RAPID ASSESSMENT OF ADOLESCENTS' SEXUAL AND REPRODUCTIVE HEALTH NEEDS: A CASE STUDY OF SAMIA SUB-COUNTY, BUSIA COUNTY.

BY

WAMBUGU BEATRICE WANJIKU

Q51/87209/2016

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN MONITORING AND EVALUATION OF POPULATION AND DEVELOPMENT PROGRAMMES

2018

DECLARATION

I, Wambugu Beatrice Wanjiku, (Q51/87209/2016) declare that this research is my original work and has not been presented for the award of any academic certificate in any other institution.

_____ _____

Signature Date

APPROVAL

This research work has been submitted with our approval as the University of Nairobi Supervisors.

Supervisor: Dr. Wanjiru Gichuhi

_____ _____

Signature Date

Supervisor: Dr. Samuel Wakibi

_____ _____

Signature Date

DEDICATION

This work is dedicated to my dear parents Mr& Mrs Francis Wambugu who have been a pillar of support and prayer throughout this process, my siblings for their moral support and encouragement.

ACKNOWLEDGEMENT

I would like to express my gratitude to the Almighty God who enabled me to work on this research work in good health and sober mind. I am profoundly indebted to Kathy Tate Bradish who sponsored me through this course. Without her financial support, I wouldn't have completed this work. My most sincere gratitude goes to my supervisors Dr. Wanjiru Gichuhi and Dr. Samuel Wakibi for their guidance, and the entire PSRI staff for their assistance.

To Mrs Phyllis Magina (Mama Bishop) and the Managing Director of The ABCs of Sex Education, thank you for your support during the entire process of this research. Lastly, I am grateful to all my friends, especially Silvia, and family for their support in various capacities throughout the entire process of this research.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

ABCs	Abstain, Be Faithful, Use Condoms
ADS	Anglican Development Services
AFIDEP	African Institute for Development Policy
AIDS	Acquired Immune Deficiency Syndrome
APHRC	African Population and Health Research Centre
ASRH	Adolescents' Sexual and Reproductive Health
CA	Catchment Areas
FAO	Food and Agricultural Organization
HIV	Human Immune Deficiency Virus
ILO	International Labour Organization
IRDO	Impact Research and Development Organization
KDHS	Kenya Demographic and Health Survey
KNBS	Kenya National Bureau of Statistics
LGBTI	Lesbian, Gay, Bisexual, Transgender, Intersex
LQAS	Lot Quality Assurance Sampling
M&E	Monitoring and Evaluation
MOH	Ministry of Health
MSH	Management Sciences for Health
NCPD	National Council for Population and Development
NGO	Non-Governmental Organization
NMG	Nation Media Group
RA	Rapid Assessments
RAP	Rapid Assessment Procedures
RoK	Republic of Kenya
RRA	Rural Rapid Appraisal
SA	Supervision Areas
SPSS	Statistical Package for Social Sciences
SRH	Sexual and Reproductive Health
SRHR	Sexual and Reproductive Health Rights
STIs	Sexually Transmitted Infections
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific & Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organization

ABSTRACT

Adolescence is a time of great change for young people when physical changes are happening at an accelerated rate. “Access to Sexual and Reproductive Health (SRH) information and services is vital for sexually active adolescents; yet, their SRH care needs are often unmet”. With earlier initiation of sexual intercourse than was the case several decades ago, there is need to understand the wide range of adolescents’ SRH needs. This study was a rapid assessment that used Lot Quality Assurance Sampling (LQAS) to assess the Sexual and Reproductive Health (SRH) needs of adolescents and STIs. The results of the study showed that male adolescents’ knowledge of important aspects of SRH was inadequate. Sexual activity was high among the respondents with 57.9 percent reporting having engaged in sexual intercourse. Males reported highest sexual activity (60 percent) compared to their female counterparts (40 percent). The average age at first sex was 15.2 years. Males were at higher risks of STIs and unwanted pregnancy for their partners. About 12 percent and 20 percent cases of pregnancy and STIs were reported in the study area. Based on these results, it was concluded that the adolescents’ greatest and most felt need was information and knowledge of SRH. The study recommended that future programmes should focus more on addressing information needs especially among male respondents. The study also recommended the use of these results in the M&E practice as a baseline against which SRH interventions could be monitored and evaluated.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Project planning and management is a logical, continuous cycle with a number of stages: identify stage, design stage to implementation and evaluation. Project monitoring is continuous throughout the cycle. This provides room for adjustments in the project's planning, design, and implementation in order to ensure the project's success (UNDP, 2009). At identification stage, a baseline or a needs assessment is done to determine community needs and problems. Needs assessment has become popular due to the requirements to ground interventions on evidence-based needs while informing organizational accountability and planning (Leigh, et al., 2001). Watkins, et al., (2012) defines a need as "a gap in results where its satisfaction, or partial satisfaction, is necessary for the achievement of another specific socially-permissible result." Findings of a needs assessment guide decision making on design, execution and evaluation of programmes and projects to achieve the desired results.

Kaufman (1992; 1998), defines Needs Assessment as the "the formal process of identifying needs as gaps between current and desired results, placing those needs in priority order based on the cost to meet each need versus the cost for ignoring it, and the selection of the most important needs (problems or opportunities) for reduction or elimination." The approach is cost-effective and minimizes the misappropriation of resources.

Needs assessment could take the form of a large scale survey or utilize rapid assessment approaches. According to ILO and UNICEF (2005), "a rapid assessment (RA) is an innovative methodology that employs several research strategies

simultaneously to provide a relatively rapid understanding of a specific problem or issue." The goal of rapid assessment is usually to provide information that is useful for programming (UNFPA, 1995). Unlike large-scale survey, RA is not resource intensive in terms of money and time and therefore much preferred for short-term and low-cost academic research work.

Originally, rapid assessments were used in rural development projects such as agriculture and infrastructural developments (Chambers, 1983; Starkey, et al., 2007). Over the years, however, RA has evolved and been adapted for use in various fields of study including health and nutrition. To understand needs, RA applies the needs assessment technique to identify the gaps that exist between current and desired situations. A needs assessment of sexual and reproductive health (SRH) of adolescents would reveal the current situation of SRH in comparison to the ideal situation based on existing standards of SRH and therefore identify the gap that needs to be addressed to meet those standards (WHO, 2003; UNFPA, 2014).

This study focused on identifying the gaps in sexual and reproductive health (SRH) of in-school adolescents in Samia Sub-County of Busia County.

1.1.1 Background of the Study Area

Among the 7 sub-counties of Busia County is Samia Sub-County. It borders Bunyala to the South, Lake Victoria to the South West, Uganda to the West, Siaya County to the East and South East, Nambale Sub-County to the North, Matayos to the North West and Butula Sub-County to the North East. It is a border Sub-County with direct entry points to Uganda. It covers a geographical area of 265.1 square kilometres (Republic of Kenya, 2013).

Administratively, it is divided into 4 wards namely: Nangina, Ageng'a-Nanguba, Bwriri and Namboboto-Nambuku wards. Topographically, Samia has an undulating relief with an altitude along Lake Victoria shores of 1,130 metres above sea level and a height of 1,500 metres at the peak of Samia Hills that cut across the Sub-County from north east to south west. In terms of economic activities, Samia has suitable soils for maize and cotton growing with annual rainfall ranging between 760 to 2000 millimetres and registers two rainfall seasons in a year. Fishing is also an important economic activity along Lake Victoria. Businesses range from small scale to large scale trans-border businesses (Republic of Kenya, 2014).

In the planning year 2013/14, Busia County had an estimated population of 823,504 representing 1.9 percent of the national population. The Sub-County has an population growth rate of 2.54 percent per annum. The projected by 2017 would be 908,658. The number of households was estimated at 164,701 with an average family size of 5 persons. The County has high poverty levels reaching 66 percent while literacy levels were estimated at 75.3 percent. Male to female ratio is 1:1 with males representing 48 percent while females represent 52 percent (KNBS, 2009; RoK, 2013). According to recent statistics released by the Ministry of Health in Samia Sub-County, the projected population by the end of 2018 will be 109,467 people. Women aged 15-49 years will be 24,948 with 4,159 being pregnant. According to the data 22,029 young men and women aged 15-24 will be sexually active.

Culturally, Samia has diverse religious and cultural aspects that are closely linked to its proximity to the border. It is host to one of the upcoming cultural centres in Busia County, Samia Cultural Centre. Majority of the residents are Christians with pockets of Islam and other religious beliefs. The Sub-County is well endowed with schools and

learning institutions depicting a commitment to improving the literacy levels of the community in the area. There are approximately 14 secondary schools in Samia, over 80 percent of which are public schools. About 60 percent are mixed schools and the rest are either boys or girls schools. Every ward has several health facilities that take care of the health needs of the communities.

In addition, there are many different organizations in Samia Sub-County that have been implementing sexual and reproductive health programmes. These organizations include Anglican Development Services (ADS) Western, Samia Orphans for Value Organization (SOVO), the ABCs of Sex Education, Impact Research and Development Organization (IRDO), among others. Nonetheless, HIV and teenage pregnancy rates have remained high despite the interventions. This study analyses the problem associated with these high rates.

1.2 Problem Statement

According to Pearson and Kessler (1992), a needs assessment is the starting point for any intervention and monitoring and evaluation. However, most programme- and project-implementing agencies, due to competitive pressure, do not adhere to this recommendation and in most cases hypothesise community needs based on their own perceptions or general findings from large scale national/regional surveys rather than the actual felt needs of the community. According to Rotary International (RI) (n.d.), community needs can only be effectively addressed if the community recognizes and identifies with them, and clearly sees the need to address them. Otherwise, they consider intervention as an imposition and may decline engagement (Altschuld, 2010).

A review of existing literature revealed studies conducted at county and national levels to try and identify SRH needs of different age groups. For instance, the Kenya

Demographic and Health Survey (2014); the Busia Sexual and Reproductive Health survey for Strategic Planning (2013) among others have been conducted with an aim to assess the situation and chat a way forward for the people. It was noted that the government of Kenya and non-governmental organizations (NGOs) have put efforts to address these needs in varying scopes and capacity. In Samia Sub-County for example, NGOs such The ABCs of Sex Education, Impact Research and Development Organization (IRDO), and Anglican Development Services (ADS) Western, among others have been implementing SRH programmes. Most of them have been implementing interventions based on the large-scale national surveys such as Census (2009) and the KDHS (2014) which may not be necessarily locally relevant (Republic of Kenya, 2015 & Mayabi, 2016).

Using rapid assessment approach, this study investigated adolescents' needs for SRH to provide a baseline for the design, implementation and monitoring and evaluation of future adolescents-based sexual and reproductive health programmes and interventions in Samia Sub-County. The study aimed at generating benchmarks or average coverage that would be useful in setting targets for future programme monitoring and evaluation. According to UNFPA (1995), rapid assessments have been used in reproductive health to enhance the understanding of specific needs for reproductive health services of various groups such as adolescents as well as monitoring the quality of existing information-gathering systems. This study analysed knowledge attitudes and practice of SRH to understand the specific needs of young people.

1.3 Research Questions

The question that this research sought to answer was:

1. What are the sexual and reproductive health (SRH) needs of in-school adolescents in Samia Sub-County of Busia County?

1.4 Objectives of the Study

The general objective of the study was to acquire assess the existing gaps in the sexual and reproductive health (SRH) of in-school adolescents in Samia Sub-County of Busia County.

1.4.1 Specific Objectives

1. To assess the level of knowledge of SRH among in-school adolescents in Samia Sub-County.
2. To explore attitudes towards SRH among in-school adolescents in Samia-Sub-County.
3. To explore SRH behaviour/practice of in-school adolescents in Samia Sub-County.

1.5 Justification of the Study

According to Watkins, et al., (2012), besides informing future decisions, needs assessments are also informed by the results of past decisions. A needs assessment therefore acts as link between the past and future performance, thus guiding decisions throughout the improvement process. A rapid needs assessment is necessary to generate quick information for programmatic purposes. According to Jeffrey, et al., (n.d.), rapid assessment methods such as lot quality assurance sampling (LQAS) provide reliable

results using a small sample of 19 units per supervision area. Valadez (2010) asserted that larger samples would not give better results and therefore a sample of 19 was considered sufficient. However, precision and reliability of results would deteriorate when the sample size is reduced to below 19.

Needs assessment informs programme design and evaluation as well as demonstrating accountability which are key aspects of M&E (McCawley, 2009; Jacobsen & O'Connor, 2006). Through needs assessment, decisions could be justified prior to their making as it is usually difficult to justify a choice once it's been made. Schutz and Derwing (1981) stated that, "it would seem that most language planners in the past have bypassed a logically necessary first step: they have presumed to set about going somewhere without first determining whether or not their planned destination was reasonable or proper". With needs assessment, it is possible to identify: (a) performance criteria for evaluating potential interventions, (b) performance data that define needs, (c) prioritize needs, and (d) information justifying activities for performance improvement (Watkins, et al., 2012).

The need to assess adolescents SRH needs was informed by the rising HIV infections, pregnancy rates and other SRH-related problems (Atieno, 2017). In an article in the Daily Nation dated December 7 2017, UNFPA noted the rising problem of teenage pregnancies especially in school going-children. In the report, between July 2016 and June 2017, about 378,397 girls aged 10 to 19 years were reported to be pregnant. Among them, 28,932 girls were aged between 10 and 14 years. Between age 15 and 19, a total of 349,465 girls reported pregnancy. The risk of pregnancy comes with a bunch of other risks including HIV due to unprotected sex (Atieno, 2017).

In a similar report by Wamuswa (2018) of the Standard Media, the country's Education Cabinet Secretary noted that the burden of pregnancy is far higher than had initially been thought and felt that the challenge was not a school or county issue but a national problem.

"...we are staring at a national challenge in the face."

(Wamuswa, 2018)

Bearing these statistics in mind, it would be important to design and implement SRH programmes from a point of understanding of the needs of these young people. The use of Lot Quality Assurance Sampling as the study method was based on the realization that it is an effective tool for generating baseline data on the needs of a community as well as monitoring and evaluation of the performance of indicators within a catchment area.

The findings of this study would provide essential information on SRH needs of adolescents to focus interventions. Programme and project managers would use these findings to plan, design and implement programmes that are relevant and culturally appropriate to the target population. For monitoring and evaluation (M&E), the findings would be useful as a reference point against which progress would be monitored and evaluated to ensure the intended results are achieved and that actual implementation does not deviate from the initial need. UNFPA (1995) suggests that the use of rapid assessment procedures facilitate the integration of monitoring and evaluation into the programme rather than treating it as a separate activity. Organizations such as The ABCs of Sex Education, Impact Research and Development Organization and the ADS Western Kenya Project implementing projects on SRH would use the data to improve their programmes. The ABCs of Sex Education has more specific programmes one of

which is targeting secondary school adolescents starting January, 2019 and would utilize the findings of this assessment to improve the design of the programme.

1.6 Scope and Limitations

According to Pearson and Kessler (1992), UNICEF recommends the use of rapid assessment procedures (RAP) as the beginning point for an intervention. A needs assessment can be a costly and labour-intensive exercise involving many steps depending on the scope of the project (NOAA, et al., 2011). However, a rapid assessment generates just as valid results (Watkins, et al., 2012).

In a project's life cycle there are five phases that guiding the process of identifying and resolving a problem. According to the World Bank (2017) and UNDP (2009), project life cycle refers to the totality of the various phases into which a project is divided: 1) Needs assessment; 2) Planning and design; 3) Implementation; 4) Monitoring and Evaluation (M&E); and 5) Impact Assessment.

According to Watkins, et al., (2012), a needs assessment is a go-between as it can either be informed by the results of an impact assessment, as well as inform the design of future programmes based on a felt need. The phase involves identifying the community problem or the felt need to be addressed or even an opportunity to be gained. During planning, a strategy is developed and a broader description of the felt need as well as the steps to be followed. A monitoring and evaluation plan is also developed to facilitate the implementation process. During implementation, the developed plan is rolled out step by step until project completion. Monitoring and evaluation involves tracking progress and assessing outcomes against targets. Lastly, impact assessment is done to determine the effects of the intervention on the target population (UNDP, 2009).

This study was limited to needs assessment as an entry point to programme interventions as well as the beginning of the M&E process. It was limited by age such that only in-school adolescents aged 15-19 were considered and therefore the results could only be generalised to a similar age group. Time and resource limitations were the main reasons the study took a rapid assessment approach to be able to generate quick, simple, cost-effective and immediate feedback on the felt needs of the target population (Valadez, 2010).

However, the success of this research was not without challenges. A number of limitations were encountered that made progress difficult. The main limitation was timing and obtaining authority to access schools. The authorities were reluctant to grant permission for the research to take place. To mitigate the challenge, the researcher contacted school authorities directly and requested for authority to carry the research. The principals assented to the study and signed a form to reinforce their approval of participation of their respective schools.

In addition, the research was carried out at a critical period of the school year when the Form Four candidates were just a couple of weeks from starting their national exams. The rest of the students were also busy with their end of year examinations. This challenge was overcome by waiting for the Form One to Three to complete their examinations and engage them when they were free. Form Fours in all the schools were excluded to avoid interference with their revision time.

The sampling strategy was LQAS which sampled 19 respondents. The best form of LQAS would have been parallel sampling which results in different sets of samples per supervision area and the results are averaged thereby giving more accurate results. However, time and resources were limited and therefore simple LQAS was conducted

with a single sample per supervision area. The results were collated to provide the average coverage for the entire catchment area.

The tool for data collection was a self-administered questionnaire that required considerable literacy and speed. Some respondents returned the questionnaire incomplete. To mitigate this challenge, the researcher allowed room for non-response and incomplete responses by increasing the sample size to 110. The extra were to cater for incomplete and unreturned questionnaires. They were also reassured that the research was purely for academic purpose and confidentiality would be maintained so as to encourage them to give honest responses. Also, some schools that had been included in the sample declined to participate in the study. This was addressed by identifying replacement schools with similar characteristics as the declining school. For instance, if a mixed school declined, a similar replacement was found to participate in the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this section, a detailed description of rapid assessment procedures was provided to demonstrate the basis for the selection of the technique that was chosen for this study. Many types of techniques are used for rapid assessments. However, the needs assessment technique has been chosen due to its ability to provide an enhanced understanding of the felt needs of adolescents for SRH. the research method used in the study is also described in details. The section also provided an overview of the methods that were used to carry out the study and their utility over other methods.

2.2 Historical Perspectives of Rapid Assessment (RA)

According to ILO and UNICEF (2005), "a rapid assessment (RA) is an innovative methodology that employs several research strategies simultaneously to provide a relatively rapid understanding of a specific problem or issue." Compared to large-scale surveys, RA is not resource efficient in terms of money and time and therefore much preferred for short-term and low-cost academic research work.

The genesis of RA is traceable to the traditional Rapid Rural Appraisal (RRA) methods which emerged in the late 1970s. The RRA methods were popularly known for their application in research related to rural development particularly in agriculture. The approach was better suited for use in developing countries where expertise to apply standard market techniques was limited (Crawford, 1997). According to Kachondham (1992), RRA was applied in food and nutrition issues to explore, recognise and establish rural problems and evaluate projects and programmes on food and nutrition.

In the following decade (early 1980s), the need to quickly and economically gather credible information in a more purposeful and problem-oriented approach began to gain popularity in the field of health over the traditional anthropological methods. As a result, the United Nations University (UNU) organized a conference in 1990 which brought together practitioners, health-care personnel, researchers, and international organizations to assess rapid methods of data collection and their applicability in the health field. The conference resulted in the development of Rapid Assessment Procedures (RAP) to facilitate the planning and evaluation of programmes and projects in health. The methods were used to understand the nature of primary health-care services by the UNU Research Programme (Pearson & Kessler, 1992). Over the years, RAP has been modified and adapted for use to investigate issues of poverty alleviation and, disaster impacts as well as demographic processes such as migration. For instance, rapid environmental impact assessment (REA) is an updated form of the RAP used by humanitarian agencies that uses qualitative data to determine the level of threat to the environment posed by a disaster or subsequent relief operation.

ILO and UNICEF in a joint decision (1990) created a RA methodology that would focus on addressing research on child labour. Since then, the methodology has been adapted and applied in different approaches to give relevant, reliable and credible results. In a study of sexual and reproductive health and HIV/AIDS linkages, RA was used to reveal the bi-directional linkages at the policy, systems and service delivery levels (AFIDEP, 2011).

2.2.1 Rapid Assessments in Monitoring and Evaluation

Rapid assessments have been used to gather quick and low-cost views and feedback information from beneficiaries and stakeholders on particular issues of interest in order to inform decisions. In monitoring and evaluation, RA provides rapid information for continuous monitoring at the project or programme level (Harding, et al., 2017; World Bank, 2004). According to Pearson (1990), evaluations carried out using rapid assessment procedures (RAP) play an important role in encouraging participatory development processes in projects. Indeed, such evaluations would be useful in ensuring that adolescents are involved in the development of ASRH interventions.

As noted earlier, this needs assessment aimed at generating data that would be used as baseline for future programme interventions. Baseline studies usually involve the collection of data before the implementation of a project to establish the existing conditions against which future improvements or changes within a given target population could be measured. Baseline data is of particular importance as it guides evaluation of the effectiveness of an intervention (WHO & UNDCP, 2003; Iskarpatyoti, et al., 2017). According to Save the Children Baselines Essential Standard, "Projects and programmes establish a baseline as a comparison and planning base for monitoring and evaluations." This underscores the importance of a baseline in any M&E activity.

2.2.2 Types of Rapid Assessments

According to UNFPA (1995), there are various approaches to rapid assessments which include among others: rapid rural appraisals, needs assessments, community diagnosis, rapid anthropological assessments, rapid ethnographic assessments, rapid assessment and response.

Rapid Anthropological Procedures (RAP) is an approach to rapid assessment in which anthropological information is collected to provide social scientists, researchers, and health workers with guidelines for understanding community attitudes towards a particular issue of interest and assessing local conditions and needs. The approach employs techniques such as informal conversation, ethnographic interviewing of key informants and observation to collect data from participants (Hurtado, 1990). The approach has been applied by the WHO's Global Programme on AIDS to collect information on AIDS-related beliefs and behaviours to generate valid and reliable information to facilitate diagnosis of a problem for intervention (Scrimshaw, Carballo, Ramos, & Blair, 1991).

Rapid Ethnographic Assessment (REA) is a descriptive anthropological research that requires limited fieldwork but which employs a wide range of data collection methods to generate locally relevant data in a quick way in order to inform advocacy, policy design and programme development (Needle, et al., 2003; IPPF, et al., 2009 & Wilson, 2009). The approach has been widely applied to carry out studies especially with key populations to advance their sexual and reproductive health rights (SRHR). In South Africa, for example, REA was used to conduct a study to enable the voices of lesbian, gay, bisexual, transgender, intersex (LGBTI) people to be heard. The findings revealed systemic failures in the provision of health services to minority groups and thereby informed the development of an agenda for universal SRHR access (Lynch, et al., 2016).

Rapid Assessment and Response (RAR) methods have been successfully applied to many public health issues in LMICs. It is a pragmatic and cost-effective method of public health research that is used for end-term project evaluations but could

also be used to assess health needs within a given population (Guha-Sapir, 1991; Aggleton & Malcolm, 2004; Pearson & Kessler, 1992). This method was successfully used to evaluate the impact of tuberculosis (TB) advocacy, communication and social mobilization (ACSM) activities in Odisha State, India. In a relatively short period of time, the method was able to achieve a comprehensive understanding of the characteristics of TB related health issues, risk behaviours and social consequences in Odisha (Kamineni et al., 2011).

Rapid Rural Appraisal (RRA) was described by McCraken, et al., (1988) as an approach for conducting action-oriented research in developing countries. It refers to a combination of investigation procedures and techniques that are time and resource efficient. Although it was the genesis of rapid assessments, RRA later became an independent approach to RA and has had wide application in various aspects of rural development such as agriculture, health, disasters and emergencies, nutrition, agroforestry, sociology approaches, non-formal education and resource management. Its wide application in agriculture particularly in developing countries has enabled improvement of agricultural marketing systems in identification and prioritisation of issues in marketing, as well as facilitating higher performance and evaluation of marketing functions to meet expansion needs (FAO, n.d.).

According to WHO (2009), Community Diagnosis is defined as "a quantitative and qualitative description of the health of citizens and the factors which influence their health. It identifies problems, proposes areas for improvement and stimulates action". A well conducted community diagnosis provides reference data that would suggest priority areas for interventions as well as providing an overview of community concerns. In Hong Kong, China, community diagnosis has been used to provide

strategic direction and planning for the Healthy Cities Project for continuous improvement of community's health.

According to (Kaufman, 1992; 1998), Needs Assessment is "the formal process of identifying needs as gaps between current and desired results, placing those needs in priority order based on the cost to meet each need versus the cost for ignoring it, and selection of the most important needs (problems or opportunities) for reduction or elimination." Generally speaking, the term refers to the identification of priorities, issues and challenges faced by the target population with regard to a particular subject. The subject has borrowed heavily from language courses where it has been defined as "the process of determining the needs for which a learner or group of learners requires a language and arranging the needs according to the priorities" (Richards et al., 1992).

Of the many approaches to rapid assessment, needs assessment was identified as the most appropriate approach in this rapid assessment of ASRH needs due to number of advantages over other approaches: (i) A needs assessment provides an opportunity for the target population to verify their level of knowledge and skill, and attitudes and behaviour towards a certain subject; (ii)it provides an opportunity to examine and learn what has been done and the existing gaps that need to be addressed; and (iii) it helps programmes in developing and demonstrating the foundation for their logic model to partners and potential funders. For instance, partners and funders are usually very keen on programme evaluations and therefore information gathered during a needs assessment is key in informing programme evaluation. For measurable changes, it is easy for project managers to determine success or failure of a project or programme and therefore curve a way forward (McCawley, 2009).

2.3 Overview of Needs Assessment

Simply put, a needs assessment is a tool for better decision making (Watkins, et al., 2012). According to McCawley (2009), "a needs assessment is a systematic approach to studying the state of knowledge, interest, or attitude of a defined audience or group involving a particular subject while also identifying the gaps that exist between the current state and the desired state." Needs assessments help: (i) to learn what the target population already knows and thinks, so as to determine the programmes and services needed; (ii) to understand what could be done to make services more accessible, acceptable and useful to the target population.

