

**KNOWLEDGE, ATTITUDE, PRACTICES AND RISK PERCEPTION TOWARDS HIV  
AND AIDS PREVENTION AMONG SECONDARY SCHOOL STUDENTS IN GWASSI  
SOUTH WARD, HOMA BAY COUNTY, KENYA**

**BY**

**KENNEDY ODHIAMBO AKELLO**

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT FOR THE REQUIREMENTS  
OF THE DEGREE OF MASTER OF PUBLIC HEALTH  
(EPIDEMIOLOGY AND POPULATION HEALTH)**

**SCHOOL OF PUBLIC HEALTH AND COMMUNITY DEVELOPMENT**

**MASENO UNIVERSITY**

**©2022**

**DECLARATION**

**Declaration by the Candidate**

This project is my original work and has not been presented by any person in any university for the award of any degree.

**Kennedy Odhiambo Akello**

PG/MPH/06028/2012S

Sign..... Date.....

**Declaration by Supervisors**

This project has been submitted to School of Graduate Studies with our approval as the university supervisors.

**Dr. Japheths Ogendi, PhD**

Department of Public Health,  
Maseno University

Sign..... Date.....

**Dr. Collins O. Asweto, PhD**

Department of Community Health,  
University of Embu

Sign..... Date.....

## **ACKNOWLEDGEMENT**

I thank all the students who took part in this study. I also thank my supervisors Dr. Japheths Ogendi and Dr. Collins Asweto for their professional guidance and precise content review of this work.

Special thanks go to my family members for their moral and financial support during the implementation of this study including its write up.

## **DEDICATION**

To the Almighty God for making everything possible, my family, supervisors, friends, and Maseno University School of Public health that made my study successful.

## ABSTRACT

Approximately 1.5 million people were reported to be living with Human Immune-deficiency Virus (HIV) infection in Kenya by 2020. The prevalence of HIV and AIDS in Homa Bay County (19.6%) is 4.5 times higher than the national average (4.6%) and the highest nationally. By 2018, young people aged 15-24 years comprised 22% of the total number of people reported to be living with HIV in the County. Suba South sub-County, with a prevalence of 20%, is among the top three sub-counties in HIV prevalence in the County. The vision of Homa Bay County is "...a County with the highest possible standards of health, free from HIV, stigma and discrimination". However, there still exists a large proportion of young people living with HIV and AIDS in the county, and this was identified as important gap to be addressed by this study. Inadequate knowledge, negative attitudes and risky practices are major hindrances to preventing the spread of HIV. This study aimed to assess HIV-related Knowledge, Attitudes and Practices (KAPs) of high school students in Gwasssi South Ward, Suba South sub-County. Specific objectives included to determine the level of knowledge on, to establish the attitude on, to determine risk perception, to determine the practice towards HIV and AIDS prevention and to establish intervention strategies for HIV and AIDS prevention among students in secondary schools in Gwasssi South Ward, Suba South sub-County. A saturated (systematic random) sample of 260 students aged 13-20 years from all the 11 secondary schools in the ward took part in KAPs cross-sectional survey. Sample size was calculated based on probability proportional to size. A head teacher or health master from each of the 11 schools was purposively sampled and took part in key informants' interview about available strategies for HIV prevention. Data was analyzed using SPSS version 18.0. Descriptive statistics was used to assess knowledge, attitudes, and risk perception among the students in secondary schools. The mean age of the students was 17.2 (SD  $\pm$ 1.6), almost half (44%) were males, and 97% were Christians. Majority (64%) had moderate to high knowledge on HIV and AIDS, and: exhibited positive attitude towards HIV and AIDS (61.1%). A total 39 (15%) reported history of sexual intercourse with more than one partner six months pre-survey; 21.2% had engaged in sex without condom with non-regular sex partner; 25% had engaged in unprotected sex with someone of unknown HIV status, while 3.1% had practiced sex directly after intoxication with alcohol. There were intervention strategies on HIV and AIDS prevention among the secondary schools in Gwasssi South Ward. Level of knowledge was associated with attitude towards HIV and AIDS ( $p < 0.001$ ) as well as likelihood of having high risk sex practices ( $p < 0.001$ ). Respondents with negative attitude were 4 times as likely (OR = 3.93; 95% CI, 2.31 – 6.69,  $p < 0.001$ ) to express high risk sex practices as those with positive attitude toward HIV and AIDS. Knowledge and attitude of the students play a big role in their HIV risk perception as well as sex practices. Understanding knowledge, attitude, practice and intervention strategies of HIV and AIDS is significant in policy formulation by Ministries of Education, and leads to improved health-related practice by the Ministry of Health and researchers focusing on HIV and AIDS in high burden area.

## TABLE OF CONTENT

DECLARATION .....	ii
ACKNOWLEDGEMENT .....	iii
DEDICATION .....	iv
ABSTRACT .....	v
TABLE OF CONTENT .....	vi
LIST OF ABBREVIATION AND ACRONYMS .....	ix
DEFINITIONS OF OPERATIONAL TERMS .....	x
LIST OF TABLES .....	xi
LIST OF FIGURES .....	xii
<b>CHAPTER ONE: INTRODUCTION .....</b>	<b>1</b>
1.1 Background Information .....	1
1.2 Statement of the Problem .....	3
1.3 Significance of the Study .....	3
1.4 Objectives .....	4
1.4.1 Main Objective .....	4
1.4.2 Specific Objectives .....	4
1.4.3 Research Questions .....	4
1.5 Scope of the Study .....	5
<b>CHAPTER TWO: LITERATURE REVIEW .....</b>	<b>6</b>
2.1 Introduction .....	6
2.2 Review of Safe Sex Practices among Secondary Students .....	6
2.3 HIV and AIDS Knowledge and Safe Sex Practices .....	7
2.4 HIV and AIDS Attitudes and Safe Sex Practices .....	8
2.5 HIV and AIDS Risk Perceptions and Safe Sex Practices .....	9
2.6 Intervention Strategies .....	10
2.7 Theoretical Framework: Protection Motivational Theory .....	11
2.8 Health Belief Model Theory (HBM) .....	11
2.9 The Conceptual Framework .....	12
2.10 Summary of the Reviewed Literature and Research Gaps .....	13
2.11 Critique of the Reviewed Literature .....	14

<b>CHAPTER THREE: RESEARCH METHODS.....</b>	<b>15</b>
3.1 Introduction.....	15
3.2 Study Site .....	15
3.3 Study Design.....	18
3.4 Study Population.....	18
3.5 Inclusion and Exclusion Criteria.....	18
3.5.1 Inclusion Criteria .....	18
3.5.2 Exclusion Criteria .....	18
3.6 Sample Size Determination.....	18
3.7 Sampling Techniques.....	19
3.8 Study Duration .....	20
3.9 Data Collection Instruments .....	20
3.9.1 Questionnaires.....	20
3.9.2 Interview Schedule for Head Teachers .....	21
3.10 Instructions on Data Collection .....	21
3.11 Measurement of Variables .....	22
3.11.1 Independent variables .....	22
3.11.2 Dependent variable .....	22
3.12 Data Collection Procedures.....	22
3.13 Piloting of Study Tools .....	23
3.14 Data Handling and Management .....	23
3.15 Validity of research instruments .....	23
3.16 Data Analysis .....	24
3.17 Permissions and Ethical Considerations .....	25
<b>CHAPTER FOUR: RESULTS .....</b>	<b>26</b>
4.1 Introduction.....	26
4.2 Response Rate.....	26
4.3 Socio-demographic Characteristics .....	26
4.4 Knowledge on HIV and AIDS .....	27
4.4.1 Knowledge on HIV/AIDS transmission .....	27
4.4.2 Knowledge on HIV/AIDS prevention .....	28

4.4.3 Overall Knowledge on HIV and AIDS on Transmission routes and Prevention .....	29
4.5 Attitude .....	29
4.6 Association of knowledge about HIV and AIDS with attitude.....	30
4.7 Sex Practices .....	31
4.7.1 Association of Knowledge about HIV with Sex Practices .....	32
4.7.2 Association of attitude about HIV with Sex Practices.....	33
4.8 Strategies on HIV and AIDS.....	33
<b>CHAPTER FIVE: DISCUSSION.....</b>	<b>34</b>
5.1 Introduction.....	34
5.2 Socio-demographic characteristics of the respondents .....	34
5.3 Level of knowledge on HIV and AIDS toward safer sex practices .....	34
5.4 Attitude towards HIV and AIDS.....	35
5.5 Practices .....	35
5.6 Limitation of the study.....	36
<b>CHAPTER SIX .....</b>	<b>37</b>
<b>SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>37</b>
6.1 Introduction.....	37
6.2 Summary of Findings.....	37
6.3 Conclusions.....	38
6.4 Recommendations from the current study .....	38
6.5 Recommendation for further studies.....	38
<b>REFERENCES.....</b>	<b>39</b>
<b>APPENDICES .....</b>	<b>43</b>



## **LIST OF ABBREVIATION AND ACRONYMS**

<b>AIDS</b>	:	Acquired Immune Deficiency Syndrome
<b>HIV</b>	:	Human Immunodeficiency Virus
<b>KAP</b>	:	Knowledge-Attitude-Practice
<b>MUERC</b>	:	Maseno University Ethics Review Committee
<b>NACOSTI</b>	:	National Commission for Science Technology and Innovation
<b>NASCOP</b>	:	National AIDS and STI Control Program
<b>PLWHIV</b>	:	People Living with HIV
<b>PPS</b>	:	Probability Proportional to Size
<b>SGS</b>	:	School of Graduate Studies
<b>SPSS</b>	:	Statistical Package for Social Sciences
<b>UNAIDS</b>	:	United Nations Program on HIV and AIDS
<b>UNICEF</b>	:	United Nations Children’s Fund
<b>USAID</b>	:	United States Agency for International Development
<b>VCT</b>	:	Voluntary Counselling and Testing
<b>WHO</b>	:	World Health Organization

## DEFINITIONS OF OPERATIONAL TERMS

**KNOWLEDGE:** the acquisition, retention, and use of information or skills (Badran, 1995). In this study, knowledge refers to respondents' comprehension of the HIV and AIDS prevention necessary for keeping it under control. In this study, knowledge was assessed based on an 18-item questionnaire listed in appendix and which was borrowed from previous relevant research work on HIV knowledge.

**ATTITUDE:** Attitude is a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor (**Eagly and Chaiken, 1993**). In this study, attitude toward HIV and AIDS refers to any preconceived ideas about HIV and AIDS and its prevention, peoples' feelings/emotions towards aspects of HIV and AIDS and HIV and AIDS prevention, and the aptness to behave in particular ways about HIV and AIDS and its prevention and was operationally assessed based on a 17-item score questionnaire (Appendix II) that have been previously used to measure attitude. The scores of attitudes were categorized into two segments based on their mean and median score: negative attitude were those scoring less than mean scores for attitude, and; positive (those scoring equal and more than mean scores were classified).

**PRACTICE:** Practice was assessed based on response to an 8-item questionnaire. The items assessed whether the respondent had: sex with more than one person in the last 6 months; sex without a condom with someone; sex directly after consuming alcohol; sex in exchange for money or food; sex without a condom with someone whose HIV status was unknown; sex without a condom with someone who the respondent knew was HIV positive; sex with someone who is younger or older than him/her by 15 years by the respondent. Accordingly, those scoring less than median scores for practice were classified as "risky" practices, and those scoring equal, and more than median scores were classified as "safe" practices.

## LIST OF TABLES

Table 1: Probability Sampling in Schools based on Population in Gwasssi South Ward.....	22
Table 2: Response Rate.....	31
Table 3.1: Socio-demographic Information of the Respondents.....	32
Table 3.2 Knowledge about HIV/AIDS among secondary school students .....	34
Table 4 Knowledge on HIV and Safe Sex Practices .....	35
Table 5: HIV and AIDS Attitude.....	35
Table 6: HIV and AIDS Attitude Categorization .....	36
Table 7: Association of knowledge about HIV and AIDS with Attitude.....	37
Table 8: Sex Practices of the Respondents.....	37
Table 9: Association of knowledge about HIV with Sex Practices.....	39
Table 10: Association of Attitude about HIV with Sex Practices.....	39

**LIST OF FIGURES**

Figure 1: The Conceptual Framework (*modified KAP-O Framework adopted for this study*)....13

Figure 2: Map showing location of Gwassi South Ward.....16

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background Information**

Globally, approximately 1.1 million had died due to Human Immune-deficiency Virus (HIV) and acquired Immune Deficiency Syndrome (AIDS) while 36.7 million people were reported to be living with the disease, by 2015 (World Health Organization, 2016). Sub-Saharan Africa region accounts for a disproportionate (71%) of the global HIV burden although the region's proportion of the global population is only 12%. Eastern and southern Africa were reported to account for 43% of the global total of new HIV infections in 2016.

Kenya is amongst the ten countries, mostly in southern and eastern Africa, viz. South Africa (25%), Nigeria (13%), Mozambique (6%), Uganda (6%), Tanzania (6%), Zambia (4%), Zimbabwe (6%), Kenya (6%), Malawi (4%) and Ethiopia (3%), that account for about 80% of all people living with HIV in Sub-Saharan Africa

Approximately 1.5 million people were reported to be living with HIV infection in Kenya by the year 2015 (Ministry of Health, 2016). HIV and AIDS also contributes to a sizeable health and economic burden in Kenya. For example, HIV and AIDS accounts for an estimated 29% of annual mortality amongst adults; 20% of maternal mortality, and; 15% of deaths of children under the age of five years, and also affects the economy adversely (Ministry of Health, 2016).

The Global Youth Wellbeing Index, which includes the component of health, reveals that 85% of youth (age 10 to 24) in the 30 countries sampled, report low levels of overall well-being (Center for Strategic & International Studies, 2014). HIV and AIDS is one of the health problems that disproportionately affects the youth. For example, HIV mortality is reported to be increasing in the adolescent age category, even though in other sub-populations, HIV mortality has shown downward trend (Berker, Johnson, Wallace, & Hosen, 2015). Of the four million young people aged 15 to 24 living with HIV globally, 29% are adolescents aged 15 to 19 (Joint United Nations Programme on HIV/AIDS (UNAIDS), 2014). While the number of AIDS-related deaths decreased by 30% for all ages between 2005 and 2012, a 50% increase was realized among adolescents in that same period. Similarly, two-thirds of new HIV infections in 2012 occurred among youth aged 15 to 24 (United Nations Children's Fund, 2013). The increase in HIV deaths in the adolescent age category has occurred mainly in the African region, resulting in AIDS

being the leading cause of deaths among adolescents in Africa, and the second leading cause for deaths amongst adolescents worldwide (World Health Organization, 2014). In Kenya, Homa Bay County is the leading County nationally in HIV prevalence. The HIV prevalence of 19.6% in the county in 2018 was 4 times higher than the national HIV average prevalence of 4.9% (Achia et al., 2022). The County is also the second leading nationally, in terms of the number of people living with AIDS and contributed 10.4% of the total number of people living with HIV in Kenya by the end of 2015, 22% of which were young people aged 15-24 years and 6% being children under the age of 15 years (Mandiwa, Namondwe, & Munthali, 2021).

