UTILIZATION OF SEXUALLY TRANSMITTED INFECTION HEALTH CARE SERVICES AMONG MEN WHO HAVE SEX WITH MEN IN NAIROBI CITY COUNTY, KENYA

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other college, University and institution or examination body.

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DEDICATION

I dedicate this work to my God for giving me strength, health, and a sound mind through this course. I also dedicate this work to my sponsors at the International Aids Vaccine Initiative (IAVI) in collaboration with the United States Agency for International Development (USAID) for giving me the financial support to undertake the project. Further dedication, to my beloved family members i.e. my parents Mr Joseph M. Nyasani and Mrs Jane Bosibori Nyasani, my sisters, and brothers whose love and support have been my strength all through.

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ABBREVIATIONS AND ACRONYMS

AIDS	-	Acquired Immune Deficiency Syndrome
APA	-	American Psychiatric Association
CDC	-	Centre for Disease Control
DSM	-	Diagnostic Statistical Manual
FSWs	-	Female Sex Workers
HCWS	-	Health Care Workers
HIV	-	Human Immunodeficiency Virus
HSV-2	-	Herpes Simplex Virus type 2
KAVI-ICR	-	KAVI-Institute of Clinical Research
LMICs	-	Low & Middle Income Countries
MOH	-	Ministry Of Health
MSM	-	Men who have sex with Men
MSMW	-	Men who sell sex to Men
NACC	-	National AIDS Control Council
NASCOP	-	National AIDS and Sexually Transmitted Diseases Control Program
NSPs	-	National Strategic Plans
STD	-	Sexually Transmitted Diseases
STI	-	Sexually Transmitted Infections
SiVET	-	Simulated Vaccine Efficacy trial
TB	-	Tuberculosis
YBMSM	-	Young Black Men who have sex with Men.
WHO	-	World Health Organization

DEFINITION OF OPERATIONAL TERMS

Discrimination- Opportunities denied to an individual or group of individual

Enabling factors Are any condition which allows an individual to use a health service. It can be measured by factors such as income, access to credit and closeness to a service provider.

Gender- Refers to the attitudes, feelings, and behaviors that a certain culture Associates with a person's sex at birth. Behavior that is harmonious with cultural anticipations is referred to as gender-normative; behaviors that are viewed as mismatched with these anticipations it is known as gender non-conformity.

Gender identity- Refers to "one's sense of oneself as male, female, or transgender". When one's gender identity and sex at birth are not similar, the individual may identify as transsexual or as another transgender category.

Homonegativity- Is the stigma associated with homosexuality.

Homophobia- Is the fear or hatred of MSM, lesbians, gay men and bisexuals.

Homosexual- Refers to people whose sexual and romantic feelings are for the same gender.

Insertive anal sex- It is when a man uses his penis to penetrate his partner. It's also known as topping.

Key population- This are people who are at a higher risk of contracting HIV. They comprise: MSM, FSWs, people who inject drugs (PWID).

Need factors- Are needs that make an individual seek health care services. This includes insight of the seriousness of the disease,the duration one has already been ill and how acute or chronic the illness is.

Predisposing factors- Are based on personal characteristics. Some people have a tendency to use more or different services than others. These characteristics exist prior to the onset of a certain disease. Those characteristics are socio-demographic factors such as age, gender, occupation and education, but also people‘s beliefs such as attitude towards health services and knowledge about the disease are part of these aspects.

Receptive anal sex- It is when a man is being penetrated by his partner’s penis. It’s also known as bottoming.

Sex- Refers to a person’s sex at birth and is typically categorized as male, female, or intersex (i.e., atypical combinations of features that usually differentiate male from female). There are a number of indicators of sex at birth, including sex chromosomes, gonads, internal reproductive organs, and external genitalia.

Sexual orientation - Refers to the sex of those to whom one is sexually and romantically appealed to. Categories of sexual orientation typically have included attraction to members of one’s own sex (gay men or lesbians), attraction to members of the other sex (heterosexuals), and attraction to members of both sexes (bisexuals).

