PATTERNS OF UTILIZATION OF HIV PREVENTIVE SERVICES BY BODA-BODA OPERATORS IN HOMABAY TOWN, KENYA

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DECLARATION

DECLARATION BY THE STUDENT

This thesis is my original work and has not been presented for examination in any university or any other academic institution of higher learning for any award.

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DECLARATION BY SUPERVISORS

We confirm that the work reported in this thesis was carried out by the candidate under our supervision.

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DEDICATION

This study is dedicated to my beloved family who has been of great help in ensuring that I reach this far and my daughter Kimberly for having walked with me through this journey.

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ABSTRACT

The mobility of the transport sector makes it difficult to access health information and treatment and/or maintain a drug regimen. There is high HIV prevalence rate in Homa-Bay County with a prevalence of 25.7% compared to 5.6% nationally. The purpose of the study was to determine patterns of utilization of HIV preventive services which specifically sought to find out awareness of HIV status, to determine the HIV prevention strategies employed by the boda-boda, to investigate the driversaffecting the uptake of HIV preventive services and finally to explore the health seeking behavior patterns among boda-boda operators in Homa-Bay town. The study adopted three theories key among them was cognitive theory. This was a mixed methods study. The study population was 1120 and it targeted male boda-boda operators who were aged between 20-40 years. The sample size for the study was 119. The main respondents were boda-boda operators while key respondents were their group leaders. Logistic regression analysis was used to determine the drivers affecting the uptake of HIV preventive services among the study population. Results from this study show that a majority of the operators (89.3%) reported having been tested for HIV. Relatively low HIV prevention service uptake with condom being the most used service at 68.9%. In the multivariate analysis, occupation of the respondent, marital status and highest level of education attained were significantly associated with HIV prevention services uptake. Participants who reported owning a business, either (Duka, Kiosk or Juakali) were about 38% less likely to utilize any of the services compared to those who reported farming as their other source of income occupation (PR=0.62, 95% CI 0.62-0.96); whereas in terms of marital status, divorced/separated were two-fold likely to use any of the two services compared to the married in a monogamous family (PR=2.13, 95% CI 1.36-3.33). Those respondents reporting having attained primary level of education as the highest were 1.3 more likely to utilize any of the services compared to those reporting secondary as the highest level of education (PR=1.33, 95% CI 1.00-1.78). Finally, medical pluralism was noted among boda-boda operators who sought health services. The study concludes that, HIV testing services in Homa-Bay are effective since many respondents reported having had an HIV test. However, utilization of HIV preventive services are relatively low as compared to the high awareness of HIV preventive services. Occupation, marital status and level of education were found to be the drivers affecting uptake of HIV preventive services. Finally, medical pluralism was noted among the operators who sought health services. The study recommends to the ministry through NACC to create flexible HIV testing hours in order to reach all the operators with testing services, put emphasis to increase the utilization of HIV prevention methods through education, there is also a need to target operators with higher educational levels, those that own business and married monogamous to increase their ability to effectively utilize HIV preventive methods. Finally, education on the importance of seeking medical services from health facilities should be stressed.

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ABREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
CDC	Center for Disease Control
EGPAF	Elizabeth Glasier Pediatric Foundation
FACES	Family AIDS Care and Education Services
FSW	Female Sex Workers
HCW	Health Care Workers
HCT	HIV Counselling and Testing
HIV	Human Immunodeficiency virus
IRDO	Impact Research and Development Organization
IOM	International Organization for Migrtion
KAIS	Kenya AIDS Indicator Survey
KNASP	Kenya National AIDS Strategic Plan
MSF	Medicines San Frontiers
MSM	Men having Sex with Men
NACC	National Aids Control Council
NASCOP	National Aids and STD Control Program
NRHS	Nyanza Reproductive Health Society
PLHIV	Persons Leaving with HIV
STD	Sexually Transmitted Diseases
STIs	Sexually Transmitted Infections
TAS	Treatment As Prevention
UNAIDS	Joint United Nations Program on HIV/AIDS
UNICEF	United Nations International Children's Emergency Fund
VMMC	Voluntary Medical Male Circumcision
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Abstinence: A case in point where an individual has not started having/has never had sexual intercourse,

Boda-boda operators are any person who uses their motorbikes to transport people and goods in exchange of money.

HIV risk behaviours: behaviours that put people at risk of HIV acquisition such as early sexual debut, unprotected sex, multiple sexual partners, drugs and alcohol use e.t.c.

Medical Pluralism: This is the act of seeking health services from different sources such as hospitals, spiritual leaders and traditional healers

Prevalence: the number of cases of a given disease/health condition in a defined population, at a single point in time, expressed as a percentage of all persons in the population.

Utilization to put to use,especially to make profitable or effective use of.

Preventive services are the amenities put in place to curb transmission of HIV

Patterns of utilization: These are the ways or methods of HIV prevention adopted by boda-boda

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) are major public health concerns and challenge facing both developing and developed nations (UNAIDS, 2010). In the last 30 years, the HIV/AIDS epidemic has emerged as one of the major challenges for the world, going from a relatively small problem in the 1980s to one of the leading causes of mortality and burden over the last decade (Murray et al, 2012). The current global trend is towards a larger share of disease burden coming from non-communicable diseases and injuries; however, HIV/AIDS is a dramatic exception. Mortality and burden from HIV/AIDS increased steadily until around 2004, against the general trend of declining infectious diseases.

Globally, there are approximately 36.9 million people currently living with HIV and tens of millions of people have died of AIDS-related causes since the beginning of the epidemic (UNAIDS, 2015). In 2013, there were an estimated 1.1 million people living with HIV in Eastern Europe and Central Asia -3% of the global total. In the same year, there were roughly 110,000 new HIV infections and 53,000 AIDS-related deaths (UNAIDS, 2014). In China HIV epidemic is rising rapidly in the populations and more effective prevention measures are urgently needed. In Latin America and Caribbean, About 2.0 million people are estimated to be living with HIV including 100,000 newly infected in 2014. The Caribbean itself, with an adult HIV prevalence rate of 1.1%, is the second hardest hit region in the world after sub-Saharan Africa. Six countries in Latin America and the Caribbean have generalized epidemics. Of the

countries with available data, Haiti has the region's highest prevalence rate (1.9%), and Brazil the greatest number of people living with the disease (approximately 610,000 to 1,000,000) (UNAIDS, 2015).

India has the third largest HIV epidemic in the world. In 2015, HIV prevalence in India was an estimated 0.26% (NACO, 2015). This figure is small compared to most other middle-income countries but because of India huge population (1.2 billion) this equates to 2.1 million people living with HIV. In the same year an estimated 68,000 people died from AIDs-related illness (UNAIDS, 2015). A number of studies from India have reported high vulnerability of truckers to HIV transmission NACO estimates that 2.59% of the two million truckers in India are living with HIV.

NACO also categorizes truck drivers as bridge population because truck drivers often have unprotected sex with high-risk groups such as female sex workers as well as their regular sexual partners which increases the risk of transmitting HIV into the general population. It also reports lower HIV testing rates among truck drivers than other higher risk groups (NACO, 2015).

Sub-Saharan Africa, the hardest hit region, is home to 70% of people living with HIV but only about 13% of the world's population. Most children with HIV live in this region (88%). Almost all of the region's nations have generalized HIV epidemics—that is, their national HIV prevalence rate is greater than 1%. In 9 countries, 10% or more of adults are estimated to be HIV-positive. South Africa has the highest number of people living with HIV in the world (6.8 million). Swaziland has the highest prevalence rate in the world at 27.7% (UNAIDS, 2015). In 2013, an estimated 24.7 million people were living with HIV, accounting for 71% of the global

total. In the same year, there were an estimated 1.5 million new HIV infections and 1.1 million AIDs related deaths. (UNAIDS, 2014).

The HIV epidemic in Kenya has evolved, since the first case was diagnosed in 1984, to become one of the major causes of mortality and has placed tremendous demands on the health system and the economy. The epidemic has affected all sections of society – children, youths, adults, women and men (NACC, 2014).

Kenya has the fourth largest epidemic globally (NASCOP, 2015). Since the country identified its first AIDS case in 1984, HIV has remained a serious public health concern that has claimed hundreds of thousands of lives and orphaned millions of children (UNAIDS, 2014).

Governments have made a series of international commitments to improve the AIDS response, with the ultimate objective of moving towards universal access to comprehensive HIV prevention, treatment, care and support by 2010. This included the Millennium Development Goal 6 to halt and reverse the spread of the epidemic by 2015. In addition the United nations has set a priority of having almost 90% of persons living with HIV in Kenya access and get retained in treatment so that the viral suppression is enhanced as a means of prevention as one of the numerous prevention strategies (UNAIDS, 2015; Cohen *et al*., 2012) Risk behaviors and vulnerabilities are enmeshed in the complex webs of economic, legal, political, cultural and psychosocial determinants.

In the HIV acquisition cascade, there are some groups of workers that are more vulnerable to HIV infection due to the nature and conditions of their work such as transport workers (IOM, 2005). Living and working conditions put transport workers at risk of contracting and transmitting the virus: they are of an age to be sexually active; they are usually men, often leaving and working in a macho culture and

separated from regular partners for extended periods of time (IOM, 2005). They are subject to stress; they usually carry significant sums of cash to meet their travel needs; they are attractive customers to sex industry that tends to be active in the so-called "hotspots" where truck stop; and they often have inadequate access to health services, including to treatment for sexually transmitted infections (IOM, 2005). Knowing the extent of HIV acquisition in various populations is key, as risk behaviors can only transmit HIV if the virus is present in the first place (Pisani *et al*, 2003).

One group where the impact of HIV transmission is growing is the male population in the transportation industry. This type of population is often referred to us the 'bridge' population. The spread of HIV/STI in the community is carried out mainly through sexual interaction between the core group and the transportation population who act as the bridge to the spread of disease to the general population (Arulogun *et al*, 2011). It is for this reason that the study will focus on the male boda-boda operators who are part of the transport industry population. As the HIV epidemics spread across communities, transmission from transportation drivers, who migrate from place to place to their wives and sex partners become an important route of infection among women. This type of transmission has occurred in many developing countries. (Arulogun *et al*, 2011).

According to UNAIDS (2006), a combination of social vulnerabilities, biological and behavioral factors place migrant workers who endure long period of spousal or partner separation at differentially higher risk of acquiring and or transmitting HIV.

The Kenya AIDS Indicator Survey (KAIS) of 2018, showed that Nyanza region, in rural western Kenya, has the highest HIV prevalence rate in Kenya at 15.1 percent compared with the national prevalence of 5.6% (NASCOP, 2013). Homabay one of

the high endemic counties in Kenya has the highest HIV prevalence of 25.7% (NACC, 2014).

The bodaboda operators just like the truck drivers are highly mobile, engage in frequent seasonal rural-urban migration and spend long hours on the road away from their families. Their need for recreation and female companionship makes them very likely to use the services of female sex workers (FSW). The HIV prevalence and service utilization patterns of key populations in Kenya such as the men who have sex with men (MSM) and FSW is known (NASCOP, 2009). However there is no known data of the prevalence of human immunodeficiency virus (HIV) and sexually transmitted infections (STIs), their behaviours and service utilization among the bodaboda operators, a highly mobile group. Since there is paucity of data among this group yet this group is suspected to be a key group in the HIV transmission dynamics, this study through self-report data determined patterns of utilization of HIV preventive services among the bodaboda operators in Homabay town. In addition, this the study determined the HIV risk behaviors among bodaboda operators in Homabay town.

There is need for various interventions and prevention strategies especially among populations at high risk of HIV acquisition is increasingly being recognized in Kenya's' national response (NACC, 2014). In this regard, various strategies have been employed to mitigate against HIV spread (NACC, 2014). These strategies include voluntary medical male circumcision that has shown to be an effective HIV prevention strategy by reducing HIV acquisition by over 60% (Barley *et al*, 2007). Additionally treatment as prevention (TAS) by use of antiretroviral drugs has shown prevention from infected partner to uninfected partner by over 96% (Cohen *et al.*,

2012). Use of condoms correctly and consistently is also an effective method to mitigate against HIV spread and acquisition (NACC, 2014). These strategies have been used over time by the general population and key population including HIV prevention organizations in the fight against HIV. Among the bodaboda group in Homa-Bay, there is no available data detailing the prevention strategies that are in use in the fight against the spread of HIV. There is equally no empirical data showing the kind of strategies employed by boda-boda operators in the fight against HIV spread. This study also examined the various prevention strategies that are employed by this highly mobile group in the fight against HIV spread in Homa-Bay town.

Populations' world-wide employ deferent health seeking behaviour models in their quest for better and improved health. In the era of HIV persons who think that they are at risk of HIV infection seek for information on HIV, STI, VMMC and condoms at various places. In Homabay town, various centers in conjunction with the ministry of health and partners have been set up to take care of the HIV health needs of the residents. Among the bodaboda, there is no data detailing their actions when it comes to HIV health seeking behaviors. This study explored patterns of utilization amongst this group.

Various prevention strategies have shown a positive correlation in the reduction and prevention of HIV in Kenya (NACC, 2014). Research has shown that condom use and male circumcision significantly reduce acquisition of HIV in the population (Barley, 2007). Seeking health services is determined by a number of factors. These could include external factors, predisposing factors, need factors and enabling factors (Andersen, 1995). Since the Kenya behaviorial surveillance was conducted in 2003, few studies such as Morris and Ferguson (2005) and Strauss et al, (2018) have been

done in the country to look at service utilization. In Homabay town, there are no known factors that determine and/or influence uptake of HIV prevention, care and treatment services among the bodaboda operators. This study additionally determined the drivers that influence uptake of HIV health services among bodaboda operators in Homabay town.

Although HIV testing capacity has increased over time, enabling more people to learn their HIV status, nearly half of all people with HIV are still unaware they are infected(UNAIDS, 2015).

1.2 Statement of the Problem

Owing to the nature of their work, bodaboda operators are faced with a lot of risks of HIV infections. The nature of their profession brings them in close contact to the nightlife and the CSWs whom they frequent and often places them in the position of being contacts for these workers (Kohli *et al*, 2017). Efforts by both governmental and non-governmental organizations have been directed towards solving this problem including a number of services e.g. condom use, VMMC and TAS offered and research have also been done in this area with the aim of finding a lasting solution (NASCOP, 2005). Most people living with HIV or at risk of HIV infection do not have access to prevention, care, and treatment, yet there is still no cure. Although HIV testing capacity has increased over time, enabling more people to learn their HIV status, nearly half of all people with HIV are still unaware they are infected (UNAIDS, 2015).

Homa-Bay County is the leading County in Kenya with an HIV prevalence of 25.7% compared with the national prevalence of 5.6%. (NACC, 2014). Boda-boda operators are a high risk group who involve themselves in HIV risk behaviours such

as having sex with multiple sex partners, low condom use with non-regular partners, use of drugs and alcohol (NASCOP, 2005). There is also documented evidence of boda-boda operators giving free rides to clients in exchange for sex (NASCOP, 2005). These among others put this group at risk of HIV infection. The role of transportation drivers, particularly long-haul truckers and CSWs in the spread of HIV/STI has been studied in many settings. However, most of these studies focus on risk behaviors and the epidemiology of HIV/STI among truck drivers (Kohli *et al*, 2017). For example, research has shown that transport workers have specific healthcare needs due to the nature of their work which includes dispropotionate healt burden, including high rates of STI and HIV, respiratory diseases, backache, leg pains etc (CDC, 2007). The occupational circumstances that make them susceptible to worst health outcomes include irregularschedules, sedentary lifestyles due tolong hours of driving/sitting and poor access to health care (Aniebui *et al*, 2009). Very few data are available on HIV/STI prevention programs among transportation drivers (few studies such as Morris and Ferguson (2005) and Strauss et al, (2018) have been done in the country to look at service utilization) and, specifically on patterns of utilization of HIV preventive services among boda-boda operators.

Despite the various measures that have been put in place to curb the spread of the virus e.g. condom use, VMMC and TAS, Homa-Bay County still leads with the highest number of new infections. There is need for targeted interventions which could have significant impact in averting HIV infections related trans-Africa highway (Morris, 2005). This study therefore sought to address this issue by investigating the patterns of utilization of HIV preventive services among boda-boda operators in Homabay town in Homabay county, Kenya. In Homabay town there is paucity of data

to describe the patterns of utilization of HIV preventive services exhibited by this group, to help in formulating policies and strategies for HIV prevention to target them within this rural community, the entire country and beyond. This will also create an appropriate background to developing a sustainable remedy to the problem

1.3 Objectives

The main objective of this study was to examine patterns of utilization of HIV preventive services among boda-boda operators in Homa-Bay town, Kenya. The specific objectives of the study were;

1. To asses HIV status awareness among boda-boda operators in Homa-Bay town.
2. To determine the HIV prevention strategies employed by the bodaboda operators in Homa-Bay town.
3. To establish the drivers of HIV preventive service uptake among boda-boda operators in Homa-Bay town, Kenya
4. To explore the health seeking behaviour patterns among bodaboda operators in Homa-Bay town.

1.4 Research Questions

The study answered the following questions;

1. Are boda-boda operators in Homa-Bay town aware of their HIV status?
2. What are the various prevention strategies that are employed by the bodaboda operators in the fight against HIV spread in Homa-Bay town?

3. What are the factors that influence the uptake of HIV preventive health services among boda-boda operators in Homa-Bay town?

4. What health seeking behaviour patterns do bodaboda operators exhibit in Homabay town?

1.5 Justification of the Study

HIV spread has been a public health concern to policy makers and governments for many years. This situation have been made worse by increased urbanization and the rise of groups that are considered to be of the greatest risk and key players in the spread of the virus. Despite the Kenyan government's efforts to curb the rate of new infections in the country, there are still high HIV prevalence rates in Nyanza province (KAIS 2012). Because of this, there is now increasing pressure on the researchers to provide a scientific solution for sustainable methods of reducing the rates of new infections especially among key populations. It is for this reason that conducting a study on the patterns of utilization of HIV preventive services among boda-boda operators in Homabay town was critical in providing empirical data to act as a platform for exploring sustainable strategies to reduce the spread of HIV virus, in line with the WHO millennium development goal number 6 (UN, 2010).

1.6 Significance of the Study

Since the government process of formulating policy is strongly dependent on research findings by academicians, public sector practitioners among other stakeholders, results from this study may bring into focus aspects of patterns of utilization of HIV prevention services among the boda-boda operators in Homa-Bay County. These findings are critical in formulating HIV intervention policies that target

the boda-boda operators in addition to devising strategies that may help in the prevention of new infections among this group which is a high risk group. Such interventions will in the long run curb HIV mortality and morbidity in this region and beyond.

Just as this research has been influenced by the findings of other researchers to undertake further investigation in the area of HIV/AIDS spread, it is also expected that the findings of this study may spur interest among other researchers to advance investigation in this area.

1.7 Scope and Limitations of the Study

The study was set to investigate the patterns of utilization of HIV preventive services among boda-boda operators. The geographical scope was Homa-Bay town of Homa-Bay county in Kenya. Thus the findings may only be generalised to communities with similar socio-economic, cultural and geographical charachteristics.

The sample for the study was drawn from boda-boda operators in Homa-Bay town. The study covered the knowledge level of boda-boda operators on HIV preventive services, factors affecting uptake of HIV/AIDS preventive services and the preventive strategies adopted by the boda-boda operators in Homa-Bay town. Few limitations were considered in this study.

Due to ethical and legal considerations, the study only collected data from boda-boda operators aged between 20 and 40 years. This excluded some persons (<20 years and >40 years) because those aged below 20 years might not have adequate experience in the operations of boda-boda business since they have just started boda-boda operation. For one to be liscensed to operate a motorbike they are required to

have attained 16 years(GOK, 2016), however those between ages 16 and 19 years were not involved in the study because they might not have had adequate experience with the day to day operations of the boda-boda indutry. Since boda-boda operation require energetic people who can work for long hours under harsh climatic conditions, it is for this reason that those aged above 40 years were excluded in the study. This study was limited to male operators because research has shown that HIV transmission among the male population in the transport industry is growing, this condition makes the male population in the transport industry vulnerable (IOM, 2005).

This study used self-reported data from the respondents. For this reason, there may be response bias as with any self-reported behavioral/risk data collection. Equally, the study may have had inadequate responses from the participants. However, staff that were involved in data collection were trained on interviewing skills and techniques to get desired and reliable data from the respondents. Some respondents were unwilling or unavailable during the time of study. This study would have covered other towns in Kenya but due to limited funds and time, the study only focused on Homabay town. It is however hoped that the findings from this study were generalized to the entire bodaboda industry in Kenya.

The research design used in this study is descriptive cross-sectional hence the limitation of following trends in real time or over a short period of time generally believed causes and effects are unclear.

1.8 Organization of the Thesis

This study is organized into five chapters which includes chapter one, two, three, four and five. Chapter one provided the background to the study, statement of the problem, objectives, and research questions, justification of the study and scope of the study. Chapter two reviewed relevant literature presenting global, regional and Kenyan experience on patterns of utilization of HIV prevention services among boda-boda operators. The reviewed literature covered, burden of HIV and AIDS, transport sector and the risk factors, VCT services and status awareness, HIV prevention strategies employed by boda-boda operators, boda-boda operators and HIV service utilization and factors influencing utilization of HIV prevention methods. Theoretical and conceptual frameworks are also covered in this chapter. Chapter three presents research design, description of the study area, target population, sampling design and sampling procedures, research instruments, data collection techniques, data analysis and ethical considerations.

The study findings are analysed, presented and discussed in chapter four. It starts with identifying the socio-demographics of the boda-boda operators. The results were arranged in four sections, each dedicated to one objective. Each section begins with analysis then presents the findings and finally discusses the results. Chapter five has a summary, a conclusion and recommendations based on objectives and findings.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter focuses on both empirical and theoretical review that is crucial in understanding utilization of health services globally. To understand and comprehend utilization of health services, detailed review of utilization patterns analysis is very vital. The empirical review was done in terms of the objectives which focused on HIV status awareness, HIV prevention strategies employed, drivers affecting the uptake of HIV preventive services and finally health seeking behavior patterns. This chapter will also look into burden of HIV/AIDs and transport sector and the risk factors. Finally, the chapter will clearly capture the conceptual framework that will depict key variables of interest and how they depend on one another.

2.2. Burden of HIV and AIDS

Human Immunodeficiency virus (HIV) /Acquired Immunodeficiency Syndrome (AIDS) still remains a major public health concern and challenge facing both developing and developed nations (Murray *et al*, 2012). Globally, an estimated 35.3 million people were living with HIV at the end of 2012 (UNICEF, 2013). Of the 35.3 million PLHIV, approximately 24.7 million live in Sub-Saharan Africa, the region hardest hit by the epidemic (UNAIDS, 2014). However in other parts of the world, low HIV infection rates have been noted for example Eastern Europe and central Asia have -3% of the global total. A different scenario is observed in some places like China, where the epidemic is rising rapidly in the population thus necessitating the need for urgent effective prevention measures (Liu *et al*, 2014).