The Vision indicated in the First Homa Bay County Multi-Sectoral Aids Strategic Plan is “A County with the highest possible standards of health, in a gender sensitive environment, free from HIV, stigma and discrimination” and with a Mission “to design and provide integrated, devolved, rights-based, evidence-informed and cost-effective HIV interventions and services that ensure timely HIV interventions”. However, high drop-out rate out of learning institutions by young girls and boys to engage in manual work and early marriage have been identified as some of the gaps to be addressed in HIV programming in the County (County Government of Homa Bay, 2013b). There has also been concern about the knowledge, attitude, practice and risk perception amongst the youth in Suba sub County by the sub-County health authorities.(Otieno, Karanja, & Kagira, 2018)

Previous studies amongst the youth , pointed out that condom use was low among the youth and adolescents and that the youth still held myths and misconceptions about HIV and AIDS (Wairimu, 2014). It was also shown that young people continue to accept favors such as gifts in exchange of sex due to their poor risk perception of contracting the disease (Ithibu, 2015). These studies, however, were conducted in urban settings of the country.

Gwassi being greatly inaccessible due to poor geographical terrains and poor roads remain cut off from information and hence adolescents and youth bear the burden of information access. Previous studies conducted in Gwassi reveal that adolescents lack accurate information or knowledge on HIV and AIDS. Their sexual behaviors and social conditions also expose them to the risk of acquiring HIV and AIDS (Ooyi, 2015).

The main objective of this study was to assess HIV and AIDS knowledge, risk perception, and attitudes toward safer sex practices among students enrolled in secondary schools in Gwassu South Ward in Suba South sub-County of Homa Bay County. Suba South sub-County is amongst the top three leading sub-Counties in terms of HIV prevalence (NASCO, 2015). The study was based in Gwassu South Ward which is one of the four (4) administrative wards in the sub-County.

Understanding the knowledge, attitude and sexual practice among the secondary school students is significant because the various developmental, psychological, social, and structural transitions that converge in this period of the lifespan render the sub-population more vulnerable to HIV (Berker et al., 2015). Furthermore, young people are the world's greatest resource (Berker et al., 2015). Reaching adolescents is very crucial for public health strategies aimed at HIV prevention and decreasing HIV-related deaths.

### **1.2 Statement of the Problem**

The Global Youth Wellbeing Index reveals that 85% of youth (aged 10 to 24) report low levels of overall well-being (Center for Strategic & International Studies, 2014). HIV and AIDS is one of the health challenges that disproportionately affect the youth. HIV mortality is reported to be increasing in the adolescent age category, even though decrease in HIV deaths have been observed in other subpopulations (Berker et al., 2015).

Being a difficult-to-access rural set up with poor road networks, poor terrains and high HIV prevalence, and a vast key population network (fisherfolk), adolescents are faced with challenges of accessing accurate information on HIV and AIDS prevention (Ooyi, 2015) and practicing responsible living (Odongo, 2018).

### **1.3 Significance of the Study**

Understanding the knowledge and attitude about HIV and sexual practice among this subpopulation is of importance because of comparatively their higher vulnerability to HIV. Study findings on the level of knowledge on HIV and AIDS are important to practitioners in health promotion targeting this age bracket for HIV and AIDS prevention and control strategies. Findings on attitude and risk perception to HIV and AIDS and sexual practices do inform implementation of behavior change through the school health programs. It adds to available

information on knowledge, attitude, and risk perception towards HIV prevention for similar populations such as this one on the shores of Lake Victoria.

## **1.4 Objectives**

### **1.4.1 Main Objective**

To assess the knowledge, attitude and practice towards HIV and AIDS prevention among students enrolled in secondary schools in Gwasssi South Ward. Gwasssi ward is a rural community located in high HIV burden area around Lake Victoria, Kenya and to assess the HIV and AIDS intervention strategies by the secondary schools.

### **1.4.2 Specific Objectives**

- i. To determine the level of knowledge on HIV and AIDS toward safer sex practices among secondary school students in Gwasssi South ward in Suba South sub-County.
- ii. To establish attitudes on HIV and AIDS towards safe sex practices among students in Secondary Schools in Gwasssi South Ward in Suba South sub-County.
- iii. To determine sexual practice in relation to HIV and AIDS among secondary school students in Gwasssi South Ward in Suba South sub-County.
- iv. To establish intervention strategies on HIV and AIDS by secondary schools in Gwasssi South Ward in Suba South sub-County.

### **1.4.3 Research Questions**

The study sought to answer the following research questions:

- i. What is the level of knowledge on HIV and AIDS toward safer sex practices among secondary school students in Gwasssi South ward in Suba South sub-County?
- ii. What are the attitudes on HIV and AIDS towards safer sex practices among students in Secondary Schools in Gwasssi South ward in Suba South sub-County?
- iii. What are the sexual practices in relation to HIV and AIDS among secondary school students in Gwasssi South ward in Suba South sub-County?
- iv. What are the intervention strategies on HIV and AIDS by secondary schools in Gwasssi South Ward in Suba South sub-County?



### **1.5 Scope of the Study**

This study was confined to assessing knowledge, attitude, practice towards HIV and AIDs prevention among secondary students enrolled in Gwasssi South Ward in Suba South sub-County by conducting a cross-sectional study using questionnaire to gather information. It also assessed the HIV and AIDS intervention strategies by the schools by gathering information from the school heads during the study period.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Literature studies have been conducted in the past by a number of scholars. Their scholarly work highlights have been covered in this chapter. The chapter takes a close look into the reviews of different authors on their study on an assessment of HIV and AIDS-related knowledge, risk perception, and attitudes toward safer sex practices. The theoretical and conceptual frameworks have been provided in this chapter. The summary of the literature has also been covered in this chapter including the gaps in the research work.

#### **2.2 Review of Safe Sex Practices among Secondary Students**

Kenya remains to be the leading country across the sub-Saharan Africa where the number of schools going children who get pregnant is still high. It has also been ranked among the top countries where school going students get infected with HIV and AIDS (Johnson- Peretz et al., 2022). This is because many of the school going children are still grappling with the simple understanding of what it means to practice safe sex. The concept of safe sex practices includes either abstaining from sexual practices or using a condom in the case of having sex. As a result, the number of students who become part of the statistics on new infections, early pregnancies and sexually transmitted diseases continue to skyrocket. The closest association to this problem is having unprotected sex or even engaging in sexual activities with many partners. A report that was released by World Relief Program indicates a shocking statistic of 10% HIV prevalence among youths who are sexually active (Leval, Sundström, Ploner, Dahlström, Widmark & Sparén, 2011). Therefore, in case the same group of youths have multiple partners, it means the problem could be worse than what the report indicated.

The process of educating adolescents and young people on issues regarding safe sex practices has been carried out in schools and other programs within the religious settings (Oladepo & Fayemi, 2011; Samuel & Baridah, 2020). However, there is a doubt on how effective the programs are because they still seem to have no effect. This is because by the age of 17 years, almost half of the school going students are already engaging in sexual activities. Therefore, the problem of new HIV infections, early pregnancies and sexually transmitted diseases continues to worsen. It would be easy to conclude that the adolescents and young people may be engaging in

unsafe sexual practices because they lack the necessary knowledge. It is also possible to have other youths assuming that their sexual practices are safe, yet they are not. This could be due to misconceptions on what it means to have safe sex. As a result, it is important to carry out campaigns that are based on easy-to-understand facts and straightforward information.

Students get information regarding safe sex practices from a variety of sources (Herdiman, Lindayani, & Darmawati, 2021; Ugarte, Högberg, Valladares, & Essén, 2013). The sources could include their peers, social media, television or even magazines. However, some of the sources such as their peers could be inaccurate and misleading. It is thus important to carry out peer-led campaigns that will target students in terms of knowing what they already know and correcting information the students may already have. School going youth are struggling with education regarding their reproductive system, puberty, and the risk of getting HIV infection. Others are still having construed beliefs on the kind of marriage they would like to have in future. Issues of love and commitment also play a major role in the kind of sexual behaviors the youths will engage in. Family background, media and cultural beliefs are some of the factors that will lead to safe or unsafe sex. Youth who are already practicing unsafe sex will need to be educated on how they can stop the habit or start having safe sex practices.

### **2.3 HIV and AIDS Knowledge and Safe Sex Practices**

The number of youths who engage in unsafe sex practices with a full knowledge of the ways they could use to protect themselves is still high. Although there are a number of youths who still have misconceptions on how they can protect themselves, it still remains evident that a good number of them are fully aware. It is also clear that some students still don't have full understanding of the facts around the HIV and AIDS virus and if there is a cure for the disease. Due to family background and lack of proper training, the youths may have distorted information regarding the use of condoms (Oladepo & Fayemi, 2011; Samuel & Baridah, 2020). The knowledge about HIV and AIDS also could require some prerequisite information a person should have about their sexual partners. This is because a high percentage of the youths have not visited a voluntary counseling and testing centre (VCT) for counseling and testing. For those who have multiple sexual partners, they lack the knowledge on the kind of havoc they can attract into their lives when one of the sexual partners is infected with HIV.

The sexual behaviors among the youth seem to be motivated by misconceptions and not factual information (Herdiman et al., 2021). Young people have misconceptions regarding the use of condoms. A section of the young people tends to argue that using condoms makes sex less enjoyable. Therefore, rather than focusing on using it to protect themselves from infections, they tend to engage in unsafe sex. Others still have inadequate knowledge regarding sexual partners. Females are mostly affected because their sexual partner could be living far from them and they only come occasionally to have sex. Lack of adequate knowledge regarding the need to be tested after a certain period of time is also common among young people. This is because they feel they trust their sexual partners and therefore don't need to have them tested to know their HIV status. Another practices pointing towards inadequate knowledge about safe sex includes their engagement in sex with married women or men. Reports have indicated females to be highly affected by the trend of having sexual affairs with men who are already married. Although the man may seem to have money and other luxurious materials a young girl could desire, the man already has another sexual partner, usually a main partner or the wife, whom the girl most likely doesn't know their HIV status.

#### **2.4 HIV and AIDS Attitudes and Safe Sex Practices**

Young people lack a healthy attitude towards safer sex practices. The number of HIV infections have increased over the years due to their way of thinking. The thinking has been cultivated over many years and it affects how they perceive the infection plus their way of engagement into safer sex practices(Gu et al., 2021). The attitudes could be built based on fear or curiosity. In the process, a person could have a distorted kind of perception on what it means to have safer sex practices. In some cases, young people believe that having a single sex partner would make them safe. Others believe a virgin girl would be the solution to having safer sex. However, all the attitudes and ways of thinking have been distorted because they are based on the wrong foundations. When young people meet at a social gathering, they throw away the care they would have exercised in the process of ensuring they remain safe while engaging in sex (Fay et al., 2011; Mkhonta et al., 2019). This is because they perceive a time sex encounter to be safer than a daily or weekly experience with one person.

According to (Mkhonta et al., 2019; Perdoman & Fitriana, 2021) the negative attitudes that affect the kind of safer sex practices that youths engage in are motivated by curiosity and negligence.

Youths who are in the habit of exploring in terms of having multiple sex partners will have an attitude that gives them the energy to go beyond the set limits. They will engage sexually with older women or men or even strangers in the club. This has remained a trend that is observed especially among school-going children. Others still perceive sexual activity as a way of trying out if their bodies are working right. When they think of marriage, they desire to have a 'test ride' just to prove that they are sexually active (Perdoman & Fitriana, 2021). The fear that someone may be barren or impotent motivates them to take a reckless attitude and thus engage in unsafe sex practices. In some cases, the young people also feel that safe sex practice should apply only to people who are in marriage. They argue that the period when they are not in marriage is a time to explore and engage in all ways with the kinds of things they may not enjoy once they get married. In other cases, unsafe sex practices are motivated by the desire to look for a life partner who can truly love them.

## **2.5 HIV and AIDS Risk Perceptions and Safe Sex Practices**

HIV and AIDS has continued to be a national crisis because of poor risk perception. The risk perception indicates how a person perceives the risk (Sallar, 2009). When it comes to HIV and AIDS, many young people engage in unsafe sexual practices due to their perceived link that they have no chances of contracting the infection (Luseno et al., 2021). Even when they are fully aware they have no details about the sexual or health background of a person, they still proceed and engage in unprotected sex. Others meet for the first-time during picnics or other forms of outings like clubs and they engage in sexual activities not considering they have a high risk of getting the infection. However, upon weighing the pleasure they will have with a new sexual partner and the risk of getting infected, they opt to experience the new feeling with a new partner. This is because they may have mistaken parameters upon which to weigh if a person is infected or not. If the person looks healthy and strong, they believe such a sexual partner would be safe although they are not sure.

Young people who have been engaging in sexual activities with strangers and still do not get the infection, end up lowering their perception of risk. Due to familiarity, they start believing that any kind of person is fit to be a sexual partner. Therefore, it is important to know that risk perception is evident in several ways. Others still engage in sex because they have known the person since they were young (Luseno et al., 2021). Others consider the beauty and

handsomeness and thus consider the person to be fit to be a safe sex partner. However, the kind of risk perception a person has while engaging in unsafe sexual practices are hinged on the background a young person has had or grown in. Those who come from an environment where due consideration is made before taking a stranger as a sexual partner will hardly engage in unsafe sexual practices.

According to (Luseno et al., 2021) a section of young people believes the risk of getting the infection is high when a person gets a prostitute unlike when they engage with a friend or classmate. This kind perception makes a student to feel safe while engaging in sexual activities with classmates. In this case, the kind of risk perception is distorted because anybody can be a source of the risk of HIV infection. This kind of perception is seen to distract many young people from the path of following information. In many cases, young people also argue that having a single sexual partner for a long time and exercising faithfulness is a sure way of locking out the infection. In this case, many young people end up getting infected because they trusted someone who was not trustworthy (Hornschuh, Dietrich, Tshabalala, & Laher, 2017). Both in urban and rural settings, the youth continue to be in danger of getting infected simply because they have poor perception regarding the risk of getting HIV infection.