Sexually Transmitted Infections- These are infections that are acquired through sexual contact. The organisms that cause sexually transmitted infections may be spread from one individual to the other via blood, semen, or vaginal and other bodily fluids. Sometimes these infections can be transmitted non-sexually such as from mother to child during prenatal period, child delivery or breastfeeding, through blood transfusions or sharing soiled sharp objects such as needles and razor blades.

Stigma- Is an attribute that embarrasses someone or a group of people in the eyes of another person or group. This means that people may look at someone & have a undesirable attitude towards that person because of a certain characteristic or quality.

Transgender- A person who has a gender identity that is different from his or her sex at birth. Transgender people may be male to female (female appearance) or female to male (male appearance).

ABSTRACT

Men who engage in same-sex relationships face a higher risk of contracting sexually transmitted infections (STIs). This heightened risk is attributed to engaging in unprotected receptive anal sex and reluctance to disclose their sexual orientation and associated behaviours to healthcare workers (HCWs). This lack of disclosure complicates clinical decision-making for HCWs, hindering their ability to offer appropriate STI treatment and prevention services. To enhance MSM utilization of STI healthcare services, open communication about their high-risk practices with HCWs is essential. In turn, they can learn risk reduction measures and access STI prevention and treatment options. However, on the contrary, MSM doesn't do this due to various reasons. This study aimed to explore how MSM in Nairobi City County utilize the STI health services, focusing on MSM hotspots within the County. The research employed a cross-sectional study design incorporating both quantitative and qualitative data collection methods. A systematic sampling approach involved 404 respondents, and in-depth interviews were conducted with five key informants selected through a purposive sampling of public health facilities and MSM health provider sites. Descriptive, bivariate, and multivariate analysis was used to analyse quantitative data from the study survey using SPSS version 25 while qualitative data from key informants was analysed thematically using Nvivo version 11. Demographically, the majority of the participants were Kenyans, youth, single, and Christians. Their level of education ranged from primary to post-secondary, more than half were employed and their income ranged from Kshs <5000 to >15,000. A significant relationship was found between participants history of having ever contracted STIs (p=0.000, aOR=6.58, 95%CI 3.38-12.82). Knowledge assessment of participants revealed that 49.4% scored below 50.0%. However, participant's knowledge score was not correlated with utilization of STI health care services. Seventy- four percent of the participants had sought sexual healthcare services within the past 12 months, with 99.0% self-reporting HIV testing. Over half (54.9%; 223) had accessed services from NGO programs and privacy they offered was correlated with utilization of STI health care services (p=0.042, aOR=1.86, 95% CI 1.02-3.37). In-depth key informant interviews highlighted health and legal system factors as the major facilitators, while health system factors, MSM individual factors, referral challenges, and political system were identified as barriers to utilizing sexual healthcare services. In conclusion, the study found low STI knowledge among participants and they sought STI healthcare services when they were infected. This is an indication that there is a need for the participants to be educated about STIs and have routine check-ups. Stigma and discrimination are the root cause of challenges faced by MSM. This emphasizes the importance of training and sensitization for all HCWs. Also, the community needs to be sensitized to avoid instances where MSM hesitate or delay to seek STI healthcare services.

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

Sexually transmitted infections (STIs) pose global public health concern, with over one million new cases estimated daily, and approximately an incidence of 357 million STIs cases yearly. Among these cases chlamydia, gonorrhea, syphilis and trichomoniasis account for 25%. A significant challenge is that majority of these infections have mild or no symptoms that may be recognized as STI (WHO, 2023). In both low- and middle-income countries (LMICs), STIs are treated by syndromic management but most STIs are asymptomatic and go undetected and untreated. Both symptomatic and asymptomatic STIs can cause serious morbidity such as cancer, infertility, and enhanced HIV transmission, especially with Herpes Simplex Virus type 2 (HSV-2) and Syphilis infections (Centres for Disease Control and Prevention., 2011; Kidd et al., 2018).