Among the general population, high burden of HIV infection has been noted among the youths in different parts of the world. In places like Iran, HIV burden is noted among this population (Noori *et al*, 2016). This has brought a significant burden for PLHIV and their families (Poudel *et al*, 2017). Many government around the world have come up with ways to reduce new infections. However, the progress has been slow, assistance for health devoted to HIV has stagnated and resources for health in low-income countries have grown slowly (UNAIDS, 2014)

In Kenya approximately 1.5 million people are living with HIV (NASCOP, 2013). Out of this people number, Homa-Bay County contribute 10.4%. A study done in Nairobi, Kenya showed that although 73.6% of adult PLHIV receives antiretroviral, their risk of death is four fold greater than uninfected, while 16.1% of all adult deaths in the city could be attributed to HIV infection (Young *et al*, 2015).

Young people, who make a bigger percentage of the Kenyan population are considered to be at a higher risk of acquiring the infection as compared to their adult counterparts. Studies done in Kenya have revealed that youths generally recorded low HIV testing, diagnosis and linkage to care (Wilson *et al*, 2017; Wong *et al*, 2017).

It is of great importance that youths take up HIV testing, ART, treatment upon diagnosis, condom and male circumcision services in order to significantly reduce the rate of HIV infection. It is equally vital to emphasize the need to adhere to treatment regimen. Poor adherence and stopping ART has also been noted in patients near famous traditional healers (Wanyama *et al*, 2017), this again requires proper education on the importance of adherence to care and treatment. With proper adherence, practice of treatment as Prevention (TAS), by use of antiretroviral drugs

has shown prevention from infected partner to uninfected partner by over 96% (Cohen *et al*, 2012).

In order to reduce the infection rate of HIV, it is important that interventions targeting the youthful population be implemented in high burden areas (Renzaho *et al*, 2017). This can be done by strengthening HCW, caregivers and peer capacities to support adolescents and youths while respecting their autonomy (Wilson *et al*, 2017).

Efforts have been put in place by government and non-governmental organizations to curb the spread of HIV and AIDs in Kenya. Nyanza region in the rural Western Kenya has the highest HIV prevalence rate in Kenya at 15.1% compared with the national prevalence of 5.6%. Homa-Bay one of the high endemic counties in Kenya has the highest HIV prevalence of 26% which is four times the national prevalence (NASCOP, 2013). Various populations lead in the spread of the epidemic and these include the sex workers, Men who have sex with men, Fisherfolk communities and the transport group (NASCOP, 2009). The transport sector is especially vulnerable to HIV/AIDS due to nature and environment of its workplace and economic activities (Arulogun *et al*, 2011)

Area of residence, age and education are some of the factors that can put one at risk of being infected by HIV. In Cambodia, people living in urban areas are more likely to be HIV infected than those living in rural areas (Chhim *et al*, 2017). However, a study done in rural community among the Kwazulu Natal indicated that there is high HIV infection in the rural area. Despite the fact that there is a declining trend in infectious diseases (Murray *et al*, 2012), a high HIV infection prevalence has been noted in many countries across the word (Van *et al*, 2017; Wong *et al*, 2017).

In order to further reduce HIV-associated mortality, high-burden countries may need to reach very high levels of dinosis, treatment coverage, retention in care and viral suppression (Young *et al*, 2015). This can be done by focusing on people living in high burden settings and reaching them with HIV services.

2.3 Transport Sector and the Risk Factors

The transport sector is considered as the 'bridge' population. The spread of HIV/STI is carried out mainly through sexual interaction between the core group and the transportation population who act as bridge to the spread of disease to the general population (IOM, 2005). The nature and conditions of their work put transport workers at risk of contracting and transmitting the virus. They are in many instances separated from regular partners for extended periods of time. There need for recreation and female companionship makes them very likely to use the services of female sex workers. The HIV prevalence and service utilization patterns of the key populations in Kenya such as MSM and FSW is known (NASCOP, 2013). Studies done on boda-boda operators in rural and urban areas in Kenya have focused on HIV testing and condom use (Yonge *et al*, 2017). However, patterns of utilization of HIV prevention methods have not been holistically studied in urban setting in Kenya.

Evidence has shown that persons working in the transport sector including truck drivers, bodaboda operators bear disproportionate health burdens, including high rates of sexually transmitted infections (STI), and HIV, respiratory diseases backache, leg pains etc (CDC, 2007), and thus need to specific healthcare atention. This is as a result of the nature of their work that increases their vulnerability to a number of diseasesa dn health outcomes (IOM, 2005). Apart from their vulnerability to HIV (Arulogun *et al*, 2011), the nature of their occupational risk circumstatnces such as

irregular schedules, sedentary lifestyle due to long hours of driving/sitting, musculoskeletal and other injuries due to loading and unloading cargo, exposure to road accidents and deaths, extended periods of social isolation, unhealthy food choices on the road and poor access to healthcare (Aniebue & Aniebue, 2009 ; CDC, 2007), make them susceptible to worst health outcomes.

Various studies conducted have shown that this group is prone to a number of health related events and disease outcomes. A number of work-related injury outcomes and factors vave been documented. Work pressures to work faster, daytime sleepiness, poor composite for safety perceptions and fatigue have shown greater odds for work related injuries (Anderson, Smith, & Byrd, 2017). Cases of cardiovascular diseases and metabolic syndome and sleepiness risk factors such as alcohol consumption has been reported among truck drivers (Mansur Ade *et al*., 2015). The use of alcohol and other substances leads to a number of road accidents in various parts of the world. Alcohol consumtion and usage has been documented among this group (Leopoldo, Leyton, & Oliveira, 2015). Evidence of alcohol and substance consumption before undertaking duties has greatly shown to be a contributing factor to risky driving behaviours among the motorcycle drivers (Heydari *et al*., 2016), as this has led to careless driving and at times overspeeding. Alizadeh et al., (2011) also did document, the risk of noise induced hearing loss due to the condition that drivers in the transport industry work under. Asefa et al., (2014) in the survey in Mekelle town in Ethiopia were able to highlight the groups susceptability to road crushes as a result of speedy driving and driving mechanically faulty vehicles. A cross-sectional study done in Nigeria on kowledge, attitude, risk behaviour and beliefs among truck

drivers showed that this group was a potential window for HIV acquisition due to their mobile nature (Angeles *et al*., 2014).

The transport sector is in equal measure considered as the 'bridge' population. The spread of HIV/STI is carried out mainly through sexual interaction between the core group and the transportation population who act as bridge to the spread of disease to the general population (IOM, 2005). There is documented evidence of a higher HIV prevalence among this bridge population as compared to the general pupolation (Delany-Moretlwe *et al*., 2014). The nature and conditions of their work put transport workers at risk of contracting and transmitting the HIV virus.

There are many instances in which this group is absent from their homes for longer periods of time and thus separated from regular partners for extended periods of time (Diallo, Alary, Rashed, & Barry, 2011). In equal measure, the need for recreation and female companionship coupled with power and monetary imbalances makes persons in the transport industry very likely to use the services of female sex workers (Kohli *et al.*, 2017), and these are risk factors towards HIV acquisition. Most of persons in this industry engage in sex for money activities and thus the likelihood of peer pressure from colleagues, including the ability to purchase for sex and the vailability of sex workers along the transport corridors including alcohol consumption make the transport industry players susceptible to HIV (Kohli *et al*., 2017).

On the other hand, apart from their long absence from their homes, alcohol consumption among this group has also been significantly associated with the acquisition of HIV as this has shown a negative correlation with the ability to abstain in risky situations (Diallo, Alary, Rashed, & Barry, 2011). Lindan et al., (2015) in their study among motorcycle taxi drivers in Uganda also identified alcohol

consumption and more lifetime sexual partners as a predictor to HIV acquisition. The transport sector is also made up of youthful population due to unemployment that is skewed towards the youths thus forcing them to get involved in informal employment like boda-boda operation. The youths being energetic and sexually active are disproportionately at a higher risk of HIV infection (Alsallaq *et al*, 2017).

Education level can also be a factor in one's choice to join informal sector. People with low education level are likely to join the informal sector (UNICEF, 2013). Education levels influences the quality of knowledge and awareness about STI/AIDS and contribute to correct condom use. Low educational level and linguistic challenges pause the risk of missing campaigns messages or misunderstanding informative materials increases (Zoboli *et al.*, 2017).

The HIV prevalence and service utilization patterns of the key populations in Kenya such as MSM and FSW is known (NASCOP, 2013). Studies done on boda-boda operators in rural and urban areas in Kenya have focused on HIV testing and condom use (Yonge *et al*, 2017), with little emphasis on risk factors.

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2.4 VCT Services and Status Awareness

HIV counseling and testing is the only way of knowing one's HIV status which is considered as an important step of the HIV prevention process (Sabapathy *et al*, 2012). According to WHO, "everyone has a right to know their HIV status", and in line with this, the adoption of VCT was recommended which is one of the nine established prevention strategies, as an international HIV/AIDS screening and prevention policy (WHO, 2011).

VCT is an effective way of enhancing the knowledge of people about HIV and measures to take in order to prevent HIV/AIDS. Particularly, people who test positive for HIV will know when to commence treatment, as well as how to reduce the risk of re-infection and prevent AIDS mortality (Leta *et al*, 2012). Furthermore, research has shown that the risk of transmission of HIV virus by an infected person to uninfected person could be reduced by 96% if HIV carriers are identified early through VCT and put on treatment, on the other hand, individuals who test negative will have the opportunity to protect themselves through the use of HIV prevention methods such as abstinence, use of condoms and being faithful to one sexual partner.

HIV counseling and testing takes place in health centers, standalone VCT, at home and at workplace. Health centers generally record a higher HIV testing as compared to the stand alone VCT centers mainly because of the perceived disguise of purpose of visit. People tend to shy away from VCT centers because of fear of

compromised confidentiality or being observed participating in HIV testing. Health care workers in standalone sites are perceived to be less experienced as compared to their counterparts who work in large integrated hospitals and test result got from the VCT centers are felt to be not accurate (Njau *et al*, 2014). These perceived unreliability of test results and HIV testing technologies discourage HIV testing uptake (Musheke *et al*, 2013).

Workplace testing as a way of reaching the operators of the transport industry is another way of improving HIV counseling and testing. Due to the nature of their work, they spend long hours on the road thus having little time to seek HCT services in the health facilities or VCT. However, workplace testing is hindered by a couple of factors such as awareness of HIV positive status, fear of lack of confidentiality, stigma or discriminated in the event of testing HIV positive, being observed participating in HIV testing or low risk perception (Weihs and Meyer 2016). It is therefore necessary to come up with interventions to match the preferences of specific populations including males and those who have never tested before (Ostermann *et al*, 2014).

There is high uptake of HIV testing services in Kenya that stand at 71.3% with 55.5% having had the test within the last one year (NASCOP, 2013). Research has shows that the females tend to be more aware of their HIV status as compared to men (Dokubo *et al*, 2014). This therefore prompted interventions to be put in place to increase the uptake of HIV testing among the male population such as provision of multiple HIV self-tests to women seeking antenatal and postpartum care (Masters *et al*, 2016).

The non-governmental organizations such as IRDO, EGPAF, FACES, NRHS and MSF in partnership with MOH have been mandated to roll out HIV prevention and treatment intervention activities in Homa-Bay in line with the 90-90-90 2020 target estimates (UNAIDS, 2014). The efforts put in place by these organizations are expected to increase HIV status among residents in Homa-Bay county and thus lower HIV prevalence rate. However, this is not the case, Homa-Bay has persistently had the highest HIV prevalence rates (NASCOP, 2013).

The male population apart from youth people, also require much attention with regards to HCT. The male population in the past had recorded low HCT turnout as compared to the female in the general population (Bwambale *et al*, 2008; Leta *et al*, 2012). This low HCT turnout among the males had been attributed to a number of reasons such as low risk perception among the abstinent, having a steady partner, not part of a high risk group or do not have symptoms of illness (Musheke, 2013). This thus makes them at a higher risk of HIV infection, re-infection or transmission of the virus from an infected person to uninfected person. Studies showed that HCT increases condom use which is one of the HIV prevention methods. It has been proven through research that consistent and correct condom use is highly effective both the rate of HIV transmission and other STDS by 80% to 90% (Cohen *et al*, 2012).

Structural and cultural factors hinder men from participating in HCT services. Owing to the fact that men are always engaged in economic activities since they are considered bread winners of their families, they spend long hour hours away from home (Camlin *et al*, 2016). Flexibility in operating hours in HCT can enhance male participation in HCT services.

Studies have also showed that accessibility of testing venue, confidentiality and attitude of health care provider could make one to go for HCT services. Easily accessible sites such as close VCT sites to where one resides, health centers perceived to have uncompromised confidentiality such as large government hospitals and health care workers with positive attitude towards HIV patients are the factors that were seen to promote the uptake of HCT services (Njau *et al*, 2014; Yonge *et al*, 2017).

2.5 HIV Prevention Strategies employed by boda-boda operators

The boda-boda operators fall in the transport sector, considered a high risk occupation due to movement of peoples and sexual interactions with key populations that lead in the spread of HIV such as sex workers (CDC, 2007). The high mobility of workers in the transport sector enables HIV transmission between high and low prevalence areas, while the sexual behaviours of transport sector workers and the populations that interact with them, such as sex workers, carry a high risk of contracting or transmitting HIV.

The risky behaviour of transport sector workers, and of the populations that interact with transport sector workers, also puts their partners and communities at risk (IOM, 2009). In East Africa, long distance truck drivers were identified very early in the epidemic as a group at risk of HIV and STIs due to the relatively high number of unprotected sexual acts and low availability of condoms (IOM, 2009). Just like the truck drivers the boda-boda operators are also highly mobile, engage in frequent seasonal rural-urban migration and spend long hours on the road away from their families. Due to this they are likely to engage the services of other sexual partners such as female sex workers (FSW). In addition to having sex with FSW, they do also have regular girlfriends or wives at home who are likely to become infected with HIV

by their husbands and boyfriends, and continue spreading the virus in their local communities (World Bank, 2003).

A study of long-distance truck drivers in KwaZulu-Natal in South Africa found that long absence from home, stressful working conditions, limited recreational opportunities and restricted social conditions combined to stimulate a flourishing commercial sex network along the freeway system (Marcus, 1997). This study also found that 35% of drivers studied had had two or more partners in the week prior to the study and condom use was absent or irregular. The Kenya behavioural surveillance report of 2012 showed that the boda-boda operators were involved in a number of HIV risk behaviours (NASCOP, 2005). These included, low condom use with casual partners (non-regular partners), having many sexual partners and use of alcohol and drugs. This study also showed that boda-boda operators exchanged sex as payment for transport services from their female clients, a predisposing factor for HIV acquisition (NASCOP, 2005).

The government has intensified campaigns against the spread of HIV by strengthening the operations of NASCOP and formulating KNASP 2014/2018 which provide action framework for HIV/AIDS within which all HIV and AIDS interventions take place. NACC too has, to date, led the national response by coordinating the five-year strategic plan. All these actions are geared towards increases awareness and knowledge of HIV prevention methods thus increasing uptake (Adedimeji *et al*, 2008). High awareness and high knowledge levels about HIV prevention methods is therefore equated to high adoption of these methods. Studies have shown that with the increase of both education level and knowledge of HIV/AIDS, accurate information about the disease and its causes and modes of

transmission seem to have led to high adoption of HIV preventive methods (Peltzer *et al*, 2009).

2.6 Boda-boda operators and HIV services Utilization

Transport workers, such as truck drivers, bodaboda operators need to specific healthcare needs due to the nature of their work. Globally, they bear a disproportionate health burden, including high rates of sexually transmitted infections (STI), and HIV, respiratory diseases backache, leg pains etc (CDC, 2007). The nature of the work by boda-boda operators indicates that they are a group at risk of HIV acquisition (Arulogun *et al*, 2011). The occupational circumstatnces that make them susceptible to worst health outcomes include irregular schedules, sedentary lifestyle due to long hours of driving/sitting, musculoskeletal and other injuries due to loading and unloading cargo, exposure to road accidents and deaths, extended periods of social isolation, unhealthy food choices on the road and poor access to healthcare (Aniebue & Aniebue, 2009 ; CDC, 2007).

In sub-Saharan Africa the transport industry which is predominantly private and has attracted international donor and domestic funding for work-related programmes tackling different aspects of truck drivers' health needs. Increasingly, implementation of health programmes is ongoing and prioritised on service delivery increase awareness and identification of communicable diseases such as STI/HIV (including prevention of mother to child transmission (PMTCT), tuberculosis, and malaria) and chronic diseases (hypertension and diabetes), as well as general primary healthcare (Lafort, 2010; Hooks C & Silue S, 2008; Imbrah, 2007; Landis, 2006) Strategies thus have been advanced to help in the fight against HIV amongst this group.

Documented research has shown that services such as consistent condom use, voluntary medical male circumcision and use of ART for treatment and prevention (TAP) have a positive impact in reducing HIV spread in the population (Bailey *et al*, 2007; Cohen *et al*, 2012). Voluntary medical male circumcision (VMMC) has shown a 60% protective effect in the fight against HIV (Bailey *et al.,* 2007). Equally, HIV testing, that also increases ones knowledge of HIV status and thus increasing risk awareness among the boda-boda, and condom when used correctly and consistently have also shown protection from getting HIV including Sexually transmitted diseases and unwanted pregnancies. Other potential HIV services include, use of Treatment as prevention (TAP) of ART prophylaxis for those already HIV positive to protect transmission to their uninfected partners (Cohen *et al.,* 2012) and health education that brings into focus the risk perceptions and prevention awareness. The behavioural surveillance survey of 2002 showed that boda-boda operators were aware about HIV and sorts various HIV services to mitigate against acquisition (NASCOP, 2005).

However, condom use still remained low (NASCOP, 2005). Equally due to the working conditions and the urge to make more money by having more customers to ferry, the boda-boda hardly have time to seek for HIV preventive services and information vital for HIV mitigation. Studies done on highly mobile groups indicated that these groups are commonly known to miss (Kabatereine *et al*, 2014). This therefore, calls for intervention that are friendly to such groups.

In a study conducted in Uganda (Lindan *et al*, 2015), use of preventive services was low with only 39.2% of men having been circumcised, and 36.9% having been tested for HIV. This study done among male boda-boda drivers showed a low uptake and frequency of preventive behaviours such as circumcision and HIV testing yet this

group had a higher HIV prevalence as compared to the general population. A call for targeted interventions for this group was thus proposed to increase HIV services uptake. Delany-Moretlwe et al, (2014) in their cross-sectional survey in South Africa found the HIV prevalence rate at 26%. They also pointed out mobidity factors as correlates to increased risk for since they created avenues for unsafe sex and reducing access to health services. A study done by Lalla-Edward et al, (2017) on uptake of health services among truck drivers in South Africa indicated that truck drivers mostly accessed primary health care services (PHC)(62%) followed by HIV (32%), with low proportions (≤6%) accessing STI, TB and malaria services.

Equally most of the visits by the truck drivers was characterized by only one service being sought. In the same study, and looking at across all service categories, younger truck drivers, those with a stable partner currently were the main clinic attendees. Lalla-Edward el al, (2017) also noted in their findings that older truck drivers (≥40 years) were more likely to access TB and PHC services, yet less likely to access HIV and STI services. Those with stable partners were less likely to access STI and TB services but more likely to access malaria and PHC services. South African attendees were more likely to access PHC, while attendees from other nationalities were more likely to access HIV and malaria services (Lalla-Edward *et al*, 2017).

In a survey carried out by Morris and Ferguson (2005) along the Mombasa- Kampala highway, 84% of the 381 surveyed truckers reported having used condoms during the last commercial sexual contact. The level of condom use with occasional partners was 71%, with truck drivers' main health concerns being malaria, hypertension, fatigue, chest problems and backaches. Morris and Ferguson (2005) also reported a higher percentage of drivers seeking health care in a private facility (60%) as compared to 27% that sought help in a government facility.

An earlier study conducted by Rakwar (1999), showed some impact of risk reduction counseling and condom promotion cum distribution by a reduction of the number of sexual partners among truck drivers. However the same showed no change in condom use among study participants was observed: only 30% of men reported consistent condom use during extra-marital sex throughout the study period and this thus confirmed a key gap between high awareness and preventive behaviors. Lalla-Edward et al, (2016) in their systematic and meta-analyses were also able to show that most HIV programs implemented showed positive changes in risk behaviors, knowledge, and attitudes showing that programmes work; however with mixed results on HIV prevalence or reported STI incidence. Adedimeji et al, (2008) also highlights low condom use despite the high levels of risky sexual behavior among transport operators with half of the males and one third of the females reporting ever using condom.

In terms of targeted interventions, education on the importance of HIV preventive services is likely to affect service utilization among the operators. Lack of adequate information may lower utilization of these services. A study done in Ethiopia on " factors affecting acceptance of Provider initiated HIV testing and counseling", indicated that reasons given for not accepting HCT were self-trust, not being at risk for HIV, not being ready, needing to consult their partners, fear of the results and busy work environment (Abdurahman *et al*, 2015), including men often being tested "by proxy", believing their wives' HIV test results to be their status (Camlin *et al*,2016).

A study done in Swaziland on "Reasons for low uptake of adult male circumcision for the prevention of HIV transmission", indicated the following as reasons for low uptake of medical male circumcision; fear of the procedure and

possible outcome, perception of no significant benefit of the procedure, impatient about waiting for the procedure or healing process, religious/cultural beliefs and worries about the fate of the foreskin (Maibvise & Mavundla, 2014).

Utilization of services is also affected by individuals education level. Studies have showed that people with higher education tend to utilize services more than those with lower levels or no education (Apanga *et al*, 2015; Abokyi *et al*, 2014;Carrasco *et al*, 2016). Rural residents were more willing to undergo HCT than urban dwellers (Abokyi *et al*, 2014), however urban dwellers were more likely to utilize VMMC services (Carrasco *et al*, 2017). Interventions targeting specific populations should be put in place to capture various needs of the different populations.

Research conducted has shown that HIV Service utilization is affected by a number of factors. Carrasco et al, (2017) in their study finding were able to show that condom use, a key HIV prevention service, was associated with having a casual/concurrent partner in the previous 3 months and negatively associated with being age 27 or older and single, therefore boda-boda operators may have mixed misgivings in terms of services utilization based on the highlighted factors. Also structural barriers such as time to go for the services, nature of the work and distance have made usage of HIV services among persons in the transport sector not to be optimal (Kohli *et al*, 2017). Therefore in order to improve and increase uptake of HIV prevention services, HIV strategies with truck drivers and those in the transport sector should address individual, social and structural barriers to HIV prevention through partnerships with the health and transportation sectors, local government and local communities.