## **2.6 Intervention Strategies**

The government of Kenya rolled out HIV prevention curriculum for primary and secondary schools. Few schools are currently implementing HIV prevention curriculum as a strategy to prevent the spread of the pandemic (Duflo, Dupas, & Kremer, 2006). Availability of HIV prevention strategies in learning institutions is a very important approach to HIV prevention since it is in these institutions where adolescents and young adults spend most of their time. Such intervention strategies must therefore take into account peer-to-peer influence and networks as these too are a huge recipe for behavior change (Hosek & Pettifor, 2019). Adolescents and youth living with HIV are a disproportionately vulnerable population owing to challenges around adherence, disclosure of HIV status and stigma. Providing school-based support to such and other key populations offers an opportunity not only to optimize their health and wellbeing but also to reduce the rates of HIV transmission to their peers (Kose et al., 2021).

Research has shown that school-based interventions to optimize care and treatment support for AYHIV are feasible and contribute to advancing sexual and reproductive health within schools.

Nevertheless, such interventions are few and there is anecdotal evidence of their implementation as well as impact in Homa Bay County (Ruria et al., 2017).

### **2.7 Theoretical Framework: Protection Motivational Theory**

The study will be based on protection motivational theory that was coined in 1975 by Rogers. The theory states that people will protect themselves depending on the severity that is perceived in a certain event. The perceived probability of the occurrence of an event will also affect the level at which a person will avoid it. Preventive behavior and self-efficacy in handling the situation also affects the way in which people will protect themselves or avoid an incidence (Khumsaen & Stephenson, 2017). A person will thus assess how severe the situation is and how they can respond in such a given situation. It is a theory that explains why people will engage in a certain unhealthy behavior. When a person has perceived that a given situation could be worse than they can handle, they will withdraw. However, if they weigh their efficacy and self-efficacy, and ascertain that they can handle the situation and even manage the negative outcomes, they will definitely engage in the act.

The theory explains how people respond during stressful events in life. Everyone wants to keep themselves safe and thus when they realize certain habits will lead to consequences that are beyond their coping skills, they will tend to avoid the event absolutely. On the other hand, when a person perceives that they can't overcome the outcome, they will hesitate to engage in the incidence (Sutton, Hardnett, Wright, Wahi, Pathak, Warren-Jeanpiere & Jones, 2011). The theory is used to explain different scenarios in the health sector. This is because people will take a drug or engage in a behavior that is not consistent with the normal behavior when they perceive that the outcome is manageable. The result is that someone people are not able to measure exactly what they can manage. This means the end result will be emergence of health issues among people from sources they could easily manage. It also explains what makes people to feel motivated to change their behavior in order to avoid a certain set of risks.

### **2.8 Health Belief Model Theory (HBM)**

The study will also be based on the health belief model theory that was developed in 1950s. It was coined by a group of sociopsychologists in the United States Public Health Service. The theory has been used over decades to promote better health practices to be embraced by people especially those who are vulnerable to a certain infection (Jeihooni et al., 2018). The theory has

been used to campaign for condom use as one of the behaviors people may overlook. Other behaviors it is used to address include use of safety belts while driving, health screening and compliance with medical standards. In this regard, a person will take a certain step if there is a chance to avoid the negative health condition upon taking the recommended steps. It also works perfectly well if there is a positive expectation such as using condoms in order to keep off HIV and AIDS (Jeihooni et al., 2018). The other consideration in this theory is that the person who is to take the action should feel capable of taking the action recommended.

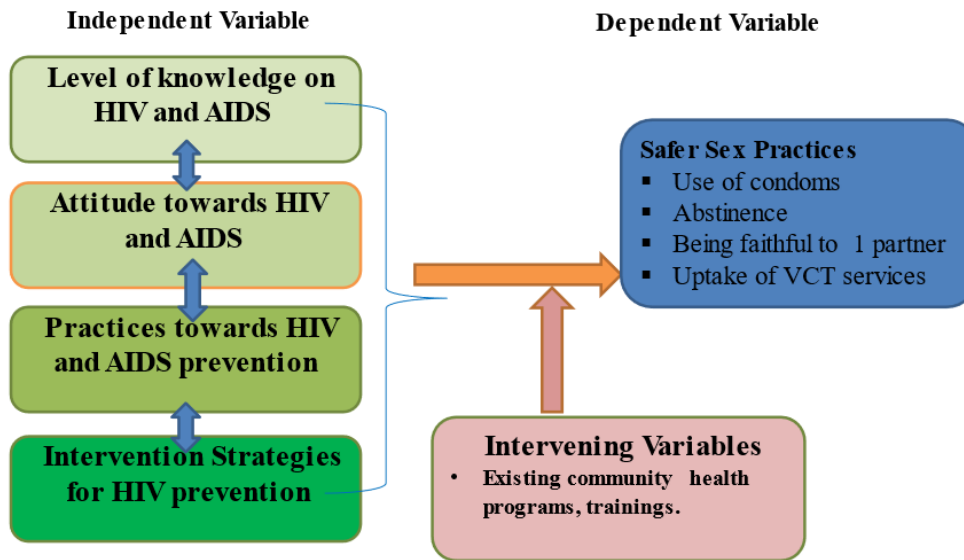
When the theory was first coined, the aim was to explain why few people were participating in the different health programs, yet they had diseases that were critical. As a result, the United States social psychologists discovered that people did not understand why they were doing what they were doing. As a result, they started a campaign to help people understand the dangers they were facing if they did not come for screening or continued to engage in certain activities (Leval, Sundström, Ploner, Dahlström, Widmark & Sparén, 2011). The campaign turned out to be a big success and it has remained one of the highly quoted theories in the medical world. The health belief model is used to encourage people to embrace a certain set of actions in order to avoid a certain health condition. The theory is hinged on four pillars including perceived benefits, perceived susceptibility, perceived severity, and perceived barriers. As such the patients or the general public started acting in a way in line with the model that was designed in the theory. The theory has thus been quoted as one of the successful models that changed the lives of many people by changing their perceptions about healthy actions, they can take to prevent a certain given outcome.

## **2.9 The Conceptual Framework**

It is assumed that knowledge, attitude, and practice are related, and that knowledge and attitude directly influence preventive practice (Ibrahim, Sanda, & Al-Sadique, 2019). Surveys are used to measure what individuals know about the disease/phenomenon. Attitude instruments measure the feelings and beliefs of respondents about the disease/phenomenon, and information on preventive behaviors that individuals follow to avoid a disease/phenomenon (Ibrahim et al., 2019).



# Conceptual framework



10/30/2022 2:19 PM

Source: Rav-Marathe *et al.*, 2016

10

**Figure 1: The Conceptual Framework (modified KAP-O Framework adopted for this study).**

(Source: Rav-Marathe *et al.*, 2016)

## 2.10 Summary of the Reviewed Literature and Research Gaps

The available literature has revealed that a high number of young people engage in unsafe sex practices across the world. The trends of unsafe sex practices are more common among adolescents. Secondary school students are found to be more vulnerable to the unsafe sex practices because they are less informed and therefore are exploited by people who knew they were a common target. Their peers take advantage of their age and induce them into having sexual relations with them. It is also common for them to be fooled that they cannot contract HIV and AIDS due to different ungrounded reasons. The studies have implied that there is need for secondary students to take due care as they could end up heightening the current crisis thereby skyrocketing number of new infections among teenagers. However, the review has revealed research gaps.

A study by Wairimu (2014), on knowledge, attitudes, and practices on prevention of HIV and AIDS did little to address the issue of safer sex practices. The study also did not address the issue

of risk perception among teenagers. Further still the study did not identify the knowledge, risk perception and attitude specifically for secondary students in embracing safer sex practices. On the other hand, Ithibu (2015), conducted a study to show the determinants of HIV and AIDS knowledge, risk perception and condom use. The study however, failed to critically address the attitudes towards HIV and AIDS. Baytner-Zamir, Lorber and Hermoni (2014), carried out a study on assessment of the knowledge and attitudes regarding HIV and AIDS among pre-clinical medical students in Israel. The study found that new infections were high in the category of men who had sex with men. However, it failed to address the risk perception, a context that would fit in a secondary school. These are the research and knowledge gaps which this study seeks to address.

### **2.11 Critique of the Reviewed Literature**

Ithibu (2015), carried out a study on determinants of HIV and AIDS knowledge, risk perception and condom use. The study indicated that there was a low-risk perception among young people who would receive gifts in exchange of sexual favors. The study, however, did not address the attitudes of the young people and how it was related to the safe sex practices they engaged in. It also did not reveal the relationship between the knowledge and risk perception to safe sex practices. Similarly, a study on knowledge, attitudes and practices regarding HIV and AIDS among male high school students in Lao People's Democratic Republic. The study revealed that there were negative attitudes among the high school students and that they still thrived on misconceptions while making decisions on sexual practices (Thongmixay et al., 2019). However, the study did little to address the issue of safer sex practices. Cognizant of these findings, Wairimu (2014), conducted a study on knowledge, attitudes and practices concerning HIV and AIDS prevention among youth in Eastleigh region in Nairobi County. The study revealed that there were differences between the male and female in their responses on knowledge, attitudes and practices concerning HIV and AIDS prevention. The study further found that males were more informed than females in the case of knowledge, attitudes and practices concerning HIV and AIDS prevention. However, the study did little to show how the knowledge, attitudes and practices concerning HIV and AIDS prevention were linked to safer sex practices. However, there is no empirical data to show the assessment of HIV and AIDS knowledge, risk perception, and attitudes toward safer sex practices hence the research gap.

## **CHAPTER THREE**

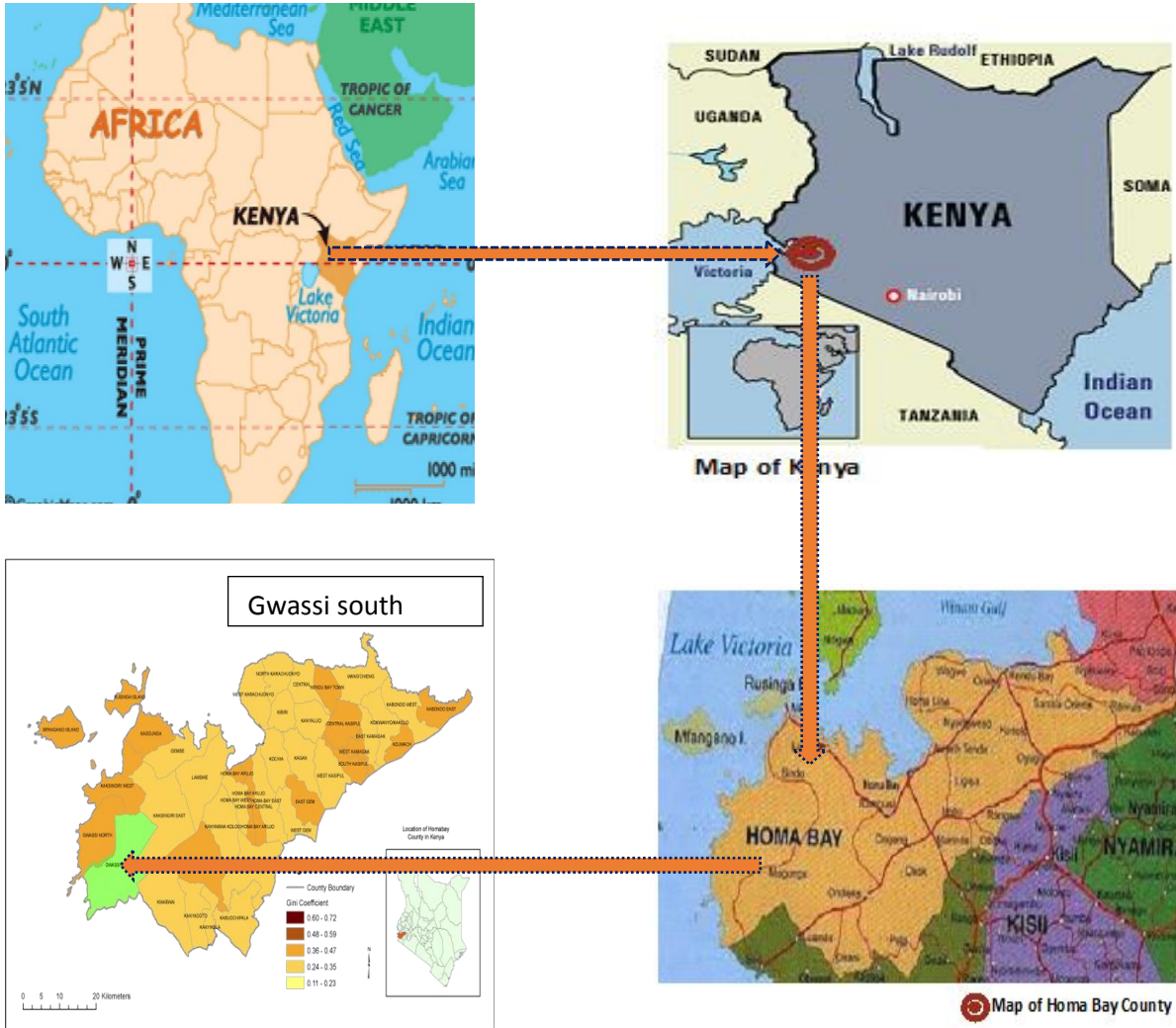
### **RESEARCH METHODS**

#### **3.1 Introduction**

This chapter presents the research methodology that was used in this study. It describes the site, population, procedures, duration, measurement of variables as well as ethical considerations for this study.

#### **3.2 Study Site**

The study was conducted in Gwassii South ward of Suba South sub-County in Homa Bay County. Homa Bay County covers an area of 4,267.1 Km<sup>2</sup> inclusive of the water surface and lies between latitude 0°15' South and 0°52' South, and between longitudes 34° East and 35° East (County Government of Homa Bay, 2013a). The county is located in South Western Kenya along Lake Victoria and borders Kisumu and Siaya counties to the North, Kisii and Nyamira counties to the East, Migori County to the South and Lake Victoria and the Republic of Uganda to the West (County Government of Homa Bay, 2013a). Homa Bay County had an estimated population of 1,038,858 persons by the end of the year 2012 was projected to rise to 1,177,181 persons in 2017. Young persons aged between 15 to 24 years has been projected to comprise 23% of this population by 2027 (Kenya Population Census 2019). Those in the 'secondary school age group', (14 to 17 years), comprised a total of 102,388 people, representing 9.8 per cent of the total population of the county. This age group was projected to rise to 113,730 people by 2017 according to 2012 population projections (County Government of Homa Bay, 2013a).