There are two types of needs assessment: direct and indirect needs assessments. In a direct NA, a formal research is carried out by gathering data from the actual target population. Indirect NA utilizes secondary data that is gathered either through opinion leaders or experts in a particular subject of interest who then give their opinions about priority needs and issues. Needs assessments are usually resource intensive and time consuming. However, this study conducted a direct needs assessment using rapid methods of data collection to gather data from adolescents. Apart from gathering quick data, the methods also ensured that the data collected was specific to the needs of individual adolescents (McCawley, 2009).

Needs assessment (also known as needs analysis) has a long history. According to West (1994), needs assessment (analysis) first began in India in the 1920s and was predominantly applied in language discourse. The concept was introduced by Michael West to address two separate and potentially conflicting concepts of need and surrender value of learning. He intended to describe what learners would do in a target situation

of foreign language, and the best way in which they could master the language within the training period (West, 1994).

Fifty years after West's introduction of the concept, other language scholars (Schutz and Derwing (1981) made comments that later popularized needs assessment. Schutz and Derwing for example stated that, "it would seem that most language planners in the past have bypassed a logically necessary first step: they have presumed to set about going somewhere without first determining whether or not their planned destination was reasonable or proper" (Schutz & Derwing, 1981).

Over the years, needs assessments have been modified and applied in a wide range of subjects to generate information that forms the basis for designing programmes and developing curricula that meet the needs of a particular target group (Munby, 1978; West, 1994; Iwai, et al., 1999; Finney, 2002). Its application in health in a less formal way began in the 19th century where medical practitioners were required to assess local populations' health needs. However, it became popular in the 1970s when the Resource Allocation Working Party attempted to determine health needs based on socioeconomic deprivation and standardised mortality ratios to inform the redistribution of health service resources. With the increasing costs of health care, it has become an important undertaking to carry out a needs assessment to be able to prioritize health care needs (Wight, et al., 1998).

According to McCawley (2009), a number of steps are involved in planning for a needs assessment. (1) The first step involves setting the objectives about the purpose of the assessment. This assessment sought to determine adolescents SRH needs. (2) The second step is to select the target population who in this case were adolescents aged between 15 and 19 years in secondary schools in Samia sub county. (3) The next step

is to organize on data collection to inform the assessment. Data was collected directly from the target population. (4) In step four, a sample is selected from the target population for participation in the study. Lot Quality Assurance Sampling (LQAS) was used to obtain the sample from the target population. In step five, the researcher selects the instrument for use in data collection. A semi-structured survey questionnaire was used to collect data from the respondents. (6) Step six involves data analysis. Data was analysed using SPSS. (7) The last step would be to ensure that the findings are disseminated and used. It would be a waste of resources if all the data is collected and analysed but the results or the information generated is not put into use (Gupta et al., 2007). The study intended to generate useful information that would be utilized by programme managers to inform the design for future programmes while also providing the benchmarks against which programme outcomes would be monitored and evaluated. Existing projects would use the data to improve the implementation and monitor progress to meet the needs of the target group.

2.3.1 Empirical Review of Needs Assessment

It has become a popular approach to conduct a needs assessment before any development intervention is implemented. This has been rapidly growing with the need to ground interventions on data-based needs while informing organizational accountability and planning (Leigh, at al., 2000). The situation of adolescents' SRH calls for extensive research into what they actually need to improve their well-being (Atuyambe, et al., 2015; Allen, 2013; Sidze, et al., 2017).

The application of needs assessments is sexual and reproductive health has been to identify and prioritize SRH needs for specific groups. In 2001, WHO conducted a needs assessment on Safe Motherhood to be able to provide programme managers,

policy-makers and other relevant stakeholders at all levels with necessary information and tools to conduct rapid surveys on provision of care for women and new-borns and the existing gaps. The study identified gaps in availability, quality and use of antenatal, delivery and postpartum care for women and new-borns particularly due to lack of skills among service providers (WHO, 2001).

In 2014, the Louisiana Department of Health and Hospitals conducted a comprehensive needs assessment to provide a strategic vision for the Reproductive Health Programme. The exercise provided a clear picture of the populations' need for and perceptions of reproductive health services (Zapata, et al., 2014). A study of SRH needs of adolescents in Ghana's slums revealed that over one-third of adolescents were sexually active but had no access to SRH information and services. Recommendations were made to provide ASRH education to equip adolescents to make informed decisions on their sexual lives (Esantsi, et al., 2015).

Similar assessments have been conducted in many different regions and the results provide a better understanding of adolescents' SRH needs thereby informing programmes and interventions aimed at addressing those needs. For instance, a needs assessment of SRH needs of young persons in Ondo State led to the development of information, education and communication (IEC) and sexual and behavioural and communication (SBC) materials with emphasis on reproductive health issues including effects of drug abuse on SRH of adolescents, HIV and other STIs to improve knowledge levels in these areas which seemed very low during the assessment (Kids & Teens Resource Centre, 2012). Similarly, this study aimed at informing programmes, interventions and policies in the area of ASRH.

Based on these studies, the importance of a needs assessment could not be overlooked if community problems are to be addressed. In particular, it is important to understand the specific SRH needs for adolescents to be able to implement and monitor appropriate interventions.

2.4 Summary of Literature Review

Adolescents' sexual and reproductive lives are complex and vary widely with geographical region, gender, among other factors. In particular, lack of quality information and sociocultural barriers is a major obstacle to understanding and addressing SRH needs of adolescents (Atuyambe, et al., 2015). Large scale studies have been carried out to understand the needs. However, with the variations, it remains a significant challenge to understand the needs of a specific group of adolescents within a given locality.

Having noted this weakness, this assessment utilized rapid assessment to study the needs of a small group of adolescents to enhance the understanding of their specific needs. The choice of the method ensured that the results would be relevant and could be generalized to a similar group with similar geographical and sociocultural settings. In particular, LQAS has proven feasible in assessing other community needs and therefore its applicability in this study was appropriate (Harding, et al., 2017).

Overall, needs assessments are important in informing the monitoring and evaluation of any intervention. With a clear understanding of the SRH needs of adolescents, any organization or agency interested in addressing those needs would be able to align their activities to target the particular needs. The development of monitoring indicators also becomes easy when the issues to be addressed are already known. During monitoring, progress can easily be tracked based on the initially

identified needs. If activities are out of track, it is easy to refocus them. During evaluation, the question of attribution and contribution is addressed as a comparison can be done between the initial state of affairs and the new developments after the intervention. Thus, a needs assessment for ASRH is crucial.

2.5 Methods of Rapid Assessment

Rapid assessments can take many different approaches and methods depending on the need such as rapid assessment and response, rapid rural appraisal, community diagnosis and needs assessment (Guha-Sapir, 1991). Each of these approaches is supported by some specific methods of data collection which are equally dependent on the need and the type of data required. Some of these methods include in-depth interviews, key informant interviews, focus group discussions and community forums (qualitative methods). Quantitative methods include structured questionnaires, survey questionnaires and checklists (Rotary International (RI), n.d).

The use of rapid assessment approaches in this study was based on the fact that the research was short-term and low-cost and involved a relatively small geographical region. The approach also helped integrate both qualitative and quantitative data to generate useful information on SRH needs for actions. According to Vincent et al., (2000), RA is rapid, technically efficient, economical and pragmatic and is therefore practical and appropriate for the study. The study assessed ASRH needs using both existing data sources and semi-structured survey questionnaires for data collection to provide a comprehensive picture of the situation. The method of data collection mainly provided quantitative data but it was considered the most appropriate due to limitations in time and resources. It is one of the cost-effective and time-efficient method of data collection (Rotary International (RI), n.d).

2.5.1 Survey Questionnaire

Surveys are a common tool that is useful for assessment of needs (Altschuld, 2010). The utility of this tool was hedged on a number of advantages including that the survey could be administered anonymously. Sexual and reproductive health is a very sensitive area of life which most people would prefer to remain a secret for them. As such, using a tool that would ensure respondents' confidentiality and privacy was critical (McCawley, 2009). In addition, the tool was inexpensive to administer and provided a formal record of participants' input into the study. The tool was also considered effective to collect responses to fairly large number of specific questions. However, there are limitations with the use of surveys in that it requires respondents who can read and write for it to be effective (Gupta et al., 2007). To overcome this challenge, the study targeted secondary school adolescents who are relatively able to read and write. In addition, the researcher and researcher assistants were present to address any issues with understanding of the questions.

2.5.2 Sampling Technique

A number of techniques are useful for sampling in studies such as this. For instance, the WHO's 30 by 7 cluster sampling has been used to conduct rapid baseline studies. It is a two-stage cluster sampling method where the population is divided into clusters. Thirty of the clusters are then sampled with probability proportionate to size (PPS) of the population in each cluster. Seven subjects are then randomly selected within each cluster. Sampling is conducted on the household level and every eligible subject is included in the sample. Although a good method of sampling, 30 by 7 cluster sample has some weaknesses in that only the first household in each cluster is randomly

selected and every eligible individual in the household is included in the sample. These could lead to bias. Nonetheless, the biases could be reduced by selecting only one individual per household. The method has been successfully used to conduct rapid assessments of immunization coverage by WHO. Compared to other sampling methods, 30 by 7 cluster sampling is time consuming and more expensive to apply unlike lot quality assurance sampling (LQAS) (Woodard, 2001).

2.5.3 Lot Quality Assurance Sampling (LQAS)

According to Namutebi (n.d), LQAS is "a simple random sampling methodology that was originally developed in the 1920s to control the quality of output in industrial production processes" (Namutebi, n.d). In the early 1990s, WHO during a consultative meeting on epidemiological and statistical methods for rapid health assessments deliberated on the use of LQAS to monitor the performance of health programmes in areas of limited resources due to its quick and inexpensive procedures (Jeffery, et al., n.d.; Biedron, et al., 2010; MEASURE Evaluation, 2011). WHO modified LQAS for use in rapidly assessing immunization coverage. The sampling methodology starts with determining the "unacceptable standards" as well as the coverage level that needs to be achieved. A confidence interval and decision rule is then defined. Since LQAS requires a small sample, frequent assessments can be conducted in a lot to assess the changes (MEASURE Evaluation, 2011).

According to Valadez (2010), LQAS is a practical tool for conducting rapid assessments and monitoring health services and health needs. The method provides high quality information at low and affordable costs with results that can be applied locally and utilised in district level annual planning and decision making; the sampling and analytical processes are relatively simple; the data from individual supervision

areas (SAs) can be aggregated into an estimate of coverage for the entire program catchment area (CA); and District level people can be trained to entirely 'own' this methodology. Due to its simplicity and ability to provide results quickly and at relatively low cost, LQAS has been used in the assessments of immunization services coverage in India. It has also been used in the tracking of reproductive health programmes as well as disaster management in countries such as Malawi, Nicaragua and Armenia. In Kenya and Uganda, LQAS has been effectively used to assess the performance of HIV/AIDS programmes (Hedt et al., 2008). In Kenya, the National Council for Population and Development (NCPD) has used LQAS to assess child health and child survival at the county level (NCPD, 2012).

Besides assessing existing programmes, LQAS has also been applied in the assessment of community needs in various situations. According to Harding, et al., (2017), LQAS was used as a rapid assessment tool to assess water, sanitation and hygiene needs in refugee camp settings. In South Sudan, for example, a study on water, sanitation and hygiene was carried out to identify refugees' greatest needs. The results showed that populations living at the periphery of the camps had the least access to water and sanitation services and were in dire need. This helped the camp managers to identify and advocate for interventions that would alleviate the situation in the least served areas. The use of LQAS was also found to be feasible as it provided useful results both at the supervision area (SA) and catchment area (CA) levels (Harding, et al., 2017).

2.5.4 Application of the Study Method

The use of LQAS in this study was to determine the sample, supervision areas and the catchment area for which the assessment was being conducted. In addition, using the predetermined decision rule, the method would help determine the acceptable

standards of SRH among adolescents. The interpretation of results was based on the decision rule, the target and the confidence interval set in the methodology part of this study. According to Obono (2010), adolescents' sexual and reproductive needs range from the desire to have sex while avoiding unplanned pregnancy, dating, childbearing and equitable and non-discriminative access to health care and services.

WHO (2012) describes sexuality as the aspect of being human being. It comprises the feelings, thoughts and behaviours of males or females, engagement in relationships and sexual activity as well as being pleasant. On the other hand, sexual health is the physical, mental and social well-being of an individual in relation to sexuality. To promote safe sexual experiences among adolescents, a positive and non-judgmental approach to sexuality is vital to enhance sexual experiences that are free of non-coercive, non-violent and non-discriminative. Reproductive health, on the other hand, refers to "a state of complete physical, mental and social well-being and not merely the absence of a disease or infirmity in all matters relating to the reproductive system, its functions and processes" (WHO, 2004). In order for adolescents to enjoy safe and healthy sexual and reproductive lives, they need to be informed. They need knowledge and access to quality information on sexual and reproductive health care and services to help them make informed choices on sexual practices as well as enhance their attitudes towards sexual and reproductive health care and services (Knut-Inge, 2008).

In recognition of the need to advance adolescents' health and to better respond to their health needs, WHO (2014) facilitated the development of global standards that would see an improvement in the quality of health-care services for adolescents. The standards included among others: 1) Adolescent health literacy – adolescents are

knowledgeable about their own health and know where and when to obtain health services; 2) Appropriate package of services – access to comprehensive package of information, counselling, diagnostic, treatment and care services at the health facilities; and 3) Adolescents participation –ensure the involvement of adolescents in the planning, monitoring and evaluation of health services and decisions on individual care as well as service provision (WHO, 2014; Montero, 2016; UNESCO, et al., 2018).

This study recognized that globally, adolescents SRH needs have some basic similarities. However, there are significant variations depending on socio-cultural settings, religion and geographical location (Atuyambe, et al., 2015). Interacting with the specific target group in a friendly and non-judgemental manner would encourage them to communicate their needs in order to see an improvement in the status of the same. This study focused on assessing the needs of in-school adolescents in Samia Sub-County by exploring their knowledge levels, use of SRH services and attitudes towards them, SRH practice and behaviour including health-seeking behaviour on matters SRH. The survey questionnaire was comprehensive and study methodology was LQAS was to determine the average coverage on indicators of focus and identify the gaps that still exist to mark priority areas.

CHAPTER THREE: STUDY METHODOLOGY

3.1 Introduction

This section describes the application of the methods and tools that were used to carry out the assessment. Details of the study area and target population are provided. In addition, the section describes the study design, sampling techniques as well as measurement of variables for the study. Details of the study methodology and its application and justification are also provided.

3.1.1 Study Area

As described earlier, the study was conducted in Samia Sub-County of Busia County, Western Kenya. The Sub-County has four wards which were proportionately represented in the study. It focused on in-school adolescents in 5 secondary schools. Namboboto-Nambuku ward is the largest of the four and therefore 2 schools were selected from this ward. One school was selected in each of the other three wards for inclusion in the study. The choice of the study area was informed by the absence of a comprehensive assessment of adolescents' sexual and reproductive health (ASRH) needs, and the presence of organizations implementing SRH programmes. In addition, it accounts for about 12 percent of all secondary schools in Busia County, both public and private. The population in the area is also diverse with varied characteristics and is therefore representative of the County's population. The diversity is also associated with differences in behaviour and perceptions (Republic of Kenya, 2013).

The concentration on in-school adolescents was based on the realization that majority of young people between age 15 and 19 in Kenya are school-going teenagers, and most of them in secondary schools and upper primary and therefore their views

were likely to reflect the view of the majority of adolescents within this age category (UNFPA, 2016; UNFPA, 2017). A recent declaration by the President of Kenya to ensure 100 percent transition into secondary schools also meant that in the near future, all adolescents within the age category considered in this study would be in secondary schools with a few still in primary schools. The 'free' secondary school education initiated in 2018 also meant that more adolescents were able to continue with secondary education, indicating more of the age category were in-school, thereby strengthening the rationale for focusing on in-school adolescents (NMG, 2017). In addition, the data collection method, which was a self-administered questionnaire, required respondents to have a considerable level of literacy to be able to respond to the questions. School-going adolescents were the most suitable based on this criteria of selection (Sidze, et al., 2017).

3.2 Study Design

The research was a descriptive case study that used mainly quantitative surveys with adolescents aged 15-19 years in secondary schools and who were willing to participate in the study in order to develop the basis for prioritization of needs and action. Qualitatively, the researcher was able to collect data on attitudes and perceptions of the respondents. The quantitative component provided statistical data on the actual numbers of adolescents responding in a particular way and their basic characteristics. Qualitative and quantitative data both complemented and supplemented each other to enrich study findings (Kadonya et al., 2002; Habtamu et al., 2013).

The participants were identified through sampling at school level and a written consent both at individual and institutional level was obtained. The study pledged to maintain anonymity of both the school and the students who participated in the study.

This encouraged participation and more honest responses. Data was collected on the background characteristics of respondents, access to information and support services, relationships and dating, sexual behaviour and desires, knowledge of HIV/AIDS and other STIs prevention, knowledge and use of contraceptive methods, pregnancy and childbearing experiences and intentions, pregnancy outcomes and use of maternal health services (Birungi, et al., 2011).

3.3 Sampling Procedures

3.3.1 Identification of Study Area

Samia Sub-County was the study area for this research. The selection of the study area was informed by several factors including that Busia County is one of the regions in the country where HIV incidences and prevalence as well as adolescent pregnancies are high (Republic of Kenya, 2013). A recent report by the Ministry of Health in Samia Sub-County release at a Stakeholders' meeting held on 2nd October, 2018 showed that this year the HIV prevalence in Samia Sub-County stood at 7.7 percent, with 297 HIV positive cases among young people below age 15. Teenage pregnancy rates were estimated at 21 percent making Busia County one of the counties with high teenage pregnacies in 2018. Being a border county as well as one of those on the Lake region, the county is faced with numerous challenges including young people engaging in sex for money especially with long-distance drivers and the fisher-folk who are a major driver of HIV in the county and other SRH issues. Samia Sub-County of Busia County was selected because of a deficiency in a comprehensive study of adolescents sexual and reproductive health needs (Mayabi, 2016).

3.3.2 Identification of Study Sites

Secondary schools in Samia Sub-County were considered as the study sites during this research. An updated list of schools in the sub-county was obtained from the County offices to act as the sampling frame from which a random sample of schools was obtained. According to lot quality assurance sampling (LQAS), the method of study, at least five schools were to be included in the study. Five schools were randomly selected for inclusion in the study. However, the random selection was limited by the period in which data collection took place. Some schools that had been identified and included in the sample declined participation (two schools) and replacements were made based on the acceptance to participate. Most schools in the area were mixed and therefore the sample was drawn with this aspect in mind. To obtain the sample for the study, lot quality assurance sampling (LQAS) was used. This method has been effectively employed to carry out rapid assessments as it provides quick, precise and locally relevant results (Jeffery, et. al. n.d).

3.3.3 Lot Quality Assurance Sampling (LQAS)

LQAS is a method of sampling and a monitoring tool for identifying priority areas, measuring coverage within a programme catchment area as well as generation of useful data that could inform better decisions. It is a multistage sampling methodology with four main stages: identification of catchment areas and lots; indicator selection and target population; defining sampling frame; and determining the decision rule (MSH STAR-E LQAS, 2012).

3.3.3.1 Identification of Catchment Areas and Lots

Samia Sub-County was identified as the catchment area (CA) for the study. There were approximately 14 secondary schools in this Sub-County some of which were mixed and others single sex. The schools represented supervision areas (SAs) or lots. A lot is a sub-area that is defined for the purposes of sampling. Five SAs were identified randomly in the CA. The selection of the 5 schools was to ensure that the aggregate sample size for the catchment met the classic LQAS "gold-standard" of at least 95 completed interviews per performance area. For best results in LQAS, five to six supervision areas are ideal, each with a sample size of 19. The importance of ensuring that the total sample is 95 is that the performance of indicators can only be determined when the sample size of all supervision areas combined is 95 or greater. When fewer than 5 SAs are selected, the sample size need to be increased so that the total is 95 or more. Thus, five SAs were considered ideal for the study (Core Group, 2008; Valadez, 2010; MSH, 2012).

3.3.3.2 Selection of Indicators and Target Populations

The assessment covered key areas of sexual and reproductive health and other important areas of adolescence for which indicators were identified. There were several different areas for which data was collected as detailed in the study questionnaire in Annex 3 of this study. The sexual and reproductive health needs of adolescents were examined using 17 indicators in each of the supervision areas. There were three main categories of indicators: i) Indicators for adolescents' knowledge of sexual and reproductive health; ii) Indicators for adolescents' attitudes towards sexual and reproductive health; iii) Indicators for adolescents' sexual and reproductive health practice and behaviour.

i. Adolescents' Knowledge of Sexual and Reproductive Health

In this category, adolescents' understanding of SRH was assessed. Six main indicators were selected for investigation and analysis: knowledge of contraceptives, knowledge of source of contraception, knowledge of HIV transmission; knowledge of HIV status; knowledge of other STIs; and knowledge of STIs symptoms. Each of these indicators was calculated as a percentage of the total population. Below is a summary of the indicators and calculation. See Table 3.1 below

Table 3.1: Indicators of Knowledge of Sexual and Reproductive Health

Indicator	**Calculation**
Percentage of adolescents with knowledge of 2 or more modern contraception	Number of adolescents with knowledge / Total respondents * 100
Percentage of adolescents with knowledge of 2 or more sources of modern contraception	Number of adolescents with knowledge / Total respondents * 100
Percentage of adolescents with knowledge of 2 or more ways of HIV transmission	Number of adolescents with knowledge / Total respondents * 100
Percentage of adolescents who know their HIV status	Number of adolescents with knowledge / Total respondents * 100
Percentage of adolescents with knowledge of the 2 main Sexually Transmitted Infections (STIs)	Number of adolescents with knowledge / Total respondents * 100
Percentage of adolescents with knowledge of at least 2 symptoms of Sexually Transmitted Infections (STIs) in males and females	Number of adolescents with knowledge / Total respondents * 100

Source: Modified from UNESCO, 2015; WHO, 2012; WHO, 2014

Knowledge levels were also categorised into three: minimum, adequate, and maximum knowledge. This categorisation was adopted and modified from a similar study conducted by the Guttmacher Institute and APHRC on Sexuality Education among adolescents aged 15-19 in 78 secondary schools in Homa Bay, Mombasa and Nairobi counties. The study was assessing the comprehensiveness of sexuality

education taught in schools. In a list of five categories of topics, if at least one topic was taught, a minimum level was attained; if all except one was included, an adequate level was registered; while a high level of comprehensiveness was attained when all the topics in the five categories were included in sexuality education. The measure was however limited in that it only addressed the range of topics included in school curriculum without considering other aspects such as access to SRH information from other sources, participatory approaches to teaching and involvement in youth programmes among others (Sidze, et al., 2017). For this study, a modification was considered based on the indicator being measured and the range of items from which respondents were choosing. See Table 3.2 below.

Table 3.2: Categorization of Knowledge of Sexual and Reproductive Health

Knowledge Categories	**Knowledge Levels**		
	Minimum	**Adequate**	**Maximum**
	Knowledge of 1 of the items	Knowledge of 2 or more but not all items	Knowledge of all items

Source: Modified from (Sidze, et al., 2017)

ii. Adolescents' Attitudes towards Sexual and Reproductive Health

This category consisted of indicators that measured adolescents' attitudes towards sexual and reproductive health. These were measured on a 3-point Likert Scale with statements which respondents were supposed to state whether they agreed, were neutral (undecided) or disagreed. Attitudes were measured for abstinence, HIV positive results, condom use, and gender relationships.

iii. Adolescents' Sexual and Reproductive Health Practice/Behaviour

This category of indicators sought to explore the sexual behaviour of adolescents so as to determine the risks and exposure to undesirable sexual and reproductive health outcomes. Sexual experience and the outcomes were explored through 9 indicators as described in Table 3.3 below.

Table 3.3: Indicators of Sexual and Reproductive Health Practice/Behaviour

Indicator	Calculation
Percentage of adolescents who have engaged in opposite sex relationships	Number of adolescents who have had a relationship / Total respondents * 100
Percentage of adolescents who have ever had sex	Number of adolescents who have had sex / Total respondents * 100
Average age at first sex	Number of adolescents who had sex at or above average age at first sex / Total respondents * 100
Percentage of adolescents who used modern Contraception at First Sex	Number of adolescents who used modern contraception at first sex/ Total respondents * 100
Percentage of adolescents who used modern Contraception in subsequent sexual encounters	Number of adolescents who used modern contraception in subsequent sexual encounters / Total respondents * 100
Incidences of pregnancy among adolescents	Number of adolescents who reported pregnancy / Total respondents * 100
STI infections among adolescents	Number of adolescents who reported STIs infections / Total respondents * 100
Percentage of adolescents who were treated for STIs	Number of adolescents treated for STIs / Total respondents * 100
Percentage of adolescents who had ever sought sexual and reproductive health services	number of adolescents who have ever sought sexual and reproductive health services / Total respondents * 100

Source: Modified from WHO, 2012; WHO, 2018

3.3.3.3 Sampling Frame

An updated database of student population was obtained from the respective schools for use in developing the sampling frame from which the study sample would

be obtained. The total student population in the five schools was 1,542. See Table 3.4 below for the population of each school.

Table 3.4: School Population

School / Supervision Area	Type	Total Population	Males	Females	Sample
School 1	Mixed	400	180	220	19
School 2	Mixed	292	131	161	19
School 3	Boys only	318	318	0	19
School 4	Girls only	321	0	321	19
School 5	Girls only	211	0	211	19
Total		**1,542**	**629**	**913**	**95**

Source: Adapted from School Databases

In each of the 5 supervision areas, 19 students were identified by random sampling providing a sample size of 95 for the entire study area. The random selection ensured that each student had an equal chance of being included in the sample. As a rule of thumb, a sample of 19 in LQAS provides a statistical confidence interval of ±10 which was sufficient for the study. In addition, 19 is the smallest sample size that allows for a confidence level of 90 percent for all the possible targets or benchmarks.

a. Confidence Interval and Confidence Level

The certainty with which one can report results is called a confidence interval. It provides the lower and upper thresholds of coverage of a given indicator. On the other hand, the confidence level provides the certainty with which results of the entire population could be reported. As noted in the previous section, the sample size of 19 used in LQAS provides a statistical confidence interval of ±10 and a confidence level of 90 percent (CORE Group, 2008). This meant that the study was 90 percent certain that the true percentage of the population depicting a certain characteristic lied within

the range of values ±10 the average coverage calculated for that indicator. A wider confidence interval was necessary to provide more room for ensuring that if the entire population was surveyed, their responses would fall within this range. This confidence interval was used to calculate the confidence limits for each of the indicators. The confidence interval provided the lower and upper thresholds (confidence limits) for each indicator. An indicator whose coverage was below the lower threshold was considered unacceptable and therefore the study area marked as a priority for interventions targeting that particular indicator. A coverage was considered acceptable if it fell between the thresholds (Valadez, 2010).