HIV prevention services should be adapted to drivers' times and places of availability; for example, condom provision where/when drivers make decisions about or have sex (Kohli et al 2017). Due to the working conditions of men in the transport sector, flexibility in operating hours of HIV testing including late evening and weekend times along with multiple convenient locations that moved were cited as facilitating factors that would enhance participating in HIV testing (Camlin *et al*, 2016).

Since the Kenya behavioural surveillance was conducted in 2003, few studies such as and Morris and Ferguson (2005) and Strauss et al, (2018) have been done to in the country to to look at services utilization. This study will thus try to furfure understand services utilization among the bodaboda group to bridge the knowledge gap.

Strauss et al, (2018) in a study conducted in Kenya concerning preferences indicated that persons never tested previously preferred oral testing and telephonic counseling, while those who were not regular testers favoured clinic based over self-testing. The results of this study indicate that for the majority of participants - most of whom had tested before - the existing services offered at roadside clinics were the preferred service delivery model. The introduction of oral self-testing increases the options available to truck drivers and may even improve testing uptake for some, especially among those who have never tested before. However, these findings suggest the impact on HIV testing uptake of introducing oral self-testing may be limited in this population.

2.7 Factors influencing Utilization of HIV Prevention Methods

Despite the fact that awareness of HIV preventive services is high, utilization of the same services still remains a challenge. Low utilization of services had been noted among males, women in rural areas, youths and people from poor backgrounds (Matovu & Ssebadduka 2013; Teklaharmanot *et al*, 2016). Rural areas tend to have limited access to HIV preventive services this could be the reason as to why high HIV prevalence is noted in the rural areas (Van *et al*, 2017). Finding from previous studies also indicate that participants living in urban areas were twice as likely to be HIV infected as those living in rural areas (Chhim *et al*, 2017). The high infection rate in the urban areas may be as a result of the fact that the leaving conditions in the urban areas and separation of men from their families in search of their family's income make them vulnerable to seeking the services of FSW, who are high risk group (IOM, 2005).

Low HIV testing among women can be as a result of the risks of partner violence following HIV positive status disclosure (Colombini *et al*, 2016). This, in turn, makes women to fear seeking for the services. In such cases, couple counseling and testing is advised.

Utilization of HIV preventive services is therefore influenced by age, sex, level of education, marital status and economic status (Ettarh *et al*, 2012). Other factors include cultural beliefs, visiting traditional healers (Wanyama *et al*, 2017).

Studies have shown that one's age is likely to affect the uptake of HIV preventive services. The more youthful one is the less likely they are to utilize HIV preventive services. High burden of HIV in places like Iran have been noted among the youths. Another study indicated that the current low rates of HIV diagnosis and treatment initiation among young people continues to present significant challenge to epidemic control (Wong *et al*, 2017). Another study done in Western Kenya indicated that focusing in high burden setting on high coverage HIV testing, ART treatment upon diagnosis, condom and male circumcision among youth may outperform adult focused ART (Alsallaq *et al*, 2017). Majority of HIV positive people unaware of their status, untreated and virally unsuppressed were found to be individuals aged 35 years and below (Huerga *et al*, 2016).

However, a study on correlates of condom use found that condom use was negatively associated with being age 27 or older and single (Carrasco *et al*, 2017). It is therefore necessary that emerging evidence should inform efforts to better target the youths who are most at risk aiming for early diagnosis and treatment initiation for those who are HIV positive, while also ensuring appropriate primary prevention so that those identified as HIV negative remain so. In this context, HIV testing and treatment should be prioritized to target young people.

The sex of a person equally affects service utilization. The male population had been shown in various studies to record low levels of service utilization (Camlin *et al*, 2016; Ostermann *et al*, 2014; Huerga *et al*, 2016; Ettarh *et al*, 2012). Structural and cultural barriers, including men's mobility and gender norms valorizing risk taking and discouraging health seeking and utilization are some of the factors which has

been found to lower service utilization among men as compared to women (Camlin *et al*, 2016).

Men's labor opportunities often require extended absences from households: during planting season men guarded fields from monkeys from dawn until nightfall; lake fishermen traveled long distances while truck drivers took longer hours on the road. Men often test 'by proxy', believing their wives results to be their status. Therefore, to increase utilization of services like HCT among men, there is need to involve their female partners in the process. A study proposed provision of multiple HIV self-tests to women seeking antenatal and postpartum care was successful in promoting partner testing and couples testing (Masters *et al*, 2016).

Another study on low uptake of VMMC among high risk men also noted that men who were categorized as high risk group recorded low VMMC uptake as compared to men who were considered to be in low risk group (Carrasco *et al*, 2018). It is therefore important that implementation of strategies should focus on the high risk group men.

Marital status of a person had been found to affect the uptake of HIV preventive services. People with casual sex partners greatly utilized condom use (Carrasco *et al*, 2017). This however differs with the finding that there is low condom use with casual partners (Chatterjee *et al*, 2006; Ziriba *et al*, 2011). The different in the two studies could be as a result of the fact that over the ages, people have gotten in touch with a lot of accurate information concerning the importance of correct and consistent use of condom in curbing HIV and STDs infection. The low condom use with individuals with casual sex partners had also been linked to unawareness of HIV status. Level of education can equally influence one's decision to utilize HIV preventive services.

Knowledge of preventive services such as VMMC, is associated with education and location with men of higher education and living in urban areas more likely to know that VMMC partially protects against HIV infection thus affecting utilization (Carrasco *et al*, 2018). Increased level of knowledge on HIV preventive services can increase service uptake (Nyaoke *et al*, 2017).

2.8 Health Seeking Behaviour Patterns

Health seeking patterns vary from one population to the next. Health or care seeking behavior has been defined as any action undertaken by individuals who perceive they have a health problem or to be ill for the purpose of finding an appropriate remedy. In the African setting, reproductive health issues including access to HIV testing has been perceived as a domain of the female gender with men being compounded with the task of providing for their families (Camlin *et al*, 2016).

Successful role enactment was considered key to achieving recognition as an adequate man; at the same time, job scarcity and insecurity, and low earning gravely impeded men. Pressures to generate continuing income then meant constantly looking for jobs, or working continuously to retain in-secure jobs or to raise money through self-employment (Chikovore *et al*, 2015). All these led men to relegate their health considerations. However, in the fight against HIV, men's uptake of HIV testing care and treatment is as much very critical to the 'test and treat strategies' in the general populations (UNAIDS, 2014).

Studies show that access and utilization of health services is multi-faced and influenced by cultural, behavioural and financial factors (Mosadeghrad, 2014). Different sexes have different tendencies when it comes to health-seeking. A study on

cultural factors and community processes showed that structural and cultural barriers men's mobility and gender norms valorizing risk-taking and discouraging health seeking behavior contribute to lower participation in HCT as compared to women (Camlin *et al*, 2016). The attention given to a person by health care workers can also improve health seeking behavior.

In certain cases, it had been found that health care workers modified or omitted consent and confidentiality in HCT in order to achieve perceived public health benefits and policy expectations. Though such actions increased HCT rates, on the other hand it jeopardized health seeking behavior of those diagnosed with HIV to treatment and care (Wringe *et al*, 2017). A study done in the urban settlements in Kenya among females also indicated that the women had a preference of seeking for contraceptive services in private health facilities as compared to public health facilities due to convenience, efficiency and privacy (Keesara *et al*, 2015).

Health seeking behavior is also associated with the knowledge of the services one sought to seek. There is likelihood that one will seek services they know about as compared to those services they have little knowledge about (Carrasco *et al*, 2017).

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modified or omitted consent and confidentiality in HCT in order to achieve perceived public health benefits and policy expectations.

Though such actions increased HCT rates, on the other hand it jeopardized health seeking behavior of those diagnosed with HIV to treatment and care (Wringe *et al*, 2017). The barrier HIV-stigma presents to the HIV treatment cascade is increasingly affecting individuals decision to seek health care services. Stigma by health care workers (HCW) such as verbal stigma, can lead to delay or avoidance of counseling and testing and other health services. Stigma from HCW acts as a roadblock in the HIV treatment cascade, as well as its undermining the human right to health (Nyblade *et al*, 2017; Magesa *et al*, 2014).

Health seeking behavior is also associated with the knowledge of the services one sought to seek. There is likelihood that one will seek services they know about as compared to those services they have little knowledge about (Carrasco *et al*, 2017). This also concur with the findings of Nyaoke et al, (2017), which found out that education on what is needed and what the services are all about could motivate a person to seek and participate in health services. These studies therefore lay a lot on emphasis on increasing the knowledge of individuals to encourage people to seek these services after making an informed decision.

A study that was conducted in Tanzania on "A community-based intervention for improving health-seeking behavior", revealed that, knowledge and attitude towards sexual violence increased the number of reported rape event by more than 50% at health facilities. This showed that the number of rape victims who sought for health services in the health facilities increased with the increasing knowledge on sexual violence (Abeid *et al*, 2015).

Distance covered by an individual when seeking health services also plays an important role in a person's decision to seek the services or not. A study done in Kenya on "The relationship Between Distance and Post-operative Visit Attendance Following VMMC", indicated that 5 km marked the threshold distance beyond which follow-up attendance significantly dropped (Golub *et al*, 2016). This therefore makes distance an important predictor of health seeking behavior.

Another phenomenon that affect health seeking behavior is medical pluralism, this is often witnessed when individuals seek medical services of both traditional healers and western medicine. Reason for seeking traditional healers is often because of failures of western medicine to provide relief from a given ailment (Atwine *et al*, 2015). It has also been documented that men sought services from traditional healers and chemist before HIV diagnosis and at government facilities afterwards. Both men and women sent infants to traditional healers for non-medical conditions such as bewitching (Drake *et al*, 2015)

2.9 Theoretical framework

This study was guided by theory of reasoned action, theory of planned behavior by Ajzen and Fishbien 1980 and social cognitive theory by Albert Bandura 1982.

2.9.1 Theory of Reasoned Action and Theory of planned behavior by Ajzen and Fishbien

Ajzen and Fishbein formulated these theories in 1980. Theory of Reasoned Action postulates that a person's behavior is determined by his/her intention to perform the behavior and that this intention is, in turn, a function of his or her attitude towards the behavior and his/her subjective norm. The best predictor of behavior is intention. Intention is the cognitive representation of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior. This intention is determined by three things: their attitude toward the specific behavior, their subjective norms and their perceived behavior control.

The theory of planned behavior holds that only specific attitudes towards the behavior in question can be expected to predict the behavior. The TPB holds that behavioral achievement depends on both motivation (intention) and ability (behavioral control). It distinguishes between three types of beliefs - behavioral, normative, and control. In addition to measuring attitudes towards the behavior, we also need to measure people's subjective norms. Perceived behavioral control influences intentions. Perceived behavioral control refers to people's perceptions of their ability to perform a given behavior. These predictors lead to intention. The more favorable the attitude and the subjective norm, and the greater the perceived control the stronger should the person's intention to perform the behavior in question. An

individual’s decision to engage in a particular behavior is based on the outcomes the individual expects will come as a result of performing the behavior. The TPB is comprised of six constructs that collectively represent a person's actual control over the behavior.

i. Attitudes - This refers to the degree to which a person has a favorable or unfavorable evaluation of the behavior of interest. It entails a consideration of the outcomes of performing the behavior.
ii. Behavioral intention - This refers to the motivational factors that influence a given behavior where the stronger the intention to perform the behavior, the more likely the behavior will be performed.
iii. Subjective norms - This refers to the belief about whether most people approve or disapprove of the behavior. It relates to a person's beliefs about whether peers and people of importance to the person think he or she should engage in the behavior.
iv. Social norms - This refers to the customary codes of behavior in a group or people or larger cultural context. Social norms are considered normative, or standard, in a group of people.
v. Perceived power - This refers to the perceived presence of factors that may facilitate or impede performance of a behavior. Perceived power contributes to a person's perceived behavioral control over each of those factors.
vi. Perceived behavioral control - This refers to a person's perception of the ease or difficulty of performing the behavior of interest. Perceived behavioral control varies across situations and actions, which results in a person having varying perceptions of behavioral control depending on the situation.

According to these two theories (TRA and TPB) the behavior of boda-boda operators towards utilization of HIV preventive services is a function of their intention. Intention to utilise HIV preventive services is seen as motivational factors that influence utilisation. Therefore, if an individual have a stronger intention to utilise these services, then it is more likely that they will utilise them. This can involve a person's evaluation of a behaviour by looking into the outcomes of that behaviour, if an individual views the outcome as favourable, then there are chances that they might engage in such behaviours.

Utilisation of HIV services by the boda-boda operators is also influenced by the belief about whether most people approve or disapprove of the behavior, for example buying condoms from a shop in the presence of other shop users/customers. The use of condoms will intern be influenced by a person's beliefs whether peers and people of importance to the person think he or she should engage in the behavior for instance, if their spouses approve of condom use and what other operators think about condom use. On the other hand, the customary codes of behavior in a group or people or larger cultural context equally affects utilisation of the services for instance, cultures that consider circumcision as a right of passage is likely to promote utilisation of VMMC among its members this is because they are considered normative, or standard, in a group of people.

Finally, an operator's perception of the ease or difficulty of performing the behavior of interest might influence utilisation of those services for example the pain and loss of working hours that comes with male circumcision can make one not to opt for male circumcision.. Perceived behavioral control varies across situations and

actions, which results in a person having varying perceptions of behavioral control depending on the situation.

Therefore, seeking HIV preventive services depends on an individuals attitudes, their beliefs and how people they care about perceive their action. Finally their perceived behavioral control (people's perception of their ability to perform a given action) will influence their intention to seek HIV preventive services. These theories helped understand HIV prevention strategies employed.

2.10 Social Cognitive Theory by Albert Bandura

Social Cognitive theory was propounded by Albert Bandura in 1982, the theory has been reviewed over time with the latest review being in 2001 by Bandura. It postulates that human behavior is extensively motivated and regulated by the ongoing exercise of self-influence. The behavior and the environment all affect learning. This is known as reciprocal causation.

The theory explains how individuals are actively involved in the learning process and able to learn through models or the observation of others. This theory have the following assumptions: People have significant control over their learning and behavior, motivation greatly impacts both learning and performance and learning is as internal process that may or may not be reflected in behavior and may or may not result in change. The major self-regulative mechanism operates through three principle sub-functions. These includes self-monitoring of one's behavior, its determinants and its effect, judgment of one's behavior in relation to personal standards and environment circumstances; effective self-relation. Self-regulation also encompasses the self-efficacy mechanisms which play a central role in exercise of

personal agency by its strong impact on thought, affect, motivation and action. The same self-regulative system is involved in moral conduct.

Core Assumptions and Statements

The social cognitive theory explains how people acquire and maintain certain behavioral patterns, while also providing the basis for intervention strategies (Bandura, 1997). Evaluating behavioral change depends on the factors environment, people and behavior. SCT provides a framework for designing, implementing and evaluating programs.

Environment refers to the factors that can affect a person's behavior. There are social and physical environments. Social environment include family members, friends and colleagues. Environment and *situation* provide the framework for understanding behavior. The situation refers to the cognitive or mental representations of the environment that may affect a person's behavior. The situation is a person's perception of the lace, time, physical features and activity (Glanz et al, 2002).

The three factors environment, people and behavior are constantly influencing each other. Behavior is not simply the result of the environment and the person, just as the environment is not simply the result of the person and behavior (Glanz et al, 2002). The environment provides models for behavior. *Observational learning* occurs when a person watches the actions of another person and the reinforcements that the person receives (Bandura, 1997). The concept of behavior can be viewed in many ways. *Behavioral capability* means that if a person is to perform a behavior he must know what the behavior is and have the skills to perform it.

Prevention of infection with AIDS virus requires bodaboda operators to exercise self-influence over their own behavior and their social environment. Learning occurs in the social context with a dynamic and reciprocal interaction of the person, environment and behavior. The unique feature of social cognitive theory is the emphasis on social influence and its emphasis on external and internal social reinforcement. Social cognitive theory considers the unique way in which individuals acquire and maintain behavior, while also considering the social environment in which individuals perform the behavior. The pattern that boda-boda operators adopts' therefore, will depend on the social influence and their internal and external social reinforcements. This adopted pattern will intern influence the use of HIV preventive services.

This theory helps to understand the drivers of HIV preventive service uptake amd also to explore the health seeking behavior patterns among boda-boda operators.

2.11 Conceptual Framework

In order to meet the objectives set out in this study, the study was guided by the conceptual framework shown in Fig. 2.1. Utilization of HIV preventive services is considered to be dependent on availlability of HIV preventive services and the predisposing, enabling and need factors. Cultural factors like religion and attitude are moderating factors which may affect utilization of HIV preventive services. Positive attitude towards use of HIV preventive services is expected to increase an individual's demand for these services and religious beliefs advocating for no use of contraceptives is also like to lower condom use.

Factors affecting the uptake of services like Predisposing Factors: The socio-cultural characteristics of individuals that exist prior to their illness. These may

include education, occupation, ethnicity, social networks, social interactions, and culture, attitudes, values, and knowledge that people have concerning and towards the health care system, age and gender, Enabling Factors: The logistical aspects of obtaining care. These include availability of services, financial resources to purchase services, health insurance, social network support etc. and Need Factors: These includes perception of severity, total number of sick days for a reported illness, total number of days in bed, days missed from work or school, help from outside for caring etc.most immediate cause of health service use, from functional and health problems that generate the need for health care services. (R.M. Andersen, 1995).

Health seeking behavior is also expected to increase utilization of preventive services. The conceptual framework that guided this study is detailed below in Fig 2.1 capturing all the variables of interest including the overall variable of outcome.

HIV status awareness

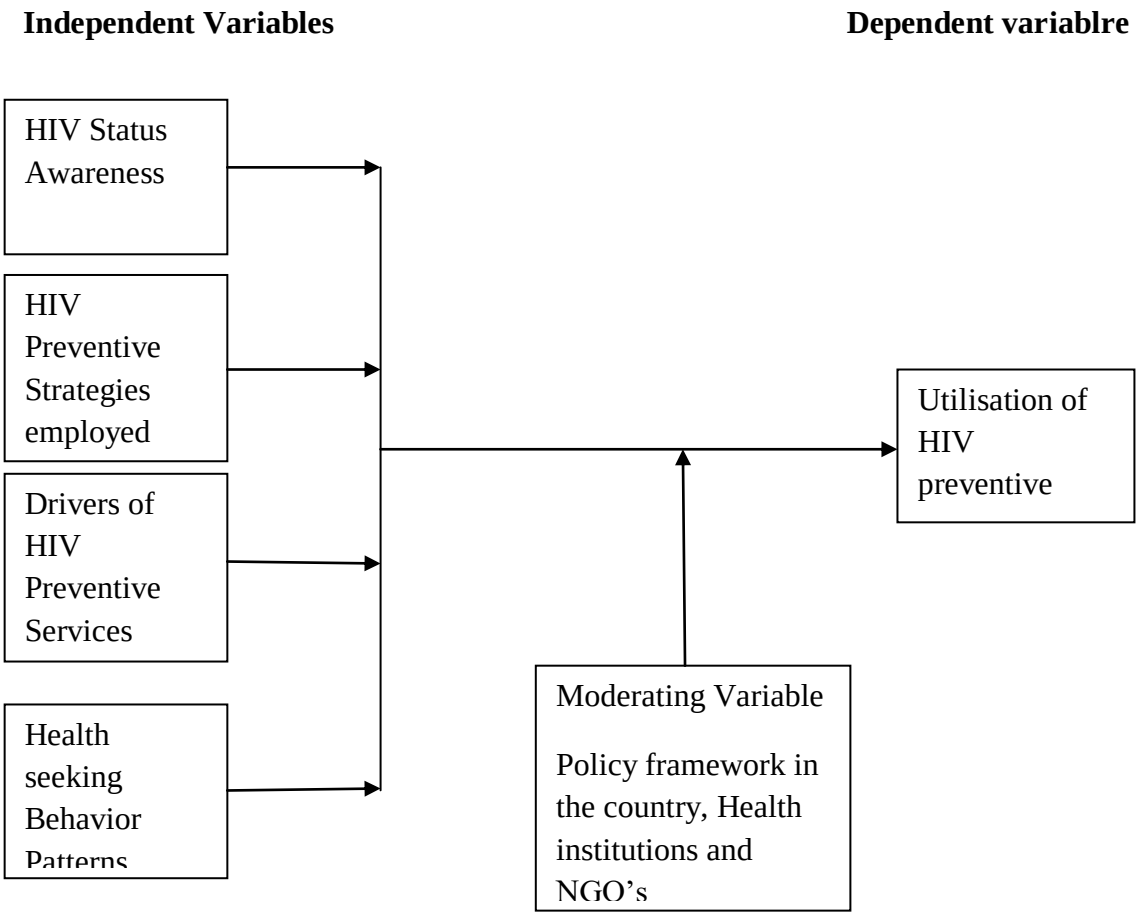

Figure 2.1: Conceptual Framework for the study

Knowing one's HIV status is key when an ndividual want's to make a decision of whether to take up the services or not. HIV counselling and testing is the only way of knowing one's HIV status which is considered as an important step of HIV prevention process (Sabapathy et al, 2012). This is because people who test positive will know when to commence treatment as well as how to reduce the risk of re-infection and prevent AIDs motarlity (Leta *et al*, 2012).

Adherence to treatment will lower the chances of HIV transmission from an infected partner to the uninfected partner by 96% if HIV carriers are identified early through HIV tessting and put on treatment. Individuals who test negative will have the

opportunity to protect themselves through the use of HIV prevention methods such as abstinence, use of condoms and being faithful to one sexual partner.

Utilization of HIV prevention methods by the boda-boda operators could help reduce the infection. The transport sector is considered a high risk occupation due to movement of people and sexual interactions with key populations that lead in the spread of HIV such as sexworkers (CDC, 2007). The risky behavior of transport sector workers also put there partners and communities at risk (IOM, 2009). However, utilization of preventive services has proved to reduce HIV transmission.

High awareness and high knowledge levels about HIV prevention methods is therefore equated to high adoption of these methods. A study by Peltzer et al (2009), shown that with the increase of both education level and knowledge HIV/AIDS, accurate information about the disease and its causes and modes of transmission seem to have led to high adoption of HIV prevention method.

Gender, age, race, marital status, and economic status are some of the drivers that affect ones decision to take up the services or not. Low utilization of services had been noted among the males, women in rural areas and youths and people from poor backgrounds (Matovu & Ssebadduka 2013; Teklaharmanot *et al*, 2016). A study by Chhim et al, (2017), indicate that participants living in urban areas were twice as likely to be HIV infected as those living in rural areas. Low uptake of VMMC among the high risk men had been noted as compared to men who are considered to be in low risk group (Carrasco *et al*, 2018). Finally, level of education can equally influence one's decision to utilize HIV preventive services.