**Figure 3.1: Map showing location of Gwassi South Ward**

Malaria is the leading cause of morbidity and mortality in Homa Bay County (County Government of Homa Bay, 2013a). Other important causes of morbidity and mortality are (County Government of Homa Bay, 2013a): Upper Respiratory Tract Infection (15%); diarrhea (11%); Pneumonia (10%), and skin diseases (10%). The prevalence of diseases such as pneumonia, meningitis, and tuberculosis are reported to be on the rise; 30 per cent of these diseases are documented to be linked to HIV and AIDS (County Government of Homa Bay, 2013a).

Homa Bay County is the leading County nationally in HIV prevalence. In 2015, the prevalence of HIV was 4.5 times higher than the national average prevalence (26.0% versus 5% for Homa Bay County and national average, respectively) (Ministry of Health, 2016). Homa Bay County is

also ranked the second leading County nationally in the number of people living with AIDS. Latest report indicates that the County is amongst the top five Counties with new HIV infection of 0.26% (NAS COP REPORT 2018). By the end of 2015 a disproportionate number, 158,077(10.4%) of the total number of people living with HIV in Kenya, was from the County. Of these, 22% were young people aged 15-24 years (Ministry of Health, 2016).

The Vision of Homa Bay County which is stated in the First Homa Bay County Multisectoral Aids Strategic Plan is “A County with the highest possible standards of health, in a gender sensitive environment, free from HIV, stigma and discrimination” (County Government of Homa Bay, 2013b). The County states its Mission, aligned to Kenya’s Vision 2030 (Republic of Kenya, 2007), is to “to design and provide integrated, devolved, rights-based, evidence-informed and cost-effective HIV interventions and services that ensure timely HIV interventions” (County Government of Homa Bay, 2013b). However, high drop-out rate in learning institutions by young girls and men to engage in early manual employments and marriage have been identified as the gaps in HIV programming in the County (County Government of Homa Bay, 2013b).

Suba South sub-County is one of the eight sub-counties that comprise Homa Bay County, namely (County Government of Homa Bay, 2013a): Kabondo/Kasipul, Kasipul, Karachuonyo, Homa Bay Town, Ndhiwa, Rangwe, Suba North (formerly Mbita) and Suba South (formerly Gwassi). It has an area of 634.1 km<sup>2</sup> and is the second largest sub-County in Homa Bay County, after Ndhiwa (711.4 km square) (Republic of Kenya, 2013). Suba South sub-County is the least densely populated sub-County in the County (Republic of Kenya, 2013). It is estimated to have a total population of 122, 383 with a density of 193 persons per square kilometer living in a total 27,769 households (Kenya Population Census 2019).

The first geospatial analysis of HIV epidemics in Homa Bay County conducted in 2014 (NAS COP, 2015) indicates that Suba South sub-County was the third leading sub-County in HIV prevalence (20%), after Mbita and Rangwe with prevalence of 23%) and 22%, respectively. Data obtained from the local sources, however, indicate that the sub-County had the highest school dropout rate in the County.

Gwasssi South is one of the five administrative wards in Suba South sub-County, namely (Republic of Kenya, 2013): Gwasssi South, Gwasssi North, Kaksingri West, Ruma and Kaksingri East. Gwasssi South Ward borders Migori County to the South, Lake Victoria to the West and Gwasssi North to the North.

### **3.3 Study Design**

This was a cross-sectional study in which structured questionnaires were used to collect data on knowledge, attitude and practice towards HIV and AIDS prevention among secondary students enrolled in schools in Gwasssi South Ward. Qualitative data was collected among head teachers/health masters using Key Informant Interview guide.

### **3.4 Study Population**

The study population is comprised of students enrolled in secondary schools in Gwasssi South Ward, during the study period and principals and teachers charged with the responsibility of students' health in the sampled schools.

### **3.5 Inclusion and Exclusion Criteria**

#### **3.5.1 Inclusion Criteria**

- i) Secondary school students in Gwasssi South Ward, Homa Bay County.
- ii) Willing to volunteer into the study and able to provide written informed consent/assent.

#### **3.5.2 Exclusion Criteria**

- i) Not able to provide assent/consent or is likely to, in way, interfere with integrity of data being collected.

The key informants were needed to have worked and/or stayed in their current school/workstation for at least 3 months prior to this study.

### **3.6 Sample Size Determination**

The sample design of this study was calculated based on (Cochran, 1963):  $n = z^2 pq / d^2$

Where;

**n** = desired sample size,

**z** = standard normal deviate at the required confidence level,

**d** = the margin of error allowed, which is 5% in this survey (0.05), or degree of accuracy desired is 95%,

**p** = proportion of the target population or estimated characteristics being measured (0.23),

**q** = estimated characteristics not being measured (1-0.5 = 0.5)

Substituting,

$$\begin{aligned} &= (1.96)^2 (0.23) (0.77)/0.05^2 \\ &= 272 \end{aligned}$$

Because the population is less than 10,000, the formula below is applied:

$$nf = n/[1+(n/N)],$$

Where,

**nf** = the desired sample size when the population is less than 10,000,

**n** = the desired sample size when the population is more than 10,000,

**N**=Target population (which is 6400, the total number of students in the Gwasssi South Ward during the study period).

Substituting,

$$\begin{aligned} &= 272/ (1+(272/6400)) \\ &= 260 \end{aligned}$$

In order to cater for non-response, 10% of 260 (which is 26) were added to 260 making the final sample size proposed to be 286.

### 3.7 Sampling Techniques

Sampling of participants in secondary schools in Gwasssi South ward was conducted according to probability proportional to size (PPS) (Brewer, 2013). This is a technique, in which the probability of selection for each sampling unit in the population is proportional to an auxiliary variable (Thomas et al., 2002). This sampling technique is used in survey research when the sampling units vary in size or in other important aspects that the researchers want to take into account in the sample design (Makela, Si, & Gelman, 2018), as indicated in table 3.1 below. In each school, systematic random method was used to get the desired number of participants.

**Table 3.1: Probability Sampling based on Population of secondary students in Gwassi South ward; October 2019**

No	School	Number of students per school*	Proportion of total (%)	No. Sampled (n)
1	God Oloo	601	9	26
2	God Bura	650	10	29
3	Homa Secondary	550	9	26
4	Kagoro Girls	652	10	29
5	Kiabuya	550	9	26
6	Kigoto Secondary	599	9	26
7	Magunga	647	10	29
8	Nyatemi	498	8	23
9	Olando	551	9	26
10	Seka	502	8	23
11	Wiga Secondary	600	9	26
<b>TOTAL</b>		<b>6400</b>	<b>100</b>	<b>286</b>

*\*Population of schools as provided by the respective Head Teachers and verified against school records to ensure correctness prior to survey.*

Gwassi South Ward was randomly picked for this study. Five similar papers were marked with the names of all the five Wards in Suba Sub County. They were put in a small basket and shaken to ensure that they were thoroughly mixed up. One person who was not involved in writing the names was told to pick one paper. That picked ward would be the ward in which the study would be conducted and it's Gwassi South Ward that was picked.

### **3.8 Study Duration**

This was a cross-sectional study in which data was collected only at one time-point. The study took a total of two months. Mapping of the schools and overall community engagement took one month while the actual data collection process lasted 1 month.

### **3.9 Data Collection Instruments**

This study used a questionnaire to gather data from students (Appendices II & III).

#### **3.9.1 Questionnaires**

The main objective of the questionnaire was to obtain information on the level of HIV and AIDS-related knowledge, attitude, and practices of the secondary school students in the ward. The questionnaire used in the study was developed by the researcher in consultation with experts in HIV and AIDS field. Previous related HIV work from Family Health International's questionnaire on HIV and AIDS prevention in developing countries (Project-USAID, 2003),



Kenya's National Aids and STIs Control Programme (NAS COP, 2015) and a local study on HIV knowledge, attitude and practice (Salmen et al., 2015) were consulted and applied in developing the questionnaire. The final questionnaire used in this study had questions relating to HIV knowledge, attitudes toward PLHIV and sexual practices, in addition to socio-demographic information. The questionnaire was divided into four sections, A, B, C and D. Section A focused on the socio-demographic characteristics of the participants, capturing age, sex, and religion. Section B had 18 knowledge-based items. Section C comprised 17 questions on attitudes towards PLHIV. Finally, Section D comprised 7 questions that focused on behavior/practices related to HIV and AIDS. In order to assess the clarity, feasibility, and appropriateness of the questionnaire for the students, the questionnaire was piloted with 11 students in within the study area. This proportion had previously been used in a study focusing in HIV knowledge, attitude and practice in low and middle income country (Thanavanh, Harun- Or- Rashid, Kasuya, & Sakamoto, 2013). The questionnaire was developed in English and there was no need for translation since the students registered in Kenya are taught in English and use English as a medium of communication.

### **3.9.2 Interview Schedule for Head Teachers**

In order to solicit detailed information, key informant interviews were conducted among head teachers of public secondary schools in Gwasssi South Ward. A semi-structured guide with open-ended questions was used in the data collection process (Appendix III). This gave the researcher an opportunity to seek more clarification on a research question regarding which strategies would best work in preventing HIV and AIDS among this population. A key informant interview schedule is an important tool for gathering data as the interview situation allows much greater depth than other methods of data collection (Cohen and Manion, 2012). It attempted to provide a true picture of opinions and feelings from key people who were more informed about the behaviour characteristics of the study population.

### **3.10 Instructions on Data Collection**

The students (potential participants) were given brief information on what terminologies they would meet in the questionnaire and instructions on how to fill the questionnaires. They were given instructions on how to correct mistakes and collect accurate data by self-administering the questionnaires.

### **3.11 Measurement of Variables**

The information gathered from participants included demographic characteristics; knowledge on; attitude towards; and sexual practices (risk perception) towards HIV and AIDS among students; as well as availability and implementation of HIV prevention intervention strategies in secondary schools in Gwassi South ward in Suba South sub-County.

#### **3.11.1 Independent variables**

The independent variables in this study include knowledge, attitude (cognition, affect, and behavior) and risk perception towards HIV and AIDS among the students in Gwassi South Ward in Suba South sub-County.

To determine the respondents' level of HIV-related knowledge, they were read for 18 HIV-related statements with options as “true”, “false” or “do not know” to every knowledge related question. A score of “1” was assigned for a correct answer and “0” for a wrong answer or a “do not know” response. The scores were then summed up to generate an overall score of each participant. The level of knowledge was then categorized into “low” for respondents scoring  $\leq 50\%$ , “moderate” for those scoring between 51% and 74% and “high” for scores  $\geq 75\%$ .

For attitude, a 17-statement questionnaire was administered and participants to answer “Yes” or “No” based on what they feel. Those scoring less than mean scores were classified as having “negative” and those scoring equal to or more than mean scores were classified as having “positive” attitudes.

#### **3.11.2 Dependent variable**

The dependent variable in this study is safe sex practices as measured by the prevalence of preventive behaviors exercised by the respondents (students in Gwassi South ward in Suba South sub-County). Such preventive behaviors include use of condoms, abstinence, being faithful to one partner and uptake of VCT services.

### **3.12 Data Collection Procedures**

Before data collection began, students were briefed about the purpose of the study and technical terminologies used in the questionnaire. Guidance was given on how to fill out the questionnaire form. Written informed assent was obtained for all the students surveyed prior to administering the questionnaires (Appendix I). Those who agreed to participate were met in the classroom by the researchers who then distributed the questionnaires to be self-administered. This was done

during the 30 minutes break of their class. The students were assured that their responses would be treated confidentially. Respondents were also informed that their participation was entirely voluntary and that they were free not to respond to any question that they were uncomfortable with. The head teacher at each engaged school was approached in order to seek permission prior to conducting the surveys. Before the Head teachers were approached, the Ethical clearances for this study had been sought and obtained from Maseno University Ethical Review Committee (Appendix IV) as well as from the County Director of Education authorized this study (Appendix V). License to conduct this research was obtained from National Commission for Science, Technology and Innovation (NACOSTI)... (Appendix VI).

### **3.13 Piloting of Study Tools**

In order to assess for clarity, feasibility, and appropriateness of the questionnaire for the students, the questionnaire was piloted with 11 students in neighboring schools in Kaksingri Central ward. This ward was chosen due to its demographic and geographic similarity with Gwasssi South ward. This proportion has previously been used in a study focusing in HIV knowledge , attitude and practice in low and middle income country (Thanavanh et al., 2013). The tools were found to be reliable and valid except for a few adjustments on logical flow which were made.

### **3.14 Data Handling and Management**

Completed data forms were thoroughly reviewed to ensure completeness, accuracy and logical flow. Fully reviewed data was entered into Excel spreadsheet and exported to SPSS. Coding was done at the entry stage to ensure all categorical variables are stored as coded data and labels are attached to each code. Both data form in source documents and Excel spreadsheet were password protected and stored confidentially- only the lead researcher and assistant were able to access.

### **3.15 Validity of research instruments**

To test content validity, the researcher sent out test papers to experts to give clarity whether the tests actually measured what it was intended to. Expert opinions were of great help to establish content validity. As such, the researcher sought assistance from supervisors and other experts from the university. All relevant expert opinions were incorporated into the questionnaire during review and so the instrument finally had valid content.

### 3.16 Data Analysis

Data were entered into an Excel spreadsheet and exported to Statistical Package for the Social Science (SPSS) for Windows, version 18.0 software (SPSS Inc., Illinois, USA) for analysis. Descriptive statistics were to summarize and demonstrate demographic characteristics, knowledge, attitude and practice of students about HIV and AIDS. Categorical data were presented in numbers and percentages. For normally distributed continuous data, the Mean (standard deviation, SD) was used while median (interquartile range, IQR) was used for non-normal continuous data. A logistic regression model was used to determine association between level of knowledge on and attitudes towards HIV and AIDS and sex practices. Odds ratios (OR) were calculated at 95% confidence intervals (CIs) and a p value of  $\leq 0.05$  was considered significant.

To evaluate knowledge and attitude of the students, they were asked to reply with “yes”, “no” or “don,t know” to every knowledge- and attitude-related question. For practices, “yes” or “no” options were used. A score of 1 was assigned for a correct answer and 0 for a wrong answer for knowledge- and practice-related questions; for attitude section, it was 1 for every positive answer and 0 for negative ones. The scores were then summed up to generate an overall score for each participant. Levels of KAPs were then re-categorized depending on their total, mean and median score.