Key populations, which encompass young individuals and adolescents, men engaging in sex with men (MSM), individuals in prison, sex workers and those who inject drugs, face a disproportionate impact from HIV and STIs. These populations are often vulnerable not solely due to their high-risk sexual and drug use behaviours, but also because of structural obstacles such as limited access to quality health services, as well as stigma and discrimination (WHO, 2016). However, among these populations MSM faces an elevated risk, given the increased vulnerability associated with unprotected receptive anal sex (Patel et al., 2018). Despite the efforts to combat HIV and STIs, MSM still continues to be disproportionately affected not only in Sub-Saharan Africa but even in high-income countries (Australian Government Department of Health, 2018). Globally, it has been documented that less than 10% of MSM are utilizing services specifically tailored for

MSM, with even lower rates observed in low and middle-income countries as reported by (Gamariel et al., 2020). This trend is particularly concerning in countries such as Gambia, Uganda, Tanzania, and Kenya, where homosexuality remains criminalized, potentially aggravating the HIV epidemic. In Kenya MSM healthcare service coverage was at 47% and coverage for the other key population that is FSWs and PWIDs was also low at 64% and 44% respectively (Ministry of Health & National AIDS Control Council, 2016). Moreover, a study conducted in Nairobi, a key city in Kenya, revealed that irrespective of self-reported HIV status, a substantial majority (76.4%,595) of participants accessed STI-related services at least once in the past year (Doshi et al., 2020).

Enhancing knowledge and awareness about STIs plays a crucial role in reducing the prevalence of these infections within populations at an elevated risk of infection. A study conducted in Ghana comprising gay and bisexual men revealed that participants with a good understanding of STIs were more prone to seek prompt treatment when they are infected. Conversely, those with limited knowledge about STIs delayed in seeking treatment, be it traditional or conventional treatment (Adoma et al., 2023). Likewise, an online testing intervention study done in China involving MSM found that lack of awareness about HIV/AIDS and distress of a positive result could act as a hindrance for young MSM to undergo HIV testing (Wong et al., 2017).

To minimize the occurrences of HIV/STIs among MSM, it is essential to examine the factors that motivate them to access STI healthcare services. In Australia, efforts to improve the accessibility of health systems for lesbian, gay, bisexual, transgender, intersex, queer or questioning and asexual (LGBTIQA) individuals involved incorporating various elements. These included peer support, E-Health initiatives, brief

interventions, and reaching out to specific communities, acknowledging the importance of meeting people where they are. Among these strategies, gateway consultations emerged as a form of medical care effortlessly integrated into routine healthcare. The scope of brief interventions encompasses psychological interventions, interventions through media, and rapid screening methods (Macdonald et al., 2022). Additionally, a study carried out in Nigeria among HIV-positive MSM and another study conducted among clients who had STI in North India both demonstrated that factors such as a higher income, employment status, literacy, and urban residence were associated with an increased likelihood of clients seeking STI health care services (Suvirya et al., 2016; Vu et al., 2013). Additionally, peer-led models of care have been proven effective in enhancing the utilization of HIV-related services among MSM (Shangani et al., 2017).

Similarly, another study conducted in Kenya revealed that marital status, a town of residence, knowledge on the correct use of condoms, HIV test and counselling and receiving of results were the factors that influenced MSM to be screened for STIs. (Kong'ani et al., 2016). However, Stigma against same-sex relationships, and a lack of unawareness about gender non-conformity among many people in the society and within health systems deter MSM from seeking health-related information and STI healthcare services (WHO, 2021). In some instances, MSM may be less inclined to disclose their sexual orientation and other health related behaviours to HCWs, making it difficult for both HCWs and MSM to engage in open and objective discussion. This lack of open communication can hinder HCWs from making informed clinical decisions, as evidenced by a study conducted in San Francisco among 32 gay and bisexual men (Koester et al., 2013).

To effectively address STIs among MSM, open communication with HCWs is crucial to educate individuals on risk reduction measures and access STI prevention and treatment options. However, on the contrary, a study conducted in Nairobi City County among MSM revealed that many hesitated to seek medical intervention even when referred for further care. They cited various reasons for this reluctance, including financial constraints, concerns about potential ridicule by the HCWs, or fears of being reported to the police. Some individuals did not give any reason (KAVI-ICR SiVET 2015-2018).

This study seeks to determine how MSM utilize the STI healthcare services in Nairobi City County. The findings will provide valuable insights for health planners and policymakers in decision–making regarding MSM STI healthcare service provision.

1.2 Problem Statement

Out of approximately twenty two thousand MSM in Kenya, the HIV prevalence stands at18.2%, in contrast to the national general population rate of 5.9% (Ministry of Health & National AIDS Control Council, 2016).