Health seeking behavior patterns vary from one population to the next. In African setting, reproductive health issues including access to HIV testing has been perceived as a domain of female gender with men being compounded with the task of providing for their families (Camlin *et al*, 2016). This has led men to relegate their health considerations. However, in the fight against HIV, men's uptake of HIV testing care and treatment is very critical (UNAIDS, 2014).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design, the study area, target population, inclusion and exclusion criteria, sampling procedures and sampling size, methods of data collection and instruments, validity and reliability, data analysis, data management and presentation. The chapter concludes by providing the ethical considerations that guided the study.

3.2 Study Design

This study was a descriptive cross sectional survey that employed both qualitative and quantitative components to collect data from boda-boda operators and their group leaders who were recruited from the various parking points in Homabay town; where they wait for their clients who come to seek transport services. The quantitative component involved administration of structured questionnaires to the Boda-boda operators while the qualitative part involved in-depth interviews (IDIs) among the leaders of the sampled booda-boda groups. A total of 112 boda-boda operators were approached for the administration of the structured interview component while 10 group leaders were approached for the in-depth interviews.

3.3 Study Area

Selection of this study area was informed by studies which reveal that among all counties in Kenya, Homa-Bay has persistently recorded highest HIV prevalence rate(UNAIDS, 2015). These high HIV prevalence rates were registered despite the fact that HIV services are availed in the study area. This inconsistency is an indication

that utilization of HIV preventive services by the residents of this county is low. In view of this it was therefore timely and worthwhile to undertake this study in Homa-Bay town inorder to establish the patterns of utilization of HIV preventive services in Homa-Bay town.

Homa-Bay County lies between latitude 0o15' South and 0o52' South, and between longitudes 34o East and 35o East. The county covers an area of 4,267.1 Km2 inclusive of the water surface which on its own covers an area of 1,227 km2. The county is located in South Western Kenya along Lake Victoria where it boarders 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. Appendix 1 is a map showing the location of Homa Bay County in Kenya.

Based on projections from the 2009 Kenya Population and Housing Census, Homa Bay County has an estimated population of 1,038,858 persons consisting of 498,472 males and 540,386 females by the end of the year 2012. As shown in table 2, this population is projected to rise to 1,177,181persons in 2017. Of this total, 564,843 will be males while 612,338 will be females. It has a HIV prevalence of 25.7% (NACC, 2014). Homa-Bay town is situated along the Katito-Kendubay-Rongo road. Homa-Bay town is the headquarter of Homa-Bay County. It was once the district headquarters for all South Nyanza districts. Homa-Bay town has a population of 59,844(KNBS, 2009). Homa-Bay town was selected because it hosts the largest town in Homabay County. It is also the County's headquarters.

In addition, Homabay town being the headquarters was expected to have many boda-boda riders because it is an economic hub for the region. Its coordinates 0.5167 degrees south, 34.4500 degrees east. Appendix 2 shows the map of Homa-Bay town

3.4 Study Population

According to Ngechu (2004) a population is a well-defined set of people, services, elements and events, a group of things of households that are being investigated. The study population in this study were all boda-boda operators between the ages of 20 and 40 years who were the main respondents and their group leaders in Homabay town also aged between 20 and 40 years who were key informant residing in Homabay town, registered in boda-boda group and have been in operaation for the more than one year within Homabay town.

Due to ethical and legal considerations, the study only collected data from boda-boda operators aged between 20 and 40 years. This excluded some persons (<20 years and >40 years) because those aged below 20 years might not have adequate experience in the operations of boda-boda business since they have just started boda-boda operation. For one to be liscensed to operate a motorbike they are required to have attained 16 years(GOK, 2016). Since boda-boda operation require energetic people who can work for long hours under harsh climatic conditions, it is for this reason why those aged above 40 years were excluded in the study. This study was limited to male operators because the male population in the transport industry. The study population was 1120 operators.

3.4.1 Inclusion Criteria and Exclusion Criteria

From the study population, only male boda-boda operators aged between 20 years and 40 years, residents of Homabay town at the time of the study, have been in operation for the last one year and willing to participate in the study by giving informed consent were included. Those who have not been in operation for atleast a

year might not be well conversant with the day to day operation of boda-boda operators in Homa-Bay town.

There is one organization registering boda-boda groups within Homabay town, which is Homabay Sub-County boda-boda SACCO. The role of this organization is to record all boda-boda operators working within Homabay constituency and help them become productive in their lives through saving and loaning. This organization was used in the study. The eligible members were those who have registered in groups that belong to the SACCO, six months since the organization began its' operation.

For the key respondents, the study only included those who had been in operation for atleast two years preceding the study and is a leader of a boda-boda group. All female boda-boda operators and male boda-boda operators below 20 years and above 40 years and any operator who falls within the required age group for the study (20-40 years) and is unwilling to provide written consent/assent for research participation will be excluded from the study.

3.5 Sample Size and Sampling Procedure

The main factors considered in determining the sample size is the need to keep it manageable (Mugenda, 1999) The sampling unit for this study was individual boda-boda operators and key informants. The sample size for the study was 119 respondents. It included 112 male boda-boda operators who have been in operation for more than one year and 7 boda-boda leaders.

3.5.1 Sampling Size and Sampling Procedure for Main Respondents

Homa-Bay town was clustered into 7 clusteres namely Shivling, Sofia, Makongeni, County Headquaters, Bus park, Bank area and Hospital junction. Simple random sampling approach was used to sample 7 groups from each cluster. The participants were selected from the groups registered within Homa-Bay Sub-County boda-boda SACCO. There are twenty two (22) registered boda-boda operators groups operating within Homa-Bay and registered by the organization as shown in Appendix 3. A sample is a careful selection of a given number of members or cases from an accessible population to represent that population with the relevant characteristics (Mugenda & Mugenda, 1999). A good sample should be adequate and representative of the underling population.

Gay (1981) observed that a sample of 10% of the population is considered adequate. There are a total of 1,120 registered boda-boda operators in Homabay town. 10% of this population was the sample size. The sample size was therefore 112 boda-boda operators. Three groups fromed a cluster, a group was randomly sampled from each cluster thus having a total of 7 groups. Each group randomly selected operators proportionate to the sample size. In addition, 10 group leaders were randomly selected and interviewed to get in-depth information on services utilization patterns.

The actual number from each group for the eventual sample size was proportionate to the total number (of the sample size) as shown in table 3.1. Once the number from each group is established the researcher randomly sampled the respondents from each group. For the qualitative data collection, the study purposively sampled the ten group leaders of the first ten groups that were registered.

Table: 1.1: Sampled Boda-boda Groups and randomly sampled operators proportionate to the sample size

S/N	Name of the group	No. of boda-boda operators per group	$\frac{x}{n}$ X 112
1	Shivling Friends in Action	50	11
2	Sofia Digital youth group	88	19
3	Stage miwa Youth Group	150	32
4	KCB Motorcycle youth Group	20	4
5	Makongeni Youth Group	50	11
6	Tsunami youth group	150	32
7	Ka-Governor Youth Group	15	3
Total			**112**

N/B x= the total number of operators in a group, n= the total sum of operators in the seven randomly selected groups registered and 112 is the calculated sample size

3.5.2 Sample Size and Sampling Procedure for Key Informants

Key informants were purposefully selected from the first seven boda-boda groups to be registered in the study area. The study had a sample size of 7 key respondents. This sample size was arrived at based on Westenholz-Bless and Achola (2007), who argue that a sample size of 10% is adequate for surveys where the target population is less than 1,000 objects. There are 66 group leaders according to Homa-Bay boda-boda SACCO.

3.6 Data Collection Instruments

The study instruments, the structured questionnaire (appendix I) which was used to collect data from main respondents who were the boda-boda operators and in-depth interview schedule (Appendix II) was used to collect data from key respondents who were the boda-boda leaders. Data on sexual risk behaviors, sexual activities and participation in HIV prevention, care, and treatment intervention activities were collected.

3.6.1 The Questionnaire

A questionnaire is a set of carefully designed questions given in exactly the same form to a group of people in order ro collect data about some topic(s) in which the researcher is interested (Jupp, 2006). The questionnaire was administered to the main respondents, male boda-boda operators who have lived and operated in Homa-Bay town for atleast one year preceding data collection.

Questionnaires enable data collection procedures to be applied in a standadized manner (Fortune & Reid, 1999). Questionnaires that have both closed and open ended questions were used. The closed questions were used since they sketch an objective picture of reality, while the open ended questions, as the qualitative part, illuminate, and allow for interpretation of participants reality and experinces (Holliday, 2007). Questionnaire is also easy to administer to a good number of respondents who respond in private settings.

3.6.2 Key Informants Interview Schedule

Key informant interview is a qualitative research technique that invoves conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program or situation (Boyce and Naele, 2006). It is carried out by interviewing persons whose professional roles endows them with in-depth knowledge on an issue (Corbetta, 2003).

Key informant interviews were conducted to key respondents who were boda-boda operators' group leaders. The information collected from key informants included; biodemographic characteristics, the boda-boda communities in Homa-Bay and challenges they are facing, health problems boda-boda community face, what boda-boda do when they feel sick, effect of HIV on boda-boda operators, how boda-boda operators feel about HIV, what boda-boda think about the clinic and health facilities, what type of boda-boda operators are served well/poorly with the health services, their thoughts on HIV preventive services and where boda-boda operators go when they feel unwell..

3.7 Validity and Reliability

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeat trials. To achieve reliability in this study, the test-retest method was used (Mugenda and Mugenda, 2003).

Validity refers to the degree to which a research study measures what it is intended to measure (Wilson, 2010). In this case, content validity was applied to ensure that the questions in the questionnaire provided adequate coverage of the investigative questions. Content validity was tested by use of expert opinion. My supervisor examined the instrument to ensure that the concepts used are valid

3.7.1 Pilot Study

The questionnaire was tested in a pilot test with 10 respondents randomly selected from the study area. According to Backer (1994), a sample size of 10-20% of the sample size for the actual study is a reasonable number of participants to consider enrolling in a pilot study. The 10 respondents involved in the pilot study were not to form part of the sample for the actual study. Reliability of the questionnaire was then done through pre-testing upon collection of the data from piloted areas. The procedure that was used in pre-testing the questionnaire was identical to the procedure used during the actual data collection. This allowed for more meaningful observations.

3.8 Data Collection Procedures

The purpose of the study and its requirements was explained to participants. Data was be collected from the respondents on age, gender, marital status, and reported HIV status. To assess patterns of services utilization and health seeking behaviour, data was collected on type of HIV preventive services sought by the operators in the past 12 months; such as condom use during last sex act, places where they receive health information, HIV testing, male circumcision (MC) and STI management (Appendix 4). An In-depth interview guide was administered to the leaders of the bodaboda groups (Appendix 5).

3.9 Data Analysis and Technique

Analysis of the data was done based on data collected using questionnaires administered to a sample size of 112 respondents. The data collected was descriptive in nature. Upon receipt of the filled questionnaires, the Statistical Package for Social Sciences (SPSS 17.0) and Stata version 10 was used to code the data, and then entered

into the computer. Results from quantitative analysis were presented in tables and figures.

Logistic regression analysis was used to determine drivers affecting the uptake of HIV preventive services among boda-boda operators in Homabay town. This enabled the data to be presented in an organized and meaningful manner, and data simplified so that general trend could be seen, while Qualitative data was categorized according to themes and objectives in relation to the opinion, views and perceptions of the respondents. Thematic analysis was used to analyse qualitative data. All qualitative interviews were transcribed, coded and sorted based emerging themes of interest such as Prevention strategies, health seeking behavior, HIV status awareness and predictors to HIV services uptake. All the 10 qualitative scripts were analysed using N-vivo software version 11 developed and marketed by QSR international.

3.10 Ethical Considerations

In accordance with the laws governing research work in Kenya, the researcher was given an introduction letter by Rongo University College, which allowed her apply for a research permit from the National Council for science and technology to conduct research in the study area. This proposal, its informed consent document and the questionnaires, and all subsequent modifications were reviewed and approved by the Rongo University Ethical Review Board and the National Council for Science and Technology (Appendix 8 : NACOSTI/P/17/60949/16635).

3.11 Potential risks to Participants

Potential risks to participants in this study were very minimal and included emotional upset or getting embarrassed when asked sensitive and personal questions regarding their personal life and sexual history and health seeking behaviours.

3.12 Benefits to Participants

There was no monetary benefits to participants in the study. During the study, participants were offered free HIV/AIDS information on prevention and referral for other HIV services

3.13 Confidentiality

The importance of maintaining confidentiality was emphasized to all research persons who were involved in the study. Research personnel were trained on research ethics and confidentiality before the data collection exercise commenced. To minimize the potential stigmatization for being identified, the study used codes on the questionnaires and not participant names. All data was password protected to avoid unauthorized access. All participants gave their informed consent before participating in the study.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSIONS

4.1 Introduction

The chapter deals with the analyses, presentation and discussions of data. The study sought to find out the patterns of utilization of HIV preventive services among boda-boda operators in Homa-Bay town. Responses obtained from the boda-boda operators who participated in the study included demographic characteristics such as marital status, age, religion and education, HIV status awareness, HIV prevention strategies employed, drivers affecting the uptake of HIV preventive services and health seeking behavior patterns. The following were the research questions which the research sought to answer.

1. Are boda-boda operators in Homa-Bay town aware of their HIV status?
2. What are the various prevention strategies that are employed by the bodaboda operators in the fight against HIV spread in Homa-Bay town?
3. What are the factors that influence the uptake of HIV preventive health services among boda-boda operators in Homa-Bay town?
4. What health seeking behaviour patterns do bodaboda operators exhibit in Homa-Bay town?

4.2 Socio-demographic information on study participants

Socio-demographic factors that influence the likelihood of boda-boda operators taking up HIV preventive services were examined. A total of 122 operators took part in the study. After obtaining consent from the boda-boda operators, they were then required to fill in their socio-demographic characteristics which included age, education, marital status and religion. In addition to these, they were also required to indicate whether they have spent way from home or not. If yes, they were required to indicate the number of days spent away from home in a week.

Out of the total number of respondents interviewed, majority 37.5% were between twenty six and thirty years of age, 22.3% were between 20 and 25 years of age, 20.8% were between the age of 31 and 35 years of age while only 13.4% were between the age of 36 and 40 years of age.

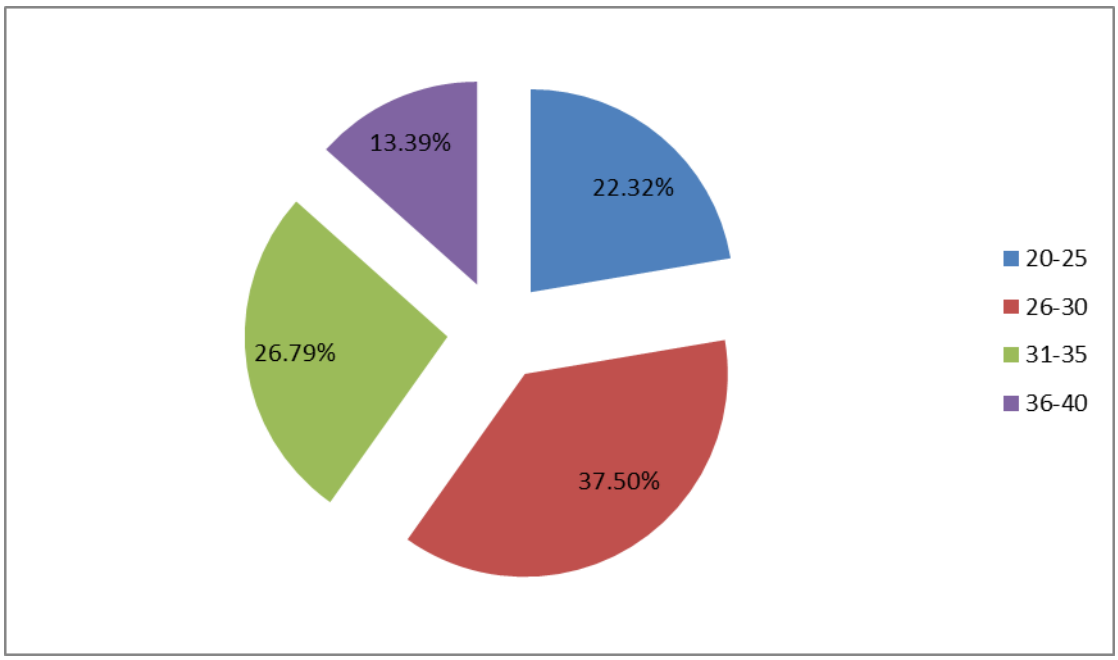

Figure 4. 1: **Age of boda-boda operators in years**

This could be attributed to the fact that majority of the youths are not employed because there are little formal job opportunities compared to the number of youths in the country. This therefore, makes bodaboda industry more attractive for many youths. This can also be as a result of the fact that bodaboda industry requires individuals who have energy to carry heavy luggage for example carrying two or more customers, work for long hours under harsh climatic conditions and operate in routes that, in some instances, are impassible.

With regard to education majority of the respondents, 73.22% went through secondary education, 16.96% had gone through primary education, 6.25% went through colleges, 2.89% went through university while only 0.89% did not go through formal education.

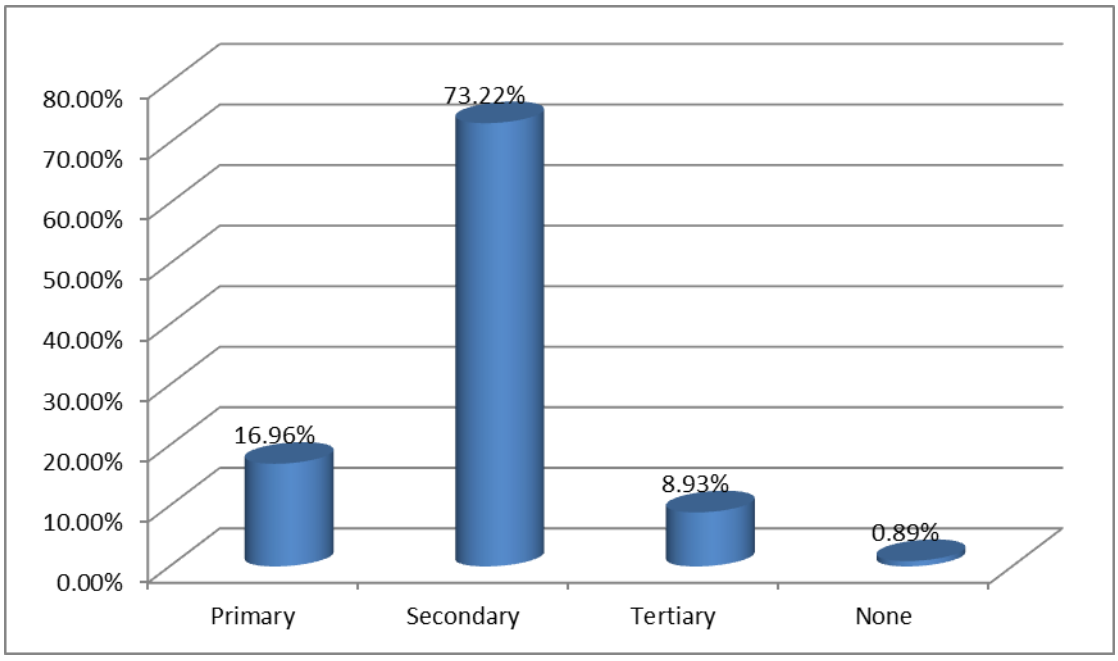

Figure 4. 2: Level of education of boda-boda operators

This could be as a result of the fact that bodaboda industry does not require specialized skills and therefore, anyone who can operate a motorbike can join the

industry. The few number of those who have gone to colleges and universities can be as a result of the fact that the society still values university and college certificates and views it as a prestigious achievement thus very few graduates join this industry despite the fact that there are no job opportunities in the country for them.

This agrees with the findings that the less the education the higher the proportion of young people in informal sector (UNDP, 2013), as shown above with most of the operators attaining secondary education as the highest level of achievement.

Majority of the respondents were married monogamous (53.57%), 32.14% reported being single with 11.61% reporting being married polygamous. Only 2.68% reported being divorced or separated. The high number of the married operators could be attributed to the fact that majority of the population is made up of young operators who might have just married or are having young families.

N=112	**n**	**Percentage (%)**
Single	36	32.14
Married Monogomous	60	53.57
Married Polygamous	13	11.61
Divorced/Seperated	3	2.68

Table. 4.1 Marital Status of boda-boda operators

The small percentage of those married monogamous or divorced could be brought about by the small percentage of those aged between 36 and 40 years of age.

It was also reported that 63.39% of the respondents have spent a day or more away from their spouses in a week while 36.61% have never spent away from their spouses. The majority of the operators spending a night or more away from home may be brought about by the fact that many operators might have taken clients to far off places and riding back at night to their homes may have been risky due to insecurity cases.

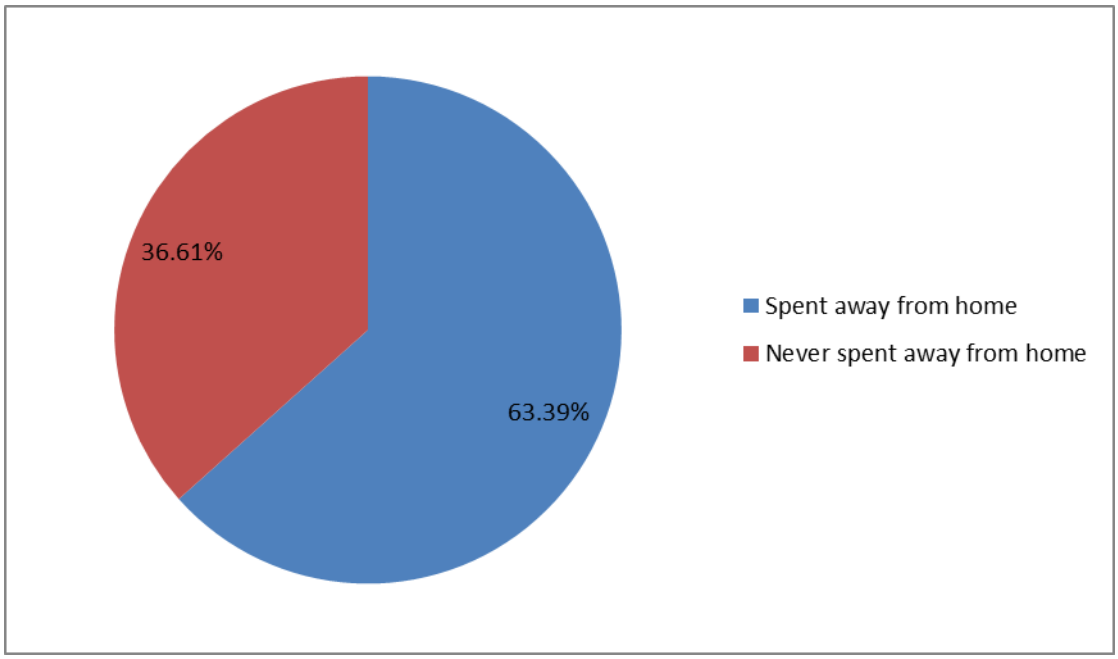

Figure 4. 3: **Number of days spent away from home**

This may be attributed to the fact that they spend long hours on the road away from home and in some cases they may have ferried customers or goods to far off places.