In each of the supervision areas, a sample size of 19 was used. Since this was smaller than 30, which is the standard sample size for a normal distribution (Z-score), and the population standard deviation was unknown, the Student's t-distribution was used as the critical value to calculate the confidence interval. Based on the confidence level (C = 90 percent) and the degrees of freedom (19-1), the t-distribution critical value from the t-distribution table was 1.734. In the table, r represents degrees of freedom and $\alpha = (1 - C)/2$. That is, α is given by subtracting the decimal form of the confidence level (0.9) from 1 and dividing by 2 (See Annex 5).

$$\alpha = \frac{1 - C}{2}$$

Therefore $\alpha = \frac{1-0.9}{2} = 0.05$

For each of the indicators, the following formula was used to calculate the confidence interval.

$$\text{Confidence Interval} = \text{x (bar)} \mp t * \frac{s}{\sqrt{n}}$$

Where: x (bar) = sample mean

t = critical value of the t-distribution

s = sample standard deviation

n = sample size

3.3.3.4 Determining the Decision Rule

For each of the indicators, an average coverage was calculated based on the correct responses for that particular indicator. Using the confidence interval (±10), the confidence limits were determined for the indicator. From the LQAS table of decision rule, the intersection between the sample size and the average coverage provided the decision rule. The decision rule varied from one indicator to the other based on the average coverage. To classify the study area as having met the target, it needed to have equal to or more correct responses than the decision rule. If the area fell below the decision rule, it was considered a priority area for sexual and reproductive health education and services (Harding, et al., 2017). In other words, if the decision rule for a given indicator was not met, it meant that the average benchmark was also not reached (CORE Group, 2008). All the supervision areas had the same sample size of 19 to reduce bias. A decision rule was used to determine whether the study area met the coverage benchmark or not (Valadez, 2010). See Annex 4 for Decision Rule Tables

3.3.4 Rationale for the Use of LQAS

As a sampling methodology, LQAS uses a small sample to assess and provide an accurate and reliable measure of coverage at the level of the catchment or study area. In a baseline assessment as in this study, LQAS was used identify priority areas of

ASRH and to establish the baseline situation against which performance on key indicators could be measured. In monitoring and evaluation, the method was used to identify underperforming supervision areas in terms of the average coverage of sexual and reproductive health (NCPD, 2012).

In this study, LQAS was used to generate baseline data that would inform future programme design, monitoring and evaluation; enhance development of indicator targets; mark SRH priority areas for action; provide the average coverage of indicators as well as help identify the target groups for future programmes and interventions (MSH STAR-E LQAS, 2012).

The use of a sample of 19 was based on the fact that larger samples in LQAS do not increase the precision of results but they increase the costs and time taken to gather data. The study method also resulted in estimations of the average coverage for the entire study/catchment area. Specifically, the sample was considered good for setting priorities on knowledge and practice of sexual and reproductive health (MSH STAR-E LQAS, 2012).

The conclusions made in this study were made for the entire study/catchment area rather than individual supervision area. Being a baseline study, the intention was to identify the priority areas of SRH in order to inform the design, implementation and monitoring and evaluation of future programmes. Practically, a programme cannot be designed for an individual school and therefore it was unnecessary to make conclusions based on supervision areas. Rather, programmes are designed and implemented for catchment areas. Having generated the baseline situation of the entire catchment area, relevant programmes could be designed and implemented to alleviate the situation.

3.3.4.1 Key Concepts in LQAS

The average coverage in this study was calculated as a proportion of the number of adolescents who responded correctly to a question. The decision rule determined the extent to which the study area was able to reach the average coverage or whether it was below the coverage.

3.4 Selection of Participants and Unit of Analysis

The students acted as the unit of analysis for the study. All students in Form One to Form Four were eligible for sampling. However, the Form Fours were excluded from the study as they were in their final days of revising for the national examinations to allow them ample time for revision. The total population in each school and Form was obtained from schools prior to sampling. A sample size of 19 was required in each school and was distributed to all Forms proportionate to the population size. To ensure representativeness and reduce biases, the sample was obtained randomly. A ballot box with coloured and uncoloured cards equal to student population in each Form was used. The coloured cards represented the required sample. Students were asked to pick the cards without prior knowledge of the meaning of the colours. At the end of the exercise, those with coloured cards were asked to move forward to form the study sample. In case any of the students in the sample declined to participate, a replacement was found from the remaining population.

3.5 Measurement of Variables

The key variables were measured using indicators. Three categories of indicators were established and specific indicators developed for purposes of measurement. Knowledge levels were also measured on a scale ranging from minimum

to maximum (Sidze, et al., 2017). Attitudes, on the other hand, were measured using a 3-point scale (Wingood, et al., 2001). Behaviour or practice was measured using frequencies to determine the proportion of respondents who responded in a particular way. For example, frequencies on adolescents who had experienced sex or those that reported using contraceptives.

3.6 Instrument Development and Data collection

The assessment used a self-administered questionnaire as the instrument for data collection. Questions and themes in the questionnaire were drawn from multiple instruments that have been used to assess various aspects of sexuality education. Based on the focus of the study, the instrument addressed knowledge, attitudes and practice on key areas of SRH including reproductive anatomy, contraceptives, HIV and other STIs, and relationships. For the study, knowledge assessed the extent to which individual adolescents had knowledge of SRH concepts. It included local knowledge and beliefs, and knowledge of SRH services. Attitudes characterized individual's feelings and inclinations towards SRH. Practice documented actions and behaviours related to SRH.

With the approval from the University of Nairobi, the Sub-County Education Office was contacted to authorise the study. Principals of the targeted schools were contacted by phone to introduce the study and solicit participation. Upon consent, a date for the research was set in which research assistants would conduct the survey. On the date of the survey, an assent form was presented to the Principals or Guidance and Counselling Teachers to read and voluntarily assent to the participation of their students. Prior to the survey, informed consent and assent was sought from all participants. To ensure confidentiality and anonymity, principals and teachers did not

know the students that completed the survey, and all information was treated with utmost respect and confidentiality with no one outside the research team being allowed access.

3.7 Data Management and Analysis

After collection, the questionnaires were checked for completeness. To a large extent, the data obtained was quantitative. Hand tabulations of the data was conducted for each of the 17 key indicators and based on the Supervision Areas (SAs). This established the average coverage, confidence intervals and confidence levels for each of the indicators. Observations were made to see which SAs had reached the average coverage by meeting the decision rule for the indicator. The remaining data was entered into Excel, cleaned and checked for inconsistencies and then transferred into the Statistical Package for the Social Sciences (SPSS) Version 20 for further analysis.

The Chi square test was run to determine the factors that were associated with SRH knowledge, attitudes and practice. The basic requirements for running the test were observed as follows. The first step was to state the null hypotheses for testing. In all the cases tested, the null hypotheses would state that no association existed between and among the variables in question. The confidence level was determined at 95 percent ($\alpha = 0.05$) at which level the Chi (χ^2) square critical value was 3.84. The decision rule was stated to provide the conditions under which the null hypotheses would be rejected or fail to reject. In this case, if the P value was less than alpha ($\alpha = 0.05$), the null hypothesis was rejected, which would mean that there was an association between or among the variables in question. However, if the P value was greater than alpha ($\alpha = 0.05$), then the null hypothesis was not rejected, meaning that the sample data did not provide sufficient evidence to prove an association and rejection of the null hypothesis.

3.8 Reliability Analysis

A check of reliability of the survey instrument and the scale used was conducted to check consistency and reliability of the results. There are several measures of reliability. However, according to Zumbo & Rupp (2004), alpha is the most common reliability index that is used for social sciences. The Cronbach's alpha uses the Pearson correlation matrix to estimate the reliability of survey instruments that use Likert-scale responses. Being a correlation-based statistic, it assumes a continuous data set. Its values range from 0 to 1, where higher values denote higher reliability. Values between .6 and .7 are considered acceptable but below that is questionable.

To calculate Cronbach's alpha, the score for each scale item is correlated with total score for each observation. The score is then compared to score variance of all individual items. If the items on the scale are independent of each other, then the value of alpha is zero (alpha = 0). However, high covariation between items results in an alpha value close to 1, with an increase in scale items. A high value of alpha indicates shared covariance and a likelihood that the same concept is being measured by items in the scale. In this study, Cronbach's alpha was used to assess the reliability of items on a 3 point Likert scale. The coefficient measured attitudes on condom use and gender relations. A high score indicated positive attitudes towards the particular concept.

A similar test of reliability was conducted for the survey items that used the YES/NO responses, in other words, dichotomous sets of responses using the Kudar-Richardson 20 (KR-20) formula. The formula creates a coefficient of reliability for dichotomous responses. However, for three or more levels of response sets, KR-20 cannot be used. In SPSS, the analysis is run the same way as the Cronbach's alpha. Just like Cronbach's alpha, its values range from 0 to 1, with values tending towards 1 being

more favourable. A value from 0.7 is usually acceptable and interpreted as showing that the survey instrument is reliable. Below is the basic interpretation of the Cronbach's alpha and KR-20 values (Gliem & Gliem, 2003)

Table 3.5: Interpretation of Cronbach's Alpha and KR-20

Value of alpha and KR-20	Interpretation
≥ .9	Excellent
≥ .8	Good
≥ .7	Acceptable
≥ .6	Questionable
≥ .5	Poor
≤ .5	Unacceptable

Source: Modified from Gliem & Gliem, 2003

3.9 Ethical Considerations

Given that the study covered a population that is internationally categorised as minors, it was important that the researcher observed and adhered to the established guidelines (World Health Organisation, 2003). Usually, parental or guardian consent is required when undertaking research with minors. However, since the study focused on in-school adolescents, school authorities were considered the rightful guardians with sufficient authority to consent to the study. Written informed consent from the adolescents was also obtained, further emphasizing the confidentiality of information.

CHAPTER FOUR: RESULTS ON ADOLESCENTS' SEXUAL AND REPRODUCTIVE HEALTH

4.1 Introduction

This chapter provides statistical presentation and analysis of the data collected based on the indicators of focus as outlined in the methodology section. The data has been presented in tables and figures with summaries being given for each table and figure. The study targeted 110 youths. Although the expected sample was 95 respondents, a non-response rate of 10percent was allowed to ensure that the required sample was attained. A total of 104 questionnaires were returned representing a response rate of 95 percent. However, 9 questionnaires were incomplete and thus discarded. The 95 respondents (91 percent of the returned questionnaires) were sufficient for the five supervision areas based on the requirements of Lot Quality Assurance Sampling (LQAS) methodology which was used for the study.

4.2 Background Characteristics of Adolescents in the Study

This study analysed SRH needs of in-school adolescents. The background characteristics were analysed for the entire study area. It was necessary to provide a background to their demographic characteristics to provide a clear picture of the group that was involved in the study. This section presents the basic characteristics such as sex of respondents, age, and type of school they attended among others. See Table 4.1 below for details. The total number of respondents was 95: 48.4 percent males and 51.6 percent females. The age of the respondents was between 15 and 19 years. Ages 15-17 represented 68.4 percent as the majority in secondary schools.

Table 4.1: Distribution by Background Characteristics of Adolescents

Characteristic		**N**	**%**
Sex of respondent	Male	46	48.4
	Female	49	51.6
Age of respondent (Years)	15 – 17	65	68.4
	18 – 19	30	31.6
Type of school	Day	61	64.2
	Boarding	34	35.8
School composition	Mixed (boys & girls)	38	40
	Boys only	20	21.1
	Girls only	37	38.9
Religion	Catholic	42	44.2
	Protestant and Evangelical Churches	49	51.6
	Other	4	4.2
Parents of Respondents	One or none alive	24	25.3
	Both parents alive	71	74.7
Household head	Parent	67	70.5
	Grandparent	16	16.8
	Others	12	12.7

Ages 18-19 represented 31.7 percent. In the area, majority of the schools are day schools. As such, 64.2 percent of the respondents were day-scholars and 35.8 percent boarding school students. In terms of composition, 40 percent of the respondents came from mixed schools, 21.1 percent from boys' only schools and 38.9 percent from girls' only schools. In terms of religion, 44.2 percent were Catholics; Protestant and Evangelical churches represented 51.6 per cent; and 4.2 percent other religions. In general, Christians represented the highest percentage at 95.8 percent indicating a Christian-dominated region. About 74.7 percent of the respondents had both parents while 25.3 percent had either one or none of the parents. About 70.5 percent of the

households were headed by parents, 16.8 percent by grandparents and 12.7 percent by others including relatives and siblings.

4.3 Results of Lot Quality Assurance Sampling (LQAS) Analysis

The coverage indicators that were used in this study were considered appropriate proxies for the monitoring of Sexual and Reproductive Health Programmes for adolescents. As described in Section 3.3.3.2 on indicator selection, three categories of indicators were analysed: i) adolescents' knowledge of sexual and reproductive health; ii) adolescents' attitudes towards sexual and reproductive health; and iii) adolescents sexual and reproductive health practice. In each the first category, indicators on knowledge of contraception, HIV and STIs were identified. The second category identified indicators on attitudes such as attitudes towards HIV and premarital sex. In the third category, sexual practices were analysed in details including whether adolescents had sex and the age at first sex among others.

Using Lot Quality Assurance Sampling (LQAS), data was analysed per supervision areas and conclusions made using the decision rule and average coverage. As cited in Section 3.3.3.3 on Decision Rule, the measure is used in LQAS to determine areas of high performance on the given indicators and those of low performance. In this analysis, the decision rule was used to determine the number of adolescents who met the average coverage on the specified indicators. In each of the tables on the indicators, the average coverage refers to the percentage of adolescents who provided correct responses to a given indicator for the entire study area. The decision rule is the cut off mark that determines whether a supervision area (SA) has reached the average coverage estimated for the study area. The confidence interval (plus or minus value) in the table represents the margin of error while confidence limits (for instance 59.4 – 77.4)

represents the range of values within which the results would fall if the entire population was surveyed.

4.3.1 Adolescents' Knowledge of Sexual and Reproductive Health

In this category, the study estimated knowledge of sexual and reproductive health in each of the five supervision areas.

4.3.1.1 Adolescents Knowledge of Modern Methods of Contraception

Knowledge is among the major driving forces of action (Allen, 2013). It is out of knowledge that one can make a wise decisions in a given situation. Improvement in knowledge of sexual and reproductive health knowledge among adolescents is a major step towards realizing desirable SRH outcomes for the group. This indicator estimated the percentage of adolescents who had knowledge of two or more methods of contraception. In Table 4.2 below, the study estimated that about 68 percent of adolescents had knowledge of 2 or more modern methods of contraception.

Table 4.2: Adolescents' Knowledge Modern Methods of Contraception

Catchment Area		**Average coverage = 68.4**	**%**	**Confidence Interval**
				± 9
		Decision Rule **11**		**59.4 – 77.4**
Supervision Area	Sample Size	Correct responses		Meets decision rule
SA 1 - Mixed School	19	10	15.4	No
SA 2 - Mixed School	19	12	18.5	Yes
SA 3 - Boys School	19	15	23.1	Yes
SA 4 - Girls School	19	14	21.5	Yes
SA 5 - Girls School	19	14	21.5	Yes
Total	**95**	**65**	**100**	

This was the average coverage for the entire study/catchment area. Using the confidence limits established by the confidence interval (± 9), a survey of the entire population would produce a coverage estimate between 59.4 and 77.4 percent. According to Table 4.2, supervision area (SA) 1 was below average coverage. Supervision areas (SAs) 2, 3, 4 and 5 reached the average coverage meaning that in 80 percent of the SAs, the average coverage was met. In terms of the percentage, 15.4 percent in SA1; 18.5 percent in SA2; 23.1 percent in SA3; 21.5 percent in SA4 and SA5, reached the average coverage. SA 3, which was a boys' school, had the highest number of adolescents with knowledge of contraception. Therefore, 70 percent of adolescents in these SAs had knowledge of 2 or more methods modern contraception.

In Figure 4.1 below, the indicator was disaggregated by sex of respondents. It showed that 46.2 percent of male adolescents had knowledge of 2 or more methods of modern contraception, while female adolescents accounted for 53.8 percent. This portrays female adolescents as having better knowledge of modern contraception compared to men.

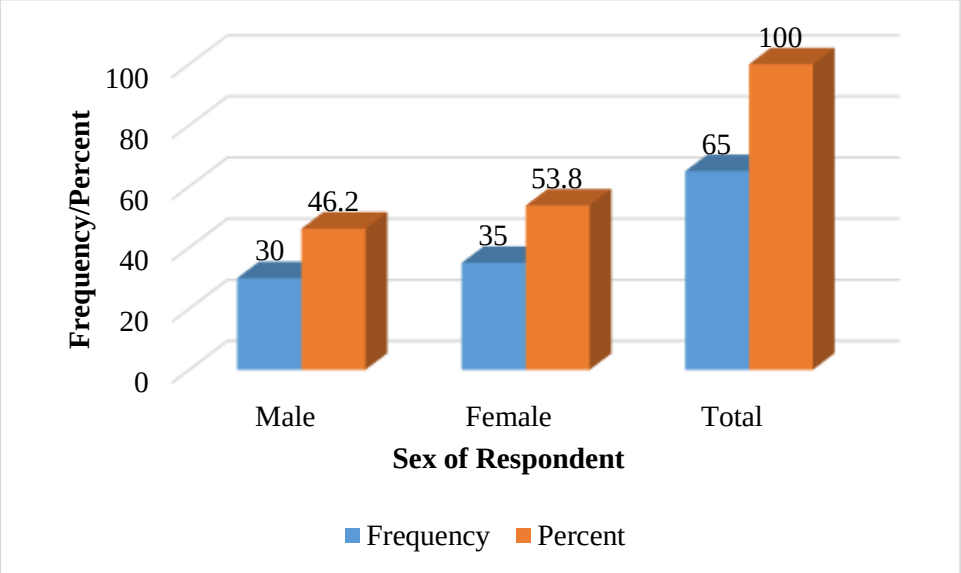

Figure 4.1: Adolescents Knowledge of Modern Methods of Contraception

4.3.1.2 Adolescents with Knowledge Sources of Modern Contraception

This indicator measured knowledge of sources of modern contraception. The average coverage was 52.6 percent for the entire catchment area (CA). Using the confidence limits established by the confidence interval (± 9.7), a survey of the entire population would produce a coverage estimate between 42.9 and 62.3 percent. See Table 4.3 below.

Table 4.3: Adolescents Knowledge of Sources of Modern Contraception

Catchment Area		**Average coverage = 52.6**		**%**	**Confidence Interval**
					± 9.7
		Decision Rule	**8**		**42.9 – 62.3**
Supervision Area	Sample Size	Correct responses			Meets decision rule
SA1 - Mixed School	19	9		18	Yes
SA2 - Mixed School	19	7		14	No
SA3 - Boys School	19	14		28	Yes
SA4 - Girls School	19	8		16	Yes
SA5 - Girls School	19	12		24	Yes
Total	**95**	**50**		**100**	

According to Table 4.3 above, 80 percent of the SAs reached the average coverage with SA 2 falling below the coverage. Eighteen (18) percent of those with knowledge of source of contraception came from SA 1; 14 percent from SA 2; 28 percent from SA 3; 16 percent from SA 4; and 24 percent from SA 5. Supervision area 3, a boys' school had the highest number of respondents who knew 2 or more sources of modern contraceptive methods.

Figure 4.2 below also provided the coverage estimates disaggregated by sex of respondents.

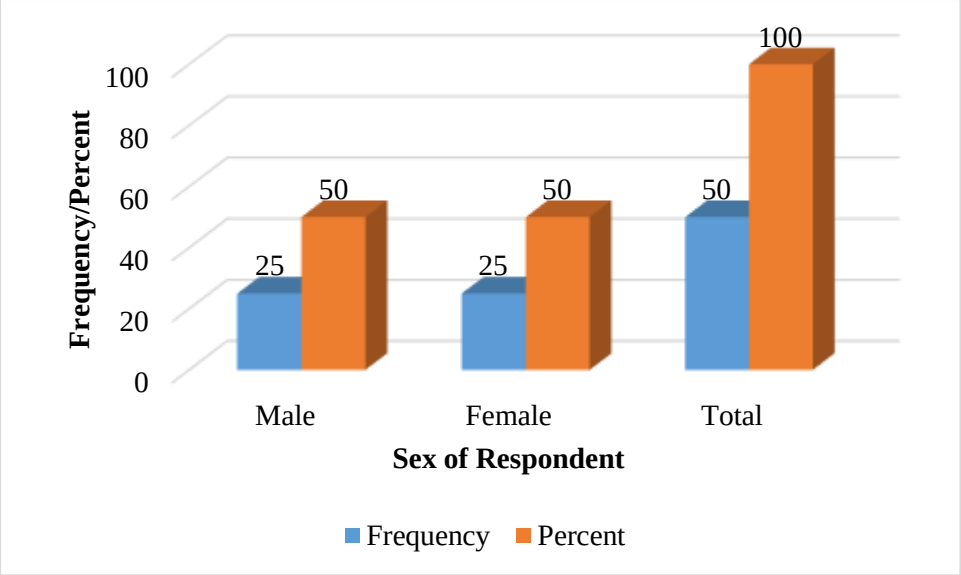

Figure 4.2: Adolescents' Knowledge of Sources of Modern Contraception

In Figure 4.2 above, males and females had equal knowledge of the sources of modern contraception methods as each accounted for 50 percent. However, it would have been expected that more females would know the sources as they portrayed better knowledge of the methods.

4.3.1.3 Adolescents with Knowledge of Ways of HIV Transmission

This indicator measured adolescents' knowledge of HIV transmission. They were required to identify at least two body fluids that carry the HIV virus (blood, sexual fluids, and breast milk). The average coverage for the catchment area was 95.8 percent. Using the confidence limits established by the confidence interval (± 3.9), a survey of the entire population would produce a coverage estimate between 91.9 and 99.7 percent. See Table 4.4 below.

Table 4.4: Adolescents Knowledge of Ways of HIV Transmission

Catchment Area		**Average coverage = 95.8**	**%**	**Confidence Interval**
				± 3.9
		Decision Rule - 16		**91.9 – 99.7**
Supervision Area	Sample Size	Correct responses		Meets decision rule
SA1 - Mixed School	19	18	19.8	Yes
SA2 - Mixed School	19	18	19.8	Yes
SA3 - Boys School	19	19	20.9	Yes
SA4 - Girls School	19	18	19.8	Yes
SA5 - Girls School	19	18	19.8	Yes
Total	**95**	**91**	**100**	

From Table 4.4 above, all the supervision areas reached the average coverage by surpassing the established decision rule. Out of the 91 respondents who were able to identify 2 or more ways of HIV transmission, 19.8 percent came from SA 1 and SA 2 each; 20.9 percent came from SA 3; and 19.8 percent came from SA 4 and SA 5 each. For this indicator also, SA3 demonstrated highest knowledge of HIV transmission as all the respondents were able to identify 2 or more ways.

In Figure 4.3 below, disaggregation was done by sex of respondent to find out who between male and female adolescents were more knowledgeable of HIV transmission.

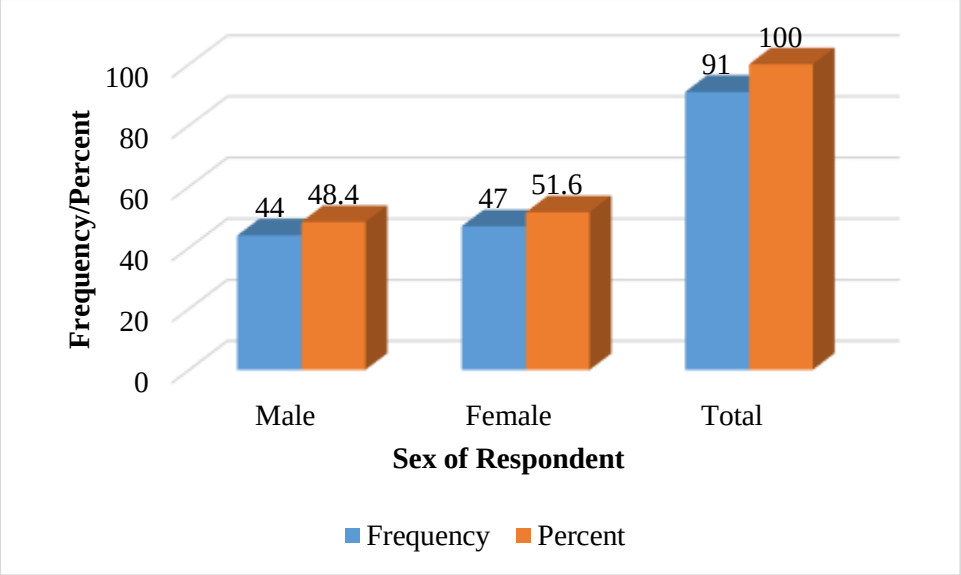

Figure 4.3: Adolescents Knowledge of Ways of HIV Transmission

From Figure 4.3 above, females (51.6 percent) demonstrated higher knowledge of HIV transmission than males (48.4 percent). However, their knowledge levels were proportional to the sample in each category

4.3.1.4 Adolescents Knowledge of HIV Status

The study also investigated the knowledge of one's HIV status as one of the key health information that any person should have knowledge of. According to Table 4.5 below, the average coverage was estimated at 88.4 percent with a decision rule of 15. Using the confidence limits established by the confidence interval (± 6.2), a survey of the entire population would produce a coverage estimate between 82.2 and 94.6 percent.