Accordingly, level of knowledge was categorized into “low” for respondents scored  $\leq 50\%$ , “moderate” for those scored between 51 and 74%, and “high” for those who scored  $\geq 75\%$ . This categorization was adopted from a study that previously described correlates of misperceptions in HIV knowledge and attitude towards people living with HIV and AIDS among in-school and out of school adolescents in Ghana (Sallar, 2009; Tarkang, Lutala, & Dzah, 2019). The scores of attitudes and practices were categorized into two segments based on their mean and median score: those scoring less than mean scores for attitude were classified as “negative” and those scoring equal, and more than mean scores were classified as “positive” attitudes. As data for practice was not normally distributed, we used median as the cut-off. Accordingly, those scoring less than median scores for practice were classified as “risky” practices, and those scoring equal, and more than median scores were classified as “safe”

### **3.17 Permissions and Ethical Considerations**

Authorization for study was sought and obtained from Maseno University School of Graduate Studies (SGS). Ethical Clearance was sought and obtained from Maseno University Ethical Review Committee (MUERC). Permissions to conduct the study in the County was sought and obtained from County and sub-County Directors of Education and Health. Informed consent was sought and obtained from respective heads of schools on behalf of students. Recognizing that majority of the students are emancipated minors, assent was sought for students aged 13 to 17 years from the head teachers. Students aged above 18 years directly provided informed consent. Respondents were assured that the information given would only be used for the research purpose and treated with utmost confidentiality. Moreover, the respondents were asked not to indicate their names on the questionnaires to ensure anonymity of their responses. Further, confidentiality of information was ensured through secured data storage- data collected was stored in soft copy and password protected and would be backed up in cloud for at least 5 years after study completion. No participant was forced to participate in the study, neither were they unduly influenced.

## CHAPTER FOUR

### RESULTS

#### 4.1 Introduction

This chapter presents data analysis and presentation of the findings from the study. Data collection was done by administering questionnaires and face-to-face interviews to the respondents. Data presentation is descriptive, and analysis done according to study objectives. The data is presented in line with the research questions as captured in the questionnaire and also as per the interviews conducted during the study. The obtained data was presented in graphs, charts and tables. Data from interviews was content analyzed and organized around themes and then presented descriptively. The findings were presented in tables. Figures in percentages were rounded up to one decimal place. The main findings from the study are presented in this chapter under sub-sections following the objectives of the research and the research questions. These sub-sections include the following: level of knowledge on HIV and AIDS toward safer sex practices, attitudes on HIV and AIDS towards safe sex practices and risk perception towards HIV and AIDS among secondary school students in Gwassu South Ward in Suba South sub-County.

#### 4.2 Response Rate

The researcher distributed 286 structured questionnaires out of which 260 were received from the field. The questionnaires accepted as correctly filled were 260 which translate to a response rate of 90.9 percent which is acceptable for this study. According to Mugenda & Mugenda (2008), a response rate 50.0% is acceptable in survey research. Therefore, the above response rate met the criterion and was appropriate for this study. Table 4.1.

**Table 4.1: Response rate**

	Frequency	Percent (%)
Issued questionnaire	286	100.0
Returned questionnaire	260	90.9
Not returned questionnaires	26	9.1

*\*Survey Data (2019)*

#### 4.3 Socio-demographic Characteristics

A total of 260 students took part in the study. Of these number, 115 (44.2%) were male and 145 (55.8%) were female. The ages ranged from 13 to 20 years, with mean age of 17.2 years (SD±1.6). Nearly all participants, 254 (97.7%), were Christians. (Table 4.2)

**Table 4.2: Socio-demographic characteristics of study participants, Gwassi South Ward, Secondary Students, 2019 (N=260)**

Variable	n (%)
<b>Sex</b>	
Males	115(44.2)
Females	145(55.8)
<b>Age</b>	
Range=13 to 20 years	
Mean Age 17.2_(SD ±1.6)	
<b>Religion</b>	
Christians	254(97.7)
Muslims	6(2.3)
TOTAL	260 (100)

*\*Sociodemographic characteristics of 260 students who participated in the study*

#### **4.4 Knowledge on HIV and AIDS**

To evaluate the respondents' HIV-related knowledge, participants were read for 18 HIV-knowledge related statements with options as “true”, “false” or “do not know” to every knowledge related question. We assigned a score of “1” for a correct answer and “0” for a wrong and “do not know” responses. The scores were then summed up to generate an overall score of each participant. The mean score was 11.8 (SD±2.7), with a range score of 3-17. The level of knowledge was then categorized into “low” for respondents scoring ≤ 50% (score ≤9), “moderate” for those scoring between 51% and 74% (9 < score ≤11) and “high” for those who scored ≥ 75% (score>11).

##### **4.4.1 Knowledge on HIV/AIDS transmission**

Table 3.2 presents the findings on knowledge on HIV transmission and prevention from the participants of the study. Overall, the knowledge about route of transmission of HIV was high for some factors and relatively low for other factors. The findings of this study indicate that, 93.1% rightfully knew that it was false that a person can get HIV by sharing a glass of water with someone who has HIV. The majority of students (93.1%) also rightly indicated that the statement that “a person can get HIV by bathing in the same place as a person who has HIV” was untrue. However, there was confusion about some routes of transmission. For example, only 40.8% knew that a woman can get HIV if she has anal sex with a man. There was also confusion regarding the question that asked whether pulling out the penis before a man gets his climax keeps a woman from getting HIV during sex; only 48.1% gave the correct response. Regarding the question on whether a person can get HIV from oral sex, about a half (51.2%) had the correct answer.

#### 4.4.2 Knowledge on HIV/AIDS prevention

Table 4.3 also summarizes the knowledge of the students about prevention of HIV. A moderate level of knowledge was reported by students when they were asked questions on: whether there is a female condom that can decrease a woman's chance of getting HIV (69.2%); whether there is a vaccine that stops adults from getting (65.4%) and; whether using Vaseline or baby oil with condoms lowers the chance of getting HIV (63.5%).

However, in response to the question whether “a natural skin condom works better against HIV than a latex condom”, only 36.5% gave the correct response. In, response to a statement “A person will NOT "feel" HIV if she or he is taking antibiotics”, only 50.4% rightly stated that this was false statement.

**Table 4.3: Knowledge on HIV route of transmission, prevention and control; secondary school students, Gwassi South Ward, 2019 (n=260)**

<i>Knowledge about route of transmission</i>			
No	Question	N	%
1	Coughing and sneezing DO NOT spread HIV (True)	190	73.1
2	A person can get HIV by sharing a glass of water with someone who has HIV ( <b>False</b> )	242	93.1
3	Pulling out the penis before a man climax / cums keeps a women from getting HIV during sex ( <b>False</b> )	125	48.1
4	A woman can get HIV if she has anal sex with a man (True)	106	40.8
5	Showing or washing one's genitals/private parts, after sex keeps a person from getting HIV (False)	199	76.5
6	All pregnant women infected with HIV quickly show serious signs of being infected ( <b>False</b> )	179	68.9
7	People who have been infected with HIV quickly show signs of being infected (False)	186	71.5
8	People are likely to get HIV by deep kissing, putting their tongue in their partner's mouth, if their partner has HIV ( <b>True</b> )	212	81.5
9	A woman cannot get HIV if she has sex during her periods (False)	197	75.8
10	Having sex with more than one partner can increase a person's chance of being infected with HIV ( <b>True</b> )	171	65.8
11	A person can get HIV by bathing in the same place as a person who has HIV ( <b>False</b> )	242	93.1
12	A person can get HIV from oral sex ( <b>True</b> )	133	51.2
<i>Knowledge about prevention and control</i>			
13	There is a vaccine that stops adults from getting HIV ( <b>False</b> )	170	65.4
14	There is a female condom that can decrease a woman's chance of getting HIV ( <b>True</b> )	180	69.2
15	A natural skin condom works better against HIV than does a latex condom ( <b>False</b> )	95	36.5
16	A person will NOT "feel" HIV if she or he is taking antibiotics ( <b>False</b> )	131	50.4
17	Taking a test for HIV one week after having sex will tell a person if she or he has HIV ( <b>False</b> )	150	57.7
18	Using Vaseline or baby oil with condoms lowers the chance of getting HIV ( <b>False</b> )	165	63.5

\*n= number of respondents who correctly answered the questions on HIV and AIDS



#### 4.4.3 Overall Knowledge on HIV and AIDS on Transmission routes and Prevention

Table 4.4 presents the level of knowledge on HIV/AIDS. Overall, respondents had a mean (11.8 (SD± 2.7), with a range score of (3–17) from score of 18 knowledge-related questions. Accordingly, 45% were classified as having a high level of knowledge (score of  $\geq 75\%$ ); 19% as having medium level of knowledge (scores of 51% to 74%), and; 36% as having low level of knowledge (scores of  $\leq 50\%$ ) regarding HIV/AIDS, as shown in table 4 below.

**Table 4.4: Knowledge on HIV/AIDS among secondary students in Gwassi South**

Knowledge Category	Category Score	Frequency, (%)
Low	(Less than) $\leq 50\%$	94 (36%)
Medium	Between 51% - 74%	49 (19%)
High	(More than) $\geq 75\%$	117 (45%)

*\*Only 36% had low level of knowledge on HIV and AIDS*

#### 4.5 Attitude

The scores of attitudes were normally distributed with a mean score of 10.2 (SD±3.1); minimum score was 2 while maximum score was 17. The scores were therefore categorized into two segments based on the mean score: those scoring less than mean score ( $<10.2$ ) for attitude were classified as having “negative” and those scoring equal to or more than mean scores ( $\geq 10.2$ ) were classified as having “positive” attitudes. The table below gives frequency of the HIV & AIDS attitude score.

**Table 4.5: HIV and AIDS Attitude (N=260)**

Qs.	Statement on HIV & AIDS Attitude	Positive Attitude		Negative Attitude	
		n	%	N	%
1	Most people think that getting HIV is a punishment for bad behavior	187	71.9	73	28.1
2	Most people would not sit next to someone with HIV in public or private transport	223	85.8	37	14.2
3	Most people think that having HIV is just a matter of bad luck	170	65.4	90	34.6
4	Most people think less of someone because they have HIV	138	53.1	122	46.9
5	Most people would not like someone with HIV to be living next door	202	77.7	58	22.3
6	Most people would reject the friendship of someone with HIV	106	40.7	154	59.3
7	Most people feel that it is safe for a person with HIV to look after somebody else's children	70	26.9	190	73.1
8	Most people think that people with HIV can teach us a lot about life	153	58.9	107	41.1
9	Most people would not date a person if they know that he / she has HIV	73	28.1	187	71.9
10	Most people are afraid to be around people with HIV	159	61.2	101	38.8
11	Most people feel that if you have HIV it is your fault	131	50.4	129	49.6
12	Most people feel that people with HIV deserve as much as anyone else	133	51.1	127	48.9
13	Most employers would not hire someone with HIV to work for them	175	67.3	85	32.7
14	Most people would not drink from a tap if a person with HIV had just drunk from it	181	69.6	79	30.4
15	Most people believe that if you have HIV you must have done some wrong to deserve it	171	65.8	89	34.2
16	Most people believe that someone with HIV should be ashamed of themselves	208	80.0	52	20.0
17	Most people feel uncomfortable around people with HIV	171	65.7	89	34.3

In summary, majority (61.1%) of the respondents exhibited positive attitude towards HIV and AIDS as shown below (Table 4.6).

**Table 4.6: HIV and AIDS Attitude Categorization (N=260)**

HIV attitude Categorization	Frequency	Percentage
Negative Attitude (scores <10)	101	38.9%
Positive Attitude (Scores $\geq$ 10)	159	61.1%
TOTAL	260	100%

*\*Majority of the students had positive attitude towards HIV and AIDS*

#### 4.6 Association of knowledge about HIV and AIDS with attitude

In order to determine the relationship between level of knowledge on HIV and AIDS and safer sex practices among secondary school students, a binary logistic regression was performed. The ‘attitude’ status, being the dependent variable, was coded as a binary outcome, with “positive attitude” coded as “0” and “negative attitude” coded as “1”. The knowledge about HIV in categories of “low”, “moderate” and “high” was our independent variable.

**Table 4.7: Association of knowledge about HIV and AIDS and Attitude**

HIV Knowledge	Attitude				OR	95% CI	p-value
	Positive		Negative				
	(n=159)	%	(n=101)	%			
Low	40	43.0%	53	57.0%	Reference		
Moderate	38	77.6%	11	22.5%	2.90	1.65 – 5.11	<0.000
High	81	68.6%	37	31.4%	4.58	2.08 – 10.05	<0.000

As shown in the table above, it was found that level of knowledge was associated with attitude towards HIV and AIDS ( $p < 0.000$ ).

#### 4.7 Sex Practices

A total of 39 (15%) of the respondents indicated that they had a history of having sexual intercourse with more than one person within six months prior to the survey (Table 4.8). Slightly less than a quarter, 55(21.2%) indicated that they had engaged in sex without condom with someone who was not their regular sex partner. A quarter (25%) of the students revealed that they had engaged in sex without condom, with someone whose HIV status they did not know, (Table 4.8). Regarding sex after intoxication with alcohol, 8(3.1%), admitted that they had practiced sex directly after consuming alcohol.