4.3 HIV Status awareness

Responses obtained from the bodaboda operators indicated that 89.29% of the respondents have ever had HIV test while 10.71% said they have never tested for HIV.

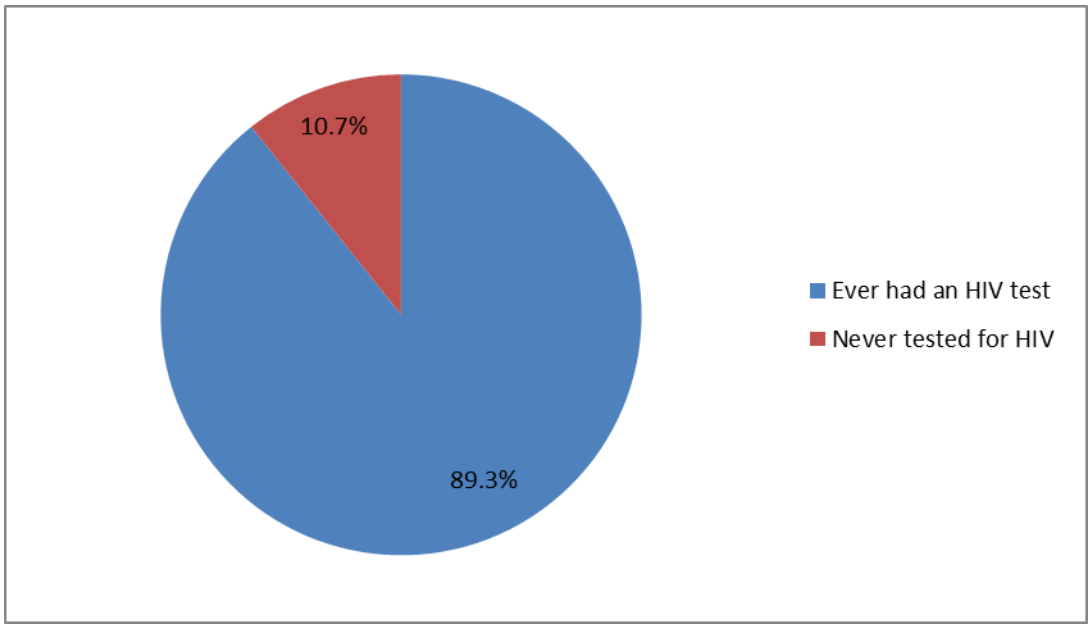

Figure 4. 4: HIV Status Awareness among boda-boda operators

The findings of the survey indicate that the majority of the bodaboda operators in Homa-Bay town generally are aware of their HIV status. Majority of the operators (89.7%) have had an HIV test and 10.29% have never tested for HIV in their lifetime. The finding that majority of the operators know their HIV status is in agreement with , NASCOP, 2013 which indicated that there is a high uptake of HIV testing in Kenya that stands at 71.3% with 55.5% having had the test within the last one of the survey. However, this study reveals that there is relatively high uptake of HIV testing and status awareness in Homa-Bay as compared to the national uptake which can be due

to the fact that attitude towards utilization of VCT services might have changed in recent times following the increased implementation of awareness-raising campaign programmes in Homa-Bay county.

Majority of the operators having had HIV testing therefore, could be attributed to the fact that currently, implementing partners such as IRDO, EGPAF and FACES in partnership with the MOH have been mandated to roll out prevention and treatment intervention activities in Homa-Bay in line with the 90-90-90 2010 target estimates (UNAIDS, 2014). Therefore the high number of boda-boda operators testing for HIV may be attributed to organizations mandated with rolling out HIV prevention and treatment intervention. In addition, out of the 47 counties, Homa-Bay County is leading with an HIV prevalence rate of 25.7% in Kenya (NASCOP, 2013), this has led to more synergy and efforts in scaling up HIV prevention strategies and knowledge of HIV status by both the government and non-governmental organizations.

These organizations therefore, have scaled up HIV counseling and testing services and awareness creation programs with the aim of increasing the number of those who take up these services in order to reduce HIV transmission. Qualitative data aalysed also showed high levels of HIV awareness. This was depicted by the knowledge of high HIV prevalence rates and impact of HIV in Homabay;

"First, it is true that the rate of HIV is HIV and the rate at which HIV spreads among bodaoda riders is very high. This is because most of my friends have passed away because of this disease. This is because we interact with women on a daily basis. It has affected most of the boda-boda families because they are forced to take care of he sick who in some cases are bed-ridden…" (IDI, Male 23 years)

This finding does not agree with the findings that there is low testing among the male (Dokubo *et al*, 2014). The male population require much attention with regards to HCT. The male population in the past had recorded low HCT turnout as compared to the female in the general population (Bwambale *et al*, 2008; Leta *et al*, 2012). This low HCT turnout among the males had been attributed to a number of reasons such as low risk perception among the abstinent, having a steady partner, not part of a high risk group or do not have symptoms of illness (Musheke, 2013)

4.3.1 Reasons for not Testing

Findings from this study showed that 10.7% of the operators have never been tested. Reasons for not getting an HIV test were explored among the bodaboda operators who had not previously been tested for HIV. Multiple responses were allowed, and the predominant reasons given were that HIV testing services were too far (60%), they were not ready for HIV testing (18%), felt they were not infected (12%), did not perceive themselves to be at risk of getting HIV (7%) and feared to discover they were HIV positive (3%).

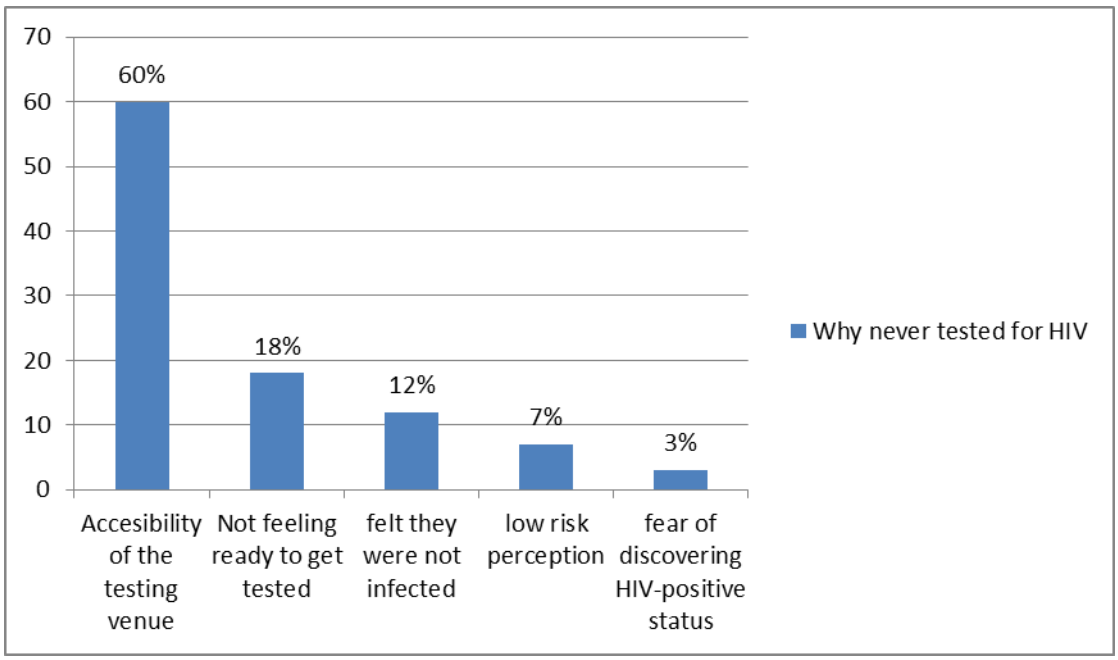

Figure 4. 5: Reasons for not having an HIV test

Among bodaboda operators who had not previously been tested for HIV, the main reason for not testing were accessibility of testing points, not feeling ready to get tested, felt they were not infected, low risk perception and fear of discovering HIV-positive status. Accessibility to the testing venues might have posed a challenge to those who operate in the periphery of Homa-Bay town who could have found it hard to access services being offered in the CBD because of lack of enough time owing to the fact that boda-boda business consume a lot of time and leaves the operators with little time to seek other services.

This study's finding that accessibility of the testing venue could make an operator not to go for HIV testing concur with the findings which looked into the predictors of consistent condom and voluntary conselling and testing utilization among bodaboda operators in Coastal region of Kenya which indicated that distance to VCT centre was among the factors that hindered the decision towards VCT uptake

and that participants who reported to be residing next to VCT centre were more likely to undergo VCT services than those who reported to reside far (Yonge *et al.* 2017). This equally seems to concur with Peltzer *et al*, 2009, on determinants of knowledge of HIV status, found out that improvement of education about HIV/AIDS and access to HIV counseling and testing (HCT), could enhance the uptake of HIV counseling and testing services.

These findings also concur with Musheke *et al*, 2013, which looked into factors enabling and deterring uptake of HIV testing in Sub-Saharan Africa and found out that individuals often assume that if they are currently abstinent, have a steady partner, are not part of a high-risk group or do not have physical symptoms of illness, they are at low risk of infection. Since majority of the operators reported being single, divorced, separated or married monogamous, they might often assume that if they are currently abstinent, have a steady partner, or do not have physical symptoms of illness, they are at low risk of infection. This is likely to lower the uptake of HIV status awareness. Despite the fact that majority of the respondents were aware the places where HIV testing was offered, accessibility to this venues was a barrier when seeking these services.

Another reason for not testing among the male boda-boda operators may be because of their busy schedule, owing to the fact that in African culture, men being bread winners of their families spend longer hours away from home in search of money (Camlin *et al*, 2016). Flexibility in operating hours of HIV testing, including late evening with multiple convenient locations male enhance their participation in HIV testing services. This was clearly brought out by one of the respondents during an interview. This is what he had to say;

'I don't mind going for HIV test, however I would wish that we could have HCT services at night after I finish working because I think there will be few people therefore no que and possibilities of meeting people I know there is small'(Male, aged 28 years)

4.3.2 VCT venues visited for HIV test

The responses obtained showed that a significant number (29.6%) of the respondents have visited HomaBay County Referral Hospital for HIV testing, 36.1% have visited other government health facilities, 25.9% have visited private health centres and hospitals, 6.5% have visited VCT sites and 1.9% had home based HIV testing.

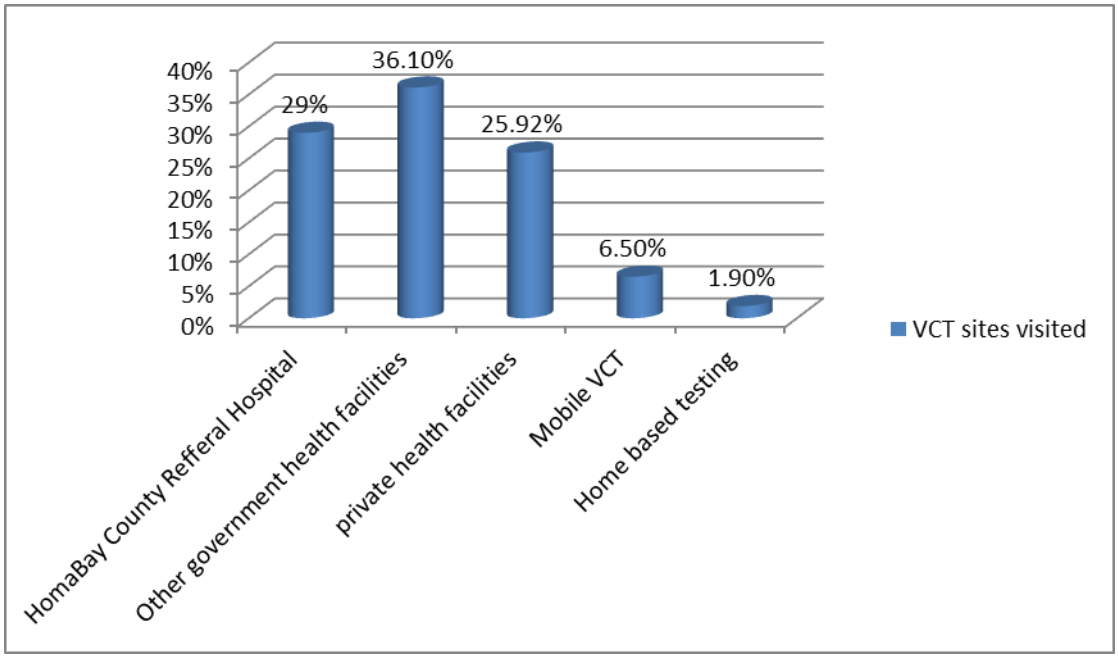

Figure 4. 6: VCT Venues Visited for HIV test

From the findings above, majority of the respondents have visited government facilities and hospitals with Homa-Bay County Referral hospital being the most visited. This could be attributed to the fact that respondents feel there is high level accuracy, training of test providers and test type offered. Respondents might fear that private or free-standing testing sites were prone to providing false positive, whereas counselors with more experience, especially those working in large hospital, are likely to deliver more accurate results.

This could also be attributed to the fact that the government facilities and hospitals offer other services which are in line with VCT for example ART which is not found in most private and stand-alone VCT centers, this makes it easy for those who have tested positive to seek for other services as well. These could be as a result of the fact that the respondents feel that there is confidentiality in government facilities and documents are kept safe as compared to mobile VCTs and private facilities. The high number of those who tested in hospitals can also be attributed to the fact that hospitals act as a disguise because they offer a range of services apart from HIV testing and counseling, this factor attracts those who fear being seen testing for HIV. It is however, evident from the findings that a smaller percentage of the respondents have visited private VCTs. However, responses got from the interviews conducted showed that some operators did not prefer Homa-Bay Referral hospital and this is what they had to say,

"it normally takes a lot of time because there are so many people seeking the same services. You will also find that the wing where we get the services, always known as MSF wing, is isolated for those who are suffering from HIV only. These

therefore, make some of us to fear going there because we do not want to be seen in that wing."(Male 35years)

The finding that respondents prefer government facility as compared with private health facilities agree with the finding that those who were not regular testers prefered clinic based testing (Strauss et al, 2018). General testing sites favoured those seeking VCT services mainly because of perceived disguise of purpose of visit. According to Njau *et al*, 2014 which looked into the importance of confidentiality, accessibility and quality of service in Tanzania found out that respondents fear private or free standing sites as compared to large hospitals because they felt that the results are not accurate and that the personnel in private facilities have little experience as compared to those working in large hospitals.

The preference of government facility by the respondents also concur with the findings from other researchers previously documented that perceived unreliability of test results and distrust of HIV testing technologies can discourage uptake (Musheke *et al*, 2013 and Dahl *et al*, 2008).

4.3.3 Reasons for visiting a given HIV testing venue

Responses obtained showed that 60.2% of the respondents who have been tested visited given venues because they were closer and easily accessible to them, 14.8% visited HIV testing venues because of friendly staff, 18.5% visited the sites because of respect shown by health care providers, 8.3% was because of the health information provided, 4.6% was because of confidentiality of the health providers and 1.9% was because of the privacy of the services offered.

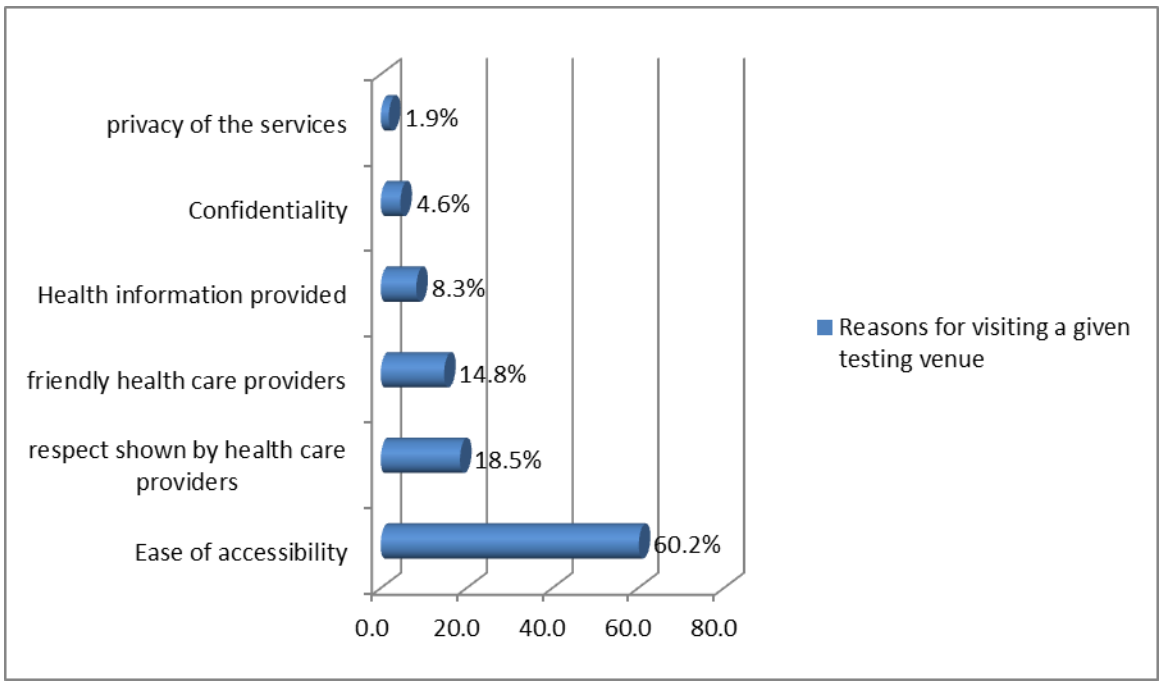

Figure 4. 7: Reasons for visiting a given HIV Testing venue

Distance and ease of accessibility of HIV testing venues was found out to be the major reason for respondents to choose a given venue. The finding that distance is the most important attribute to an individual's choice to take up HIV preventive services can be attributed to the fact that bodaboda operators have limited time due to the nature and kind of work they are doing. They are therefore, likely to visit a site that is easily accessible to them to limit time spent when seeking HIV testing services. This was followed by respect shown by health care providers, friendly staff, health information provided, confidentiality shown by health care providers, short quees then finally privacy.

This finding agree with the finding of Ostermann *et al,* 2014 on HIV testing preference in an urban setting which found out that distance to testing venue as the most important attribute to respondents, followed by confidentiality and the method of obtaining the sample. This finding that distance is the most important attribute tend to

differ with findings of Njau *et al 2014*, on HIV testing preferences with regard to the importance of confidentiality, accessibility and quality of service which found out that confidentiality was key in one's decision to go for HIV test in a given venue. This could be as a result of the fact that the respondents in this study are highly mobile group and with limited time to seek health services, they are therefore likely to seek services from closer and easily accessible venues.

The importance of consent and confidentiality should never be undermined by healthcare workers as this may jeopardise the potential of test and treatment intervention (Wringe et al, 2017)

4.4 Prevention strategies employed by boda-boda operators

Responses obtained from the bodaboda operators show that there is high level of awareness of HIV preventive methods among the bodaboda operators with 99.1% saying that they are aware of HIV preventive methods while 0.9% are saying that they are not aware of any HIV preventive method.

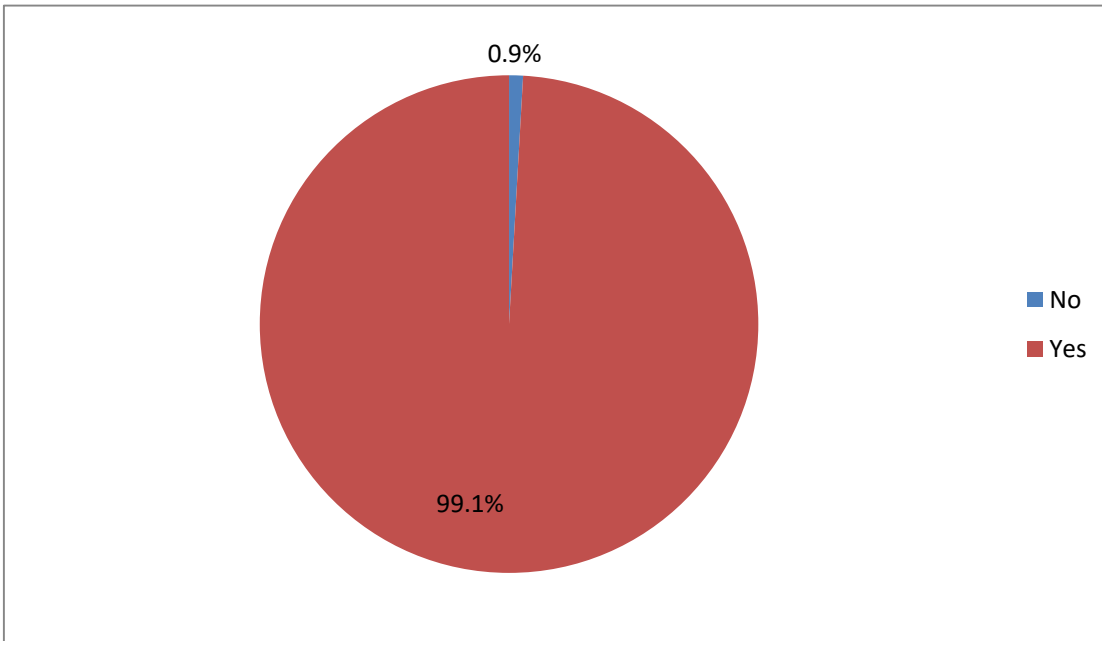

Figure 4. 8: Awareness of HIV prevention Methods

From the findings above, awareness of HIV preventive methods is very high with only 0.9% of the respondents saying they are not aware of any HIV preventive method. This could be attributed to the fact that the government is committed to intensify campaign against the spread of HIV and has come up with HIV and AIDs Prevention and Control bill-Act No. 14 of 2006 gazetted in August 2004 and assented into law in 2006. The government has also established Kenya National AIDs Strategic Plan (KNASP) 2005/2010 which provide action framework for HIV/AIDs within which all HIV and AIDs interventions in Kenya take place and finally, NACC has, to date, led the national response by coordination the three five-year strategic plan.