The results show that 80 percent of the SAs reached the average coverage but SA 1 did not. All respondents in SA 2 reached the average coverage indicating that participants in this SA were keen to know their statuses.

Table 4.5: Adolescents who knew their HIV Status

Catchment Area		**Average coverage = 88.4**	**%**	**Confidence Interval**
				± 6.2
		Decision Rule **15**		**82.2 - 94.6**
Supervision Area	Sample Size	Correct responses		Meets decision rule
SA1 - Mixed School	19	14	16.7	No
SA2 - Mixed School	19	19	22.6	Yes
SA3 - Boys School	19	17	20.2	Yes
SA4 - Girls School	19	16	19.0	Yes
SA5 - Girls School	19	18	21.4	Yes
Total	**95**	**84**	**100.0**	

In terms of percentages, 16.7 percent of adolescents who reported knowledge of their HIV status came from SA1; 22.6 percent from SA 2; 20.2 percent from SA 3; 19 percent from SA 4 and 21.4 percent from SA 5. Supervision areas 2, 3 and 5 indicated higher levels of knowledge of HIV status compared to SA 4 and 1.

In figure 4.4 below, the indicator was disaggregated by sex of respondent

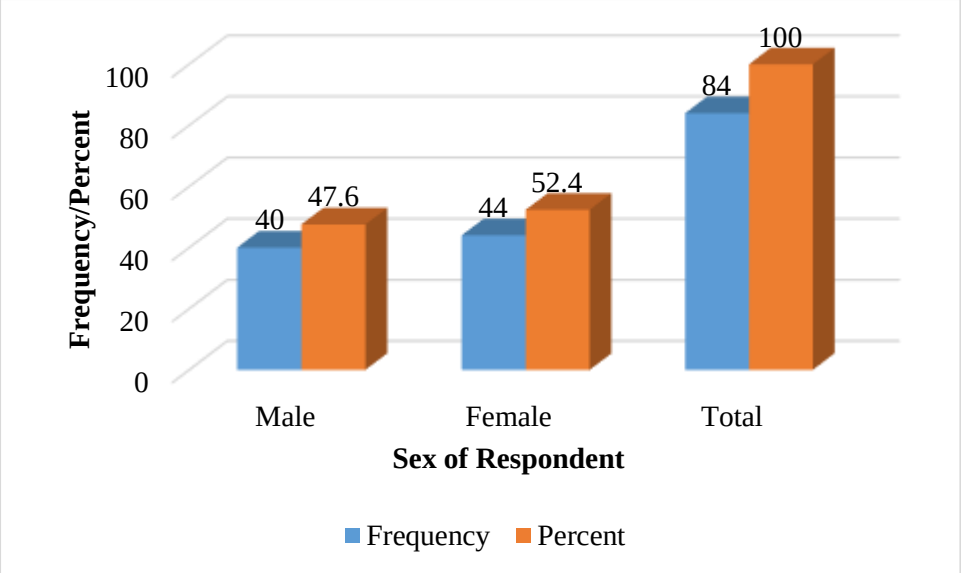

Figure 4.4: Percentage of Adolescents with Knowledge of HIV Status

From the figure, females demonstrated higher knowledge of HIV status than male respondents. In other words, females (52.4 percent) were keener to find out their HIV status compared to males (47.6 percent).

4.3.1.5 Adolescents' Knowledge of Sexually Transmitted Infections (STIs)

This indicator measured the adolescents' knowledge of STIs. The two main ones included for the study were Syphilis and Gonorrhoea. The average coverage for the indicator was 69.5 percent. Using the confidence limits established by the confidence interval (±9), a survey of the entire population would produce a coverage estimate between 60.5 and 78.5 percent. See Table 4.6 below.

Table 4.6: Adolescents Knowledge of Sexually Transmitted Infections (STIs)

Catchment Area		**Average coverage = 69.5**		**%**	**Confidence Interval**
					± 9
		Decision Rule	**12**		**60.5 – 78.5**
Supervision Area	Sample Size	Correct responses			Meets decision rule
SA1 - Mixed School	19	14		21.2	Yes
SA2 - Mixed School	19	12		18.2	Yes
SA3 - Boys School	19	14		21.2	Yes
SA4 - Girls School	19	17		25.8	Yes
SA5 - Girls School	19	9		13.6	No
Total	**95**	**66**		**100**	

From Table 4.6, all the supervision areas except one (SA 5) met the average coverage. SA 5 fell significantly below the average coverage. Interventions could focus more on providing knowledge in this supervision area to improve the status. In terms of percentage, the best performing SA in terms of reaching the average coverage was SA 4 (25.8 percent); followed by SA 3 and SA 1 (21.2 percent; SA 2 (18.2 percent) and lastly SA 5 (13.6 percent) which was the least performing.

Figure 4.5 below disaggregated the indicator by sex of respondents.

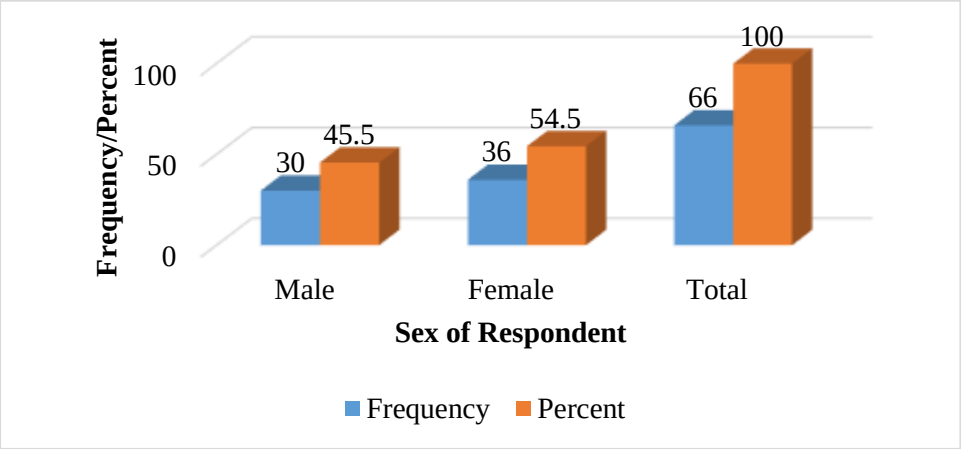

Figure 4.5: Adolescents Knowledge Sexually Transmitted Infections (STIs)

From figure 4.5 above, 45.5 percent of males had knowledge of the two main STIs affecting both males and females; while 54.5 percent of females had the same knowledge. For this indicator, females had better knowledge compared to male respondents.

4.3.1.6 Adolescents Knowledge of Symptoms of Sexually Transmitted Infections (STIs)

In this indicator, the study sought to estimate the levels of knowledge of STIs so as to inform health seeking decisions among adolescents. The study provided a list of symptoms that occur in males and females that would signal an abnormality in the sexual and reproductive system. Analysis was based on identification of at least two symptoms of STIs in both males and females. The average coverage for this indicator was 28.4 percent in the entire catchment area. Using the confidence limits established by the confidence interval (± 8.8), a survey of the entire population would produce a coverage estimate between 19.6 and 37.2 percent. See Table 4.7 below.

Table 4.7: Adolescents' Knowledge of Symptoms of Sexually Transmitted Infections (STIs)

Catchment Area		**Average coverage = 28.4**	**%**	**Confidence Interval**
				± 8.8
		Decision Rule **3**		**19.6 - 37.2**
Supervision Area	Sample Size	Correct responses		Meets decision rule
SA1 - Mixed School	19	4	14.8	Yes
SA2 - Mixed School	19	5	18.5	Yes
SA3 - Boys School	19	3	11.1	Yes
SA4 - Girls School	19	9	33.3	Yes
SA5 - Girls School	19	6	22.2	Yes
Total	**95**	**27**	**100.0**	

From the Table, all the supervision areas reached the average coverage. The highest percentage of respondents with such knowledge was recorded in SA 4 (33.3 percent); followed by SA 5 (22.2 percent); SA 2 (18.5 percent); SA 1 (14.8 percent); and lastly SA 3 (11.1 percent). Although the average coverage was met in all the supervision areas, the average coverage was low.

In figure 4.6 below, the indicator was disaggregated by sex of respondents for the entire catchment area.

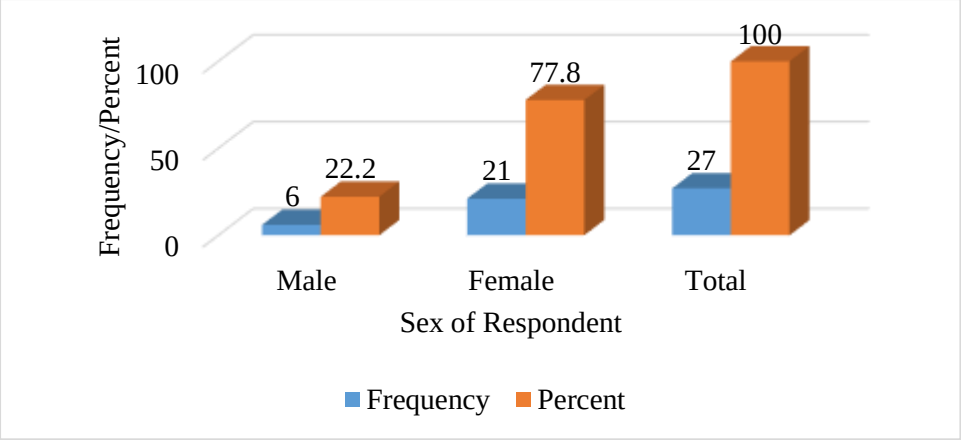

Figure 4.6: Adolescents' Knowledge of Symptoms of Sexually Transmitted Infections (STIs)

From Figure 4.6 above, females (77.8 percent) demonstrated better knowledge of symptoms of STIs compared to males (22.2 percent). Males had significantly low levels of knowledge of the symptoms of STIs which would further affect their health-seeking behaviour. Future interventions could focus on involving males more to ensure they get access to accurate information.

4.3.1.7 Categorization of Adolescents' Knowledge of Sexual Health

In this section, a summary of knowledge levels according to the categories adopted and modified from Sidze (2017) is provided. Three categories are given where minimum represents knowledge of one of the items in the list, adequate represents knowledge of two or more but not all, while high/maximum level represents knowledge of all the items in the list. See Table 4.8 below.

Table 4.8: Categories of Adolescents' Knowledge of Sexual Health

Knowledge Categories	Knowledge Levels					
	Minimum		Adequate		Maximum	
	%	N	%	N	%	N
Modern Contraception	31.6	30	46.3	44	22.1	21
Source of Modern Contraception	40.0	38	52.6	50	7.4	7
HIV Transmission	4.2	4	30.5	29	65.3	62
Sexually Transmitted Infections	23.2	22	69.5	66	7.4	7
Symptoms of STIs	62.1	59	28.4	27	9.5	9

From Table 4.8 above, 31.6 percent of the respondents had minimum knowledge of modern methods of contraception; 46.3 percent had adequate; and 22.1 percent had maximum knowledge. On the source of modern contraception, 40 percent had minimum knowledge; 52.6 had adequate; 7.4 percent had maximum knowledge. Knowledge of HIV transmission was estimated at 4.2 percent having minimum knowledge; 30.5 percent had adequate knowledge; and 65.3 percent had maximum

knowledge. Knowledge of STIs was estimated at 23.2 percent having minimum knowledge; 69.5 percent had adequate knowledge; and 7.4 percent had maximum knowledge. The category with least knowledge was symptoms of STIs where majority of the respondents (62.1 percent) had minimum knowledge; 28.4 percent had adequate knowledge; while 9.5 percent had maximum knowledge.

4.3.2 Adolescents' Attitudes towards Sexual and Reproductive Health

This indicator investigated and measured the attitudes towards sexual and reproductive health. Two areas of interest were investigated: attitudes towards HIV; and attitudes towards abstinence and premarital sex. Positive attitudes were summarized at the supervision area level as negative attitudes were too low for LQAS.

4.3.2.1 Adolescents Positive Attitudes towards HIV

This indicator estimated the positivity of respondents towards people living with HIV as well as a situation where they would test positive for HIV. The average coverage was 98 percent. This meant that 98 percent of the respondents would accept and embrace a HIV positive friend or their own results. Using the confidence limits established by the confidence interval (± 2.8), a survey of the entire population would produce a coverage estimate between 95.1 and 100 percent. See Table 4.9 below

From Table 4.9, all the supervision areas met the average coverage indicating that majority of the adolescents would embrace a HIV positive situation either for self or a friend. The highest coverage was observed in SAs 3, 4 and 5 (20.4 percent) while SAs 1 and 2 had 19.4 percent of the respondents reaching average coverage. None the less, the indicator seemed well covered in the study area.

Table 4.9: Adolescents' Positive Attitudes towards HIV

Catchment Area		Average coverage = 97.9		%	Confidence Interval
					± 2.8
		Decision Rule	16		95.1 - 100
Supervision Area	Sample Size	Positive Attitudes			Meets decision rule
SA1 - Mixed School	19	18		19.4	Yes
SA2 - Mixed School	19	18		19.4	Yes
SA3 - Boys School	19	19		20.4	Yes
SA4 - Girls School	19	19		20.4	Yes
SA5 - Girls School	19	19		20.4	Yes
Total	95	93			

In Figure 4.7 below, disaggregation was made by sex of respondents to compare the sex with more favourable attitudes. Interestingly, the responses were proportional to sample size although females demonstrated more positive attitudes (51.6 percent) while males had (48.4 percent).

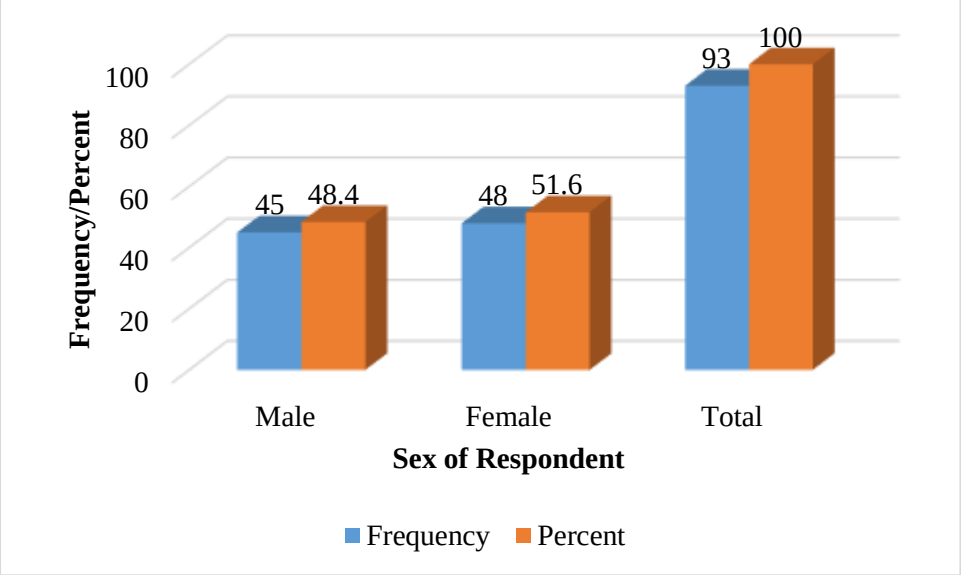

Figure 4.7: Adolescents' Positive Attitudes towards HIV

4.3.2.2 Adolescents Positive Attitudes towards Abstinence and Premarital Sex

This indicator measured the percentage of adolescents who felt that abstinence was a virtue by responding that premarital sex is wrong. This was necessary to predict the future of the adolescents in regards to sexual behaviour. For the indicator, the average coverage was 42.1 percent indicating that less than half of the adolescents in the study area were abstaining at the time of the study. With the confidence interval of ± 9.6, a survey of the entire population would have an average coverage between 32.5 and 51.7 percent. See Table 4.10 below.

Table 4.10: Adolescents' Positive Attitudes towards Abstinence

Catchment Area		**Average coverage = 42.1**	**%**	**Confidence Interval**
				± 9.6
		Decision Rule **6**		**32.5 - 51.7**
Supervision Area	Sample Size	Correct responses		Meets decision rule
SA1 - Mixed School	19	5	12.5	No
SA2 - Mixed School	19	7	17.5	Yes
SA3 - Boys School	19	8	20	Yes
SA4 - Girls School	19	12	30	Yes
SA5 - Girls School	19	8	20	Yes
Total	**95**	**40**	**100**	

From the table, 4 out of 5 supervision areas met the average coverage but one (SA 1) did not. The highest percentage of abstinence was recorded in SA 4 (30 percent), a girls' school, followed by SA 3 and 5 (20 percent each). Supervision area 2 had 17.5 percent of the respondents demonstrating positive attitudes towards abstinence while the least (12.5 percent) were observed in SA 1.

Attitudes we compared between males and females as in Figure 4.8 below.

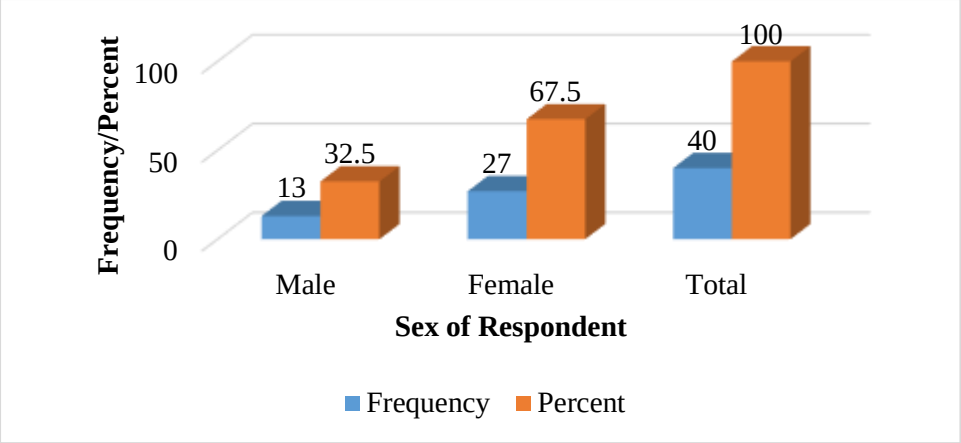

Figure 4.8 Adolescents Positive Attitudes towards Abstinence and Premarital Sex

From Figure 4.8 above, more females (67.5 percent) portrayed positive attitudes towards abstinence compared to their male counterparts (32.5 percent). In other words, more females demonstrated the willingness to abstain unlike the male adolescents.

4.3.3 Adolescents' Sexual and Reproductive Health Practice

This category of indicators investigated the sexual and reproductive health behaviour of adolescents in the catchment/study area. The importance of this section was to help explore the risks and safety of adolescents in terms of sexual and reproductive health and to identify priority areas that would need to be addressed to ensure their health is not compromised. Unlike the previous indicators, higher coverage in most of SRH practice indicators indicated a risky situation that would call for action. Nine indicators were selected for investigation.

4.3.3.1 Adolescents' Engagement in Opposite Sex Relationships

This indicator aimed at predicting the possibility of sexual experience among adolescents. It is common belief that the exposure to opposite sex relationships increases the chances of engaging in premarital sex. Adolescents who had engaged in relationships were more likely to have engaged in sex compared to those who had not.

For this indicator, the average coverage was 83.2 percent which meant that over 80 percent of the adolescents had been exposed to the risks of premarital sex. With the confidence interval of ± 7.3, a survey of the entire population would have an average coverage between 75.9 and 90.5 percent. See Table 4.11 below.

Table 4.11: Adolescents in Opposite Sex Relationships

Catchment Area		**Average coverage = 83.2**		**%**	**Confidence Limits**
					±7.3
		Decision Rule	**14**		**75.9 - 90.5**
Supervision Area	Sample Size	Correct responses			Meets decision rule
SA1 - Mixed School	19	17		21.5	Yes
SA2 - Mixed School	19	16		20.3	Yes
SA3 - Boys School	19	14		17.7	Yes
SA4 - Girls School	19	16		20.3	Yes
SA5 - Girls School	19	16		20.3	Yes
Total	**95**	**79**		**100**	

From Table 4.11 above, all the supervision areas met the average coverage. This implied that majority of the adolescents in the five SAs included in this study had been exposed to sexual risks. The highest coverage was observed in SA 1 (21.5 percent); SAs 2, 4, and 5 tied at 20.3; percent while SA 3 had the least number of adolescents who had engaged in relationships.

A comparison was also made between male and female respondents to also estimate the risks associated with each sex of the respondent. See Figure 4.9 below.

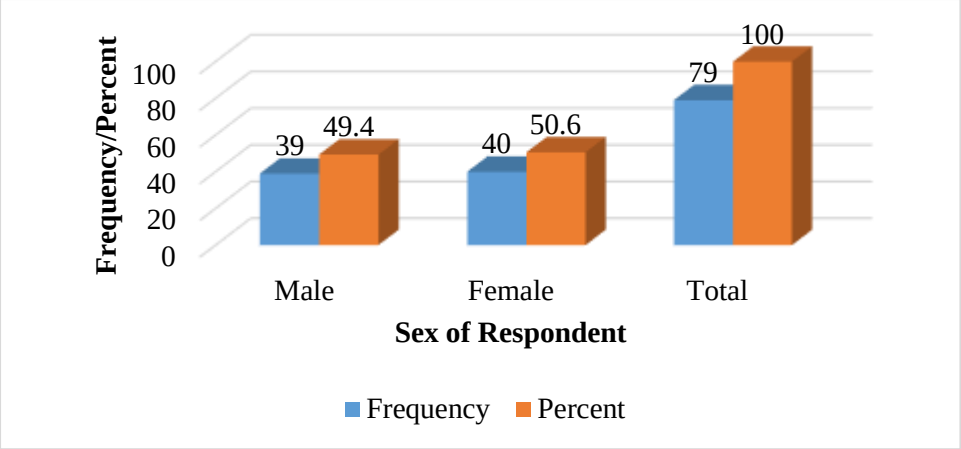

Figure 4.9: Adolescents in Opposite Sex Relationships

The results of Figure 4.9 showed that females (50.6 percent) were more exposed to relationships compared to 49.4 percent among males. In the following indicator, actual sexual experience was explored to delineate exposure from the actual engagement.

4.3.3.2 Percentage of Adolescents who have had Sexual Intercourse

Besides exploring the exposure to early sex, it was necessary to find out the actual engagement in sex. This indicator provided the percentage of adolescents who had engaged in sexual intercourse at the time of this study. In Table 4.12 below, the average coverage was 57.9 percent. With the confidence interval of ± 9.6, a survey of the entire population would have an average coverage between 48.3 and 67.5 percent.

From Table 4.12, all the supervision areas except one (SA 4) reached the average coverage. This meant that 57.9 percent of the adolescents in all the SAs had engaged in sex except SA 4. The highest coverage was observed in SA 1 (25.5 percent); 21.8 percent in SA 2; 20 percent in SAs 3 and 5; while the least was observed in SA 4 (12.7 percent).

Table 4.12: Percentage of Adolescents who have had Sex

Catchment Area		Average coverage = 57.9	%	Confidence Interval ±9.6
		Decision Rule 9		48.3 - 67.5
Supervision Area	Sample Size	Correct responses		Meets decision rule
SA1 - Mixed School	19	14	25.5	Yes
SA2 - Mixed School	19	12	21.8	Yes
SA3 - Boys School	19	11	20.0	Yes
SA4 - Girls School	19	7	12.7	No
SA5 - Girls School	19	11	20.0	Yes
Total	**95**	**55**	**100**	

Although exposure to sexual risk seemed to correlate with the engagement in the actual act, this was not true for SA 4 where 20.3 percent were involved in relationships but only 12.7 percent had sex. For all the other SAs, there seemed to be a relationship between these variables. Interestingly, SA 1 had consistently low knowledge levels of modern contraception yet the rate of sexual behaviour was the highest.

In Figure 4.10 below, a disaggregation by sex of respondent was made to estimate the sex at higher risks of unfavourable sexual outcomes.

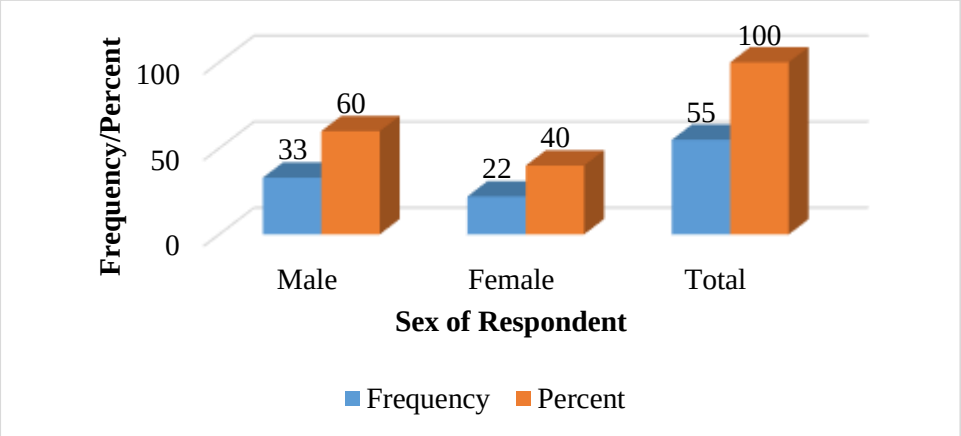

Figure 4.10: Percentage of Adolescents who have had Sex

From Figure 10 above, 60 percent of the males and 40 percent of the females had engaged in sexual intercourse. Although more females (50.6 percent) were engaged in relationships compared to 49.4 percent males, fewer ended up engaging in sexual intercourse. This could imply a substantially high level of self-control among females compared to male adolescents. Better knowledge of the risks associated with early sex such as knowledge of STIs and HIV may also have contributed to higher levels of abstinence among female adolescents unlike males.

The study also sought to establish the average age at which first sex occurred among the respondents. The following indicator provides the details.

4.3.3.3 Average Age at First Sex among Adolescents

This indicator aimed at establishing the age at which adolescents were likely to encounter their first sexual experience. The lowest age recorded was 13 while the highest was 18. The first step was to average the ages so as to establish the most likely age at which sex would occur. This was estimated at 15.2 years. See Table 4.13 below.