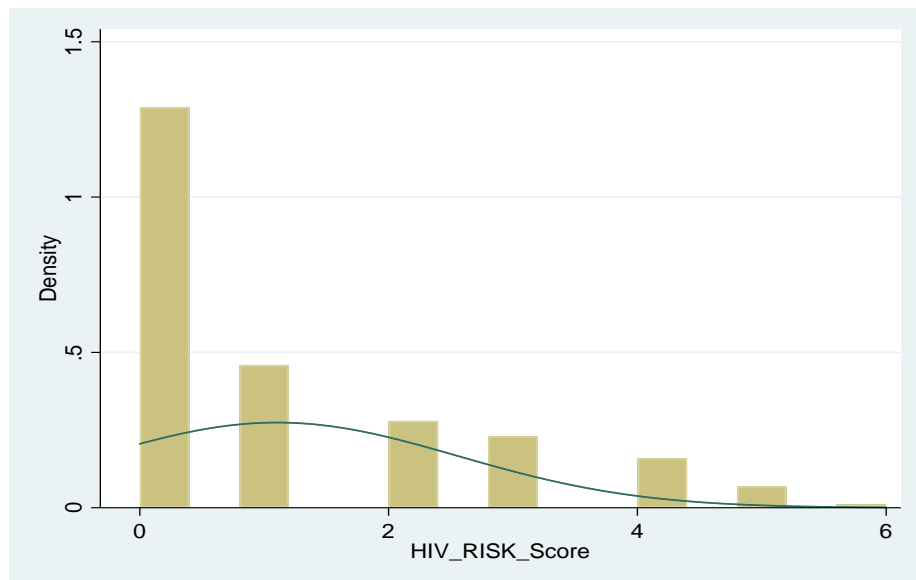
**Table 4.8: Sex Practices (sex risk behaviour) of the respondents (N=260)**

Sexual risk behaviour	n	%
Had sex with more than one person in the last 6 months	39	15.0
Ever had sex without a condom with someone not their regular sex partner	55	21.2
Ever had sex directly after consuming alcohol	8	3.1
Ever had sex in exchange for money, goods or favour.	35	13.5
Ever had sex without a condom with someone whose HIV status they don't know	65	25.0
Ever had sex without a condom with someone they knew was HIV positive	23	8.8
Ever had sex with someone who is younger or older than them by 15 years	25	9.6
Thinking about choices over the last 6 months, rated a high risk of being infected with HIV	36	13.9

*\*Table showing responses the students gave to the sex practice questions*

As data for practice was not normally distributed, we used median as the cut-off. Accordingly, those scoring less than median scores for practice were classified as having “safe” sexual practices, and those scoring equal and more than median scores were classified as having

“risky” sexual practices. Figure 4.1 (below) further illustrates the HIV risk score of the respondents as derived from their sexual practices.



**Figure 4.1: HIV Risk Score of the respondents**

#### 4.7.1 Association of Knowledge about HIV with Sex Practices

The ‘risk’ status, being the dependent variable, was coded as a binary outcome, with “Low Risk” coded as “0” and “High Risk” coded as “1”. The knowledge about HIV in categories of “low”, “moderate” and “high” was the independent variable. The output was shown in the table below.

**Table 4.9: Association of knowledge about HIV with sex practices**

HIV Knowledge	Sex Practices				OR	95% CI	p-value
	Low Risk		High Risk				
	(n=132)	%	(n=128)	%			
Low	32	34.4%	61	65.6%	Reference		
Moderate	31	63.3%	18	36.7%	0.30	0.15 – 0.63	<0.001
High	69	58.5%	49	41.5%	0.37	0.21 – 0.65	<0.001

*\*Binary logistic regression analysis shows positive association between knowledge and sex practices*

The binary logistic regression analysis (in the table) above shows that respondents with moderate (OR=0.30; 95% CI, 0.15–0.63, p<0.001) and high HIV knowledge (OR=0.37; 95% CI, 0.21–0.65, p<0.001) were less likely to demonstrate high risk sex practices as compared to respondents with low HIV knowledge.

#### 4.7.2 Association of attitude about HIV with Sex Practices

In order to establish attitudes on HIV and AIDS towards safe sex practices among students in Secondary Schools, a binary logistic regression was performed. The sex practices status was taken as the dependent variable, coded as a binary outcome, with “safe risk” coded as “0” and “High risk” coded as “1”. The attitudes about HIV in categories of “Positive” and “Negative” was our independent variable.

**Table 4.10: Association of attitude about HIV with sex practices**

HIV Attitude	Practices				OR	95% CI	p-value
	Safe		Risky				
	(n=132)	%	(n=128)	%			
Positive	101	63.5%	58	36.5%	Ref.		
Negative	31	30.7%	70	69.3%	3.93	2.31 – 6.69	<0.000

The binary logistic regression analysis shown (in the table) above revealed that respondents with negative attitude were 4 times more likely (OR = 3.93; 95% CI, 2.31 – 6.69, p<0.001) to express high risk sex practices as compared to respondents with positive attitude toward HIV and AIDS.

#### 4.8 Strategies on HIV and AIDS

The fourth objective of the study was to establish intervention strategies on HIV and AIDS by secondary schools in Gwasssi South Ward in Suba South sub-County. Key informant interviews were conducted with 30 individuals (22 headteachers and 8 health masters) from among the 11 secondary schools in Gwasssi South ward. Some of the most striking qualitative data from head teacher interview schedules are shown below. All the 11 schools had the revised HIV curriculum in place. Most (76%) of the key informants had been trained on the curriculum while only 12 (4%) reported having implemented the curriculum in the past one month. The curriculum was found to include sections for HIV knowledge, attitude and practices.

*Some of the teachers in my school are trained on teaching and support of HIV and AIDS in our school. There are about 2-4 teachers who have been trained in HIV and AIDS. [Interviewees 3]*

*In our school we have curriculum quality assurance including HIV and AIDS. In addition, we have teacher appraisal form. [Interviewee 11]*

The qualitative data indicates that the secondary schools in Gwasssi South Ward have in place intervention strategies on HIV and AIDS.

## **CHAPTER FIVE**

### **DISCUSSION**

#### **5.1 Introduction**

This chapter includes detailed discussion of the results has been presented. It further contains a comparison of key results with the findings of similar studies elsewhere in the world in line with each study objective. This is the first study on HIV and AIDS-related KAPs among high school students in Gwassi South Ward of Suba South sub-County.

#### **5.2 Socio-demographic characteristics of the respondents**

The respondents were asked to state their socio-demographic characteristics. The socio-demographic information included age, gender and religious affiliation. The respondents' age ranged 13-20 years and majority were teenagers. Slightly more males than females responded to the questionnaires. Majority were Christians which implies that Christian faith was more dominant than Islamism in secondary schools in Gwassi South ward.

#### **5.3 Level of knowledge on HIV and AIDS toward safer sex practices**

This study reports an above average level of KAPs relating to HIV and AIDS. However, misconceptions about the routes of transmission of HIV still remain. In addition, only 61.1% of the students showed positive attitudes towards PLHIV. Almost all survey respondents knew about HIV and AIDS and majority of them could correctly answer questions on HIV transmission and prevention, indicates that the majority had good basic awareness of the issue as seen in other studies (Chory et al., 2021). Respondents also answered majority of questions relating to the main routes of HIV transmission correctly. Similar findings were reported in two studies in Afghanistan and Kazakhstan (Forsyth, 2018). However, there was a lack of understanding about some important points of transmission of HIV, such as the lack of knowledge that HIV can be transmitted through oral or anal sex and beliefs that skin condom works better than latex condom against HIV and that a person can get HIV by sharing a glass of water by someone who has HIV. This indicates that students need correct or accurate information routes of HIV transmission. Again, similar misconceptions have been reported in other studies. The majority of students knew that the use of condoms during sexual intercourse could prevent HIV. Similar findings were reported by previous studies conducted amongst some university students in Afghanistan (Mansoor, Fungladda, Kaewkungwal, & Wongwit, 2008).

#### **5.4 Attitude towards HIV and AIDS**

Students exhibited mixed reactions to PLHIV. Whilst they displayed positive attitudes on most of the issues, a good proportion expressed discomfort sitting next to being around someone who has HIV in public or private transport.

This finding is not unique for Gwassi South Ward Secondary School students. Similar results had been reported in several studies conducted in Ghana, China, Turkey and Iran (Hansson, Stockfelt, Urazalin, Ahlm, & Andersson, 2008; Sallar, 2009) A study in Iran in 2002 among 4641 second-grade high school students reported that about half of the respondents ( 46%) said that they would not want to sit near PLHIV or to shake hands with them. This may be because students at times express empathy towards PLHIV. However, they still fear that having close contact with them might put them at risk of contracting HIV. For instance, most students felt that it is not safe for a person with HIV to look after somebody else's children. On the contrary, nearly half of the respondents said they were eager to show compassion towards PLHIV (Tavoosi, Zaferani, Enzevaei, Tajik, & Ahmadinezhad, 2004).Discriminating attitudes to adolescent PLHIV might be an obstacle for the efficient propagation of awareness programs (Mansoor et al., 2008), and voluntary counselling and testing for HIV.

Many barriers, such as stigma and discriminatory attitudes (Mansoor et al., 2008), also need to be reduced. Adolescent PLHIV should be equally respected and valued in the society. The Ministry of Education has initiated curriculum instruction models for teaching in secondary schools and to make teachers be examples by providing psychosocial and spiritual care to adolescent PLHIV (Mansoor et al., 2008). Adolescents need targeted counselling about safe practices by avoiding, for example, unprotected sexual relationships and exchange of syringes/needles. Risky sexual practices were also highlighted as another barrier for HIV prevention. Almost one-third of the high school students had a history of sexual intercourse, similar to the findings from other reports (Abruquah & Bio, 2008; Kamala & Aboud, 2006).

#### **5.5 Practices**

Although condoms are widely available in pharmacies and public health facilities, and/or are cheap to buy, affordability might still be a factor behind its inconsistent use by students in secondary school. These findings are supported by a study, which identified unavailability of condoms as a major barrier to HIV prevention; about 25% of respondents said that they had

engaged in sex without condoms [19]. Such behaviour are likely to increase the likelihood of HIV spread.

### **5.6 Limitation of the study**

The finding of this study is subject to a few limitations. First, the findings presented in this study were based on self-reports from participants. Self-reports may suffer some extent of social desirability biases from respondents (Fris and Sellers, 1996). Although anonymity and honesty were both encouraged during the administration of the questionnaires, it is likely to some extent that the process experienced respondent bias in sensitive questions such as on condom use. Second, the scope of this study was confined to interviewing students enrolled in public secondary schools in Suba South sub-County, Gwasssi South ward. Secondary school enrollment was a conglomeration of students originating from other wards or parts of the County, and not necessarily Gwasssi South ward. It is possible that localized geospatial variations in perceptions of the students could have affected the responses of 17 students who were found to be coming from outside Gwasssi South ward; the extent to which this could have affected our findings is unknown. These two limitations were factored in our analysis plan so as to minimize the margin of error.



## CHAPTER SIX

### SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

#### 6.1 Introduction

The chapter provides the summary of findings of the main study, conclusions and recommendations

#### 6.2 Summary of Findings

The first objective of the study was to determine the level of knowledge on HIV and AIDS towards safer sex practices among students in secondary school in Gwasssi South Ward, Suba South sub-County. The study found out that majority (64%) of the respondents had moderate to high knowledge about HIV and AIDS. Binary logistic regression analysis shows that respondents with moderate (OR=0.30; 95% CI, 0.15–0.63, p=0.001) and high HIV knowledge (OR=0.37; 95% CI, 0.21–0.65, p=0.001) were less likely to demonstrate high risk sex practices as compared to respondents with low HIV knowledge. The second objective of the study was to establish attitudes on HIV and AIDS towards safe sex practices among students in Secondary Schools in Gwasssi South Ward, Suba South sub-County. The study found out that majority (61.1%) of the respondents exhibited positive attitude towards HIV. Binary logistic regression analysis revealed that respondents with negative attitude were 4 times more likely (OR = 3.93; 95% CI, 2.31 – 6.69, p<0.001) to express high risk sex practices as compared to respondents with positive attitude toward HIV and AIDS.

The third objective of the study was to determine risk behaviour/practices towards HIV and AIDS among students in secondary school in Gwasssi South Ward, Suba South sub-County. Small proportion (15%) of the respondents had a history of sexual intercourse with more than one partner within six months prior to survey, a fifth (21.2%) had sex without condom with a non-regular sex partner while a quarter (25%) had sex without a condom with someone of unknown HIV status. Only 8(3.1%) had sex immediately after consuming alcohol. The fourth objective of the study was to establish intervention strategies on HIV and AIDS by secondary schools in Gwasssi South Ward in Suba South sub-County. The qualitative data indicates that all the eleven secondary schools in Gwasssi Ward had interventions in place for HIV and AIDS prevention. Most (76%) of the teachers were trained to deliver curriculum but only 12 (4%) had implemented the curriculum in the past one month. The main objective of this study was to assess the knowledge, attitude and practice towards HIV and AIDS prevention among students

enrolled in secondary schools in Gwassi South Ward. Binary regression analysis revealed a statistical relationship between knowledge ( $p < 0.001$ ), attitude ( $p < 0.001$ ) and practice towards HIV and AIDS and safer sex practices.

### **6.3 Conclusions**

Based on the findings above, the study concluded that despite the students displaying adequate knowledge about HIV and AIDS, misconceptions about its routes of transmission as well as prevention and control still exist. Negative attitudes towards HIV and AIDS and risky practices are still common with the youth in secondary schools in Gwassi. The research concluded that secondary schools in Gwassi south Ward had intervention strategies on HIV and AIDS. There was a positive moderate relationship between knowledge on HIV and AIDS and safer sex practices. There was a positive moderate relationship between attitude on HIV and AIDS and safer sex practices. Finally, there was also a positive moderate relationship between risk behaviors/practices on HIV and AIDS and safer sex practices. Finally, study concluded that there was a positive moderate relationship between knowledge, attitude and practice towards HIV and AIDS and safer sex practices.

### **6.4 Recommendations from the current study**

Given the conclusion, the study recommended the following:

- i. The secondary schools' administration should ensure that students have relevant knowledge on HIV and AIDS so as to enhance safer sex practices among them.
- ii. The students should be supported to have positive attitude towards HIV and AIDS so as to reduce stigma among PLWHIV in their schools.
- iii. The secondary school administrations should ensure that students understand the risk behavior/practices so as to reduce the rate of HIV infection in the society.
- iv. The head teachers of the secondary schools in Gwassi South ward should ensure that they implement the appropriate interventions strategies e.g. by implementing the HIV and AIDS curriculum in order to promote safer sex practices among students.

### **6.5 Recommendation for further studies**

Further studies are recommended that would provide evidence for specific interventions aimed at improving KAPs and preventing new HIV infections among students in Gwassi South and other parts of sub-Saharan Africa.