The high level of awareness finding agree with Adedimeji *et al*, (2008) which looked into social factors, social support and condom use behavior among young urban slum inhabitants where they found out that there is widespread knowledge about HIV preventive method.

Out of the operators who are aware of HIV preventive methods, 7.4% said they are aware of only one method, 28.7% said they are aware of two methods, 34.3% said they are aware of three methods, 24.1% are aware of four prevention, while 4.6% said they are aware of five prevention methods. 0.9% said they are not aware.

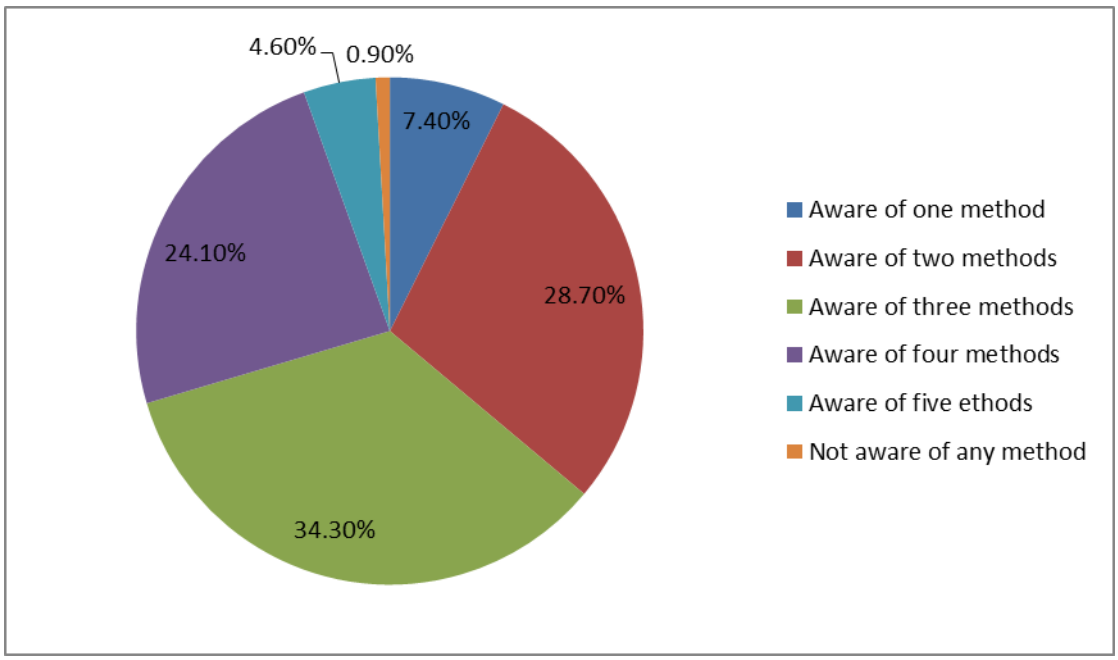

Figure 4. 9: Awareness of HIV prevention Methods

From the findings of the study, majority of the respondents are aware of two or more methods two or more methods of HIV preventive method. The high level of HIV prevention method awareness may be as a result of the fact that some of the preventive methods are work hand in hand with the others in order to ensure effective prevention of HIV infection i.e. circumcision and correct and consistence condom use. High awareness levels can also be due to the fact that awareness creation has been done in the country and majorly in hardest hit counties like HomaBay by both government and non-governmental organizations.

This finding that shows that there is high level of HIV prevention awareness concur with the findings of Carrasco et al, (2017) which also found out that there was high awareness of HIV preventive services among men who live in urban areas.

4.4.1 Utilization of HIV preventive services

Responses obtained on the usage of the four prevention methods, condom use, abstinence, being faithful and circumcision indicated that 63.9% have used condom, 34.8% have not used condom and 0.9% said not applicable. 14.8% have used abstinence, 85.2% have not used abstinence while 0.9% answered not applicable. 13.9% have used being faithful while 86.1% have not used being faithful. 34.3% have used circumcision while 65.7% have not used circumcision. Other methods used include; use of sterilized sharp piercing tool mentioned by 14 (12.7%) respondents, blood transfusion screening by 3(2.8%), Others such as HIV testing, treatment as prevention (TaP) and behavioural interventions were mentioned by less than 1% of bodaboda operators.

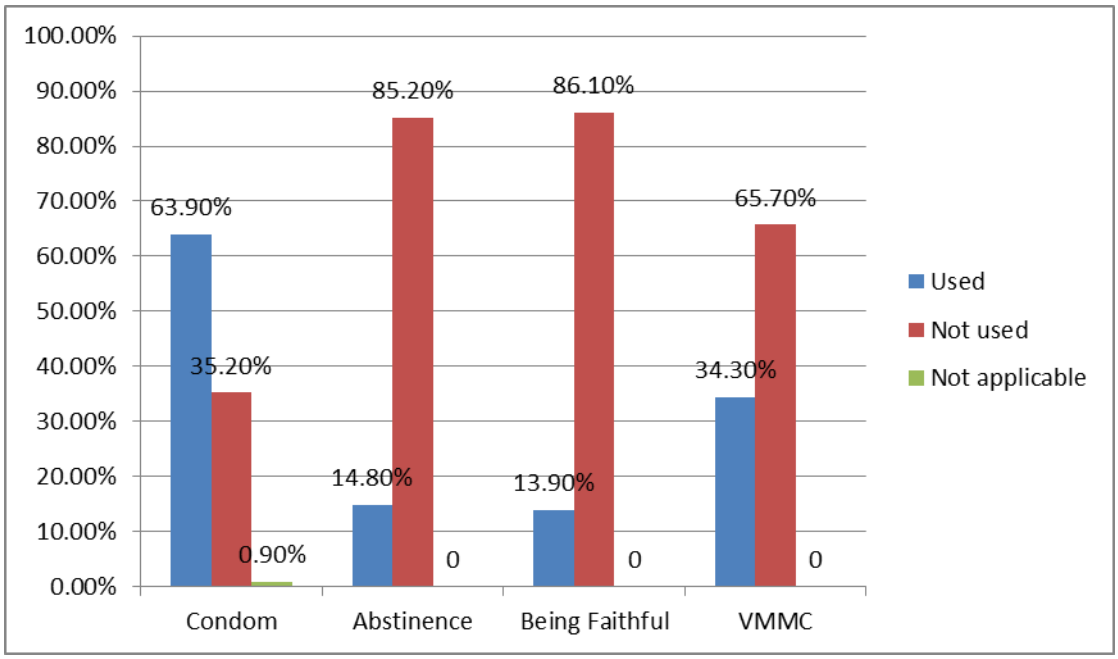

Figure 4. 10: Utilisation of HIV preventive services

Though there is high awareness of HIV prevention methods (99.1%) as indicated in the findings above, only 63.9% of the respondents had utilized condom use, while 35.2% did not utilized this service. This could be attributed to the fact that currently

NGOs in partnership with MOH in Homa-Bay are ensuring that there is supply of condoms in the hospitals and social joints in Homa-Bay to improve on access of HIV preventive method. The high condom use can also be attributed to the fact that individuals migh have had high level of knowledge concerning condom use. Below is what two respondents had to say during an interview concerning condom use,

"I use condoms sometimes when I visit a condom dispenser at the hospital but sometimes I don't use condoms because I fear going to the shop to buy condoms, everyone at the shop will feel am promiscuous."(Male 28 years)

"Use of condoms is good the only problem we have is that we are always in a hurry, this is why we end up not using what we are supposed to use."(Male 32 years)

The relatively high condom use finding disagree with the findings of Chandran *et al,* (2012) which studied predictors of condom use and refusal among the population of free state province and found out that low levels of condom use. Low levels of utilization of abstinence as a method of HIV prevention was also noted. 14.8% were the respondents who had utilized abstinence while 85.2% did not utilize abstinence. The low uptake of abstinence could be as a result of the fact that majority of the respondents were married.

This finding also concur with the findings on a study on factors that influence utilization of HIV preventive method and found out that despite the high level of awareness, utilization of the services were still low. The study also found out that despite the fact that the respondents were aware of abstinence as being one of the most effective ways of preventing HIV infection, majority declined using it because they felt that it was not practical (McHunu, 2014).

4.4.2 Reasons for using HIV prevention method

The respondents gave varying reasons for using various HIV prevention methods. Out of the total number of respondents who have used condoms, 17.4% used condoms for family planning purposes, 37.7% used it to avoid HIV infection, 18.9% used it to avoid STIs infection and 42.0% used it because they are cheap and available.

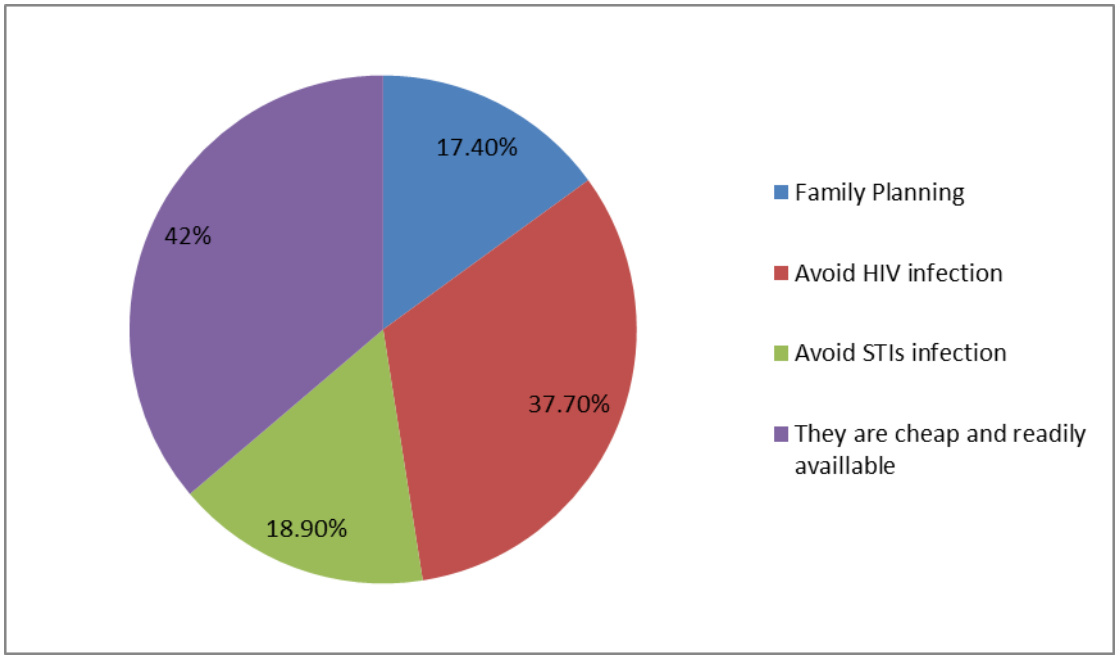

Figure 4. 11: Reasons for condom use

The findings above indicate that majority of the respondents used condom for various reasons apart from preventing HIV infection. Only 37.7% used condoms to avoid HIV infection. Low levels of condom use to avoid HIV infection could be as a result of te fact that most of the respondents are married or have a stable partner and might not feel the need of using condom because of low risk perception and shame associated with condom use. This could also be as a result of the fact that there are knowledge deficits regarding use of condom as a way of preventing HIV infection.

A study done in South Africa on "predictors of condom use and refusal" concluded that improvement of correct and consistent use of condoms require targeted interventions (Chandran *et al*, 2012)

4.4.3 Condom use at last sex

Information reported from the respondents concerning condom use at last sex indicated that 49.10% used condom at last sex while 50.9% did not use condom at last sex.

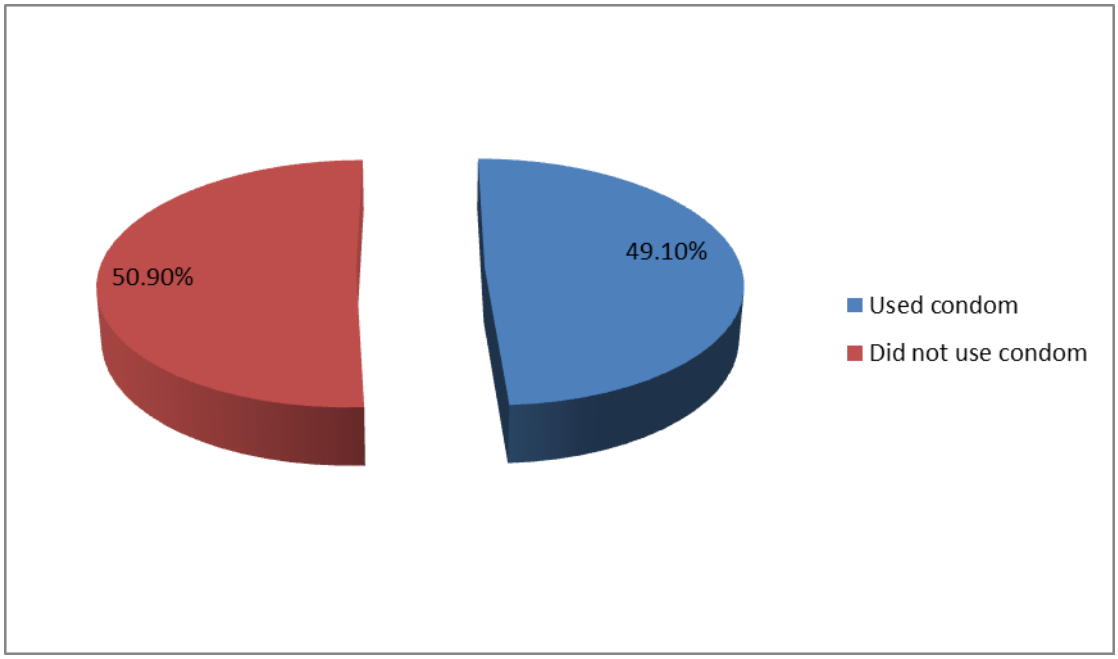

Figure 4. 12: Condom use at last sex

The above findings indicate that majority of the respondents did not use condom at last sex. The lack of use of condom at last sex is in agreement with Chatterjee *et al, (2006)* who also noted lower rate of condom use with casual partners. This could be as a result of the fact that majority of the respondents are married and therefore have lower risk perception as compared to those who are not in stable relationships.

Reasons for using condom at last sex were explored and the respondents gave the following responses 43.64% said they used condom for family planning purposes, 41.81% used condom to avoid HIV infection and 14.55% used condom to avoid STIs infection.

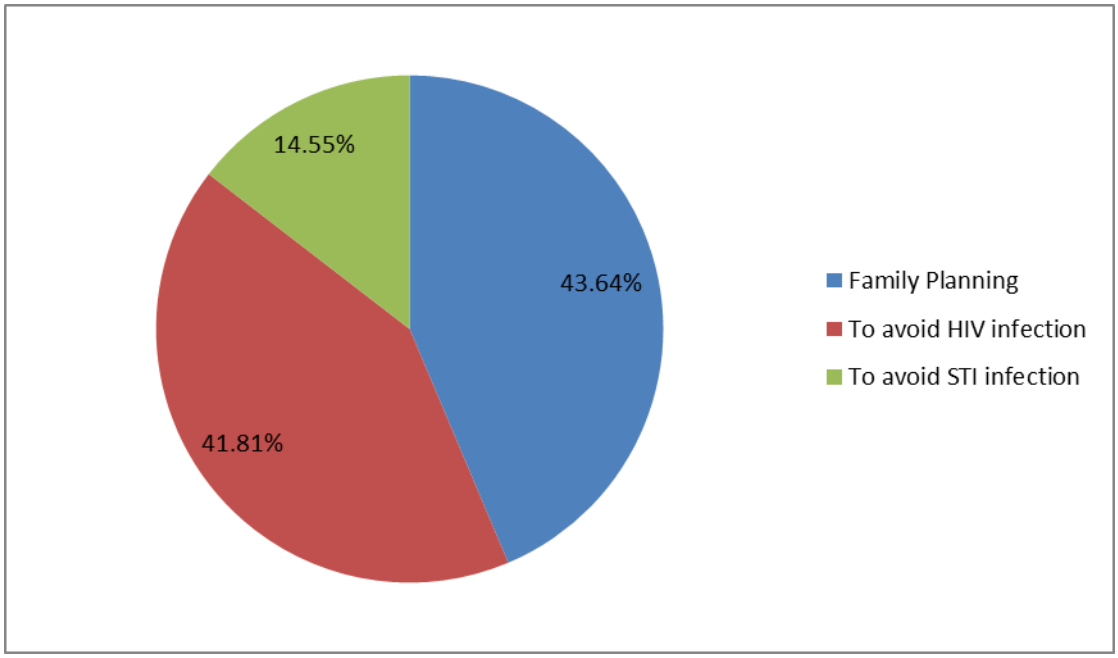

Figure 4. 13: Reasons for condom use at last sex

From the findings above, majority of the operators use condom at last sex to avoid HIV and STI infection. This could be attributed to the fact that the operators knowledge and percieve risk of infection was high. This agrees with the finding that percieved need might increase one's chances of using condoms (Chandran *et al*, 2012)

Response of the bodaboda operators on preference of HIV prevention strategies indicated that 64.8% first preference was condom use, 12.0% preferred abstinence, 4.6% preferred circumcision, 14.8% preferred being faithful and 3.7% did not show preference to any method of HIV prevention

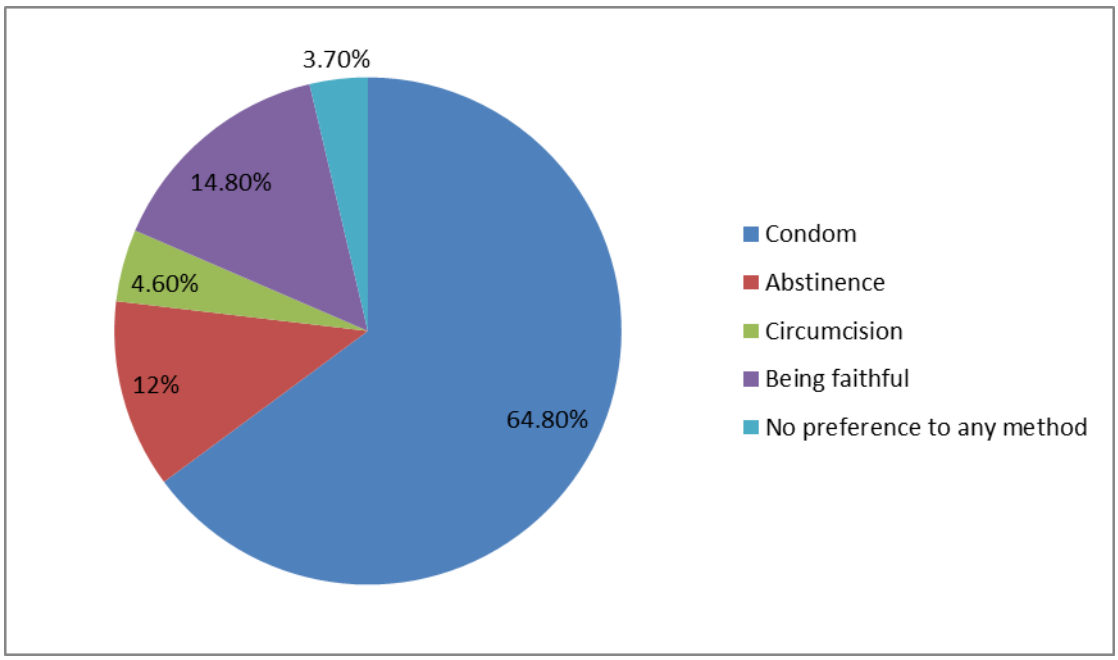

Figure 4. 14: Preference to HIV prevention methods

4.4.4 Challenges faced when acquiring HIV prevention method

The reported responses from the bodaboda operators concerning the challenges they face when acquiring HIV prevention services 4.63% said their partners declined the HIV prevention method they wanted to use, 19.44% said they lacked funds needed for them to use a given prevention method, 10.19% said the service providers were far from them, 21.30% did not acquire HIV prevention strategies because of myths and misconceptions around some preventive methods, 4.63% was because of pain and duration it takes for them to resume work, 2.78% talked of provider attitude/unfriendly providers, 6.48% talked of confidentiality factors and 3.70% said they lack knowledge concerning the preventive services.

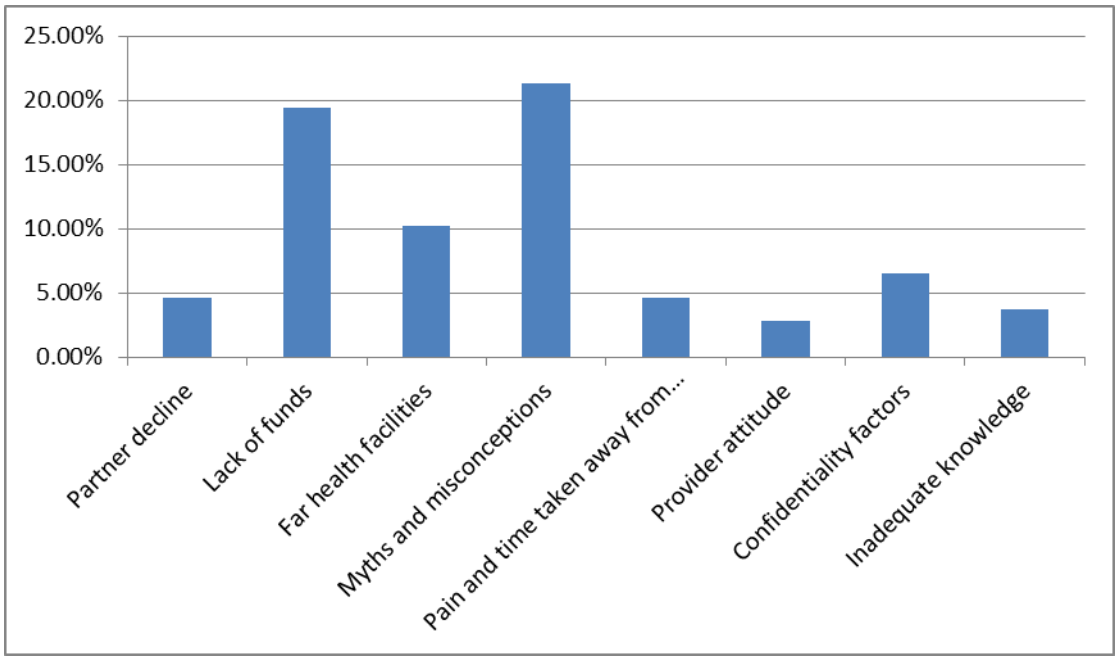

Figure 4. 15: Challenges faced when acquiring HIV prevention method

4.5 Drivers of HIV preventive service uptake

Predictors to utilization of HIV prevention services among the Bodaboda operators were examined. In the analysis, condom use, circumcision, abstinence and being faithful as a means of protection against contracting HIV were the variables considered. If a respondent reported any of the above strategies as a means of prevention against HIV, then he or she was considered to have used a strategy to prevent against HIV. If a respondent did not use all of the above prevention strategies for prevention against HIV, then he was considered to never have used a prevention strategy. As of importance to note is the fact that this analysis did not consider HIV testing as a prevention strategy but as a strategy for knowing one's HIV status.