Table 4.13: Average Age at First Sex among Adolescents

Catchment Area		**Average coverage = 46.3**	**%**	**Confidence Interval**
				±9.7
		Decision Rule **7**		**36.6 - 56**
Supervision Area	Sample Size	Correct responses		Met decision rule
SA1 - Mixed School	19	10	22.7	Yes
SA2 - Mixed School	19	9	20.5	Yes
SA3 - Boys School	19	8	18.2	Yes
SA4 - Girls School	19	7	15.9	Yes
SA5 - Girls School	19	10	22.7	Yes
Total	**95**	**44**	**100**	

Adolescents who had sex between ages 15 and 18 were therefore included in estimating the coverage for the catchment area. For this indicator therefore, the average coverage was 46.3 percent. This implied that 46.3 percent of the respondents were likely to have their first sexual encounter between ages 15 and 18. From Table 4.13 above, all the supervision areas reached the average coverage. This meant that 46.3 percent of those who had sex did so between age 15 and 18 in all the SAs. The highest coverage was observed in SA 1 and 5 (22.7 percent each); SA 2 (20.5 percent); SA 3 (18.2 percent) and SA 4 (15.9 percent). It was interesting to note that none of the respondents in SA 4 had sex before age 15.

In Figure 4.11 below, the indicator was disaggregated by sex of respondents so as to compare the results.

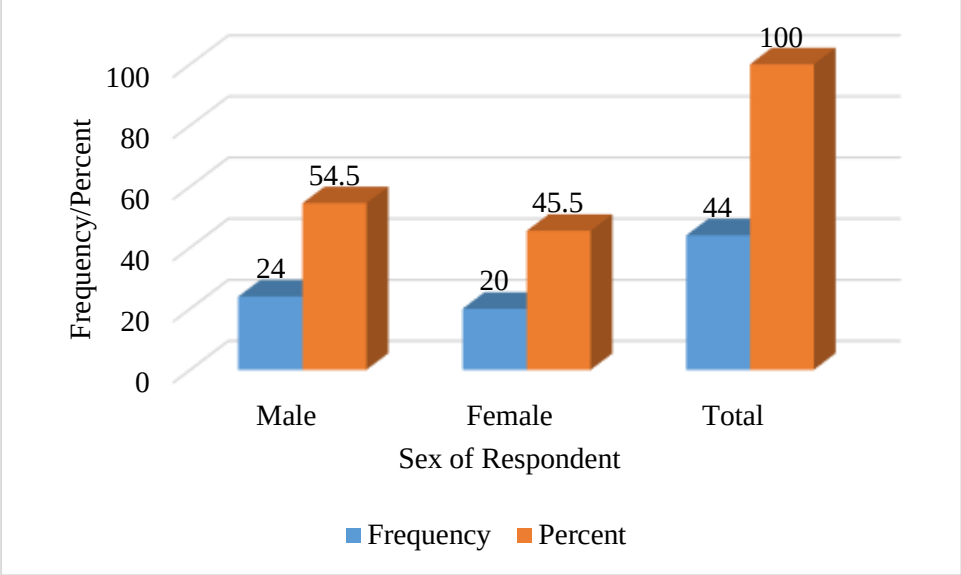

Figure 4.11: Average Age at First Sex among Adolescents

The results in Figure 4.11 indicate that more males (54.5 percent) had their average age at first sex at 15 years compared to 45.5 percent females. Females therefore seemed to have delayed sexual debut compared to males.

4.3.3.4 Adolescents' Use of Modern Contraception Method at Fist Sex

Besides measuring knowledge of modern contraception, this indicator also estimated the accessibility to and affordability of modern contraception methods among the sexually active adolescents. Use of contraception at first sex would indicate knowledge of the method, access and affordability, as well as adolescents' cautious and checked sexual behaviour. For the indicator, the average coverage was estimated at 40 percent. See Table 4.14 below.

Table 4.14: Adolescents' Use of Modern Contraception Method at Fist Sex

Catchment Area		**Average coverage = 40**	**%**	**Confidence Interval**
				±9.6
		Decision Rule 5		**30.4 – 49.6**
Supervision Area	Sample Size	Correct responses		Met decision rule
SA1 - Mixed School	19	10	26.3	Yes
SA2 - Mixed School	19	10	26.3	Yes
SA3 - Boys School	19	5	13.2	Yes
SA4 - Girls School	19	4	10.5	No
SA5 - Girls School	19	9	23.7	Yes
Total	**95**	**38**	**100**	

From Table 4.14 all the SAs met the average coverage except SA 4 which was slightly below the decision rule. The highest coverage was observed in SAs 1 and 2 (26.3 percent each); 23.7 percent in SA 5; 13.2 percent in SA 3; and 10.5 percent in SA 4. The average coverage was met for most of the SAs.

The figure below provides a comparison between the sex of respondents and use of contraception at first sex.

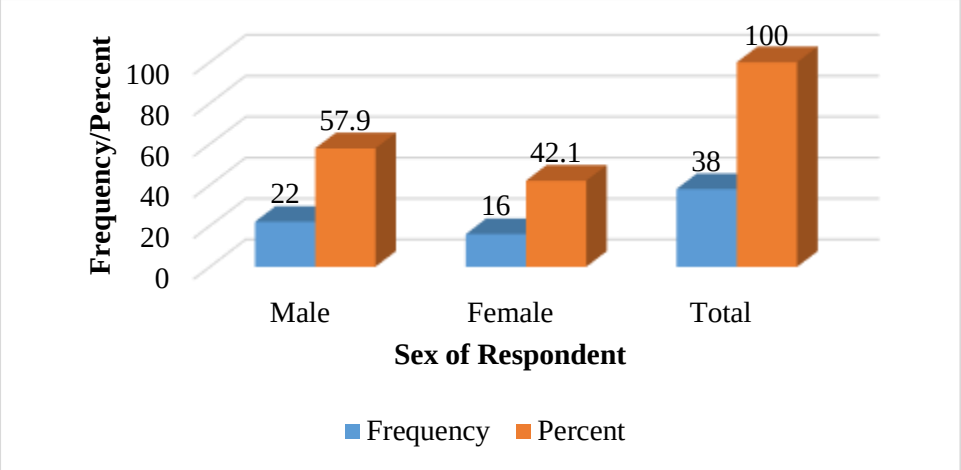

Figure 4.12: Adolescents' Use of Modern Contraception Method at Fist Sex

The results showed that more males (57.9 percent) were able to use a modern method of contraception at first sexual encounter compared to females (42.1 percent). Although both males and females demonstrated equal knowledge of the sources of modern contraception, fewer females were able to use them at first encounter.

4.3.3.5 Adolescents using Modern Contraception in Subsequent Sex

Besides the first time, the study explored the possibility of using contraception in subsequent experiences to also bring out the extent to which adolescents sexual behaviour could be considered safer. This indicator had an average coverage of 47.4 percent implying that 47.4 percent of adolescents in the study area were using a contraception method in the subsequent sexual experiences. See Table 4.15 below.

From the Table, all the SAs reached the average coverage except SA 4 which fell slightly below the decision rule. Supervision areas 1 and 2 had the highest coverage (23.9 percent), followed by SA 5 (21.7 percent); SA 3 (17.4 percent); and SA 4 (13 percent).

Table 4.15: Adolescents using Modern Contraception in Subsequent Sex

Catchment Area		Average coverage = 48.4	%	Confidence Interval
				±9.7
		Decision Rule 7		38.7 - 58.1
Supervision Area	Sample Size	Correct responses		Met decision rule
SA1 - Mixed School	19	11	23.9	Yes
SA2 - Mixed School	19	11	23.9	Yes
SA3 - Boys School	19	8	17.4	Yes
SA4 - Girls School	19	6	13.0	No
SA5 - Girls School	19	10	21.7	Yes
Total	**95**	**46**	**100**	

In Figure 4.13 below, the indicator was disaggregated by sex of respondent to identify the differences in the usage of contraception. The results showed that more males (58.7) continued to use modern contraception in their subsequent sexual encounters compared to their female counterparts (41.3 percent).

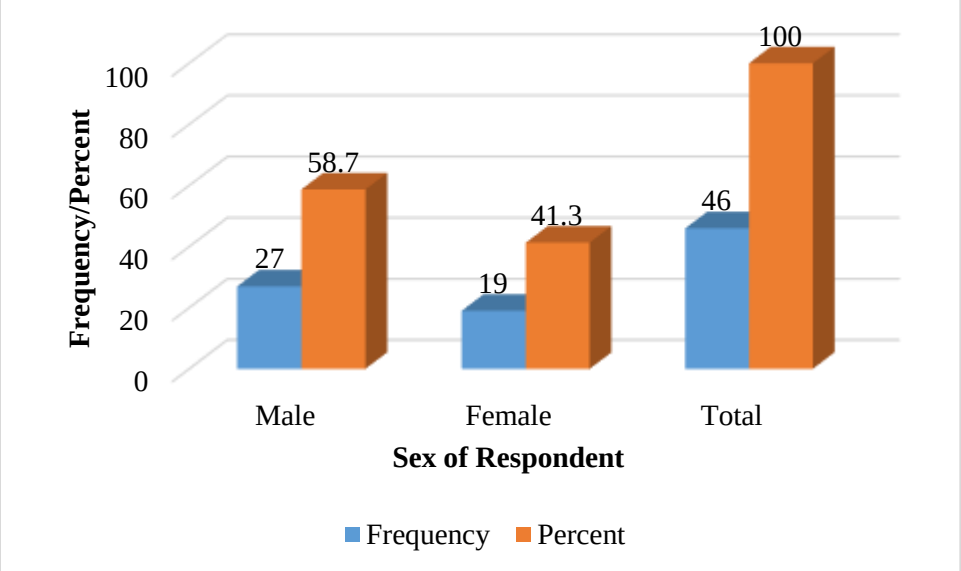

Figure 4.13: Adolescents using Modern Contraception in Subsequent Sex

4.3.3.6 Indicator 14: Incidences of Pregnancy among Adolescents

This indicator measured the likelihood of pregnancy among the sexually active adolescents. The average coverage was estimated at 11.6 percent which meant that for every 100 adolescents who engaged in sex in the study area, 12 got pregnant or their partners got pregnant by them. In this particular indicator, the decision rule could not be applied or rather, LQAS could not be used to assess whether a SA had reached average coverage or not because the coverage was either too low or too high to be assessed at the supervision area level. On whether the SA met the decision rule or not was therefore labelled N/A as this could not be assessed (MSH STAR-E LQAS, 2012). See Table 4.16 below.

Table 4.16: Incidences of Pregnancy among Adolescents

Catchment Area		**Average coverage = 11.6**		**%**	**Confidence Interval**
					± 6.2
		Decision Rule	**N/A**		**5.4 - 17.8**
Supervision Area	Sample Size	Correct responses			Meets decision rule
SA1 - Mixed School	19	3		27.3	N/A
SA2 - Mixed School	19	0		0.0	N/A
SA3 - Boys School	19	4		36.4	N/A
SA4 - Girls School	19	3		27.3	N/A
SA5 - Girls School	19	1		9.1	N/A
Total	**95**	**11**		**100**	

However, the study calculated the percentages for each of the SA. From Table 4.16 above, SA 3 had the highest incidences of pregnancy (36.4 percent). Despite being a male school, participants reported high rates of pregnancy among their female partners. SAs 1 and 4 reported 27.3 percent pregnancy rates while SA 5 had 9.1 percent rates. No incidence of pregnancy was reported in SA 2.

In Figure 4.14 below, the indicator was disaggregated by sex of respondents to determine the rates of pregnancy among males and females.

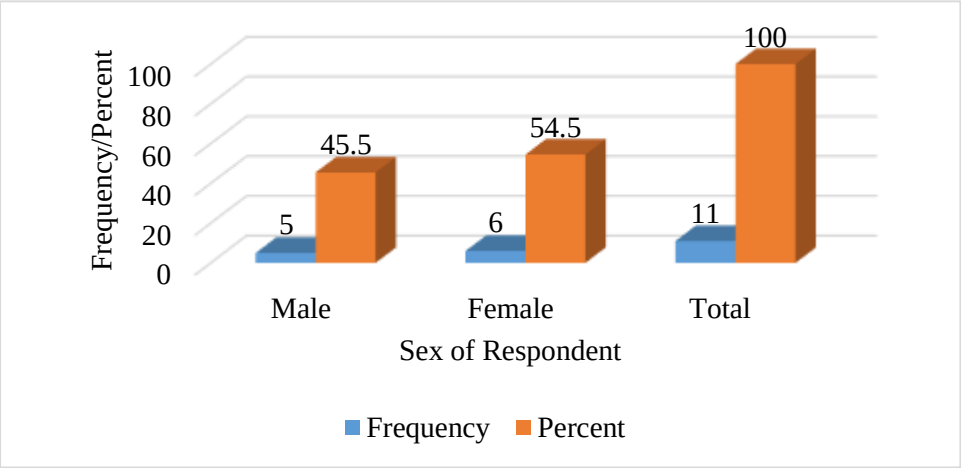

Figure 4.14: Incidences of Pregnancy among Adolescents

The results showed that more female adolescents 54.5 percent reported pregnancy compared to 45.5 percent males. See Figure 4.14 below.

4.3.3.7 Incidences of Sexually Transmitted Infections (STIs) among Adolescents

This indicator estimated the risks of sexually transmitted infections (STIs) among the sexually active adolescents in the study area. The higher the coverage of the indicator, the more needy the SA area and therefore marked as priority. For this indicator, the average coverage was 20 percent. This implied that for every 100 adolescents who engaged in sexual intercourse, 20 of them contracted an STI. See Table 4.17 below.

From Table 4.17, all the SAs except SA 4 reported incidences of STIs as they met the decision rule. The highest observations were made in SA 1 (47.4 percent); followed by SA 2 (21.1 percent); SA 3 and SA 5 (15.8 percent each). These areas ought to be marked as priority areas for interventions against STIs.

Table 4.17: Incidences of Sexually Transmitted Infections (STIs)

Catchment Area		Average coverage = 20	%	Confidence Interval
				±7.8
		Decision Rule 1		12.2 - 27.8
Supervision Area	Sample Size	Correct responses		Meets decision rule
SA1 - Mixed School	19	9	47.4	Yes
SA2 - Mixed School	19	4	21.1	Yes
SA3 - Boys School	19	3	15.8	Yes
SA4 - Girls School	19	0	0.0	No
SA5 - Girls School	19	3	15.8	Yes
Total	**95**	**19**	**100**	

From Figure 4.15 below, the indicator was disaggregated by sex of respondents.

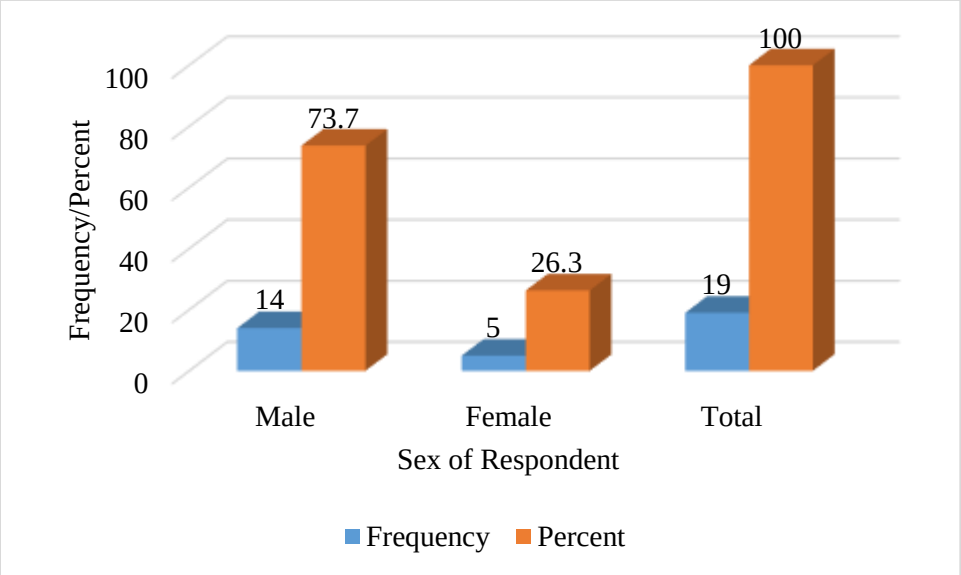

Figure 4.15: Incidences of Sexually Transmitted Infections (STIs)

From Figure 4.15, incidences of STIs were highest (73.7 percent) among male adolescents compared to female adolescents (26.3 percent).

4.3.3.8 Treatment for Sexually Transmitted Infections (STIs)

Besides noting the incidences of STIs, the study investigated the health-seeking behaviour of the victims of infections. For this indicator, the average coverage was 15.8 percent. See Table 4.18 below.

Table 4.18: Treatment for Sexually Transmitted Infections (STIs)

Catchment Area		**Average coverage = 15.8**		**%**	**Confidence Interval**
					±7.1
		Decision Rule	**1**		**8.7 - 22.9**
Supervision Area	Sample Size	Correct responses			Meets decision rule
SA1 - Mixed School	19	5		33.3	Yes
SA2 - Mixed School	19	4		26.7	Yes
SA3 - Boys School	19	3		20	Yes
SA4 - Girls School	19	0		0	No
SA5 - Girls School	19	3		20	Yes
Total	95	15		100	

All supervision areas reached the average coverage except SA 4. This is because in the previous indicator, there was no incidence of infection. In terms of percentage, 33.3 percent of those who got infected in SA 1 received treatment; 26.7 percent in SA 2; 20 percent in SA 3 and 5 each.

In figure 4.16 below, the indicator was disaggregated by sex of respondent such that 73.3 percent of the males and 26.7 percent of females who got infected sought treatment. Generally, close to 80 percent of those who got infected were able to seek treatment which was encouraging. See Figure 4.16

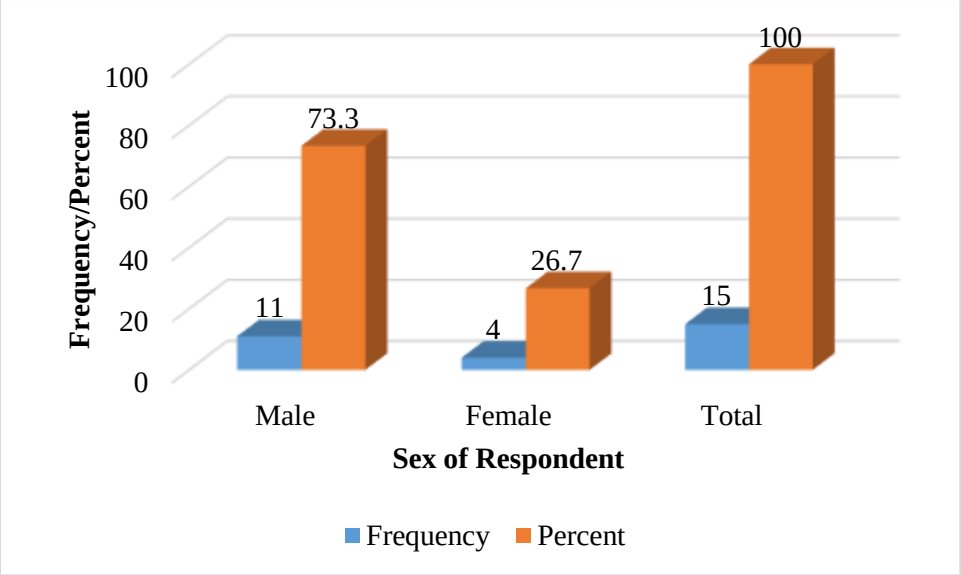

Figure 4.16: Treatment for Sexually Transmitted Infections (STIs)

4.3.3.9 Sexual and Reproductive Health Care and Services Seeking Behaviour of Adolescents

The last key indicator for the study sought to investigate the healthcare-seeking behaviour of adolescents in the study area. It investigated whether adolescents had visited health facilities for reproductive health care and services. The average coverage for the indicator was estimated at 64.2 (± 9.3) percent. See Table 4.19 below.

The results showed that all the SAs except SA 3 met the decision rule. SA 3 was below the decision rule by 2 points. In terms of the percentages, SAs 1 (23 percent) and SA 5 (24.6 percent) demonstrated the highest coverage in terms of SRH seeking behaviour. SAs 2 and 4 had 19.7 percent of the respondents going to seek SRH services while SA 3 had the lowest coverage. Nonetheless, more than half of the respondents reported having visited health facilities for SRH services. This was encouraging.

Table 4.19: Adolescents Sexual and Reproductive Health Care and Services Seeking Behaviour

Catchment Area		Average coverage = 64.2		%	Confidence Interval ±9.3
					54.9 - 73.5
Supervision Area	Sample Size	Decision Rule	10		Meets decision rule
		Correct responses			
SA1 - Mixed School	19	14		23.0	Yes
SA2 - Mixed School	19	12		19.7	Yes
SA3 - Boys School	19	8		13.1	No
SA4 - Girls School	19	12		19.7	Yes
SA5 - Girls School	19	15		24.6	Yes
Total	**95**	**61**		**100**	

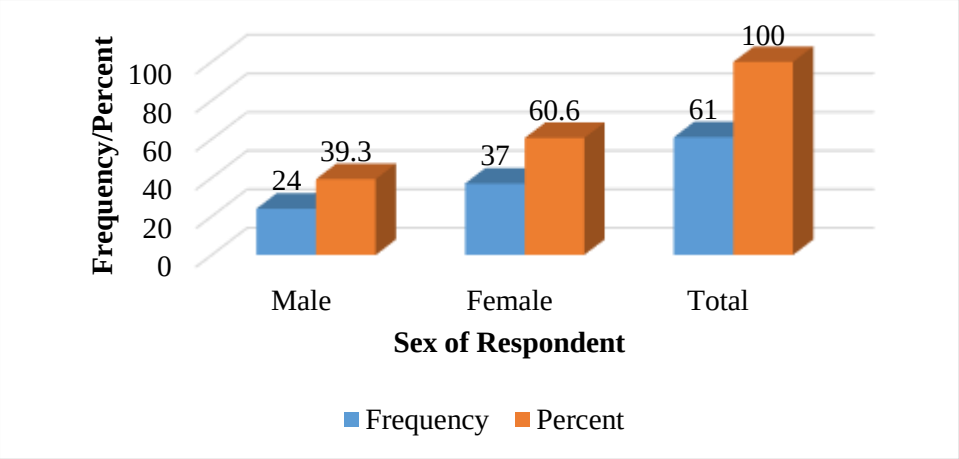

Figure 4.17: Adolescents' Sexual and Reproductive Health Care and Services Seeking Behaviour

Figure 4.17 below shows the indicator disaggregated by sex of respondents. Female adolescents demonstrated higher coverage (60.6 percent) in terms of seeking the sexual and reproductive health care and services compared to their male counterparts (39.3 percent).

In general, more females had better knowledge, more positive attitudes and portrayed better and safer sexual practices compared to their male counterparts. See Annex 6 for a summary of the indicators.

4.4 Additional Analyses

Besides the key indicators of focus for the study, other analysis were conducted to investigate other aspects not included in the previous section of key indicators. Among other analyses included an investigation into the sources of information on SRH for adolescents, myths and truths about HIV/AIDS, reasons for taking a HIV test among others. These were generalised for the entire catchment area.

4.4.1 Adolescents' Source of Information on Sexual and Reproductive Health

A review of literature showed that adolescents and young people obtain information on SRH from different sources. See Table 4.20 below.

Table 4.20: Source of Information on Sexual and Reproductive Health

Characteristic		**Sexual & reproductive system**		**Puberty**		**Relationships**	
		%	**N**	**%**	**N**	**%**	**N**
Current Source of SRH information	Teachers	50.0	47	68.4	65	51.6	48
	Family members/ Parents	36.2	34	67.4	64	47.3	44
	Peers/ friends	21.3	20	25.3	24	26.9	25
	Health workers	23.4	22	21.1	20	23.7	22
	Media	44.7	42	53.7	51	34.4	32
	Total	**100**	**94**	**100**	**95**	**100**	**93**

The source of information was categorized into 3: (i) sexual and reproductive system; (ii) puberty; (iii) relationships. For the three categories, multiple choices were

allowed. It is important to note that not all respondents gave their responses to all the categories and therefore the value of N varied from one category to the other. However, the response rate was well above 90 percent. As shown in Table 4.20 above, 50 percent of the respondents reported getting information on sexual and reproductive system from teachers; 36.2 percent from parents; 21.3 percent from friends; 23.4 percent from health workers; and 44.7 percent from the media. On puberty, 68.4 percent got the information from teachers; 67.4 percent from parents; 25.3 percent from friends; 21.1 percent from health workers; and 53.7 percent from the media. On relationships, 51.6 percent reported getting information from teachers; 47.3 percent from parents; 26.9 percent from friends; 23.7 percent from health workers; and 34.4 percent from the media.

4.4.2 HIV/AIDS Myths and Truths

Adolescents' perceptions of HIV/AIDS were explored using statements to which the respondents were required to indicate whether the statement was true, false or whether they didn't know. The intention was to identify misconceptions and false beliefs (myths) on HIV/AIDs. The results were as presented as percentages in Table 4.21 below. T = True, F = False, DK = Don't Know, T = Total

Table 4.21: Adolescents' Beliefs about HIV/AIDS

Statement	T	F	DK	T
AIDS can be cured	12	76	12	100
A person who is HIV positive always looks unhealthy	40.2	53.3	6.5	100
A person know their HIV status through a simple test	73.4	13.8	12.8	100
HIV is transmitted through sex with an infected person	95.7	3.2	1.1	100
HIV positive mothers can have children	94.7	0	5.3	100
Insects transmit HIV	8.4	85.3	6.3	100

From Table 4.21, 76 percent believed that there is no cure for AIDS while 12 percent thought there is a cure or didn't know. Moreover, 40.2 percent thought that

being HIV positive meant being unhealthy and emaciated while 53.3 percent termed the statement as false and 6.5 percent did not know. Those who believed that a simple test could tell if one has HIV were 73.4 percent, 13.8 percent and 12.8 percent reported false and don't know respectively. About 96 percent said that HIV is transmitted through sexual intercourse with an infected person but 3.2 percent reported false and 1.1 percent didn't know. About 95 percent knew that HIV positive mothers or women could have children but 5.3 percent didn't know. Majority of the respondents (85.3 percent) knew that insects cannot transmit the HIV virus while 8.4 percent and 6.3 percent reported that it would be possible for insects to transmit HIV or didn't know, respectively. In general, majority of the respondents were able to differentiate between myths and truths about HIV/AIDS. It was however a concern that about 40 percent still believed that a HIV positive person would be looking emaciated. In today's world of antiretroviral therapy (ART), even a health looking person could still have the virus.