## REFERENCES

- Abruquah, H., & Bio, F. (2008). HIV/AIDS: knowledge, attitude and practice of school adolescents in the Kwaebibirem district of Ghana. *Journal of Science and Technology (Ghana)*, 28(2), 10-18.
- Achia, T., Cervantes, I. F., Stupp, P., Musingila, P., Muthusi, J., Waruru, A., . . . Bore, J. (2022). Methods for conducting trends analysis: roadmap for comparing outcomes from three national HIV Population-based household surveys in Kenya (2007, 2012, and 2018). *BMC Public Health*, 22(1), 1-16.
- Berker, L.-G., Johnson, L., Wallace, M., & Hosek, S. (2015). Building our youth for the future. *Journal of International AIDS Society*, 18(Supplement 1), 1-7. Retrieved from <http://www.jiasociety.org/index.php/jias/article/view/20027> | <http://dx.doi.org/10.7448/IAS.18.2.20027>
- Center for Strategic & International Studies. (2014). *The global youth wellbeing index*. Retrieved from <http://www.youthindex.org/contact/>
- Chory, A., Nyandiko, W., Martin, R., Aluoch, J., Scanlon, M., Ashimosi, C., . . . Vreeman, R. (2021). HIV-related knowledge, attitudes, behaviors and experiences of Kenyan adolescents living with HIV revealed in WhatsApp group chats. *Journal of the International Association of Providers of AIDS Care (JIAPAC)*, 20, 2325958221999579.
- County Government of Homa Bay. (2013a). *First County Integrated Development Plan*.
- County Government of Homa Bay. (2013b). *The First Homa Bay County Multisectoral Aids Strategic Plan 2014/2015-2018/2019*.
- Duflo, E., Dupas, P., & Kremer, M. (2006). *Education and HIV/AIDS Prevention: Evidence from a randomized evaluation in Western Kenya* (Vol. 4024): World Bank Publications.
- Fay, H., Baral, S. D., Trapence, G., Motimedi, F., Umar, E., Lipinge, S., & Beyrer, C. (2011). Stigma, health care access, and HIV knowledge among men who have sex with men in Malawi, Namibia, and Botswana. *AIDS and Behavior*, 15(6), 1088-1097.
- Forsyth, T. (2018). *School-Based Adolescent Reproductive Health Education in Afghanistan and other Muslim-majority Settings: A Systematic Review and Key Informant Interview Study of Knowledge, Attitudes and Barriers*.
- Gu, Y., Liang, Q., Chen, Y., Luo, Y., Du, Y., Yao, Z., . . . Han, Z. (2021). Influence of self-categorized deviation in knowledge, attitude and practice for sexual health on the willingness to seek help for corresponding problems among young students. *Zhonghua liu Xing Bing xue za zhi= Zhonghua Liuxingbingxue Zazhi*, 42(11), 1937-1941.
- Hansson, M., Stockfelt, L., Urazalin, M., Ahlm, C., & Andersson, R. (2008). HIV/AIDS awareness and risk behavior among students in Semey, Kazakhstan: a cross-sectional survey. *BMC International Health and Human Rights*, 8(1), 1-10.
- Herdiman, H., Lindayani, L., & Darmawati, I. (2021). Self-Management Applications For Improving The Productivity Of Adolescence At Risk Of HIV/AIDS. *Indonesian Journal of Community Development*, 1(2).
- Hornschuh, S., Dietrich, J. J., Tshabalala, C., & Laher, F. (2017). Antiretroviral treatment adherence: knowledge and experiences among adolescents and young adults in Soweto, South Africa. *AIDS Research and Treatment*, 2017.
- Hosek, S., & Pettifor, A. (2019). HIV prevention interventions for adolescents. *Current HIV/AIDS Reports*, 16(1), 120-128.

- Ibrahim, A. M., Sanda, H. U., & Al-Sadique, A. S. S. (2019). Online media exposure and HIV/AIDS awareness among adolescent Almajiri pupils in North-Eastern Nigeria: Knowledge, attitude, and practice. *International Journal*, 5(1), 67-79.
- Ithibu, A. W. (2015). *A logistic regression to identify key determinants of HIV/AIDS knowledge, risk perception and condom use among young people aged 15-24 years in Kenya*. (PhD). University of Nairobi,
- Jeihooni, A. K., Arameshfard, S., Hatami, M., Mansourian, M., Kashfi, S. H., Rastegarimehr, B., . . . Amirkhani, M. (2018). The effect of educational program based on health belief model about HIV/AIDS among high school students. *International Journal of Pediatrics-Mashhad*, 6(3), 7285-7296.
- Johnson- Peretz, J., Lebu, S., Akatukwasa, C., Getahun, M., Ruel, T., Lee, J., . . . Onyango, A. (2022). “I was still very young”: agency, stigma and HIV care strategies at school, baseline results of a qualitative study among youth in rural Kenya and Uganda. *Journal of the International AIDS Society*, 25, e25919.
- Joint United Nations Programme on HIV/AIDS (UNAIDS). (2014). *Joint United Nations Programme on HIV/AIDS (UNAIDS). The Gap Report*. Retrieved from
- Kamala, B., & Aboud, S. (2006). Knowledge, attitudes and practices on HIV prevention among secondary school students in Bukoba rural, Kagera region-Tanzania. *Dar Es Salaam Medical Students' Journal*, 14(1), 14-17.
- Khumsaen, N., & Stephenson, R. (2017). Beliefs and perception about HIV/AIDS, self-efficacy, and HIV sexual risk behaviors among young Thai men who have sex with men. *AIDS education and prevention: official publication of the International Society for AIDS Education*, 29(2), 175.
- Kose, J., Lenz, C., Akuno, J., Kiiru, F., Jelagat Odionyi, J., Otieno-Masaba, R., . . . Leendert Fraaij, P. (2021). Supporting adolescents living with HIV within boarding schools in Kenya. *PLoS One*, 16(12), e0260278.
- Luseno, W. K., Field, S. H., Iritani, B. J., Odongo, F. S., Kwaro, D., Amek, N. O., & Rennie, S. (2021). Pathways to depression and poor quality of life among adolescents in Western Kenya: role of anticipated HIV stigma, HIV risk perception, and sexual behaviors. *AIDS and Behavior*, 25(5), 1423-1437.
- Makela, S., Si, Y., & Gelman, A. (2018). Bayesian inference under cluster sampling with probability proportional to size. *Statistics in medicine*, 37(26), 3849-3868.
- Mandiwa, C., Namondwe, B., & Munthali, M. (2021). Prevalence and correlates of comprehensive HIV/AIDS knowledge among adolescent girls and young women aged 15–24 years in Malawi: evidence from the 2015–16 Malawi demographic and health survey. *BMC Public Health*, 21(1), 1-9.
- Mansoor, A. B., Fungladda, W., Kaewkungwal, J., & Wongwit, W. (2008). Gender differences in KAP related to HIV/AIDS among freshmen in Afghan universities. *Southeast Asian journal of tropical medicine and public health*, 39(3), 404.
- Ministry of Health. (2016). *Kenya HIV County Profiles*. Retrieved from
- Mkhonta, Z., Kaplan, L., Nxumalo-Magagula, N. N., Faye, A., Gary, F., Zanele, C., . . . Mkhonta, R. N. (2019). Knowledge and Attitudes of Female Adolescents’ Regarding Contraceptive Use in one High School in Manzini, Swaziland. *Multidisciplinary Journal of Language and Social Sciences Education (2664-083X, Online ISSN: Print ISSN: 2616-4736)*, 2(2), 145-169.

- NASCOP. (2015). *The National Advisory Committee and Technical Working Group on HIV Prevention, treatment, Care and Support*. Retrieved from Nairobi, Kenya:
- Odongo, I. A. (2018). *Factors influencing community participation in field based HIV testing and counselling in Suba sub county, Homa Bay county, Kenya*. University of Nairobi,
- Oladebo, O., & Fayemi, M. M. (2011). Perceptions about sexual abstinence and knowledge of HIV/AIDS prevention among in-school adolescents in a western Nigerian city. *BMC Public Health*, 11(1), 304.
- Ooyi, G. O. (2015). *Determinants of youth participation in prevention of HIV and AIDS in secondary schools in Suba district, Homabay county, Kenya*. University of Nairobi,
- Otieno, A., Karanja, S., & Kagira, J. (2018). Knowledge and attitude as determinant factors in HIV care among pregnant women in Rachuonyo North, Homa-Bay County, Kenya. *East African Medical Journal*, 95(4), 1413-1425.
- Perdoman, A. T., & Fitriana, D. (2021). YOUTH KNOWLEDGE ABOUT THE GENERATION PLANNING PROGRAM AND ATTITUDE OF YOUTH IN MATURITY AGE OF MARRIAGE AT SMA NEGERI 4 BATAM. *Zona Kedokteran: Program Studi Pendidikan Dokter Universitas Batam*, 11(2), 14-19.
- Project-USAID, P. (2003). *HIV/AIDS in the Mekong region Cambodia, Lao PDR. Thailand, & Vietnam: current situation, future projections, socioeconomic impacts, and recommendations*. Retrieved from <http://www.policyproject.com/pubs/generalreport/ACF1B3.pdf>
- Republic of Kenya. (2007). *Kenya Vision 2030: A Globally Competitive and Prosperous Kenya*. Nairobi, Kenya Retrieved from <http://www.researchictafrica.net/countries/Kenya-Vision-2030-2007.pdf>
- Republic of Kenya. (2013). *Homa Bay County Development Profile*. Nairobi, Kenya: Government Printer
- Ruria, E. C., Masaba, R., Kose, J., Woelk, G., Mwangi, E., Matu, L., . . . Rakhmanina, N. (2017). Optimizing linkage to care and initiation and retention on treatment of adolescents with newly diagnosed HIV infection. *AIDS (London, England)*, 31(Suppl 3), S253.
- Sallar, A. M. (2009). Correlates of misperceptions in HIV knowledge and attitude towards People Living With HIV/AIDS (PLWHAs) among in-school and outof-school adolescents in Ghana. *African health sciences*, 9(2).
- Salmen, C. R., Hickey, M. D., Fiorella, K. J., Omollo, D., Ouma, G., Zoughbie, D., . . . Campbell, H. (2015). “Wan Kanyakla”(We are together): Community transformations in Kenya following a social network intervention for HIV care. *Social Science & Medicine*, 147, 332-340.
- Samuel, G., & Baridah, K. J. (2020). KNOWLEDGE OF SEXUALLY TRANSMITTED INFECTION AMONG SECONDARY SCHOOL STUDENTS IN OGBA/EGBEMA/NDONI LOCAL GOVERNMENT AREA OF RIVERS STATE.
- Tarkang, E. E., Lutala, P. M., & Dzah, S. M. (2019). Knowledge, attitudes and practices regarding HIV/AIDS among senior high school students in Sekondi-Takoradi metropolis, Ghana. *African Journal of Primary Health Care and Family Medicine*, 11(1), 1-11.
- Tavoosi, A., Zaferani, A., Enzevaei, A., Tajik, P., & Ahmadinezhad, Z. (2004). Knowledge and attitude towards HIV/AIDS among Iranian students. *BMC public health*, 4(1), 1-6.

- Thanavanh, B., Harun- Or- Rashid, M., Kasuya, H., & Sakamoto, J. (2013). Knowledge, attitudes and practices regarding HIV/AIDS among male high school students in Lao People's Democratic Republic. *Journal of the International AIDS society*, 16(1), 17387.
- Thomas, K., Thyagarajan, S., Jeyaseelan, L., Varghese, J. C., Krishnamurthy, P., Bai, L., . . . George, S. (2002). Community prevalence of sexually transmitted diseases and human immunodeficiency virus infection in Tamil Nadu, India: a probability proportional to size cluster survey. *National Medical Journal of India*, 15(3), 135-139.
- Thongmixay, S., Essink, D. R., Greeuw, T. d., Vongxay, V., Sychareun, V., & Broerse, J. E. (2019). Perceived barriers in accessing sexual and reproductive health services for youth in Lao People's Democratic Republic. *PLoS One*, 14(10), e0218296.
- Ugarte, W. J., Högberg, U., Valladares, E., & Essén, B. (2013). Assessing knowledge, attitudes, and behaviors related to HIV and AIDS in Nicaragua: A community-level perspective. *Sexual & Reproductive Healthcare.*, 4(1), 37-44.
- United Nations Children's Fund. (2013). *Towards an AIDS-free generation - children and aids*. Retrieved from New York:
- Wairimu, H. W. (2014). *Knowledge, attitudes, and practices concerning HIV prevention among youths in Eastleigh Location in Nairobi County*.
- World Health Organization. (2014). *Fact sheet on adolescent health*. Retrieved from [http://www.unaids.org/en/media/unaids/contentassets/documents/factsheet/2012/20120417\\_FS\\_adolescentsyoungpeoplehiv\\_en.pdf](http://www.unaids.org/en/media/unaids/contentassets/documents/factsheet/2012/20120417_FS_adolescentsyoungpeoplehiv_en.pdf)

## APPENDICES

### Appendix I: Assent Form

You are requested to participate in a research study conducted by Kennedy Odhiambo Akello who is pursuing a degree of Master of Public Health from School of Public Health and Community Development, Maseno University.

The purpose of this study is to contribute to the knowledge, attitude and perception on HIV and AIDS towards safe sex practices among the secondary school students in Gwasssi South ward in Suba South sub-County. You are therefore requested to participate fully and further informed that this study is very important and your sincerity in answering the questions is highly encouraged.

Your participation in this study is voluntary, and your non-participation will not in any way affect you in this school. Also, confidentiality is highly maintained in this study and at no time will you be required to identify yourself by name. The research does not pose any physical or psychological risk that would warrant the termination of the study. Furthermore, participating in this study will not yield any direct benefits; however, the findings of the study will be shared with the Department of Health so that policy-makers be better informed about issues surrounding HIV and AIDS prevention among the adolescents. Lastly, if you agree to participate in the study, you are required to sign this consent form.

Sign.....

## Appendix II: Questionnaire for Students

This is a study on *assessment of knowledge, attitude, practice and risk perception towards HIV and AIDS Prevention among Secondary School Students in Gwasssi South Ward, Homa Bay County*. The purpose of this questionnaire is to seek information from you on this theme of study. Your knowledge will be highly appreciated. Please complete this questionnaire as honestly as possible and note that any information you provide will be treated with at most confidence. DO NOT write your name on the questionnaire. Thank you for accepting to take part in this study.

Please tick (✓) where applicable and incase yours is missing write it on the free space provided.