Employing generalized linear modelling framework and log-binomial regression, the study modelled occurrence of service utilization and compared it among

categories of explanatory variables using crude and multivariable-adjusted prevalence ratios (PR) and 95% confidence intervals (CI). Variables significant at <0.25 level in univariable analysis were further examined using multivariable regression model. Potential confounding effect of each covariate and two-way interactions were examined. Predictor variables were considered to be statistically significant at 0.05 level. The analyses were completed using STATA version 14.1 (STATA Corporation, College Station, Texas, USA).

Socio-demographic factors that influence the likelihood of bodaboda operators utilizing HIV preventive methods were then examined to ascertain whether they influenced uptake of these services.. In the multivariate analysis, occupation of the respondent, marital status and highest level of education attained were significantly associated with HIV prevention services uptake.

Participants who reported owning a business, either (Duka, Kiosk or Juakali) were about 38% less likely to utilize any of the services compared to those who reported farming as their other source of income occupation (PR=0.62, 95% CI 0.62-0.96); whereas in terms of marital status, divorced/separated were two-fold likely to use any of the two services compared to the married in a monogamous family (PR=2.13, 95% CI 1.36-3.33). Those respondents reporting having attained primary level of education as the highest were 1.3 more likely to utilize any of the services compared to those reporting secondary as the highest level of education (PR=1.33, 95% CI 1.00-1.78).

Table: 2.2: Regression analysis outcomes for predictors to HIV service utilization

Variable level	HIV Service uptake Prevalence[¥]	Adjusted Ratio 95% CI	Prevalence		p-value
Age group in years					
21-25	77.4	Ref			
26-30	73.3	1.05	(0.70	,1.57)	0.810
31-35	52.7	0.73	(0.48	,1.11)	0.145
36-40	61.3	0.84	(0.54	,1.30)	0.432
Occupation					
Farmer	77.7	Ref			
Fisherman	69.0	0.88	(0.60	,1.31)	0.533
Small business (sells maize etc)	83.9	1.04	(0.68	,1.57)	0.861
Busines owner (Duka, Kiosk, Juakali)	47.8	0.62	(0.39	,0.96)	0.034
Marital status					
Married monogamous	63.4	Ref			
Single/never married	68.2	0.93	(0.61	,1.41)	0.724
Married polygamy	71.2	1.01	(0.61	,1.68)	0.955
Divorced/separated	-	2.13	(1.36	,3.33)	0.001
Level of education attained					
Secondary	62.8	Ref			
Primary	81.5	1.33	(1.00	,1.78)	0.047
Post-secondary	82.5	1.24	(0.91	,1.69)	0.181

¥: Adjusted prevalence

OR: odds ratio, CI: confidence Intervals

The results presented here show that occupation of the respondent, marital status and level of education attained were likely to influence service uptake among the bodaboda operators.

According to this study religion and ethnicity did not affect the uptake of HIV preventive services. However the findings suggest that the higher the education level of the respondents the less likely they are to utilize HIV preventive services with those attaining lower level of education (primary education) more likely to utilize HIV preventive services. This is consistent with Yonge *et al* (2017) that examined predictors of condom and voluntary counseling and testing services utilization and found out that those with primary education were more likely to use condoms as compared to those who have secondary education and above. This can be attributed to the fact that those with secondary and above were mostly older and may be resistant to change than individuals with primary education who may be friendly to accept ideas and advices to prevent HIV infection.

Findings from this study did however not agree with findings of Apanga *et al* (2015) on a study looking into factors influencing uptake of voluntary counseling and testing services for HIV/AIDs that found out that the findings suggest that the higher the educational level of respondents, the more likely that they will use VCT services. This also agrees with the finding that men of higher education and living in urban areas are more likely to know about the importance of HIV preventive services which in turn affects utilization of these services (Carrasco *et al, 2017*)

The study also shows that economic statuses of the respondents also affect HIV preventive service utilization with those who reported owning a business, either (Duka, Kiosk or Juakali) were about 38% less likely to utilize any of the services compared to those who reported farming as their other source of income. This finding agrees with the finding that poverty is one of the barriers that affect the utilization of HIV preventive services such as condom (Matovu and Ssebadduka, 2013)

The findings also shows that the respondents who are divorced/separated were two-fold likely to use any of the services compared to the married in the monogamous family. This could be attributed to the fact that those in monogamous union have developed a sense of trust in their partners thus feeling no need of using HIV preventive services. It can also be as a result that those who are not married monogamous might be having several casual sexual partners that makes them have high risk perception thus utilizing HIV preventive services.

However, these findings does not agree with the findings of Ziriba *et al* (2011) conducted in Nairobi which found out that unmarried males were less likely to be tested and counseled for HIV as compared to married males. This could be because males in Nairobi are exposed to different socio-economic and cultural characteristics. Additionally the study period might influence the association.

4.6 Health seeking behaviour patterns

In the analysis, a number of issues came up that affected health seeking bahaviour patterns among the bodaboda. These include reasons for seeking services, type of service, preference for services and pluralism of health services sought. Medical pluralism as a way of treatment was highlighted by a number of IDI respondents who emphasized that boda-boda operators sought for services in conventional health facilities, religious healers, self-medication and traditional healers. The choice of the places or persons they visit for services is influenced by a number of factor such as belief in the treatment, cost of treatment and time available to seek for services:

"when our people are sick, they often go to the district hospital because the services are affordable….others do self-medication. This is where one concludes that are suffers from for example malaria and buys malarial drugs from local chemist. They also visit herbalists when having stomach problems because they claim herbalists have better concoctions for their ailments. They also take their expectant wives to herbalists." (IDI, Male 35 years)

This could be attributed to low level of knowledge about HIV prevention among the bodaboda operators. This concurs with the finding that with the increase of both education level and knowledge of HIV/AIDS, accurate information about the disease and its causes and modes of transmission seem to have led to high adoption of HIV prentive services (Peltzer *et al*, 2009).

In as much as bodaboda operators know their status, qualitative data collected hinds to the fact that a number of them fear going for the HIV test. The fear of being is a major challenge towards seeking for health services. However, there is a general concensus that once one know their HIV status and for instance the results are reactive (HIV positive), then tis becomes a motivator to services acquisition. This is well captured by the leaders of the boda-boda groups;

"One of the challenges is that these people do not want to know their status. They would not go for testing even if it is brought close to them. However once they have been confirmed to be suffering from the disease, they usually go for medication. The problem only comes before they get tested and confirm their status even for those who are showing signs of being infected." (IDI, Male 35 years)

In terms of seeking for treatment, responses obtained from the boda-boda operators on whether they would collect ART from the nearest health center indicated that 62.3% of the respondents said they would while 37.7% said they would not collect ART from the nearest health center.

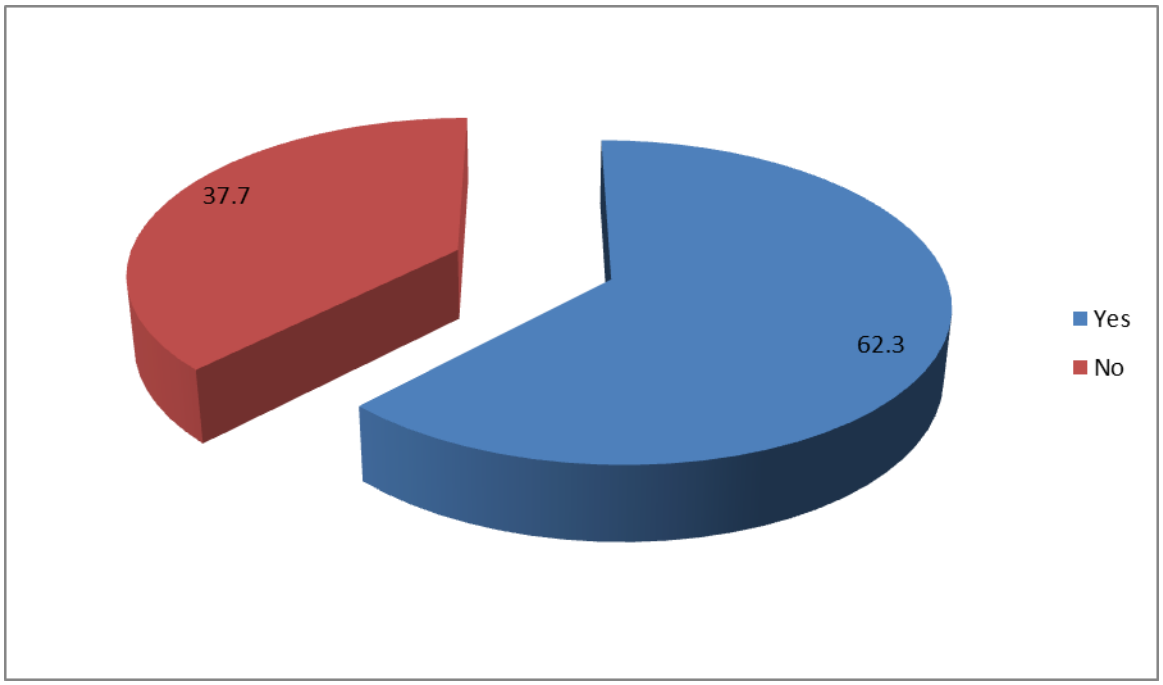

Figure 4. 16: ART collection from the nearest health center

The findings above indicate that majority of the respondents (62.3%) would seek for ART services in the nearest health center while 37.7% of the respondents would not seek for ART services in the nearest health center. The above finding that majority of the respondents preferred to visit the nearest health center is in line with the finding of Yonge *et al*, 2017, which indicated that those residing closer to the center would go for HIV services as opposed to those residing far away from the health center. Respondents decision to seek ART services from the nearest health center can be as a result of the fact that boda-boda operators are a highly mobile group

thus their business consume a lot of tile and leaves them with little time to seek services from a far off place.

4.6.1 Reasons for not seeking ART services from the nearest health center

Of the 37.7% of the respondents would not seek ART services from the nearest health center. 45.1% said they would not seek ART services from the nearest health center because of lack of confidentiality, 34.1% said they feared being discriminated and 20.8% was because of the attitude of the health care providers.

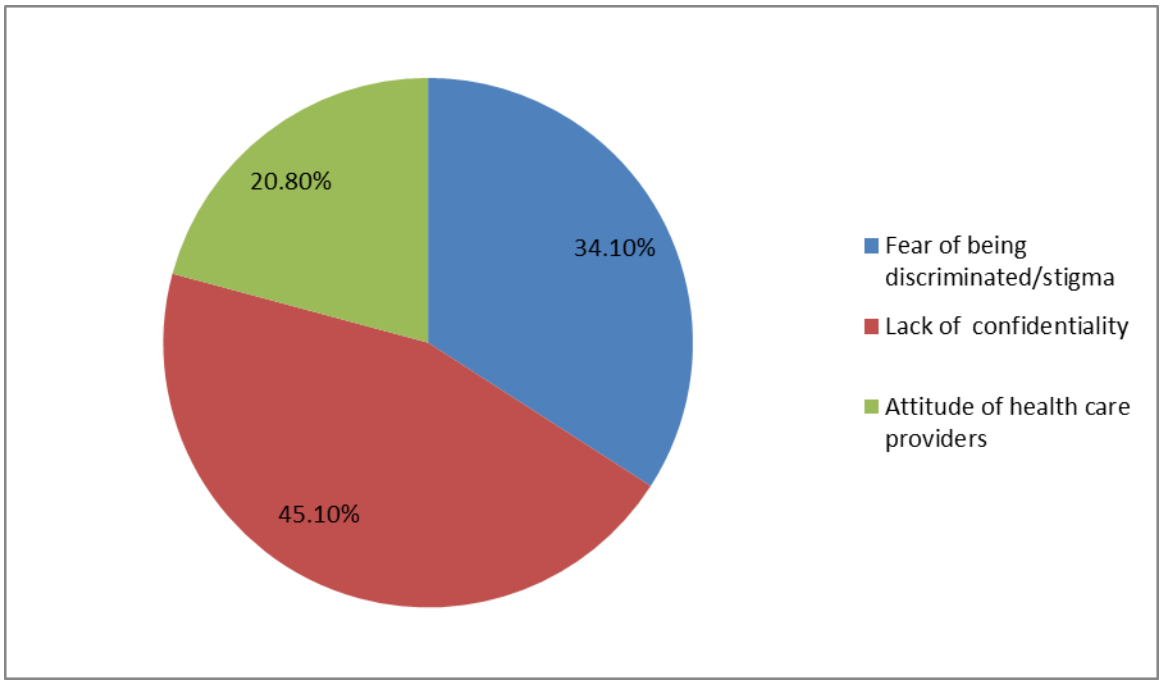

Figure 4. 17: Reasons for not seeking ART from the nearest health center

Lack of confidentiality was found out to be the major reason for respondents to decline seeking ART services from the nearest health facility. This is in line with the findings that confidentiality was key in one's decision to go for HIV services in a given venue (Njau *et al*, 2014). This can be attributed to the fact that some of the

workers in the health care facility including health care providers might be known by the respondents, therefore the respondents might lack trust in them. The following are some of the responses got from the leaders of the boda-boda groups cum operators during an interview;

"The challenge I have with health facility close to my home is that the health care workers there might leak the information to the public and I also fear being stigmatized."(Male 26 years)

"I might be having relatives or people I know as health care providers. If they get to know I am HIV positive they might go around telling people."(Male 26 years)

In summary, it is therefore critical to note that health seeking behavour among boda-boda operators is influenced by a number of factors ranging from facility factors, individual factors to provider factors. Individual boda-boda operators have their own preferences for services and where they would like to get treatment including acquisition of services. Stigma and discrimination around HIV is still a very strong correlate to use of services including testing. Provider factors such in which the operators fear that their HIV status and treatment cycles would be known to other people act as a deterrent to services acquisition. Most of the operators were critical to the fact that confidentiality was a key factor in facilitation of service utilization. Time was also critical to seeking for health services. The nature of work of the operators is time consuming as they move from place to place transporting their clients thus most of them would not seek for services due to lack of time.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter deals with the summary, conclusions, recommendations, contribution to the body of knowledge and suggested areas for further research in the following sub themes.

5.1 Summary of Key Findings

Based on the data and other information obtained and analyzed to answer the research questions of the study, a number of research findings were presented in chapter four. The findings are summarized in this section

5.1.1 Socio-Demographic information of the respondents

The study showed that 42 (37.5%), boda-boda operators were aged between 26 years and 30 years while 15 (13.4%), were between the ages of 36 to 40 years, 25 (22.3%) were aged between 20 to 25 years and 23 (20.8%) were between the ages of 31 to 35 years as captured in (Figure 4.1). This is a clear indication that boda-boda industry is majorly made up of youths.

With regards to education, a high population of boda boda operators were KCSE holders 82 (73.22%) followed by KCPE holders 19 (16.96%). 1 (0.89%) did not go through any kind of formal education. The rest of the population 10 (8.93%) had a college and university education, as sown in (Figure 4.2).

It also emerged from the study that majority of the operators 71 (63.39%) have spent atleast a night away from home while 41 (36.61%) indicated that they have

never spent away from home as revealed in (Figure 4.3). 73(65.18%) of the respondents reported being married. Of the married 60 (53.57%) were married monogomous while13 (11.61%)reported being married polygamous. 36 (32.14%) reported being single. On the other hand only 3 (2.68%) of the respondents reported being divorced or seperated as indicated in (Table 4.1)

5.1.2 HIV Status Awareness

HIV status awareness among boda-boda operators in Homa-Bay town was found to be high. Majority of the operators 100 (89.3%) have had an HIV test, and only a few operators 12 (10.7%) reported not having had an HIV test as shown in (Figure 4.4).

The findings from the study showed that a large number of the operators have visited Homa-Bay refferal hospital 33 (29.6%) and government facilities 40 (36.1%). 29 (25.9%) visited private health centers while 7 (6.5%) having visited VCT stand alone sites. The remaining 2 (1.9%) had home based HIV testing, as shown in (Figure 4.6). This shows that boda-boda operators prefer getting HIV test in government health facilities. The study also revealed that the operators preferred a given venue because it was easily accessible 60 (60.2%), 19 (18.5%) respect shown by health care providers, 15 (14.8%) friendly health care providers and 8 (8.3%) due to the health information provided as indicated in (Figure 4.7).

It emerged from the study that the main reasons for not having an HIV test were; testing services were too far 7(60%), not ready for HIV testing (2 or 18%) and did not percieve themselves to be at risk of getting HIV and feared to discover they were HIV positive 3 (22%). Accessibility of the testing venue was seen to have a great influence

on operator's decision to seek for HIV services. The closer the testing venue, the higher the chances the boda-boda operators would agree to go for HIV testing, as revealed in (Figure 4.5). It also emerged from the interviews that boda-boda operators preffered night HTC services as indicated in an interview of page 66.

5.1.3 Prevention Strategies Employed by boda-boda Operators

Utilization of HIV prevention methods have been shown in the study to be relatively low (Figure 4.10) as compared to the high level of awareness of the various methods used to prevent HIV with 111(99.1%) saying they are aware of HIV preventive methods as shown in (Figure 4.8). Though abstinence has been seen as the surest way of protecting one's self from HIV infection, it is one of the least used preventive strategies by boda-boda operators with only 17 (14.8%) reporting abstaining, 16 (13.9%) reported being faithful, 38 (34.3%) VMMC and finally 72 (63.9%) showed that they have used condoms as indicated in (Figure 4.10). It was also revealed from the study that boda-boda operators used condoms for various reasons which were not limited to HIV/STI prevention. 40 (56.6%) to avoid HIV and STI infection, 30 (42%) said they were readily availlable, and 2 (2.4%) for family planning as shown in (Figure 4.11).

It emerged from the study that there was low condom use at the last sexual intercourse with 57 (50.9%) not using condoms while 55 (49.1%) used condoms as it emerged in (Figure 4.12) and low levels of abstinence among the operators (Figure 4.10). Some of the reasons given for not using condoms were; shame associated with condom use for example people viewing those who buy condoms from shops as promiscuous, knowing one's HIV status(low risk perception), partner declining and lack of knowledge on condoms. A respondent during an interview, reported to get

condoms only from the dispenser and fear buying condoms because of stigma associated with it as it emerged in the interview of page 74 (IDI 4).

5.1.4 Drivers affecting the Uptake of HIV Preventive services

In the multivariate analysis, occupation of the respondent, marital status and highest level of education attained were significantly associated with HIV prevention services uptake.

Participants who reported owning a business, either (Duka, Kiosk or Juakali) were about 38% less likely to utilize any of the services compared to those who reported farming as their other source of income occupation (PR=0.62, 95% CI 0.62-0.96); whereas in terms of marital status, divorced or separated were two-fold likely to use any of the two services compared to the married in a monogamous family (PR=2.13, 95% CI 1.36-3.33). Those respondents reporting having attained primary level of education as the highest were 1.3 more likely to utilize any of the services compared to those reporting secondary as the highest level of education (PR=1.33, 95% CI 1.00-1.78) as shown in (Table 4.2).

According to this study religion (predominantly christian) and ethnicity (predominantly Luo) did not affect uptake of HIV preventive services. Ethnicity and religion could not play any major influence in determining HIV services utilization since there were no other categories within these variables for comparrison in the multivariate analysis.

5.1.5 Health Seeking Behaviour Patterns

In the analysis, a number of issues came up that affected health seeking bahaviour patterns among the bodaboda. These include reasons for seeking services, type of service, preference for services and pluralism of health services sought. Medical pluralism as a way of treatment was highlighted by a number of IDI respondents who emphasized that boda-boda operators sought for services in conventional health facilities, religious healers, self-medication and traditional healers, as it emerged in an interview of page 85 (IDI 8). The choice places or persons they visit for services is influenced by a number of factors such as belief in the treatment, cost of treatment and time available to seek for services

In as much as bodaboda operators know their status, qualitative data collected hints to the fact that a number of them fear going for the HIV test. The fear of being HIV positive is a major challenge towards seeking for health services. However, there is a general concensus that once one has know his/her HIV status and for instance the results are reactive (HIV positive), then this becomes a motivator to HIV preventive services acquisition. This is well captured by the leaders of the boda-boda groups, as shown in an interview of page 85 (IDI 3).

Health seeking behavior of the operators was also seen to be affected by the proximity to the health center. With the majority of the operators (62.3%) preferring to attend health centers which are closer to their places of residence as indicated in (Figure 4.16). This was mainly because they spend limited time to get these services and also ease of access. However, those who declined seeking HIV services from a nearby health center was largely because of fear of lack of confidentiality among the heaith care workers as revealed in (Figure 4.17)

5.3 Conclusion

Based on the findings in chapter four and the summary, the study concludes the following;

5.2.1 Hiv Status Awareness

There is high level of HIV status awareness among the boda-boda operators.This could be as a result of the governmental and the non-governmental organizations efforts to curb the spread of HIV in Homa-Bay County. Ease of accessibility of the testing venues was found to be a key determinant to whether an individual will opt to go for HIV testing services. Flexibility of HIV testing services such as having testing points that work during the night is also likely to increase the number of those going for HIV test. Boda-boda operators preferred government health facilities to private health facilities and stand alone testing sites

5.2.2 Prevention Strategies Employed by boda-boda operators

Low utilisation of HIV preventive services was noted as compared to the high level of awareness of HIV preventive services among boda-boda operators. On the preffered HIV prevention method employed by the boda-boda operators, the study concludes that boda-boda operators mostly utilized condom as compared to the other HIV preventive methods like, abstinence, being faithful and VMMC. Furthermore, not all the respondents used condoms for HIV prevention, some used it as a way of family planning.

5.2.3 Drivers affecting Uptake of HIV preventive services

In regard to the drivers affecting uptake of HIV preventive services, the study concludes that education level, economic status and marital status are the key drivers affecting the uptake of HIV preventive services. Operators with higher education levels, owners of business other than boda-boda operation and are married monogamous were less likely to take up the preventive services as shown in Table 4.2.