4.4.3 Adolescents' Reasons for Taking HIV Test

Respondents had varied reasons as to why they opted to take an HIV test. Table 4.22 below presents the reasons. As shown in the table, 11.8 percent of the respondents tested for HIV because they had engaged in unprotected sex; 16.6 percent went with partners to know their status before engaging in sex; 5.9 percent took the test through parents decision; 1.2 reported that HIV testing was a requirement before joining school; 76.5 percent just wanted to know their status; while 1.2 percent had other reasons.

Among males; 22.5 percent reported unprotected sex and the need to know their status before engaging in sex as reasons for taking the test; 2.5 percent was a parents decision and a requirement for joining school; 70 percent just wanted to know their status.

Table 4.22: Adolescents' Reasons for Taking HIV Test

Reason for taking HIV Test	Total		Sex of Respondent			
			Male		Female	
	%	N	%	N	%	N
Had unprotected sex and wanted to know if I had been infected	11.8	10	22.5	9	2.2	1
Wanted to know our status first before we could have sex with my partner	16.5	14	22.5	9	11.1	5
My parents took me for testing	5.9	5	2.5	1	8.9	4
It was a requirement before joining current school	1.2	1	2.5	1	0.0	0
I just wanted to know my status	76.5	65	70.0	28	82.2	37
Other	1.2	1	0.0	0	2.2	1
Total	**100**	**85**	**100**	**40**	**100**	**45**

Among females, 2.2 percent had engaged in unprotected sex and wanted to know if they had been infected; 11.1 percent needed to know partner's and own status before engaging in sex; 8.9 percent was a parent's decision; and 82.2 percent wanted to know their status. For the 2.2 percent who had other reasons; the respondent reported that she had unprotected sex but later learnt that the partner was living with HIV. She therefore took the test to know if she had been infected.

4.4.4 Adolescents' Attitudes towards Condom Use

To understand condom use, respondents were asked to indicate their views on some statements about condoms and condom use. The attitudes were seen as having some level of influence of the use of condoms (Atuyambe, et al., 2015).

Table 4.23: Adolescents' Attitudes towards Condom Use

Statement	View					
	Agree		Undecided		Disagree	
	%	N	%	N	%	N
Condoms are effective to prevent pregnancy	56.8	54	10.5	10	32.6	31
Condoms are can protect against HIV/AIDS	52.6	50	12.6	12	34.7	33
Condom reduces sexual pleasure	21.1	20	33.7	32	45.3	43
Condoms are can protect against STIs	57.9	55	15.8	15	26.3	25

In table 4.23, respondents indicated their agreement or disagreement with the statements. Out of the 95 respondents, 56.8 percent agreed that condoms could effectively prevent pregnancy, 10.5 percent were undecided while 32.6 percent disagreed. Those who felt that condoms reduce sexual pleasure were 21 percent, 33.7 percent were undecided and 45.3 percent disagreed.

4.4.5 Adolescents' Attitudes towards Gender and Relationships

In most places, there are common beliefs that are associated with males or females and the expected manner in which they should carry themselves. This section explored such beliefs and presented agreement or disagreement with such beliefs. Table 4.24 below presents the results of attitudes towards gender relations and the position of males vis a vis females.

The results of Table 4.24 showed that majority (54.7 percent) did not agree with the engagement of boys and girls in romantic relationships (dates), 31.6 percent agreed while 13.7 percent were undecided. About 34 percent agreed that adolescents could engage in sexual relations provided they are in love; 9.5 percent were undecided while majority (56.8 percent) disagreed.

Table 4.24: Adolescents' Attitudes towards Gender and Relationships

Statement	Total %	View		
		Agree	Undecided	Disagree
		%	%	%
Unmarried girls and boys can date	100 N = 95	31.6 N = 30	13.7 N = 13	54.7 N = 52
Boys and girls can kiss, hug and touch each other	100 N = 95	33.7 N = 32	14.7 N = 14	51.6 N = 49
Boys and girls can have intercourse if they love each other	100 N = 95	33.7 N = 32	9.5 N = 9	56.8 N = 54
Boy and girl should have sex before engagement to see if they are suited to each other	100 N = 95	16.8 N = 16	21.1 N = 20	62.1 N = 59
Girls and boys can have sex if they use contraceptives	100 N = 95	36.8 N = 35	14.7 N = 14	48.4 N = 46
I am confident I can use a condom properly	100 N = 95	27.4 N = 26	26.3 N = 25	46.3 N = 44

About 17 percent reported agreement to sex before engagement to determine suitability of partners; while 21.1 percent were undecided, 62.1 percent disagreed. About 37 percent agreed that adolescents could engage in sex provided they used contraceptives; 14.7 percent were undecided; and 48.4 percent were undecided. Interestingly and of great concern to this study is the fact that only 27.4 percent reported proper knowledge of condom use; 26.3 percent were not sure; and majority (46.3 percent) did not know the proper use of condom.

4.4.6 Challenges faced by Adolescents in Accessing Sexual and Reproductive Health Services

Barriers to accessing and seeking sexual and reproductive health care and services among adolescents were also investigated. See Table 4.25 below.

Table 4.25: Challenges in Accessing Sexual and Reproductive Health Services

Challenges	Total		Sex of the respondent			
			Male		Female	
	Percent	N	%	N	%	N
Lack of confidentiality	33.3	21	31.3	10	35.5	11
Harassment by service providers	19.0	12	12.5	4	25.8	8
Fear & embarrassment	33.3	21	43.8	14	22.6	7
Financial challenges	14.3	9	12.5	4	16.1	5
Total	100	63	100	32	100	31

In Table 4.25 above, of the 63 respondents who reported having faced challenges at the health facilities, 33.3 percent (31.3 percent males and 35.5 percent females) reported lack of confidentiality; 19 percent (12.5 percent males and 25.8 percent females) reported harassment by service providers; 33.3 percent (43.8 percent males and 22.6 percent females) reported fear and embarrassment to seek for services; and 14.3percent (12.5 percent males and 16.1 percent females) reported financial constraints as hindrances to seeking health care and services. Generally, females experienced more challenges where majority reported lack of confidentiality (35.5 percent), harassment by service providers (25.8 percent) and financial constraints (16.1 percent). The main challenges for males were lack of confidentiality (31.3 percent) and fear and embarrassment (43.8 percent).

In light of these challenges, the respondents made recommendations to help improve SRH care and services to adolescents. Table 4.26 below presents the results.

Table 4.26: Adolescents' Recommendations to Improve Sexual Health Services

Recommendations	Total		Sex of the respondent			
			Male		Female	
	%	N	%	N	%	N
Service Providers should be understanding and supportive	44.2	42	28.3	13	63.3	31
Ensure fair treatment & non-discrimination	6.3	6	6.5	3	6.1	3
Teach SRH education in schools	21.1	20	32.6	15	10.2	5
Introduce ASRH programmes at health facilities	23.2	22	43.5	20	24.5	12
Educate adolescents on their SRH rights	3.2	3	6.5	3	0.0	0
Total	100	95	100	46	100	49

According to Table 4.26, majority (44.2percent) of the respondents (28.3percent males and 63.3percent females) suggested an improvement in service providers' attitudes towards being more understanding and supportive; 6.3 percent (6.5percent males and 6.1percent females) suggested fair treatment and non-discrimination; 21.1 percent (32.6percent males and 10.2percent females) suggested that SRH education should be taught in schools; 23.2 percent (43.5percent males and 24.5percent females) suggested an introduction of adolescents' sexual and reproductive health (ASRH) programmes at the health facilities; and 3.2 percent (6.5percent males) suggested that adolescents ought to be educated on their rights. Only then would they be able to seek health care and services.

4.4.7 Factors Associated with SRH Knowledge and Practice

In addition to descriptive statistics, some non-parametric tests were conducted to determine the association between various variables and their influence on sexual and reproductive health knowledge, attitudes and practice. The Chi square was chosen to test for this association.

4.4.7.1 Factors Associated with Sexual Practice

The Chi square test was run to determine the association between the sex and age of the respondent and sexual experience. See Table 4.27 below.

Table 4.27: Factors Associated with Sexual Practice

Attribute			**Ever had sex**		
			No	**Yes**	**N**
Sex of respondent		Male	13	33	46
		Female	29	20	49
		$\chi 2 = 9.963$	df = 2	Sig. (P-value) = 0.007	
Age of respondent		15 - 17	33	32	65
		18 - 19	9	21	30
		$\chi 2 = 14.046$	df = 2	Sig. (P-value) 0.077	
Method of contraception	Condom	No	40	11	51
		Yes	2	42	44
		$\chi 2 = 52.494$	df = 2	Sig. (P-value) = 0.000	
Method of contraception	Safe period	No	42	39	81
		Yes	0	14	14
		$\chi 2 = 13.012$	df = 2	Sig. (P-value) = 0.001	

According to Table 4.27 above, there was not sufficient evidence to rule out existence of an association between the sex of the respondent and sexual practice. However, the smaller P-value (0.007) compared to alpha ($\alpha = 0.05$) may point to an association. Age of respondent, on the other hand, did not indicate an association as the P-value (0.077) was greater than alpha ($\alpha = 0.05$). There was an association between the method of contraception known to the respondents and their sexual behaviour as demonstrated by a smaller P-value (0.000 and 0.001) for condom and safe period

respectively compared to alpha ($\alpha = 0.05$). The methods whose knowledge influenced sexual behaviour the most were condom and safe period.

4.4.7.2 Factors Associated with Outcomes of Sexual Practice

The Chi square test was also run to determine the association between the outcomes of sexual practice and the sex of respondent. Table 4.28 below presents the details of the association.

Table 4.28: Factors Associated with Outcomes of Sexual Practice

Attribute		Sex of Respondent		
		Male	**Female**	**N**
Instance of pregnancy	No	41	43	84
	Yes	5	6	19
	$\chi 2 = 39.03$	df = 2	Sig. (p-value) = 0.000	
STI infection	No	32	44	76
	Yes	14	5	19
	$\chi 2 = 11.351$	df = 2	Sig. (P-value) = 0.01	

In Table 4.28, there was an association between sex of respondent and the outcomes of sexual practice such as pregnancy and STI infections as indicated by the smaller P-values of 0.0 and 0.01, respectively compared to alpha ($\alpha = 0.05$). Female respondents had a higher likelihood of getting pregnant compared to the partners of the male respondents as reported by males. STI infections were higher among male respondents compared to females.

Table 4.29: Association of the Contraception and Outcomes of Sexual Practice

Attribute		Method of Contraception		
		No	**Yes**	
Instance of pregnancy	No	2	41	42
	Yes	2	10	11
	$\chi 2 = 37.001$	df = 2	Sig. (P-value) = 0.005	
STI infection	No	2	33	34
	Yes	2	18	19
	$\chi 2 = 108.204$	df = 2	Sig. (P-value) = 0.000	

In Table 4.29 above, there was an association between the method of contraception used and the outcomes of sexual practice. It was concluded that the method of contraception and its proper use strongly influenced the chances of pregnancy and STI infections. Interestingly, those who used a method of contraception reported the highest incidences of pregnancy and STI infection. This reinforces the finding that respondents lacked correct knowledge on the proper use of the various methods of contraception.

4.5 Reliability Analysis

4.5.1 Reliability Analysis of Dichotomous Response Items

A reliability check of the dichotomous response set of survey questions was conducted to determine the extent to which they demonstrated consistency in measuring the internal reliability of the survey tool. Kudar-Richardson 20 (KR-20) was used and the results of the analysis were as shown in Table 4.30 below. According to the results, there were 51 items in dichotomous response set of questions which demonstrated a high internal reliability as shown by the alpha value of 0.835.

Table 4.30: Cronbach's Alpha of Dichotomous Responses

Cronbach's Alpha	No. of Items
.835	51

According to Table 4.31, the value of KR-20 is 0.835. The value falls in the category that is interpreted as "good" according to Table 3.4. Therefore, the reliability of the dichotomous response items was considered good, and therefore the results generated were equally reliable.

4.5.2 Reliability Analysis of Likert Scale Items

Likert scale items are those in which responses are not mutually exclusive from each other and there are no clear cuts between one item and the other. The scale was a 3 point, a score was generated for each item. This was to determine the extent to which items in the questionnaire were able to measure attitudes towards sexual and reproductive health. A high score indicates high reliability.

4.5.2.1 Adolescents' Opinions on condom use

This section tested the reliability of the scale used to determine the opinions/attitudes towards condom use. See Table 4.31 below.

Table 4.31: Cronbach's Alpha of Opinions on Condom Use

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.661	.656	4

Table 4.31 above indicates the Cronbach's alpha coefficient. The scale included 4 items for which the coefficient of reliability was 0.661. This value was rounded-off to the nearest tenths to 0.7 which is an acceptable coefficient of reliability.

In Table 4.32 below, the mean and standard deviations of the items included in the scale are presented.

Table 4.32: Mean and Standard Deviations of Opinions on Condom Use

Opinion	Mean	Std. Deviation	N
Condoms are effective to prevent HIV	1.82	.922	95
Condoms reduce sexual pleasure	2.24	.782	95
Condoms are effective to prevent STIs	1.68	.866	95
Condoms are effective to prevent pregnancy	1.76	.919	95

Of the four items, three had fairly similar mean scores and standard deviations. However, one item a mean score higher and a standard deviation lower than the other items in the scale. That is, 'Condoms reduce sexual pleasure' had higher average score than the other items. A removal of this item would have made the scale more reliable. A comparison with other statistics would however guide as to whether it should be removed from the scale or not. See Table 4.33 below.

Table 4.33: Correlation of Adolescents' Opinions on Condom use

Opinion	Condoms are effective to prevent HIV	Condoms reduce sexual pleasure	Condoms are effective to prevent STIs	Condoms are effective to prevent pregnancy
Condoms are effective to prevent HIV	1.000	.267	.448	.300
Condoms reduce sexual pleasure	.267	1.000	.177	.231
Condoms are effective to prevent STIs	.448	.177	1.000	.518
Condoms are effective to prevent pregnancy	.300	.231	.518	1.000

Table 4.33 above displays a correlation matrix on the correlation of each item to all the others in the scale. A perfect correlation (r = 1) of an item with itself was

observed as shown by the list of 1.000 across the top left to bottom right diagonal. Items measuring the same concept would show a correlation among them all. To enhance the reliability of the questionnaire, items that showed consistently low correlations would need to be removed. Item two in the scale still seemed to be problematic as its correlations were relatively weak and below r = 0.3 except for itself.

In table 4.34 below, a decision on which item to remove could be made based on the results of α after the deletion.

Table 4.34: Effect of Scale Items on Cronbach's Alpha

Opinion	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Condoms are effective to prevent HIV	5.68	3.601	.460	.239	.581
Condoms reduce sexual pleasure	5.26	4.494	.289	.096	.684
Condoms are effective to prevent STIs	5.82	3.531	.547	.362	.520
Condoms are effective to prevent pregnancy	5.75	3.553	.480	.290	.566

According to the table, the column indicated 'Correlated Item-Total Correlation' indicates the overall correlation of the item with the questionnaire score. A correlation less than r = .3 usually denotes that the item is not fit for the scale. Item 2 is the only one that did not meet this criterion of consideration. In addition, the last column in the table denoted 'Cronbach's Alpha if Item Deleted' provided the value of alpha if a given item would be deleted. Given the current α = 0.661, any item that would

lower the score if deleted should be retained. However, an item that increased the score ought to have been deleted to enhance the reliability of the scale. Again, item 2 seemed to increase Cronbach's alpha score to $\alpha = 0.684$. To improve the reliability of this scale, a deletion of item 2 would make it better.

Therefore, the results of the reliability analysis of opinions on condom use consisting of 4 scale items indicated that the questionnaire reached acceptable reliability as shown by a Cronbach's alpha score of $\alpha = 0.661$ (0.7). Majority of the items were fit for the scale as they would decrease alpha if deleted. However, item 2 would increase alpha and therefore its exclusion from the scale should be considered.

4.5.2.2 Adolescents' Opinions on Gender and Relationships

Respondents' views on gender relationships were also subjected to a reliability check as below. In Table 4.35 below, the value of Cronbach's alpha is provided for the scale items included in the analysis.

Table 4.35: Cronbach's Alpha of Opinions on Gender and Relationships

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.796	.796	6

From Table 4.35, the value of Cronbach's alpha coefficient is $\alpha = 0.796$. This indicates an acceptable level of reliability in the scale's measure of respondents' views on gender relationships.

Table 4.36 below provided the mean and standard deviations of each of the items in the scale. All the items had fairly similar mean and standard deviation scores indicating their suitability in measuring the underlying concept. See Table 4.36 below.

Table 4.36: Mean and Standard Deviations of Scale Items

View	Mean	Std. Deviation	N
Unmarried girls and boys can date	2.23	.905	95
Boys and girls can kiss, hug and touch each other	2.18	.911	95
Boys and girls can have intercourse if they are in in love	2.23	.928	95
Girls and boys can have sex if they use contraceptives	2.12	.921	95
I know how to use a condom properly	2.19	.842	95
A boy and girl should have sex before engagement to see if they are suited to each other	2.45	.769	95

In Table 4.37 below, a correlation matrix of each item's correlation with all others is provided. The perfect correlation indicated by the 1.000 diagonal from top left to top right indicate an item's correlation with itself because the scores are identical. Items that measure the same concept correlate well with each other. No single item demonstrated consistently low correlations across the board and therefore they were all considered fit to measure the concept. See Table 4.37 below.

Table 4.37: Correlation Matrix of Adolescents' Views on Gender and Relationships

	Unmarried girls and boys can date	boys and girls can kiss, hug and touch each other	Boys and girls can have intercourse if they are in love	Girls and boys can have sex if they use contraceptives	I know how to use a condom properly	A boy and girl should have sex before engagement to see if they are suited to each other
Unmarried girls and boys can date	1.000	.569	.366	.274	.026	.322
Boys and girls can kiss, hug and touch each other	.569	1.000	.530	.482	.247	.445
Boys and girls can have intercourse if they are in love	.366	.530	1.000	.491	.434	.508
Girls and boys can have sex if they use contraceptives	.274	.482	.491	1.000	.397	.466
I can use a condom properly	.026	.247	.434	.397	1.000	.359
A boy and girl should have sex before engagement to see if they are suited to each other	.322	.445	.508	.466	.359	1.000

Table 4.38 below presented the correlations and values of Cronbach's alpha if any of those items was deleted.

Table 4.38: Effect of Scale Item on Cronbach's Alpha

Views	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Unmarried girls and boys can date	11.17	10.525	.425	.361	.794
Boys and girls can kiss, hug and touch each other	11.22	9.366	.654	.494	.739
Boys and girls can have intercourse if in love	11.17	9.227	.666	.452	.736
Girls and boys can have sex if they use contraceptives	11.28	9.610	.592	.375	.755
I know how to use a condom properly	11.21	10.955	.390	.279	.800
A boy and a girl should have sex before engagement to see if suited to each other	10.95	10.327	.591	.357	.758

From Table 4.38 above, the means tended towards a similar value. In the column of 'Correlated Item-Total Correlation', indicated the correlation of each of the items

with all others in the scale. There was no correlation value below r = .3 and therefore all the items were fit for the scale. The last column in the table presented the value of Cronbach's alpha if any of the items would be deleted. The value of alpha for the scale was α = 0.796. Most items if deleted would reduce the value of alpha except item 5 which would increase alpha to 0.8. However, since the increase was insignificant, the item was still considered appropriate for inclusion in the scale.

In sum, the reliability analysis of the perceptions towards gender and relationships with 6 items in the scale produced an alpha value of α = 0.796 indicating an acceptable level of reliability of the questionnaire items. All the items were fit for inclusion in the scale and therefore none was considered for deletion. The reliability of survey items also implied reliability of results generated from the scales.

4.6 Summary of Findings

The results of the study showed that average coverage was met for most of the indicators in 80 percent of the supervision areas. Knowledge of sexual and reproductive health was higher among females compared to males. Perceptions and attitudes towards sexual and reproductive health were more positive among female adolescents. On sexual and reproductive health practice and behaviour, high sexual activity was noted among male adolescents who seemed to initiate sex at early age of 13 years. Females demonstrated delayed sexual debut and sexual activity was also lower among females. Having more knowledge of the risks and health issues associated with early sex may have influenced the sexual behaviour of females while inadequate knowledge of sexual and reproductive health knowledge may have contributed to risky behaviour. In summary, adolescents need for sexual and reproductive health was identified as knowledge and information to help them make informed decisions.

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section is a summarized discussion of the findings that attempted to answer the research question and achieve the research objectives. The section presents also conclusive remarks and recommendations in line to the results generated by the study. The summaries are given according to the key indicators in the study area. In the conclusion, emphasis is put on the outcomes of the research in line with the objectives of the study. Recommendations are made based on the conclusions that have been drawn from the research findings. There are both policy/programme recommendations as well as recommendations from further research and the M&E practice.

5.2 Discussion and Summary of Findings

The research question aimed to understand the sexual and reproductive health (SRH) needs of in-school adolescents in Samia Sub-County of Busia County. This was to be answered by investigating the knowledge, attitudes and practice of SRH of in-school adolescents aged between 15 and 19 were targeted, all in secondary schools in the study area. Three key objectives on knowledge, attitudes and practice of SRH guided the study in attempt to answer the research question.

5.2.1 Objective on Knowledge of Sexual and Reproductive Health

This objective aimed at assessing the current levels of knowledge of key aspects of SRH. Six key indicators were used to estimate knowledge levels. Indicator one on knowledge of modern contraception an average coverage of 68.4 percent of the

respondents had knowledge of at least two methods; and slightly above half (52.6 percent) knew at least two places where they could source for the methods. Knowledge of HIV transmission had the highest average coverage with 95.8 percent of adolescents knowing at least two main ways in which HIV is transmitted while 88 percent knew their HIV status. About 70 percent reported that they knew at least two sexually transmitted infections that affect males and females; but only 28.4 percent could identify the common symptoms in both males and females. Female adolescents had higher levels of knowledge of modern contraception, HIV transmission and status, STIs as well as their symptoms (53.8, 51.6, 52.4, 54.5 and 77.8 percent), respectively.

In sum, indicators in the category of knowledge provided a clearer picture of the status of knowledge among adolescents. Although the average coverage was reached in most cases, there existed gaps in knowledge particularly among male respondents who consistently lagged behind in all the indicators of knowledge. Females seemed more informed. Awareness creation and sensitization would be necessary to improve the knowledge level and ensure that adolescents achieve SRH literacy as recommended by WHO (WHO, 2014).

5.2.2 Objective on Attitudes towards Sexual and Reproductive Health

The second objective was to explore the respondents' attitudes towards SRH. The main areas of interest were attitudes towards sex and abstinence and HIV/AIDS positive results of self or friends. Generally, females portrayed more positivity towards abstinence as they were the majority (67.5 percent) among those who were abstaining. Nonetheless, the average coverage for the indicator on abstinence was 42.1 percent. This meant that majority (57.9) of the adolescents were willing to explore their

sexuality. With such attitudes information was considered a critical need to enable them make informed decisions.

However, the indicator of attitudes towards HIV reported an average coverage of 98 percent. This was very encouraging as majority of the respondents would embrace an HIV positive situation and enrol for antiretroviral therapy (ART). Both males and females demonstrated high positivity towards this indicator and therefore the study area was considered as having minimal negativity of HIV.

5.2.3 Objective on Sexual and Reproductive Health Practice

The third objective of the study was to explore the SRH practice of in-school adolescents in Samia Sub-County. It included assessment of sexual relations and sexual experience, methods of contraception used, HIV and other STIs infection and health-seeking behaviour of the respondents. Nine indicators were used to assess the SRH practice of adolescents.

The findings showed that over 80 percent had engaged in opposite sex relations. Females reported higher (50.6 percent) engagement in relationships compared to 49.4 percent males. An average coverage of 57.9 percent was attained on the indicator of ever having sex where majority (60 percent) of those who had sex were males compared to 40 percent females. About 46 percent average coverage was attained on the indicator of average age at first sex (15.5 years). More males (54.5 percent) were likely to have had sex by age 15 compared to 45.5 percent females. Use of modern contraception at first sex reported an average coverage of 40 percent which was close to the estimated use of modern contraception (36.8 percent) among 15 – 19 year olds (KNBS, MOH, NACC, KEMRI, NCPD, & ICF International, 2015). More males (57.9 percent) were able to use modern contraception at first sex compared to females (42.1 percent). In

addition, subsequent use of contraception reached an average coverage of 48.4 percent, an increase from 40 percent at first sexual encounter.

The findings also showed that cases of pregnancies were reported in the study area at an average coverage of 11.6 percent. For every 100 girls and boys who engaged in sexual intercourse, at least 12 percent reported pregnancy, with more pregnancies (54.5 percent) occurring among females. Cases of sexually transmitted infections (STIs) were also reported at 20 percent average coverage with males reporting over 70 percent of the cases. Treatment of STIs reached an average coverage of 15.8 percent indicating that over 80 percent of the reported cases were treated. Lastly, the reproductive health-seeking behaviour reached an average coverage of 64 percent. This meant that over 60 percent of the adolescents had sought sexual and reproductive health services, 61 percent of who were females and 39 percent males.

In summary, the objectives of the study were achieved in that knowledge levels, attitudes and practices of sexual and reproductive health were analysed. The findings showed a relationship between knowledge, attitudes and practices.

5.3 Conclusion

The study aimed to understand the sexual and reproductive health needs of in-school adolescents in Samia Sub-County. Using LQAS, data was collected and analysed per supervision area and summaries generated for the entire catchment area. Among the key aspects of SRH assessed were knowledge, attitudes and practices. According to WHO (2014), adolescents need adequate information on SRH to help them make informed choices. Providing ASRH education would equip adolescents to make informed decisions on their sexual lives. However, knowledge of some important aspects of SRH were critically low such as knowledge of STIs symptoms.