A study carried out at KAVI-ICR affirms that MSMs have poor STI health-seeking behaviors as noted among 368 participants who had been screened. Among those screened 9 (3.8%) had hepatitis B, 7 (1.9%) had HIV infection and, 5 (1.4%) had rectal conditions such as hemorrhoids, anal bleeding, and rectal prolapse. Those participants were referred for further management. On follow-up of the referred clients, they had not gone for treatment citing various reasons such as lack of funds, fear of being ridiculed by the health care workers, or fear of being reported to the police. Others did not give any reasons (KAVI-ICR SiVET 2015-2018).

Further 250 participants who were enrolled into the study were screened for STIs and treatment was given to them at the research site. Various STIs were found among those participants some whom were asymptomatic. These STIs included: chlamydia 30 (12%), gonorrhea 12 (4.8%), and syphilis 6 (2.4 %). This is evident that this is a population which is at risk and yet these STIs can enhance HIV transmission (Centres for Disease Control and Prevention., 2011). To date, there is limited scientific data on how MSM utilize STI healthcare services in Nairobi County. The study was carried out to help in understanding the factors that influence the MSM to utilize the STI healthcare services thus contributing to implementation of strategies that will improve their health-seeking behavior and quality of care provided by HCWs.

1.3 Justification of the study

HIV preference for MSMs in Kenya is higher at 18.2% in contrast with the national general population of 5.9% (Ministry of Health & National AIDS Control Council, 2016). Though there is progress in curbing the high preference, there is a need to investigate the obstacles to MSM STI healthcare service utilization. This is because MSMs are known of not disclosing their sexual orientation and other health-related behaviours to the HCWs due to stigma. That makes it difficult for the healthcare providers to make proper clinical decisions to treat them and offer STI prevention services that are available (Koester et al., 2013).

Therefore this study sought to understand what factors influence MSM to utilize STI health care services. The findings will give input of the gaps that prevent the achievement of implementing the Kenya AIDS Strategic Framework (2014-2019) of ensuring 90% coverage and access to services for key populations both at national and county levels.

Also, the findings can support Kenya in achieving zero HIV infections by 2030 (Ministry of Health & National AIDS Control Council, 2016), by ensuring that its population has access to healthcare services irrespective of their sexual orientation.

1.4 Research Questions

1. What is the level of knowledge regarding STIs and STI healthcare services among MSM in Nairobi City County?
2. What is the proportion of MSM who utilize STI healthcare services in Nairobi City County?
3. Which health facilities do MSM seek STI healthcare services in Nairobi City County?
4. What are the factors influencing the utilization of STI healthcare services among MSM in Nairobi City County?

1.5 Null Hypothesis

There is no notable correlation between the knowledge of MSM regarding STI healthcare services and their actual utilization of STIs healthcare services.

1.6 Objectives

1.6.1 General objective

To determine the level of utilization of sexually transmitted infection healthcare services among men who have sex with men in Nairobi City County.

1.6.2 Specific objectives

(a) To determine the level of knowledge among MSM about STIs and STI healthcare services in Nairobi City County.

(b) To determine the proportion of MSM who seek STI healthcare services in Nairobi City County. .

(c) To determine places where MSM seek STI healthcare services in Nairobi City County.

(d) To determine the factors influencing the utilization of STI health care services among MSM in Nairobi City County.

1.7 Significance of the study

The data collected regarding utilization of STI health care services among MSM will be used by HCWs to improve quality of services offered in the public, Non–governmental organizations, and private sectors. It will also form a basis for reference to improve utilization of STI health care services among MSM. On the other hand, the healthcare planners and policymakers will be able to make decisions regarding strengthening and supporting both structural and environmental STI healthcare services for MSM. At the end, support will be provided for the implementation of the 2011 declaration aimed at attaining zero HIV infections in Kenya by the year 2030.

1.8 Limitations

The focus of the study was on MSM living in Nairobi City County therefore generalization of the findings to other counties may not be possible. Also, due to security concerns selection and timing bias may have occurred. Moreover, the study depended on on self-reported information. Therefore, information bias may have ensued due to over and underreporting.