5.2.4 Health seeking behaviour Patterns

In regard to health seeking behavior patterns, boda-boda operators sought for services in both conventional health facilities and traditional healers. The choice of the places or persons they visit for services is influenced by a number of factors such as belief in the treatment , cost of treatment and time availed to seek for services. A number of the operators fear going for HIV test due to the fear of being found to be HIV positive.

5.4 Recommendations for Policy and Practice

The study makes the following recommendations for policy and best ways to improve HIV preventive service utilisation among the bodaboda operators and thus lower infection rate among this highly mobile group.

1. The study recommends that the County government of Homa-Bay through the Ministry of health to equip government facilities with enough resources and also making HIV testing services flexible to meet the need of different groups like bodboda operators who prefer night services. These night services should not only be limited to HTC but should also include HIV care and treatment for

those who have confirmed their HIV status to be HIV positive. Health care workers should undergo refresher trainnings to improve service delivery to their clients. Support supervision for all health care staff should also be strengthened to reduce cases of discrimination at the health facilities for those who test positive.

2. The study strongly recommends to the County Government of Homa-Bay through the Homa-Bay County Ministry of Health to provide adequate prevention services to the bodaboda operators for example increase the number of condom dispensers where they can easily get condoms. These services should not hinder them from performing their daily activities. Mobilization of bodaboda operators to take up these services should be prioritized. Appropriate information on the short term preventive services which are easy to understand should also be provided for these groups to increase their knowledge on the preventive services.

3. The study recommends to the County Government through County Ministry of health to come up with programs that target couples, operators with higher education level and who own other businesses apart from bodaboda operation to improve the uptake of HIV services among these three groups of operators.

4. The study recommends to the National government through NACC to increase knowledge levels on HIV/AIDS and importance of adherence.

5.5 Recommendations for Further Research

The current study examined various variables affecting uptake of HIV preventive services such as accessibility, confidentiality and attitudes of the health care providers to find out the barriers to providing quality health care services to operators in Homa-Bay town so that these barriers are addressed in good time. Addressing such barriers will go a long way in addressing utilization of HIV preventive services among boda-boda operators and in so doing facilitate the desired outcomes as far as utilization of HIV preventive services by the boda-boda operators is concerned.

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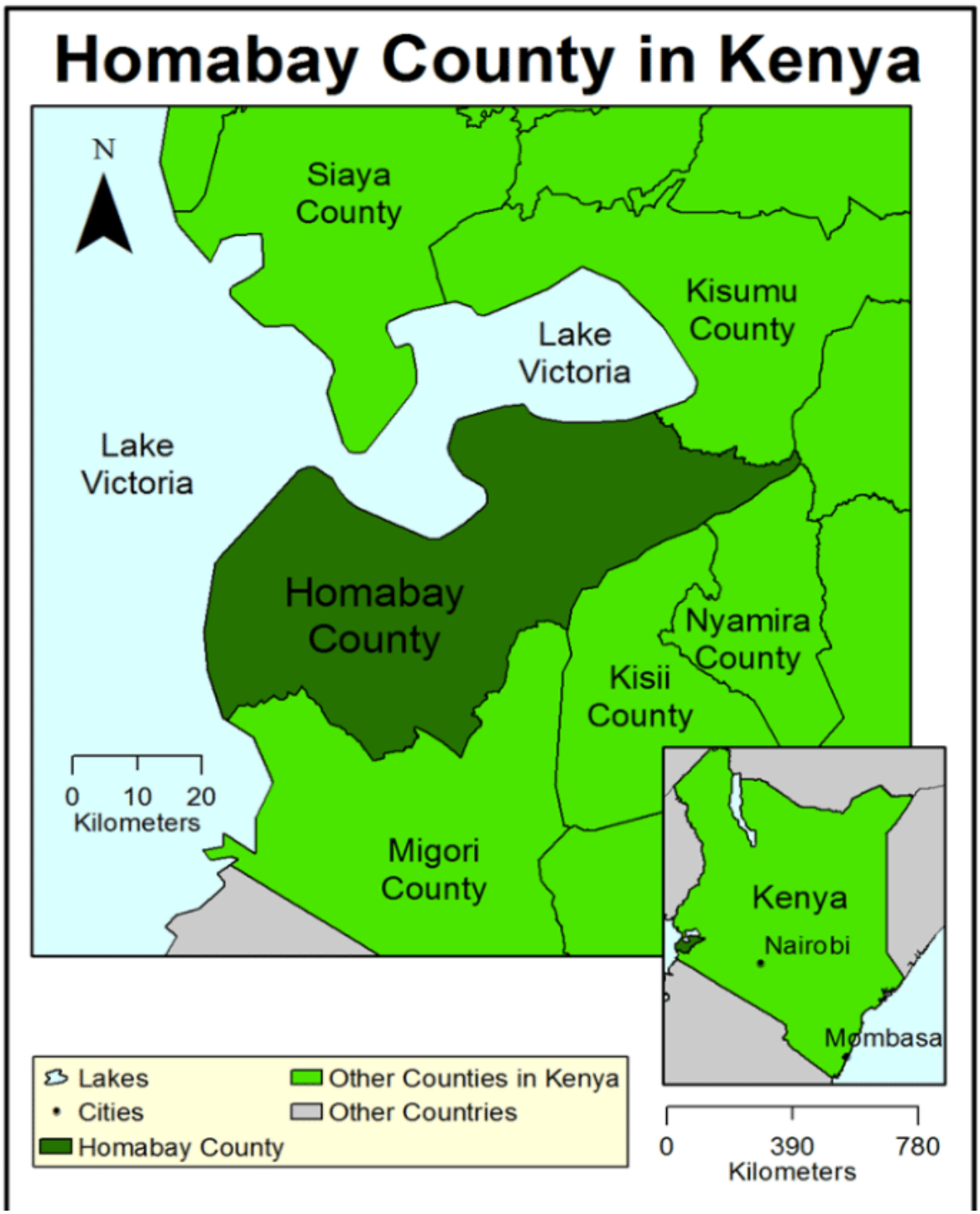
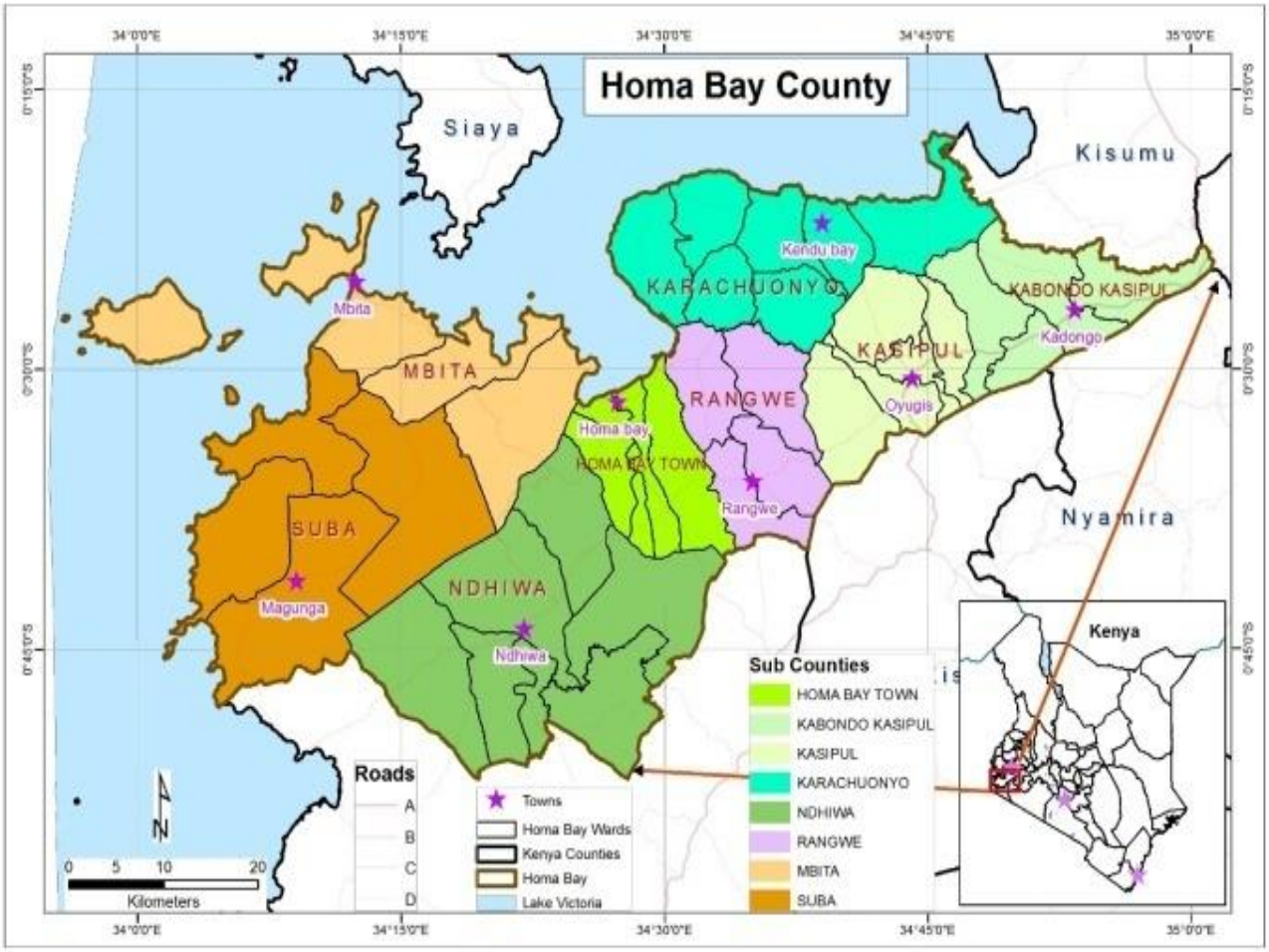
APPENDICES

Appendix 1: Map of Kenya showing the position of Homa-Bay county



Appendix 2: Map of Homa-Bay town



Appendix 3: All boda-boda groups working within Homabay town

S/N	Name of the group	No. of boda-boda operators
1	Junction Kodoyo M/Y group	63
2	Sofia Digital youth group	88
3	Ruma Joy Max youth group	30
4	Salama M/Y group	23
5	Hospital M/Y group	32
6	Shivling Happy valley youth group (shilvling A)	105
7	Shivling New Dawn youth group (Shivling B)	35
8	Shivling Friends in Action (Shivling C)	50
9	Stage Miwa youth group	150
10	Bank Road Junction bodaboda youth group	42
11	Makongeni youth group	50
12	Got Rabuor M/Y group	52
13	KamturiBodaBoda youth group	48
14	Ka-Governor BodaBoda youth group	15
15	DC BodaBoda youth group	16
16	KCB MortocyclistBodaBoda youth group	20
17	Meeting point Kimiu youth group	14
18	Wagon youth group	57
19	Tsunami youth group	105
20	Mobishe youth group	41
21	Hilview Transit	18
22	Bonde youth group	24
	Total	**1120**

Appendix 4: Questionnaire for Main Respondents

Good morning/Afternoon/Evening! My name is Winnie Omolo. I am a Masters Degree student from Rongo University College carrying out a survey to find out patterns of utilization of HIV preventive services among boda-boda operators in this area. I appreciate if you would spare some of your valuable time to give me your views. I am aware that some of the questions are sensitive but I assure you that all the answers you give will be treated with a lot of confidentiality and your identity will not be revealed to anyone. Your views will highly be applied in developing new ways to ensure better utilization of HIV preventive services and to curb the spread of HIV virus in this area and the whole country at large. You are also not required to give your name anywhere in this questionnaire.

Please answer questions by putting a tick [ ] in the appropriate box.

Date: |_|_| |_|_| |_|_|

Day Month Year

Respondent number |___|___|___|___|___|___|

Section 1: Background Information of the respondents

1. Gender (a) Male (b) Female
2. Age in years

   20-25 [ ]

   26-30 [ ]

   31-35 [ ]

36-40 [ ]

3. What is your highest level of education?
    a) Primary
    b) Secondary
    c) College
    d) University
4. What is your marital status?
    a. Single/never married
    b. Married monogamous
    c. Married polygamous
    d. Separated/divorced
    e. Widowed
5. Please mention your religion

    ……

6. To which ethnic group do you belong?

    ……..

7. Apart from your Boda-boda business, which other activity do you usually do for a living?
    a. Farmer
    b. Fisherman
    c. Small business (sell maize etc)
    d. Business owner (duka, kiosk, jua kali etc)
8. Approximately, what is the income you get from boda-boda operation and that other business?

Approximated income from boda-boda operation……..

Approximated income from the other business……..

9. How long have you been in the boda-boda business?

……

…

Section 2: HIV status awareness among the boda-boda operators in Homa-Bay town

1. How frequent do you find yourself spending away from your spouse in your line of duty in one week? Number ……....

2. Have you ever had an HIV test?

   a) Yes [ ]

   b) No [ ]

   Please give reasons for your answer above;

   i. ……

   ii. ……

   iii. ……

3. If yes, when last did you get tested?

   ……

4. Where did you get tested?

   a) At home [ ]

   b) At work [ ]

c) In an health facility [ ]

Other

(specify)……

5. Was the test voluntary?

a) Yes [ ]

b) No [ ]

Please give reasons for your answer above

i. ……

ii. ……

iii. ……

6. Are you aware of the different types of testing involved? Please mention the types of testing you are aware of

a. ……

b. ……

c. ……

d. ……

7. Which one of the above mentioned types would you prefer?

……

8. Are you aware of places where HIV testing services are offered?

Please mention the places you are aware of

i. ……

ii. ……

iii. ……

9. Which one among them have you visited?

……

Please give reasons for your answer above

i. ……..

ii. ……

iii. ……

Section 3: HIV prevention strategies employed by the boda-boda operators

1. Are you aware of any ways of preventing HIV?

   a) Yes [ ]

   b) No [ ]

   Kindly list the prevention ways you are aware of

   i. ……

   ii. ……

   iii. ……

   iv. ……

   v. ……

2. The box below shows different types of HIV prevention. Please tick (√) against the one you have used and give reasons for using it

SN	Ways of HIV prevention	Used	Reasons
1.	Condom		I ii. iii.
2.	Abstinence		i. ii. iii.
3.	Being faithful to one		i.

	sexual partner		ii. iii.
4.	Circumcision		i. ii. iii.

3. Have you ever been circumcised?

    a) Yes [ ]

    b) No [ ]

    Please give reasons for your answer above

    i. ……

    ii. ……

    iii. ……

4. For those circumcised, how long ago were you circumcised?

    a) 1 year

    b) 2 years

    c) 3 years

    d) 4 years

    e) 5 years and above

5. In your last sexual intercourse, did you and your partner use a condom?

    a) Yes [ ]

    b) No [ ]

    Please give reasons for your answer above

    i. ……

ii. ……

iii. ……

6. In order of your preference which method of HIV prevention works for you as a boda-boda operator?

   a) ……

   b) ……

   c) ……

   ……

   d) ……

   ……..

7. In your opinion what are the challenges you face in trying to acquire HIV prevention method?

   a) ……

   ……

   b) ……

   ……

   c) …….

8. How can the challenges stated above be solved?

   a) ……

   b) ……

   c) ……

Section 4: Drivers affecting the uptake of HIV preventive services among boda-boda operators

1. Below is a table showing different HIV prevention methods. What are the things that would make you not to freely and easily go for,

HIV Testing	Condom Use	Male Circumcision
i. ii. iii.	i. ii. iii.	i. ii. iii.

2. What is the view of your religion in relation to use of

   Condom

   i. ……

   ii. ……

   Circumcision

   i. ……

   ii. ……

   HIV testing

   i. ……

   ii. ……

   Abstinence

   i. ……

   ii. ……

   Having one sexual partner

   i. ……

   ii. ……

3. Would you freely share your HIV status and preventive methods you are using with your workmates?

    a) Yes [ ]

    b) No [ ]

    Please give reasons for your answer above

    i. …….....

    ii. …….

4. Would you go for HIV testing when approached by a sexual partner?

    a) Yes [ ]

    b) No [ ]

    Please give reasons for your answer above

    i. ……

    ii. ……

5. In your everyday life negotiating for sexual intercourse, have you ever asked for a disclosure of your partner's HIV status?

    a) Yes [ ]

    b) No [ ]

    Please give reason to your answer above

    i. ……

    ii. ……

6. What will be your reaction/attitude towards a colleague who discloses his/her HIV status to you as being HIV positive?

    ……

    ……

7. Would you be free with health care provider knowing your HIV status

a) Yes [ ]

b) No [ ]

Please give reasons for your answer above

i. ……

ii. ……

Section 5: Health seeking behavior patterns among boda-boda operators

1. What is your view concerning ART (Anti-Retroviral Therapy)?

   i. ……

   ……

   ii. ……

   ……

   iii. ……

   ……

2. Would you feel free to collect ART from your nearest health Center?

   a) Yes [ ]

   b) No [ ]

   Give reasons for your answer above

   i. ……

   ……

   ii. ……

   ……

   iii. ……

   ……

3. What are the challenges you face when seeking for HIV care?

a) ……

……

b) ……

……

c) ……

……

4. Among the challenges you have mentioned above, which is the main challenge you face when seeking for HIV care?

   a) ……

   ……

5. How can the above mentioned challenges be solved?

   a) ……

   b) ……

   c) ……

Thank you very much for your cooperation. We greatly appreciate your help in responding to the questions

Appendix 5: Interview guides for Leaders of Boda-boda group

- Please tell me a bit about yourself: where do you come from? How long have you been working in this town? What were you doing before working here?
- Kindly tell me about the bodaboda community in Homabay, and what difficulties Bodaboda here face.
- What kind of health problems do Bodaboda have in this community?
- What do Bodaboda do when they feel unwell?

  Probe: Use of clinics, traditional healers, religious healers
- How has HIV affected the bodaboda operators in Homabay?
- What do the Bodaboda operators in the community feel about HIV? How do you feel about that?
- What do Bodaboda think about the clinics and health facilities in your community?
- What types of Bodaboda operators do you think health services serve well? And what types of Bodaboda operators are served poorly?
- Have health services got better or worse over the past few years? Why
- Where do bodaboda operators go to when they need HIV health services?
- Where do the bodaboda operators generally test for HIV?
- What do bodaboda operators think about male circumcision services? Where do they go to when they want circumcision services? What kind of challenges do they face when seeking for circumcision services?
- What do you know and feel about ART?
- What kind of challenges do Bodaboda operators face in getting to the ART clinic after they have tested positive for HIV?

- What motivates people to go to the ART clinic after they have tested?
- What do bodaboda operators generally know and feel about ART?
- What challenges do bodaboda operators face in seeking for high quality HIV services?
- What problems at the clinic do you hear bodaboda operators complaining about? How do you feel about that?

Appendix 6: Consent Form

Hello, my name is Winnie Omolo. I am a Master of Sociology student at Rongo University College/ I am here on behalf of WinnieOmollo who is a student at Rongo University College. We are conducting an academic research titled 'PATTERNS OF UTLIZATION OF HIV PREVENTIVE SERVICES AMONG BODA-BODA OPERATORS IN HOMABAY TOWN, KENYA.' The main purpose of this study is to determine patterns of utilization of HIV preventive services among bodaboda operators in Homabay town. You have been selected to participate in this study since you are a bodaboda operator carrying out your activities within Homabay town.

Procedure

Your participation in this study is completely voluntary. You are going to be given a questionnaire asking questions concerning the research topics which you are required to give an honest answer to. Feel free not to respond to any question(s) with which you don't feel comfortable answering. You can withdraw at any point during the interview.

Risks

There will be no direct risks to you for participating in the study. However some questions may be personal in nature. You are free not to answer any question that you feel is intrusive to you.

Benefits

You will not directly benefit from the study. However, findings from this research will help in bringing into focus bodaboda health utilizations patterns in Homabay town and Kenya as a whole.

Confidentiality

The study will keep all your records in a confidential manner. Your name will not be used in any data records. The study will use numbers. Your name will also not be used in any study findings.

Costs

Participation in this study is free. You will not pay any amount of money or incur any expense in order to participate.

Rights

You can decide to answer/not to answer any question. You can also withdraw from this study at any time during the interview. In case you feel that your rights for study participation have been violated, you can contact the chairman of the Rongo University College Ethics Board on the address below.

Persons to contact

If you have any questions and need more clarification regarding the study, even after completing study procedures, feel free to contact us on Tel: 0717102729. You can also contact Rongo University College school of Humanities and Social Sciences directly on Tel:_____

Statement of consent

Joining this study is voluntary. I have been explained to and understood the study. All my questions regarding the study have been answered by the researcher. I agree to participate in the study.

Name of respondent……

Signature ……

Date ……

Witness (In case the respondent is illiterate).

Name of witness ……...

Signature ……

Date ……

Name of study staff……

Signature ……

Date ……

APPENDIX 7: Introductory Letter to NACOSTI

RONGO
UNIVERSITY COLLEGE
Goldmine of Knowledge and Innovation
(A Constituent of Moi University)

OFFICE OF THE DEAN

SCHOOL OF GRADUATE STUDIES

Tel. 0771349741 P.O. Box 103 - 40404
RONGO

Our Ref: **MSOC/8015/2014** **Date:** Wednesday, July 20, 2016

The Chief Executive Officer,
National Commission for Science, Technology & Innovation,
Utalii House,
Off Uhuru Highway, Nairobi,
P.O Box 30623-00100,
Nairobi-KENYA.

Dear Sir,

RE: RESEARCH PERMIT FOR MS. OMOLO WINNIE AKINYI-MSOC/8015/2014.

We wish to inform you that the above person is a bona fide graduate student of Rongo University College in the School of Arts and Social Sciences pursuing a Master of Arts degree in Sociology. She has been authorized by the University to undertake research titled; ***"Patterns of Utilization of HIV Preventive Services among Boda Boda Operators in Homa-Bay Town, Kenya."***

This is, therefore, to request the commission to issue her with a research permit to enable her proceed for field work.

Your assistance to her shall be highly appreciated.

Thank you.

Prof. Hezborn Kodero
DEAN, SCHOOL OF GRADUATE STUDIES

Copy to: Principal
Deputy Principal (Academic and Student Affairs).
Dean, School of Arts and Social Sciences.
HoD, Humanities and Social Sciences.

APPENDIX 8: Research Permit

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

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/17/60949/16635**

Date: **28th April, 2017**

Winnie Akinyi Omolo
Rongo University College
P.O. Box 103-40404
RONGO.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Patterns of utilization of HIV preventive services among bodaboda operators in Homabay Town,"*** I am pleased to inform you that you have been authorized to undertake research in **Homabay County** for the period ending **28th April, 2018.**

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

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

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

Copy to:

The County Commissioner
Homabay County.

The County Director of Education
Homabay County.