From the findings, the importance of knowledge in influencing behaviour could not be overlooked. For instance, females demonstrated higher levels of knowledge of SRH compared to males. Based on this, an argument could be put forward to say that this knowledge helped females make informed decisions on sexual practice as shown by fewer of them engaging in sex compare to among male counterparts. Also, better knowledge of STIs may have contributed to less infections among females compared to males whose less knowledge of STIs may have led high infections.

It was also noted that the use of modern contraception increased after the first sexual intercourse. This might point to increased knowledge as well as accessibility and affordability of the methods among adolescents. However, use of contraception among females was low compared to males. Factors such as less access, reduced power to make decisions on contraception use as well as affordability issues may have contributed to low usage among females. Nonetheless, despite males having less knowledge of sexual and reproductive health, sexual activity was high.

Based on the findings, it was concluded that adolescents' greatest need was information and knowledge on sexual and reproductive health. Ensuring that adolescents acquire SRH information from reliable sources was considered critical to avoid misleading information that would consistently expose them to life-threatening risks to sexual and reproductive health.With correct and adequate knowledge, adolescents would be able to make informed decisions on their sexual lives.

In conclusion, adolescents in Samia Sub-County of Busia County, particularly male adolescents were needy in terms of knowledge of sexual and reproductive health. The answer to the research question was answered by concluding that knowledge and information on sexual and reproductive health (SRH) were the most critical needs of

the target population. With this understanding, programmes and interventions in the area should focus on addressing the knowledge gaps based on these results and monitor the changes using the results as the baseline for comparison purposes.

5.4 Recommendations

5.4.1 Policy/Programme Recommendations

This study investigated the knowledge, attitudes and practices of SRH among in-school adolescents in Samia Sub-County of Busia County. The following are the policy and programme recommendations.

According to the Constitution of Kenya (2010), every individual in Kenya has a right to information. Accurate and quality information is necessary for decision making. WHO (2014) reiterates the need for adolescents to have access to comprehensive information on their sexuality to enable them make informed choices. Therefore, the government should put in place legal frameworks to enforce the existing policies on adolescents' sexual and reproductive health to enhance information sharing to this group in order for them to make informed decisions on matters sexuality. Promoting SRH education through learning institutions would go a long way to achieve this.

The differences in knowledge between males and females was clearly noted. Educators and implementers should monitor the SRH behaviour based on the knowledge levels between males and females. A close observation showed that the more information one had on SRH, the less likely they were to engage in risky behaviours.

Future programmes and interventions should direct adequate focus on understanding the SRH practice of male adolescents. Results showed that they were at

the highest risk of SRH related health problems due to their risky sexual practices. They also had less knowledge compared to females, yet their level of involvement in sexual activities was the highest.

Improving the health services to become more youth-friendly would improve the health-seeking behaviour of adolescents and facilitate access to contraceptive services, particularly condoms. It's also important to sensitize health service providers on the sexual and reproductive health needs of adolescents to enable them provide services based on the needs. Precisely, there is need for the establishment of adolescent SRH programmes and free services at health facilities to specifically address adolescents' needs.

The media had a strong influence as a source of SRH information for young people. Ensuring that the media provides accurate information is very critical in enhancing knowledge levels of adolescents. The government should therefore ensure that any SRH programme being aired in the media, especially television and radio is accurate and age appropriate.

5.4.2 Recommendations for Future Research and M&E Practice

Future research should investigate the reasons behind increased risk-taking behaviour among male adolescents compared to the females. A qualitative study would also provide a deeper understanding why males were less knowledgeable of SRH compared to females, yet their engagement in sexual activities was the highest.

Future research should also focus on assessing the level of knowledge of educators and other stakeholders on SRH issues to ensure that accurate information and right

knowledge is passed on to the young people to help them make realistic and informed choices on their sexual and reproductive health.

A country-wide study of adolescents' SRH needs, including those out-of-school, is necessary to compare the findings to those of this research that focused on one Sub-County. This would enable the government and policy makes to formulate policies that address in a comprehensive way the needs of adolescents. A county-wide survey to compare with the findings of this research would be useful to help the county make strategic decisions towards addressing adolescents' SRH needs.

In the M&E practice, a baseline assessment or a needs assessment helps determine the community's or target group's needs and the relevance of an intervention. We recommend that the stakeholders in the study area consider the findings of this research as a baseline against which implementation and impact of interventions would be monitored and evaluated.

In addition, monitoring and evaluation of programmes in the area should be carried out using the LQAS tool used in this study as it proved effective in generating quick and useful information relevant at the local level. As a monitoring tool, it could provide quick information as to the state of the interventions for quick management decisions at the supervision area level.

During mid-term evaluations, LQAS could be used to assess the low performing supervision areas on certain indicators to inform decisions as to whether to continue or adjust the intervention. The data generated in this study could act as the baseline for such evaluations.

There is need for future interventions to ensure that the target group (adolescents) are involved in the design and implementation of such interventions to ensure their relevance and impact. The success of any intervention is largely dependent on how the beneficiary relates to the services. Specifically, an adolescent-specific intervention would succeed in its intention, largely, based on the extent to which they are able to relate to and own the intervention. All along, most interventions addressing adolescents SRH have been naïve in focusing on abstinence. However, the situation is different with over 50percent sexually active adolescents. Their needs are therefore knowledge of how to maintain sexual and reproductive health in their current sexual status.

REFERENCES

AFIDEP. (2011). *Rapid Assessment of the Status of HIV and Sexual and Reproductive Health Linkages and Integration in Lesotho. A Report Prepared for UNFPA.* Nairobi, Kenya: African Institute for Development Policy (AFIDEP).

Aggleton, P., & Malcolm, A. (2004). *Rapid assessment and response; Adaptation guide for work with especially vulnerable young people.* Geneva: WHO.

Aksit, B., Karanci, N., & Gunduz-Hosgor, A. (2001). Turkey - Working Street Children in three Metropolitan Cities: A Rapid Assessment. *Investigating the Worst Forms of Child Labour*.

Allen, C. (2013). *Situational Analysis of Adolescent Sexual and Reproductive Health and HIV in Caribbean.* Pan American Health Organisation.

Altschuld, J. W. (2010). *Needs Assessment Phase III: Collecting Data (Book 3 of Needs Assessment Kit).* CA: Sage Publications .

Atieno, W. (2017, December 7). High rate of teen pregnancies is a burden to Kenya: UNFPA Official. *Daily Nation*, pp. 3-4. Retrieved December 8, 2018, from https://www.nation.co.ke/news/education/High-rate-of-teen-pregnancies-is-a-burden-to-Kenya/2643604-4218610-10jwxmd/index.html

Atuyambe, L. (1998). Health Care Seeking Behaviour for Sexually Transmitted Infections among Adolescents in Rakai District, Uganda. In L. Atuyambe, *Master of Public Health.* Kampala, Uganda.: Makerere University.

Atuyambe, L. M., Kibira, S. P., Bukenya, J., Muhumuza, C., Apolot, R. R., & Mulogo, E. (2015, April 22). Understanding sexual and reproductive health needs of adolescents: evidence from a formative evaluation in Wakiso district, Uganda. *Reproductive Health*, 12-35. doi:DOI 10.1186/s12978-015-0026-7

Atuyambe, L., Mirembe, F., Johansson, A., Kirumira, E., & Faxelid, E. (2005). Experiences of pregnant adolescents--voices from Wakiso disctict, Uganda. *Afr Health Sci., 5*(4), 304. doi:10.5555/afhs.2005.5.4.304

Bal, K., Subedi, G., Gurung, Y., & Adhikari, K. (2001). Nepal - Trafficking in Girls with Special Reference to Prostitution: A Rapid Assessment. *Investigating the Worst Forms of Child Labour*, 39.

Biedron, C., Pagano, M., Hedt, B. L., Kilian, A., Ratcliffe, A., Mabunda, S., & Valadez, J. J. (2010). An Assessment of Lot Quality Assurance Sampling to Evaluate Malaria Outcome Indicators: Extending Malaria Indicator Surveys. *International Journal of Epidemiology, 39*, 72-79. doi:10.1093/ije/dyp363

Birungi, H., Obare, F., Namwebya, H., Mohammed, M., Gitau, M., & Makumi, M. (2011). *Sexual and Repoductive Health Needs of Adolescents living with HIV in Kenya; APHIA II OR Project in Kenya/ Population Council.* Nairobi, Kenya.: The Population Council.

Borgelin, S. (2016). *Young People's Perceptions of, and Access to Sexual and Reproductive Health Services in Western Cape, South Africa.* Master Thesis, Norwegian University of Life Sciences, Public Health Science, Cape Town.

Chambers, R. (1983). *Rural Development: Putting the Last First.* Harlow, England: Prentice Hall. Retrieved from http://opendocs.ids.ac.uk/opendocs/handle/123456789/178

Corbett, E. L., Steketee, R. W., Ter Kuile, F. O., Latif, A. S., Kamali, A., & Hayes, R. J. (2002). *'HIV/AIDS and the Control of other Infectious Disease in Africa'* (Vol. 359). The LANCET.

Core Group. (2008). *LQAS frequently asked questions.*

CORE Group. (2008). LQAS Frequently Asked Questions., (pp. 6-8). Retrieved December 12, 2018, from https://coregroup.org/wp-content/uploads/media-backup/documents/Workingpapers/LQAS_FAQ.pdf

Department of Health and Social Security. (1976). *Sharing Resources for Health in England: Report of the Resource Allocation Working Party.* London: HMSO.

Esantsi, S., Onyango, F., Quansah Asare, G., Kuffour, E. O., Tapsoba, P., Birungi, H., & Askew, I. (2015). *Understanding the Reproductive Health Needs of Adolescents in Selected Slums in Ghana: A Public Health Assessment.* Ghana: Population Council.

Finney, D. (2002). The ELT Curriculum: A Flexible Model for a Changing World. In J. C. Richards, & W. A. Renandya, *Methodology in Language Teaching: An Anthology of Current Practice* (pp. 69-79). Cambridge: Cambridge University Press.

Gliem, J. A., & Gliem, R. R. (2003). Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales. *2003 Midwest Research to Practice Conference in Adult, Continuing, and Community Education* (pp. 82-88). Columbus, OH: The Ohio State University.

Gonzales, C. (2015). *Catalyst for Change: Empowering Women and Tackling Income Inequality.* Washington, D.C.: International Monetary Fund.

Government of Tanzania. (2016). *National Plan of Action to End Violence Against Women and Children in Tanzania.* Dar es Salaam: GoT.

Guha-Sapir, D. (1991). Rapid assessment of health needs in mass emergencies: Review of current concepts and methods. *World Health Statistics Quarterly,* 81-171.

Gupta, K., Sleezer, C. M., & Russ-Eft, D. F. (2007). *A Practical Guide to Needs Assesment* (Second ed.). San Francisco: John Wiley and Sons, Inc.

Guttmacher Institute. (2017). Adding it up. Retrieved from https://www.guttmacher.org/tags/adding-it

Habtamu, D., & Adamu, A. (2013). Assessment of Sexual and Reproductive Health Status of Street Children in Addis Ababa. *Journal of Sexually Transmitted Diseases*, 4-5.

Harding, E., Beckworth, C., Fesselet, J., Lenglet, A., Lako, R., & Valadez, J. (2017). Using Lot Quality Assurance Sampling to assess access to water, sanitation and hygiene services in a refugee camp setting in South Sudan: A feasibility study. *BMC Public Health*.

Hurtado, E. (1990). *Rapid Anthropological Procedures for Community-Based Assessment and Analysis.* Retrieved from Participatory Methods: http://www.participatorymethods.org/resource/rapid-anthropological-procedures-community-based-assessment-and-analysis

Ighobor, K. (2013). Africa's Youth: A "Ticking time Bomb" or an Opportunity? *Africa Renewal*, 10.

ILO. (2017). *Global Estimates of Child Labour: Results and Trends, 2012-2016.* Geneva: International Labour Organization (ILO).

ILO and UNICEF. (2005). *Manual on Child Labour Rapid Assessment Methodology: Statistical Information and Monitoring Programme on Child Labour (SIMPOC).* Geneva: International Labour Office (ILO).

Inter-Agency Working Group (IAWG). (2010). Adolescent Reproductive Health. In *Inter-Agency Field Manual on Reproductive Health in Humanitarian Settiongs* (pp. 87-98).

IPPF, UNFPA, WHO, UNAIDS, GNP +, ICW, & Young Positives. (2009). *Rapid assessment tool for sexual and reproductive health and HIV linkages: A generic guide.* Retrieved from http://www.unfpa.org/resources/rapid-assessment-tool-sexual-reproductive-health-and-hiv-linkages

Iskarpatyoti, B. S., Sutherland, B., & Reynolds, H. W. (2017). *Getting to an Evaluation Plan: A Six-Step Process from Engagement to Evidence.* Chapel Hill: MEASURE Evaluation.

Iwai, T., Kondo, K., Limm, S. J., Ray, E. G., Shimizu, H., & Brown, J. D. (1999). Japanese Language Needs Analysis. *Performance Based Testing Committe.* Manoa: University of Hawaii.

Jacobsen, M., & O'Connor, A. (2006). *Population Needs Assessment: A Workbook for Assessing Patients' and Practioners' Decision Making Needs.* Ontario, Canada: University of Ottawa. Retrieved from http://www.ohri.ca/decisionaid

Jeffery, C., Sprague, D. A., Ouma, J., House, T., & Valadez, J. J. (n.d). Lot Quality Assurance Sampling for Improving Health Systems in Low Resource Settings: A Decision-Making Tool to Empower Health Officers and Inform Health Policy.

Kadonya, C., Madihi, M., & Mtwana, S. (2002). Tanzania - Child Labour in the Informal Sector: A Rapid Assessment. *Investigating the Worst Forms of Child Labour.*, 7.

Kamineni, V. V., Turk, T., Wilson, N., Satyanarayana, S., & Chauhan, L. S. (2011). A rapid assessment and response approach to review and enhance Advocacy, Communication and Social Mobilisation for Tuberculosis control in Odisha state, India. *BMC Public Health*.

Kaufman, R. (1992). *Strategic planning plus: An organizational guide*. Thousand Oaks: Sage.

Kaufman, R. (1998). *Strategic thinking: A guide to identifying and solving problems.* . Washington, D.C. : International Society for Performance Improvement.

Kids & Teens Resource Centre. (2012). *Needs Assessment on the Sexual and Reproductive Health Needs of Young Persons in Ondo State. Increasing Young People's Access to Sexual and Reproductive Health Services.* Insight Health Consulting Ltd.

Kilonzo, E. (2017, April 18). We want Condoms, say Teens: Stop the Moral Talk in Sex Lessons, urge Teens in New Study. *Daily Nation Kenya*, pp. 4-5.

Kirby, D. (2011). *The Impact of Sex Education on the Sexual Behaviour of Young People.* United Nations, Population Division. New York: United Nations Department of Economic and Social Affairs (UNDESA).

KNBS. (2009). *Projections from Kenya 2009 Population and Housing Census.* Nairobi: KNBS.

KNBS, MOH, NACC, KEMRI, NCPD, & ICF International. (2015). *Kenya Demographic and Health Survey 2014.* Nairobi: Kenya Nationa Bureau of Statistics (KNBS).

Knut-Inge, K. (2008). *Promoting adolescent sexual and reproductive health in East and Southern Africa.* Sweden: Nordiska Africa Institute.

Leigh, D., Watkins, R., Platt, W. A., & Kaufman, R. (2001, January 9). Alternate Models of Needs Assessment: Selecting the Right one for your Organization. *Human Resource Developement Quarterly, 11*(1), 87-93. Retrieved August 12, 2018, from https://doi.org/10.1002/1532-1096(200021)11:1%3C87::AID-HRDQ7%3E3.0.CO;2

Lynch, I., Morison, T., Moolman, B., Chiumbu, S., & Makoae, M. (2016). *Advancing Sexual and Reproductive Health rights (SRHR) of Sexual and Gender Minorities in Gert Sibande District, Mpumalanga: A Rapid Ethnographic Assessment.* Durban, South Africa: AIDS Foundation of South Africa.

Magadi, M. A. (2006). A comparative analysis of the use of maternal health services between teenagers and older mothers in sub-Saharan Africa: Evidence from Demographic and Health Surveys (DHS). *Social Science & Medicine, 64*, 1311-1325.

Management Sciences for Health (MSH) STAR-E LQAS. (2012). *LQAS Participants' Manual; For Conducting Community Surveys at District Level.* Uganda Edition.

Mayabi, J. M. (2016, May 31). Prevalence of Sexual Activities among Secondary Students in Nairobi and Busia Counties in Kenya. *Kabarak Journal of Research and Innovation, 4*(1), 11-19.

Mbeba, R., Mkuye, M., Magembe, G., Yotham, W., Mellah, A., & Mkuwa, S. (2012). Barriers to sexual reproductive health services and rights among young people in Mtwara district, Tanzania: a qualitative study. *Pan Afr Med J.*

Mbonye, A. (2003, April-June). Disease and health seeking patterns among adolescents in Uganda. *Int. J Adolesc Med Health., 15*(2), 105. Retrieved August 25, 2018, from https://www.ncbi.nlm.nih.gov/pubmed/12955812

McCawley, P. F. (2009). *Methods for Conducting an Educational Needs Assessment: Guidelines for Cooperative Extension System Professionals.* Moscow: University of Idaho.

MEASURE Evaluation. (2011). *2011 Lot Quality Assurance Sampling Survey in Liberia.*

Mendes, N., Palma, F., & Serrano, F. (2014). Sexual and reproductive health of Portuguese adolescents. *Int J Adolesc Med Health, 26*(1), 3-12. doi:10.1515/ijamh-2012-0109

Ministry of Health. (2018). *HIV Status Report of Samia Sub-County.*

Montero, M. F. (2016). *Standards for Adolescents' Sexual and Reproductive Health Services for Latin America and the Caribbean.* UNFPA.

Munby, J. (1978). *Cummunicative Syllabus Design.* Cambridge: Cambridge University Press.

Namutebi, T. G. (n.d). *Using LQAS for Baseline Surveys and Regular Performance Monitoring in Health Care.* Kampala, Uganda: Capacity Systems Link.

Nation Media Group. (2017, November 6). Government to Effect Full Free Day Secondary Learning in January. *Daily Nation*, p. 3. Retrieved December 7, 2018, from https://www.nation.co.ke/news/education/Full-free-day-secondary-education/2643604-4175706-leh7cbz/index.html

NCPD. (2012). *Rapid Child Survival Indicator Survey in Western and Eastern Provinces Using the Lot Quality Assurance (LQAS) Methodology.* Nairobi: National Council for Population and Development. Retrieved December 7, 2018, from http://www.ncpd.go.ke/wp-content/uploads/2016/11/2011-12-Rapid-Child-Survival-Indicator-Survey-Report-LQAS-Kenya.pdf

Needle, R. H., Trotter, R. T., Singer, M., Bates, C., Page, J. B., Metzger, D., & Marcelin, L. H. (2003). Rapid assessment of the HIV/AIDS crisis in racial and ethnic minority communicates: An approach for timely community interventions. *American Journal of Public Health, 93*(6), 970-979.

Newton-Levinson, A., Leichliter, J., & Chandra-Mouli, V. (2016, July). Sexually Transmitted Infection Services for Adolescents and Youth in Low- and Middle-Income Countries: Perceived and Experienced Barriers to Accessing Care. *J Adolesc Health, 59*(1), 7-16. doi:10.1016/j.jadohealth.2016.03.014.

NOAA, Coastal Services Center. (2011). *Needs Assessment Guide.* Retrieved from http://coastal.noaa.gov/needsassessment/#/

Obono, O. (2010). *A Tapestry of Human Sexuality in Africa.* Cape Town: CTP Printers.

Omboki, A. (2017, December 1). Kenyan Youth Ranked 3rd in New HIV Cases in East and Central Africa. *Daily Nation*.

Pearson, R. (1990). *Use of Rapid Assessment Procedures in Evaluation in UNICEF.* Institute of Development Studies.

Pearson, R., & Kessler, M. (1992). Use of rapid assessment procedures for evaluation by UNICEF. In S. Scrimshaw, & G. Gleason, *In Rapid anthropological procedures: qualitative methodologies for planning and evaluation of health-related programs.* Boston: Boston International Nutrition Foundation for Developing Countries.

Pearson, Roger, & Kessler, S. (1991). *Use of Rapid Assessment Procedures for Evaluation by UNICEF. In Rapid Assessment Procedures: Qualitative Methodologies for Planning and Evaluation of Health Related Programs.* Boston.

Republic of Kenya & Ministry of Health. (2001b). *National Condom Policy and Strategy 2001-2005. Ministry of Health in Collaboration with the National AIDS Control Council.* Nairobi: RoK & MoH.

Republic of Kenya. (2009). *Rapid Child Survival Indicator Survey in Nyanza and Western Provinces Using the Lot Quality Assurance (LQAS) Methodology.* Nairobi: National Coordinating Agency for Population and Development. Retrieved December 7, 2018, from http://www.ncpd.go.ke/wp-content/uploads/2016/11/2009-Rapid-Child-Survival-Indicator-Survey-Report-LQAS-Kenya.pdf

Republic of Kenya. (2010). *The Constitution of Kenya, 2010.* Nairobi: National Council for Law Reporting.

Republic of Kenya. (2013). *Busia County HIV & AIDS Strategic Plan 2014/15 - 2018/19.*

Republic of Kenya. (2014). *County Government of Busia. Department of Community Development, Sports, Culture and Social Services Strategic Plan 2014-2018.* Busia: County Government of Busia.

Republic of Kenya. (2015). *Nationa Adolescent Sexual and Reproductive Health policy.* Nairobi: Government Press.

Republic of Kenya and Ministry of Health. (1997). *Sessional Paper No. 4 of 1997 on AIDS in Kenya Ministry of Health.* Nairobi: RoK & MoH.

Republic of Kenya and Ministry of Health. (2001a). *AIDS in Kenya: Background, projections, Impact, Interventions, Policy.* Nairobi: RoK & MoH.

Richards, J. C., J., P., & H., P. (1992). *Longman Dictionary of Language Teaching and Applied Linguistics.* London: Longman.

Rotary International (RI). (n.d). *Community Assessment Tools: A Resource for Rotary Projects.* Rotary International. Retrieved August 22, 2018, from https://www.rotary.org

Sawyer, S. M. (2012, April 28). Adolescence: A Foundation for Future Health. *The Lancet, 379*(9826), 1630-1640. doi:10.1016/S0140-6736(12)60072-5).

Schutz, N., & Derwing, B. (1981). *The Problem of Needs Assessment in English for Specific Purposes: Some Theoretical and Practical Considerations.*

Scrimshaw, N., & Gleason, G. (1992). *Rapid assessment procedures: Qualitative methodologies for planning and evaluation of health-related programs.* . Boston: International Nutrition Foundation for Developing Countries.

Scrimshaw, S. C., Carballo, M., Ramos, L., & Blair, B. A. (1991, April 1). The AIDS Rapid Anthropological Assessment Procedures: A Tool for Health Education Planning and Evaluation. *Sage Journals*. doi:10.1177/109019819101800111

Scrimshaw, Susan, C. M., Carballo, M., Ramos, L., & et, a. (1991). The AIDS Rapid Anthropological Assessment Procedures: A Tool for Health Education Planning and Evaluation. *Health Education Quarterly* , 111-123.

Sharma, S., Thakurathi, M., Sapkota, K., Devkota, B., & Rimal, B. (2001). Nepal - Situation of Domestic Child Labourers in Kathmandu: A Rapid Assessment. *Investigating the Worst Forms of Child Labour*(3), 4.

Shivaram, K., Nandini, C., & Malleshappal, K. (2011). Knowledge and Attitude about Reproductive Health among Rural Adolescent Girls in Kuppam Mandal: An Intervention Study. *Journal of Biomedical Research, 14*(3), 305-310.

Sidze, E. M., Stillman, M., Keogh, S., Mulupi, S., Egesa, C. P., Leong, E., . . . Izugbara, C. (2017). *From Paper to Practice: Sexuality Education Policies and their Implementation in Kenya.* New York: Guttmacher Institute & APHRC. Retrieved July 12, 2018, from https://www.guttmacher.org/report/sexuality-education-kenya

Spano, S. (2004). *Act for Youth Upstate Centre: Research Facts and Findings.* New York: Cornell University.

SRHR Alliance. (n.d.). Access, Services and Knowledge (ASK) 2013-2015 Program.

Starkey, P., Awadh, A., Musonda, H., Njenga, P., Newport, S., Sirpe, G., . . . Kemtsop, G. (2007). *The Rapid Assessment of Rural Transport Services. A methodology*

for the Rapid Acquisition of the Key Understanding required for informed Transport planning. New York: The World Bank, UNECA.

Sundby, J. (2006). Young People's Sexual and Reproductive Health Rights. *Best Practice & Research Clinical Obstetrics & Gynaecology, 20*(3), 355-368.

Tilahun, M., Mengistie, B., Egat, G., & Reda, A. (2012, September 3). Health workers' attitudes toward sexual and reproductive health services for unmarried adolescents in Ethiopia. *Reprod. Health*, 9-19. doi:10.1186/1742-4755-9-19

Trotter, R., & Singer, M. (2005). Rapid assessment strategies for public health: Promise and problems. In E. Trickett, & W. Pequegnat, *Community intervention and AIDS.* New York: Oxford University Press.

U.S. Embassy. (2017). *Reporting.* Dar es Salaam.

UNDP. (2009). *Handbook on Planning, Monitoring and Evaluating for Development Results.* New York: United Nations Development Programme. Retrieved August 9, 2018

UNESCO. (2015). *Emerging Evidence, Lessons and Practice in Comprehensive Sexuality Education. A Global Review.* Paris: United Nations Educational, Scientific and Cultural Organization.

UNESCO, UNAIDS, UNFPA, UNICEF, UN Women & WHO. (2018). *International Technical Guidance on Sexuality Education: An Evidence-informed Approach.* Paris, France: UNESCO.

UNFPA. (1995). Role of Rapid Assessment Procedures. (pp. 1-20). New York: UNFPA.

UNFPA. (2014). *Operational Guidance for Comprehensive Sexuality Education: A Focus on Human Rights and Gender.* New York: UNFPA.

UNFPA. (2016). *Universal Access to Reproductive Health: Progress and Challenges.* New York.