1.9 Delimitation

Security was provided by MSM community mobilizers and peer navigators. Qualitative data provided a more detailed explanation about the factors that influenced MSM to utilise STI healthcare services.

1.10 Conceptual Framework

Figure 1.1 below illustrates the conceptualized relationship among variables in the study. The independent variables include the knowledge level about STIs among MSM. This variable includes awareness of diseases transmitted through sexual intercourse, recognition of signs and symptoms of STIs and understanding of STI transmission and prevention. Additionally the figure illustrates proportion of MSM who sought STI healthcare services in the past 12 months, places where they sought STI healthcare services and the factors influencing utilization of STI healthcare services among MSM. These factors influencing utilization of STI healthcare services among MSM encompasses elements such as health care system factors, health workers' attitude, access to privacy and confidentiality, adherence to STI guidelines and the impact of health policies and legal systems. The intervening variable in the model is MSM friendly healthy facilities, leading to the ultimate dependent variables: the utilization of STI healthcare services.

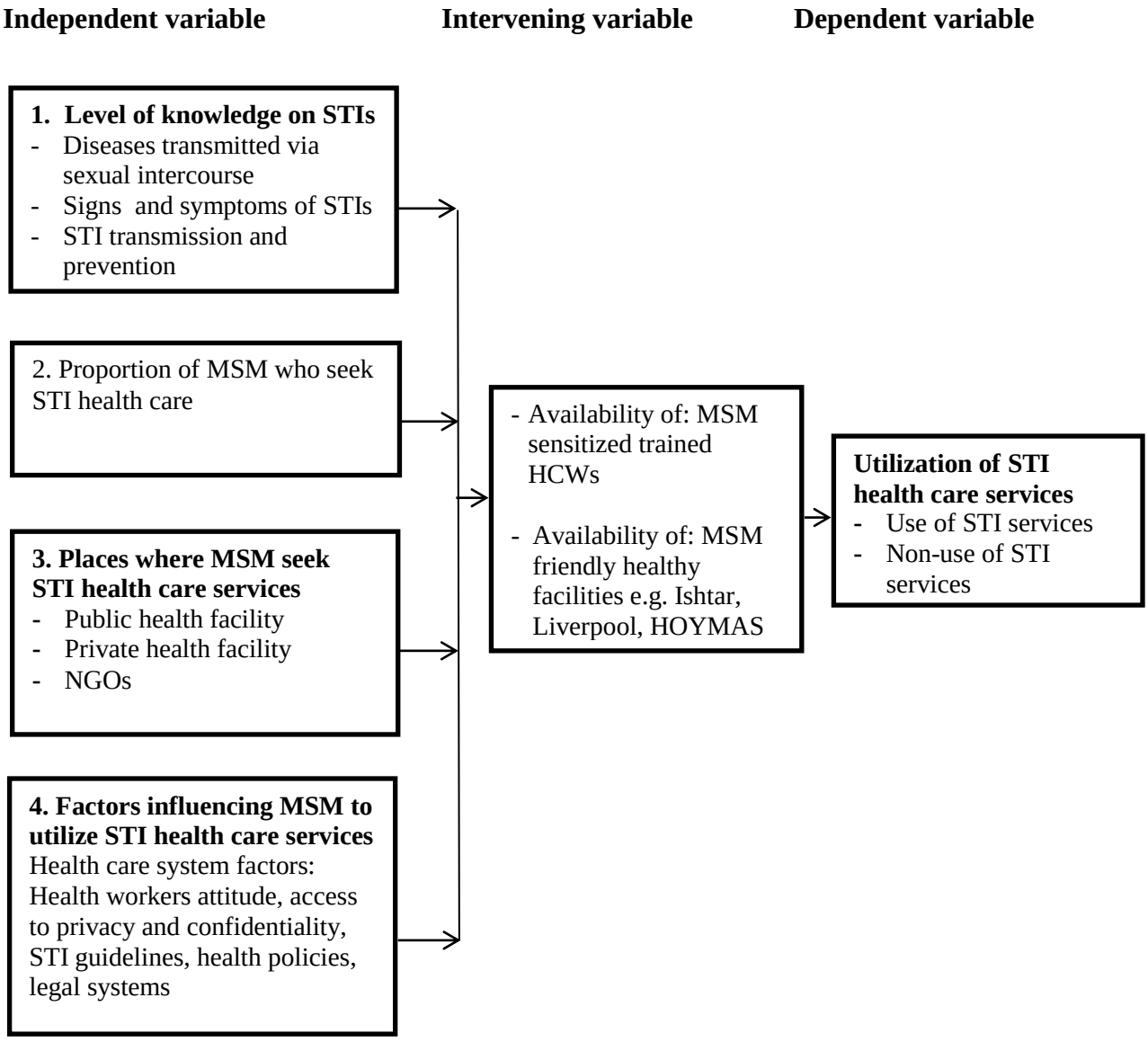

Figure 1.1: Conceptual Framework (Source: Adopted from (Arreola et al., 2012).

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter is about literature on research objectives that is: MSM knowledge levels on STIs, proportion of MSM who seek STI healthcare services, places where MSM seek STI healthcare services and factors influencing the utilizationof STI healthcare services among MSM.

2.2 MSM knowledge levels on STIs

A study conducted in the United Kingdom among MSM noted limited knowledge of STIs among HIV-negative or unknown status compared to HIV-positive MSM (Wayal et al., 2019). On the contrary, a study carried out in Finnish among MSM found that they had good knowledge about STIs (Suominen et al., 2017). Another study conducted among Peruvian 36 MSM and transgender individuals found they had limited knowledge of Human Papilloma Virus. Awareness of genital warts was common mostly among transgender individuals and sex workers. Still, few subjects knew that genital warts were sexually transmitted and the majority had difficulty distinguishing between genital warts and other STI/anogenital conditions. Search for treatment was facilitated by peers. However, stigma, inadequate health services, and incapability of HCWs to treat genital warts limited MSM and transgender individuals from accessing effective medical care (Nureña et al., 2013). A research conducted in Ireland among MSM revealed that individuals with limited knowledge tended to be in the age range of 18–24 years, born in Ireland, lacking support, never tested for HIV and not having visited a health promotion website specifically for MSM (Carey et al., 2021a). Similarly, a study carried out among adolescents and young adults in Germany reported inadequate knowledge within an age