### SECTION A: Socio-Demographic Characteristics

a) Age \_\_\_\_\_

b) Gender \_\_\_\_\_

c) **Religious Affiliation**

- Christian ( )
- Muslim ( )
- Others (specify) ( )

### SECTION B: KNOWLEDGE ON HIV AND AIDS AND SAFE SEX PRACTICES

The following statement relates with HIV AND AIDS knowledge and Safe Sex practices. Please indicate with tick (✓) your level of agreement and disagreement in the column provided

**Key: 1- strongly disagree, 2-disagree, 3- undecided, 4-agree and 5-strongly agree**

	Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1	Coughing and sneezing DO NOT spread HIV.					
2	A person can get HIV by sharing a glass of water with someone who has HIV.					
3	Pulling out the penis before a man climaxes/cums keeps a woman from getting HIV during sex.					
4	<b>A woman can get HIV if she has</b>					



	<b>anal sex with a man</b>					
5	Showering or washing one's genitals/private parts, after sex keeps a person from getting HIV.					
6	All pregnant women infected with HIV quickly show serious signs of being infected.					
7	People who have been infected with HIV quickly show signs of being infected.					
8	There is a vaccine that stops adults from getting HIV.					
9	People are likely to get HIV by deep kissing, putting their tongue in their partner's mouth, if their partner has HIV.					
10	<b>A woman cannot get HIV if she has sex during her period</b>					
11	There is a female condom that can decrease a woman's chance of getting HIV.					
12	A natural skin condom works better against HIV than does a latex condom.					
13	A person will NOT "feel" HIV if she or he is taking antibiotics.					
14	<b>Having sex with more than one partner can increase a person's chance of being infected with HIV.</b>					
15	Taking a test for HIV one week after having sex will tell a person if she or he has HIV.					
16	A person can get HIV by bathing in the same place as a person who has HIV.					
17	<b>A person can get HIV from oral sex.</b>					
18	Using Vaseline or baby oil with condoms lowers the chance of getting HIV.					
19	Showering or washing one's genitals/private parts, after sex keeps a person from getting HIV.					

## SECTION C: HIV AND AIDS STIGMA/ATTITUDE AND SAFE SEX PRACTICES

The following statements relates with Stigma/Attitude and Safe Sex Practices on HIV AND

AIDS. Please indicate with tick (√) whether you agree or disagree with the statement

**Key:** 1- strongly disagree, 2-disagree, 3- undecided, 4-agree and 5-strongly agree

	Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1	Most people think that getting HIV is a punishment for bad behavior.					
2	Most people would not sit next to someone with HIV in public or private transport.					
3	Most people think that having HIV is just a matter of bad luck					
4	Most people think less of someone because they have HIV.					
5	Most people would not like someone with HIV to be living next door.					
6	Most people would reject the friendship of someone with HIV.					
7	Most people feel that it is safe for a person with HIV to look after somebody else's children.					
8	Most people think that people with HIV can teach us a lot about life.					
9	Most people would not date a person if they know that he/she has HIV.					
10	Most people are afraid to be around people with HIV.					
11	Most people feel that if you have HIV it is your own fault.					
12	Most people feel that people with HIV deserve as much as anyone else.					
13	Most employers would not hire someone with HIV to work for them.					
14	Most people would not drink from a tap if a person with HIV had just drunk from it.					
15	Most people believe that if you have HIV you must have done some wrong to deserve it.					
16	Most people believe that someone with HIV should be ashamed of themselves.					
17	Most people feel uncomfortable around people with HIV.					

**SECTION D: RISK BEHAVIOR/PRACTICES AND HIV AND AIDS**

The following statements relates with Risk Behavior/Practices and HIV & AIDS. Please indicate with tick (√) whether you agree or disagree with the statement.

**Key:** 1- strongly disagree, 2-disagree, 3- undecided, 4-agree and 5-strongly agree

	<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Undecided</b>	<b>Agree</b>	<b>Strongly agree</b>
1	Have you had sex with more than one person in the last 6 months?					
2	Have you had sex without a condom with someone who is not your spouse?					
3	Have you had sex directly after consuming alcohol?					
4	Have you had sex in exchange for money or food?					
5	Have you had sex without a condom with someone whose HIV status you did not know?					
6	Have you had sex without a condom with someone who you knew was HIV positive?					
7	Have you had sex with someone who is younger or older than you by 15 years?					
8	When you think about your choices over the last 6 months, how would you rate your risk level for becoming infected with HIV?					

## SECTION E: SAFER SEX PRACTICES

The following statements relate with safer sex Practices on HIV AND AIDS. Please indicate with tick (✓) whether you agree or disagree with the statement

**Key:** 1- strongly disagree, 2-disagree, 3- undecided, 4-agree and 5-strongly agree

	Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1	Consistent use of condoms during sex					
2	Abstinence among youths					
3	Faithfulness to one partner					
4	Improved uptake of VCT service					
5	Changed sexual behaviour among the youths					
6	Reduced sexual transmission infections and diseases					

Thank you for cooperation

### Appendix III: Head teacher/ Health master Key Informant Interview Schedule

This section is to be filled by the Head Teacher or the Deputy Head Teacher in case the Head Teacher is not in. It is used to gather information on HIV and AIDS prevention strategies and whether they are being implemented in the study schools.

1. How many teachers do you have in the school?-----  
-----  
-----  
-----
2. Are there teachers in the school who have been trained on teaching and support of HIV AND AIDS in this school? Please tell me more about this.
3. If the answer to question 2 above is “yes”, please state the number of teachers who have been trained, separated by gender-----  
-----  
-----  
-----
4. Do you have the revised HIV curriculum in the School? Yes/No (*Confirm and indicate if present in the School. If present, ask participant to give details of the contents of the curriculum*)
5. If the answer is “yes” in 4 above, kindly share with us a copy of the curriculum. Seen/not seen
6. If the response is “yes” in 4 above, is it being implemented? Yes/No
7. Does the curriculum quality assurance include HIV and AIDS? Yes/No. Please tell me more about this.
8. Do you have teacher performance appraisal form? Yes/No
9. Kindly share with us, if possible. Seen/not seen
10. If the response is “yes” in 8 above, does it include HIV and AIDS as an element to be assessed? Yes/No

## Appendix IV: Letter from Maseno University Ethics Review Committee



### MASENO UNIVERSITY ETHICS REVIEW COMMITTEE

Tel: +254 057 351 622 Ext: 3050  
Fax: +254 057 351 221

Private Bag – 40105, Maseno, Kenya  
Email: muerc-secretariate@maseno.ac.ke

**FROM:** Secretary - MUERC

**DATE:** 11<sup>th</sup> June, 2019

**TO:** Kennedy Odhiambo Akello  
PG/MPH/06028/2012  
Department of Public Health  
School of Public Health and Community Development  
Maseno University  
P. O. Box, Private Bag, Maseno, Kenya

**REF:** MSU/DRPI/MUERC/00689/19

**RE: Assessment of Knowledge, Attitude, Practice and Risk Perception towards HIV and AIDS Prevention among Secondary School Students in Gwasi South Ward, Suba Sub-County. Proposal Reference Number MSU/DRPI/MUERC/00689/19**

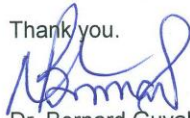
This is to inform you that the Maseno University Ethics Review Committee (MUERC) determined that the ethics issues raised at the initial review were adequately addressed in the revised proposal. Consequently, the study is granted approval for implementation effective this 11<sup>th</sup> day of June, 2019 for a period of one (1) year. This is subject to getting approvals from NACOSTI and other relevant authorities.

Please note that authorization to conduct this study will automatically expire on 10<sup>th</sup> June, 2020. If you plan to continue with the study beyond this date, please submit an application for continuation approval to the MUERC Secretariat by 15<sup>th</sup> May, 2020.

Approval for continuation of the study will be subject to successful submission of an annual progress report that is to reach the MUERC Secretariat by 15<sup>th</sup> May, 2020.

Please note that any unanticipated problems resulting from the conduct of this study must be reported to MUERC. You are required to submit any proposed changes to this study to MUERC for review and approval prior to initiation. Please advise MUERC when the study is completed or discontinued.

Thank you.

  
Dr. Bernard Guyah  
Ag. Secretary,  
Maseno University Ethics Review Committee



Cc: Chairman,  
Maseno University Ethics Review Committee.

MASENO UNIVERSITY IS ISO 9001:2008 CERTIFIED



**Appendix V: Authorization letter from the Ministry of Education**



**MINISTRY OF EDUCATION**

**STATE DEPARTMENT FOR EARLY LEARNING & BASIC EDUCATION**

Telegrams: "SCHOOLING" Homa Bay  
Telephone +  
When replying please quote  
[cdehomabay@gmail.com](mailto:cdehomabay@gmail.com)

COUNTY DIRECTOR OF EDUCATION  
HOMA BAY COUNTY  
P.O BOX 710  
HOMA BAY  
DATE: 16<sup>TH</sup> SEPTEMBER, 2019

REF: MOEST/CDE/HBC/ADM/11/VOL. II/20

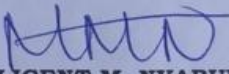
KENNEDY ODHIAMBO AKELLO  
MASENO UNIVERSITY  
PRIVATE BAG  
MASENO.

**RE: RESEARCH AUTHORIZATION.**

Following your application for authority to carry out research on "**Assessment of knowledge , attitude , practice and risk perception towards HIV and AIDS prevention among secondary school students in Gwasi South Ward, Suba Sub County** " I am pleased to inform you that you have been authorized to undertake research in Homa Bay County for the period ending **25<sup>th</sup> July, 2020.**

Kindly note that ,as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a copy of the final research report to the County Director of Education Office after completion both the soft copy and hard copy.

Thank you in advance.

  
**MILLICENT M. NYABUNGA**  
COUNTY DIRECTOR OF EDUCATION  
Cc.

**COUNTY DIRECTOR OF EDUCATION**  
HOMA BAY COUNTY  
P O BOX 710-40300, HOMA BAY  
Email: [cdehomabay@gmail.com](mailto:cdehomabay@gmail.com)

1. County Commissioner  
Homa Bay County.



## Appendix VI: Research Authorization by NACOSTI



### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,  
2241349,3310571,2219420  
Fax: +254-20-318245,318249  
Email: dg@nacosti.go.ke  
Website : www.nacosti.go.ke  
When replying please quote

NACOSTI, Upper Kabete  
Off Waiyaki Way  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No. **NACOSTI/P/19/82658/29880**

Date: **26<sup>th</sup> July, 2019**

Kennedy Odhiambo Akello  
Maseno University  
Private Bag  
**MASENO**

#### **RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *“Assessment of knowledge, attitude, practice and risk perception towards HIV and AIDs prevention among secondary school students in Gwasi South Ward, Suba Sub County”* I am pleased to inform you that you have been authorized to undertake research in **Homa Bay County** for the period ending **25<sup>th</sup> July, 2020**.

You are advised to report to **the County Commissioner and the County Director of Education, Homa Bay County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a **copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

  
**GODFREY P. KALERWA MSc., MBA, MKIM**  
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner  
Homa Bay County.

The County Directors of Education  
Homa Bay County.

*National Commission for Science, Technology and Innovation is ISO9001:2008 Certified*



## Appendix VII: Research Permit by NACOSTI

**THIS IS TO CERTIFY THAT:**  
**MR. KENNEDY ODHIAMBO AKELLO**  
**of MASENO UNIVERSITY, 0-40100**  
**KISUMU, has been permitted to conduct**  
**research in Homabay County**  
**on the topic: ASSESSMENT OF**  
**KNOWLEDGE, ATTITUDE, PRACTICE AND**  
**RISK PERCEPTION TOWARDS HIV AND**  
**AIDS PREVENTION AMONG SECONDARY**  
**SCHOOL STUDENTS IN GWASI SOUTH**  
**WARD, SUBA SUB COUNTY**  
**for the period ending:**  
**25th July, 2020**

**Permit No : NACOSTI/P/19/82658/29880**  
**Date Of Issue : 26th July, 2019**  
**Fee Received :Ksh 1000**



**Applicant's Signature**



**Director General**  
**National Commission for Science,**  
**Technology & Innovation**

**THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013**

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

**CONDITIONS**

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights thereunder are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The License does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
7. The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.

**National Commission for Science, Technology and innovation**  
P.O. Box 30623 - 00100, Nairobi, Kenya  
TEL: 020 400 7000, 0713 788787, 0735 404245  
Email: dg@nacosti.go.ke, registry@nacosti.go.ke  
Website: www.nacosti.go.ke



**REPUBLIC OF KENYA**



**NACOSTI**  
**National Commission for Science,**  
**Technology and Innovation**  
**RESEARCH LICENSE**

**Serial No.A 26151**  
**CONDITIONS: see back page**

**Appendix VIII: Approval of the Research Proposal by Maseno University**



**MASENO UNIVERSITY  
SCHOOL OF GRADUATE STUDIES**

*Office of the Dean*

**Our Ref:** PG/MPH/06028/012

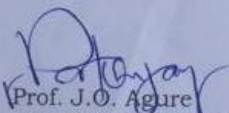
Private Bag, MASENO, KENYA  
Tel:(057)351 22/351008/351011  
FAX: 254-057-351153/351221  
Email: [sgs@maseno.ac.ke](mailto:sgs@maseno.ac.ke)

Date: 14<sup>th</sup> March, 2019

**TO WHOM IT MAY CONCERN**

**RE: PROPOSAL APPROVAL FOR KENNEDY ODHIAMBO AKELLO —  
PG/MPH/06028/2012**

The above named is registered in the Masters of Public Health Programme in the School of Public Health, Maseno University. This is to confirm that his research proposal titled "Assessment of Knowledge, Attitude, Practice and Risk Perception towards HIV and AIDS Prevention among Secondary School Students in Gwasi South Ward, Suba Sub County." has been approved for conduct of research subject to obtaining all other permissions/clearances that may be required beforehand.

  
Prof. J.O. Agure

**DEAN, SCHOOL OF GRADUATE STUDIES**

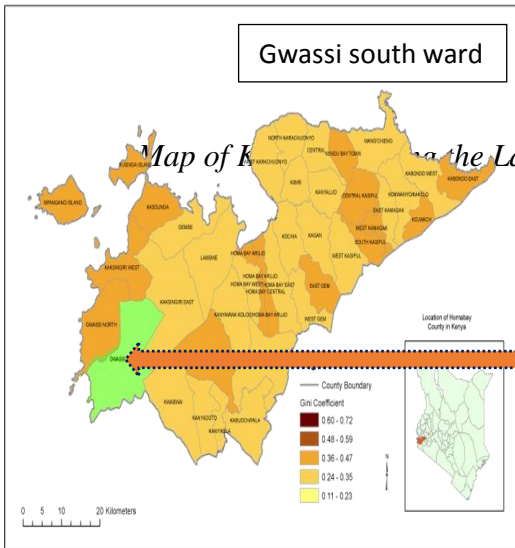


*Maseno University*

*ISO 9001:2008 Certified*



**Appendix IX: Map of Kenya Showing the Lake Region and the Study Site**



**Map of Homa Bay County**