UNFPA. (2017). *State of the World Population: Reproductive Health and Rights in an age of Inequality.* New York: UNFPA.

United Nations. (2014). *The World Population Situation in 2014: A Concise Report.* New York: DESA.

USAID; UNICEF; Family Health International (FHI)/IMPACT; Population Council/Horizons. (2004). *Ethical Guidelines for Gathering Information from Children and Adolescents.*

Valadez, J. (2010). A Brief overview of Lot Quality Assurance Sampling (LQAS) and its application in the Health Sector. Liverpool School of Tropical Medicine .

Wamuswa, N. (2018, November 20). Number of teenage pregnancies higher than thought. *Standard Digital*. Retrieved December 8, 2018, from https://www.standardmedia.co.ke/article/2001303295/number-of-teenage-pregnancies-higher-than-thought

Watkins, R., Meiers, M. W., & Visser, Y. L. (2012). *A Guide to Assessing Needs: Essential Tools for Collecting Information, Making Decisions, and Achieving Development Results.* Washington DC: The World Bank.

Watkins, R., West Melers, M., & Visser, Y. (2012). *A Guide to Assessing Needs: Tools for collecting information, making decisions, and achieving development results.* Washington, DC: World Bank.

West, R. (1994). Needs Analysis in Language Teaching. *Language Teaching*, 1-19.

WHO & UNDCP. (2003). *UNDCP/WHO Global Initiative on Primary Prevention of Substance Abuse. Overall Evaluation: Baseline Assessment Guidelines and Instruments.* Geneva.

WHO. (2001). *Safe Motherhood Needs Assessment.* Geneva: World Health Organization.

WHO. (2004). *HIV and AIDS in Adolescents.* Geneva: World Health Organization.

WHO. (2009). Basic Principles of Healthy Cities: Community Diagnosis. 1-6.

WHO. (2012). *Adolescents sexual and reproductive health.* Geneva: World Health Organization.

WHO. (2014). *Health for the World's Adolescents: A second chance in the second decade.* Geneva: World Health Organization.

WHO, UNAIDS, UNFPA, UNICEF, UNWomen, The World Bank Group. (2018). *Survive, Thrive, Transform. Global Strategy for Women's, Chidren's amd Adolescents' Health: 2018 Report on Progress Towards 2030 Targets.* Geneva: WHO.

Wilson, B. (2009). Black lesbian gender and sexual culture: Celebration and resistance. *Culture, Health & Sexuality, 11*(3), 297-313.

Wingood, G. M., DiClement, R. J., Harrington, K., Davies, S., Hook, E. W., & Oh, M. K. (2001, May). Exposure to X-rated Movies and Adolescents' Sexual and Contraceptive-Related Attitudes and Behaviours. *Paediatrics, 107*(5), 1116-1119.

World Bank. (2004). *Monitoring & Evaluation: Some Tools, Methods and Approaches.* Washington, D.C.: The World Bank.

World Bank. (2017, July 18). *The World Bank.* Retrieved from World Bank Project Cycle: https://www.worldbank.org/en/projects-operations/products-and-services/brief/projectcycle

World Health Organisation. (2003). 'Special Programme of Research, Development and Research Training in Human Reproduction Guidelines for Research on Reproductive Helath Involving Adolescents' in Preparing a Research Project Proposal: Guidelines and Forms. In U. Bank, *Special Programme of Research, Development and Research Training in Human Reproduction* . Geneva: WHO.

Wright, J., Williams, R., & Wilkinson, J. R. (1998). Development and Importance of Health Needs Assessment. *Biomedical Journal*.

Zapata, A., Alletto, M., Gibson, G., White, B. S., Wise, C., & Burman, A. (2014). *Reproductive Health Needs Assessment.* New Orleans: Louisiana Department of Health and Hospitals.

Zumbo, B. D., & Rupp, A. A. (2004). Responsible modelling of measurement data for appropriate inferences: Important advances in reliability and validity theory. In D. Kaplan, *The SAGE Handbook of Quantitative Methodology for the Social Sciences* (pp. 73-92). Thousand Oaks, CA: Sage Press.

ANNEX 1: ASSENT FORM FOR PARTICIPATION IN SRH STUDY

I, Wambugu Beatrice, (Registration No. Q51/87209/2016), am a student at the University of Nairobi. I am currently registered for Master's Degree in Monitoring and Evaluation of Population and Development Programmes. In partial fulfilment of the programme's requirements, I am supposed to carry out a research project. The purpose of the research is to examine the sexual and reproductive health needs of adolescents in secondary schools. The focus will be on adolescents between the ages of 15-19 years old.

I would like to administer a survey questionnaire to your students and this might take approximately one hour of their time. The survey will focus on sexual and reproductive health needs of adolescents, knowledge of, attitudes and practice of sexual and reproductive health care and services available for in-school adolescents. The anonymity of your students will be maintained as their names will not appear in the questionnaire. The anonymity of the school will also be maintained.

The participation of your students will be strictly voluntary and he/she have the right to withdraw at any time during the course of the survey. This will not have any effect whatsoever to his/her relationship with the researcher. If you have any questions about the study that you wish to raise, you can contact the researcher on this cell number – 0724023364 or email at bwambugu17@gmail.com

Thank you for allowing your students to participate in the study.

Wambugu Beatrice (Researcher) ……

I give my full consent for my students' participation in this study and acknowledge that the implications of my consent have been explained to me.

Principal's/Teacher's signature_____ Date_____

Researcher's signature_____ Date_____

ANNEX 2: ADOLESCENTS' CONSENT FORM FOR PARTICIPATION

I, Wambugu Beatrice, (Registration No. Q51/87209/2016), am a student at the University of Nairobi. I am currently registered for Master's Degree in Monitoring and Evaluation of Population and Development Programmes. In partial fulfilment of the programme's requirements, I am supposed to carry out a research project. The purpose of the research is to examine the sexual and reproductive health needs of adolescents in secondary schools. The focus will be on adolescents between the ages of 15-19 years old.

I would like to administer a survey questionnaire to you and this might take approximately one hour of your time. The survey will focus on sexual and reproductive health needs of adolescents, knowledge of, attitudes and practice of sexual and reproductive health care and services available for adolescents in secondary schools. You will not be required to identify yourself or indicate your name in this survey to ensure privacy and confidentiality of your information.

Your participation will be strictly voluntary and you have the right to withdraw at any time during the course of the survey. This will not have any effect whatsoever on your relationship with the researcher. If you have any questions about the study that you wish to raise, you can contact the researcher on this cell number – 0724023364 or email at bwambugu17@gmil.com

Thank you for participating in the study.

Wambugu Beatrice (Researcher) ……

I voluntarily agree to participate in this study and acknowledge that the consent form has been read and explained to me. I have been assured that my identity will not be revealed while the study is being conducted or when the study is published.

Participant's signature_____ Date_____

Researcher's signature_____ Date_____

ANNEX 3: STUDY QUESTIONNAIRE

Study Questionnaire on Sexual and Reproductive Health Needs of In-School Adolescents

Thank you for consenting to this study. Your correct and honest answers are very important. Please answer each question carefully and honestly. Thank you in advance.

Section 1: Socioeconomic Background

This section addresses key characteristics of the respondent's life that may shape sexual conduct and sexual health.

1. Sex of the respondent: Male ☐ Female ☐
2. How old are you? Years old _____
3. What form are you in? Form _____
4. Is your school a public or private institution? Public ☐ Private ☐
5. Are you attending day or boarding school? Day ☐ Boarding ☐
6. Is your school mixed or single sex (boys only/girls only)?
   Mixed (boys & girls) ☐ Boys only ☐ Girls only ☐
7. Are you expecting to continue with education after completing secondary school education?
   Yes ☐ No ☐
8. What is your religion?
   None ☐ Protestant ☐ Evangelical churches ☐
   Catholic ☐ Muslim ☐ Other _____
9. Are both your parents alive? Yes ☐ No ☐
10. If not both, who is alive between your father and mother or neither?
    Mother ☐ Father ☐ Neither ☐
11. Do you live in the same household as your parent(s)? Yes ☐ No ☐
12. If not, whom do you live with?
    Alone ☐ Grandparents ☐ Other relatives ☐ Other____
    Siblings☐ Aunt/uncle ☐ Friends☐
13. Do you find it difficult or easy to talk to your parent(s)/guardian about important things to you? Easy ☐ Difficult☐ Do not live with adults ☐
14. Have you ever discussed sex-related matters with your parent/guardian(s)?
    Yes ☐ No ☐
15. Do you have other siblings? Yes ☐ No ☐

Section 2: Sources of information on, and knowledge of reproductive health

This section addresses the source of information on sexual and reproductive health.

1. Young people learn about puberty (ways in which boys' and girls' bodies change during teenage years) from many sources. What has been the source of information for you on this topic?

   School teacher ☐ Mother ☐ Father ☐

   Sister ☐ Brother ☐ Other family members ☐

   Friends ☐ Doctors ☐ Books/magazines ☐

   Films/videos ☐ Other (specify) _____

2. What is your preferred source of information on this topic?_____
3. What have been the sources of information on the sexual and reproductive system of men and women?

   School teacher ☐ Mother ☐ Father ☐

   Sister ☐ Brother ☐ Other family members ☐

   Friends ☐ Doctors ☐ Books/magazines ☐

   Films/videos ☐ Other (specify) _____

4. What is your preferred source of information on this topic?_____
5. What have been the sources of information about relationships (how boys and girls should treat each other)?

   School teacher ☐ Mother ☐ Father ☐

   Sister ☐ Brother ☐ Other family members ☐

   Friends ☐ Doctors ☐ Books/magazines ☐

   Films/videos ☐ Other (specify) _____

6. What is your preferred source of information on this topic_____
7. Does your school offer lessons on sexual and reproductive systems, puberty and on boys and girls relationships?

   Yes ☐ No ☐ Not sure ☐

Section 3: Relationships with boys/girls

This section looks at the relationships among young people form, sexual contact and level of risks involved.

1. Have you ever had a girl/ boyfriend? (Someone you were sexually or emotionally attracted to). **IF NO, SKIP TO SECTION 4**

   Yes ☐ No☐

2. Occupation of girl/boyfriend

   Full-time student ☐ Working☐ Neither ☐

3. How old is he/she? (Please select the age bracket)

   Below 15 ☐ 15-19☐ 19-24 ☐ Above 24 ☐

4. Have you ever had sex? Yes ☐ No ☐

Please answer these questions only if you have had sex

1. What would you say about the first time you had sex with your partner?
   a) I forced my partner to have intercourse against his/her will ☐
   b) I persuaded my partner to have intercourse ☐
   c) My partner forced me to have intercourse against my will ☐
   d) My partner persuaded me to have intercourse ☐
   e) We were both equally willing to have intercourse ☐
2. How old were you when you first had sex with your partner? _____
3. Did you regret having intercourse with your partner? Yes ☐ No ☐
4. On that first time, did you do anything to avoid pregnancy? Yes ☐ No ☐
5. What method did you use?

   Condom ☐ Withdrawal ☐ Injection ☐

   Pill ☐ Safe period ☐ Other(specify) _____

6. Apart from the first time, do you and your partner use a modern contraception method to avoid pregnancy? If YES, always or sometimes?

   Always ☐ Sometimes ☐ Never ☐

7. What method do you and your partner MOSTLY use? (Please tick all that apply)

   Condom ☐ Injection ☐ Pill ☐ Other _____

8. Where did you or your partner get this method?

   Shop ☐ Friend ☐ Pharmacy ☐

   Government clinic/Health centre/ Hospital ☐ Don't know ☐

   Private Doctor/Nurse/Clinic ☐ Other_____

9. Males: Did your partner ever become pregnant by you?

   Females: Did you ever become pregnant by your partner? Yes ☐ No ☐

10. What happened to the pregnancy?

    Currently pregnant ☐ Live-birth ☐ Miscarriage ☐

    Abortion ☐ Not sure ☐

Please answer these questions only if you have not had sex

1. People may have mixed reasons for not having intercourse. Which of the following reasons apply to you?
   a) I don't feel ready to have sex
   b) I have not had the opportunity
   c) I think that sex before marriage is wrong
   d) I am afraid of getting pregnant
   e) I am afraid of getting HIV or another sexually transmitted infection
2. What are your future plans about sexual intercourse?
   a) I plan to wait until marriage
   b) I plan to wait until I am engaged to be married
   c) I plan to wait until I find someone I love
   d) I plan to have sexual intercourse when an opportunity comes along
3. Do you feel any pressure from others to have sexual intercourse? Yes No
4. From whom do you feel pressure?
   Friends Partner/special friend
   Relatives Other _____

Section 4: Contraceptive Methods Knowledge and Use

This section investigates the methods of contraceptives that are known to adolescents and if they have used them.

1. Men and women can use various methods to avoid pregnancy. Which of the following methods do you know of?

Method	Knowledge of method
Pill – women and girls can use a pill very day	Yes ☐ No ☐
Injection –women and girls can have an injection every 2 or every 3 months	Yes ☐ No ☐
Condom – a boy/man can put a rubber device on his penis before intercourse	Yes ☐ No ☐
Emergency contraceptive pills – women and girls can take pills soon after intercourse	Yes ☐ No ☐
Withdrawal – men and boys can pull out of a girl before climax	Yes ☐ No ☐
Periodic abstinence/rhythm – a couple can avoid sex on days when pregnancy is most likely to occur	Yes ☐ No ☐

2. If you needed to use a method of contraception, where would you go to get it?

   Shop ☐ Friend ☐ Pharmacy ☐

   Government clinic/Health centre/ Hospital ☐ Don't know ☐

   Private Doctor/Nurse/Clinic ☐ Other_____

3. If you have experienced sexual intercourse, which methods of contraception have you or your partner ever used? (Please circle all that apply)

   Pill ☐ Emergency pills ☐ Condom ☐

   Injection ☐ Withdrawal ☐ Periodic abstinence ☐

   Other……

Section 5: Knowledge of HIV/AIDS and sexually transmitted Infections (STIs)

This section investigates knowledge and attitudes towards HIV/AIDs and STDs

1. Have you ever heard of HIV or AIDs? Yes ☐ No ☐
2. Do you know how HIV is transmitted from one person to the other? Yes ☐No ☐
3. Identify the three body fluids that contain the HIV virus.

   Saliva ☐ Tears ☐ Breast milk ☐

   Sexual fluids ☐ Blood ☐ Sweat ☐
4. Have you ever been tested for HIV? If YES, why did you decide to get tested?
   a. I had unprotected sex and wanted to know whether I had been infected ☐
   b. I and my partner wanted to know our statuses before we could have sex ☐
   c. My parents took me for testing ☐
   d. It was a requirement before joining the current school ☐
   e. I just wanted to know my status ☐
   f. Other ……
5. Would you go for a voluntary counselling and testing for HIV? Yes ☐ No ☐
6. If NO, why wouldn't you want to be tested?…….
7. If you or your friend got tested for HIV and the results were positive (he/she has HIV), what would be the best thing to do? (Multiple responses are allowed)
   a. Accept the situation and start taking medicine (ARV) ☐
   b. Inform a close relative or parents for moral support ☐
   c. Commit suicide ☐
   d. Drop out of school and run away from home ☐
   e. Engage multiple partners and infect as many as possible ☐

8. Is there anyone in your family who is infected with HIV? Yes ☐ No ☐
9. Which of the following statements about HIV/AIDS do you think is true, false or you don't know

Statement	True	False	Don't know
AIDS is can be cured			
A person with HIV always looks emaciated or unhealthy in some way			
People can take a simple test to find out whether they have HIV			
HIV is transmitted through sexual intercourse with an infected person			
HIV positive mothers can have children			
Insects like mosquito and bedbugs can transmit HIV			

10. Apart from HIV/AIDS, there are other diseases that men and women can catch by having unprotected sexual intercourse. Which one of these diseases have you heard of?

    Syphilis ☐ Gonorrhoea ☐ Others ☐

11. What are the signs and symptoms of a sexually transmitted disease in a man/boy?

    Discharge from penis ☐ Ulcers/sores in genital area ☐

    Pain during urination ☐ Other ……

12. What are the signs and symptoms of a sexually transmitted disease in a woman/girl?

    Vaginal discharge ☐ Ulcers/sores in genital area ☐

    Pain during urination ☐ Other …….

13. If you or a friend of yours needed treatment for a sexually transmitted disease, where could he/she obtain such treatment? (Any other places)

    Shop ☐ Government hospital/health centre/clinic ☐

    Pharmacy ☐ Private doctor/nurse/clinic ☐

    Other ……..

<u>These questions are for those who have experienced sexual intercourse</u>

14. Have you ever had a sexually transmitted disease? If YES, Once or more than once

    Once ☐ More than once ☐ Never ☐

15. Did you ever seek treatment? Yes ☐ No ☐
16. Did your sexual partner (any of your partners) also obtain treatment?

    Yes ☐ No ☐ Don't know ☐

Section 6: Condom knowledge and attitudes

1. Have you ever seen a condom? Yes ☐ No ☐
2. Have you or a partner ever used a condom? Yes ☐ No ☐
3. Have you ever experienced a condom that split or broke during intercourse?
   Yes ☐ No ☐
4. People have different opinions about condoms. Which of the following opinions do you agree (A) or disagree (D) with or you are undecided (U)?

Opinion	A	U	D
Condoms are an effective method of preventing pregnancy			
Condoms are an effective way of protection against HIV/AIDS			
Condoms reduce sexual pleasure			
Condoms are an effective way of protecting against sexually transmitted diseases			

Section 7: Sexuality, gender and norms

Young people have various views about relationships. Which of these views do you agree (A) or disagree (D) with or are undecided (U)?

Statement	View		
	A	U	D
I believe it's all right for unmarried girls and boys to date			
I believe it's all right for boys and girls to kiss, hug and touch each other			
Boys and girls can have intercourse if they love each other			
A boy and a girl should have sex before engagement to see if they are suited to each other			
Girls and boys can have sex if they use contraceptives			
I am confident I know how to use a condom properly			

Section 8: Use and attitudes towards sexual and reproductive health services

1. Have you ever visited a health facility or a doctor of any kind to receive services or information on contraception, pregnancy, abortion or sexually transmitted diseases?
   Yes ☐ No ☐
2. How many times have you sought services or information from a doctor or a nurse for these services in the last twelve months?
   Number of times_____ Did not seek care in the last 12 months ☐
3. During your last visit, did you go to a government clinic or a private doctor or clinic?

Government ☐ Private ☐ Other ☐

4. When you last saw a doctor or a nurse, what was your reason for going?

   Contraception ☐ Pregnancy test ☐ Gynaecological exam ☐

   STD ☐ Pregnancy termination ☐ Mother/child health ☐

   Other ……..

5. At this facility:

   a. Did you see posters on contraception? Yes ☐ No ☐

   b. Were you given brochures on contraception? Yes ☐ No ☐

   c. Did you attend a talk on contraception? Yes ☐ No ☐

   d. Did you request contraceptive services during consultation? Yes☐ No ☐

6. Did the doctor or nurse talk to you about:

   a. Contraception? Yes ☐ No ☐

   b. Sexually transmitted disease? Yes ☐ No ☐

   c. Pregnancy? Yes ☐ No ☐

7. Did you feel comfortable enough to ask questions? Yes ☐ No ☐

8. What are some of the questions you asked during the consultation?

   ……

9. Were the questions you asked during the consultation answered adequately?

   Yes ☐No ☐

10. Was there enough confidentiality? (Explain your experience)Yes ☐ No ☐

    ……

11. What would say about the attitude of the doctor or nurse who you consulted?

    ……

12. What challenges do you face in accessing sexual and reproductive health care and services?

    ……

    ……

13. What would be your recommendations to improve sexual and reproductive health care and services provided to adolescents?

    ……

Is there anything else you would like to share with us?

……

Thank you for your participation and honest responses.

ANNEX 4: LQAS TABLE OF DECISION RULES AND COVERAGE TARGETS/AVERAGE OF 10%-95%

LQAS Table: Decision Rules for Sample Sizes of 12-30 and Coverage Targets/Average of 10%-95%

Sample	**Average Coverage (Baselines) / Annual Coverage Target (Monitoring and Evaluation)**																	
Size*	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%
12	N/A	N/A	1	1	2	2	3	4	5	5	6	7	7	8	8	9	10	11
13	N/A	N/A	1	1	2	3	3	4	5	6	6	7	8	8	9	10	11	11
14	N/A	N/A	1	1	2	3	4	4	5	6	7	8	8	9	10	11	11	12
15	N/A	N/A	1	2	2	3	4	5	6	6	7	8	9	10	10	11	12	13
16	N/A	N/A	1	2	2	3	4	5	6	7	8	9	9	10	11	12	13	14
17	N/A	N/A	1	2	2	3	4	5	6	7	8	9	10	11	12	13	14	15
18	N/A	N/A	1	2	2	3	5	6	7	8	9	10	11	11	12	13	14	16
19	N/A	N/A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
20	N/A	N/A	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17
21	N/A	N/A	1	2	3	4	5	6	8	9	10	11	12	13	14	16	17	18
22	N/A	N/A	1	2	3	4	5	7	8	9	10	12	13	14	15	16	18	19
23	N/A	N/A	1	2	3	4	6	7	8	10	11	12	13	14	16	17	18	20
24	N/A	N/A	1	2	3	4	6	7	9	10	11	13	14	15	16	18	19	21
25	N/A	1	2	2	4	5	6	8	9	10	12	13	14	16	17	18	20	21
26	N/A	1	2	3	4	5	6	8	9	11	12	14	15	16	18	19	21	22
27	N/A	1	2	3	4	5	7	8	10	11	13	14	15	17	18	20	21	23
28	N/A	1	2	3	4	5	7	8	10	12	13	15	16	18	19	21	22	24
29	N/A	1	2	3	4	5	7	9	10	12	13	15	17	18	20	21	23	25
30	N/A	1	2	3	4	5	7	9	11	12	14	16	17	19	20	22	24	26

N/A: *Not Applicable*, meaning LQAS cannot be used in this assessment because the coverage is either too low or too high to assess an SA. This table assumes the lower threshold is 30 percentage points below the upper threshold.

: light-shaded cells indicate where *alpha* or *beta* errors are greater than or equal to 10%.

: dark-shaded cells indicate where *alpha* or *beta* errors are greater than 15%.

Source: Adapted from Management Sciences for Health (MSH) STAR-E LQAS, 2012

ANNEX 5: STUDENT'S t-DISTRIBUTION TABLE OF CRITICAL VALUES

t Table

cum. prob	$t_{.60}$	$t_{.75}$	$t_{.80}$	$t_{.85}$	$t_{.90}$	$t_{.95}$	$t_{.975}$	$t_{.99}$	$t_{.995}$	$t_{.999}$	$t_{.9995}$
one-tail	0.50	0.25	0.20	0.15	0.10	0.05	0.025	0.01	0.005	0.001	0.0005
two-tails	1.00	0.50	0.40	0.30	0.20	0.10	0.05	0.02	0.01	0.002	0.001
df											
1	0.000	1.000	1.376	1.963	3.078	6.314	12.71	31.82	63.66	318.31	636.62
2	0.000	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925	22.327	31.599
3	0.000	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.000	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.000	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.000	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.000	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.000	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.000	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	0.000	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.000	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.000	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.000	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.000	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.000	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.000	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.000	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.000	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	0.000	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.000	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.000	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.000	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.000	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.000	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.000	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.000	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.000	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.000	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.000	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.000	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.385	3.646
40	0.000	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.307	3.551
60	0.000	0.679	0.848	1.045	1.296	1.671	2.000	2.390	2.660	3.232	3.460
80	0.000	0.678	0.846	1.043	1.292	1.664	1.990	2.374	2.639	3.195	3.416
100	0.000	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.174	3.390
1000	0.000	0.675	0.842	1.037	1.282	1.646	1.962	2.330	2.581	3.098	3.300
z	0.000	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.090	3.291
	0%	50%	60%	70%	80%	90%	95%	98%	99%	99.8%	99.9%
	Confidence Level										

Source: Adapted from http://www.sjsu.edu/faculty/gerstman/StatPrimer/t-table.pdf

ANNEX 6: SUMMARY OF KEY INDICATORS

Category	Indicators	**n**	**Average Coverage**	**Decision Rule**	**Confidence Interval**	**Confidence Limits**
Indicators of Knowledge	Knowledge of 2 or more modern contraception methods	65	69.5	11	± 9	60.5 - 78.5
	Percentage of Adolescents with knowledge of 2 or more Sources of Modern Contraception	50	53.7	8	± 9.7	44 - 63.4
	Percentage of Adolescents with knowledge of 2 or more Ways of HIV Transmission	91	96.8	16	± 3.4	93.4 - 100
	Percentage of Adolescents with Knowledge of HIV Status	84	88.4	15	± 6.2	82.2 - 94.6
	Percentage of Adolescents with Knowledge of the two main Sexually Transmitted Infections (STIs)	66	70.5	12	± 8.9	61.6 - 79.4
Indicators of Attitudes	Percentage of Adolescents with Positive Attitudes towards HIV Positive Results and Friends	93	97.9	16	± 2.8	95.1 - 100
	Percentage of Adolescents with Positive Attitudes towards Abstinence and Premarital Sex	40	42.2	6	± 9.6	32.5 - 51.7
Indicators of Sexual and Reproductive Health Practice	Percentage of Adolescents who engaged in opposite Sex Relationships	79	83.2	14	±7.3	75.9 - 90.5
	Percentage of Adolescents who engaged in Sex	55	57.9	9	±9.6	48.3 - 67.5
	Average Age at First Sex	44	46.3	7	±9.7	36.6 - 56
	Percentage of Sexually Active Adolescents who Used Modern Contraception Method at Fist Sex	38	40	5	±9.6	30.4 – 49.6
	Percentage of Adolescents using Modern Contraception in Subsequent Sexual Experiences	46	48.4	7	±9.7	38.7 - 58.1
	Incidences of Pregnancy	11	11.6	N/A	± 6.2	5.4 - 17.8
	Incidences of Sexually Transmitted Infections (STIs)	19	20	1	±7.8	12.2 - 27.8
	Treatment for Sexually Transmitted Infections (STIs)	15	15.8	1	±7.1	8.7 - 22.9
	Sexual and Reproductive Health Care and Services Seeking Behaviour of Adolescents	61	64.2	10	±9.3	54.9 - 73.5