group that is particularly susceptible to contracting STIs (Skaletz-Rorowski et al., 2020) . Additionally,a study conducted among MSM found that participants with high knowledge tended to be 25 years or older,they had 12 or more years of formal education, had a white skin color, had health insurance, had experienced discrimination based on their sexual orientation, underwent a syphilis test, and had received educational material in the previous 12 months. Moreover, there was a negative association with transactional sex (Guimarães et al., 2019). A study conducted in South China among 354 MSM regarding knowledge about syphilis revealed that 81.1% were aware of syphilis prevention and treatment (Wu et al., 2016).

In summary, studies on knowledge levels of STIs among MSM reveal varying results in different regions. Overall, factors such as age, education, HIV status and discrimination experience influenced STI knowledge among MSM.

2.3 Proportion of MSM seeking STI healthcare services and the places where they seek such services

Results from a cross-sectional study in Southeast Asia, specifically Myanmar, focusing on young men who are having sex with men (YMSM), highlighted that (80%) of participants sought services from NGOs stating that, it was due the assurance of confidentiality and non -discriminatory attitudes from the health care workers (Pham et al., 2017). A scoping review done in high–income countries exploring HIV/STI testing preferences among MSM, revealed that young MSM tended to prefer self-testing, while those who perceived themselves as high-risk chose in-clinic testing (Kularadhan et al., 2022). Similarly, a study conducted in New-York among Cis-gender Men and Transgender Women who Have Sex with Men found that they preferred STI self-testing

because it was convenient and private (Balán et al., 2022). Additionally, a qualitative study conducted among 61 MSM in four English cities (London, Leeds, Manchester and Birmingham) which was evaluating MSM perceptions concerning STI testing; found that others preferred universal sexual and reproductive health clinics and others specialist community services (Datta et al., 2018). In China, a virtual review conducted among 503 MSM found that majority of them (84.5%) searched STI information online and it was associated with visiting a physician. The most common platform used was the search engines (94.5%) followed by the gay mobile apps (47.3%) (Cao et al., 2018).

A study conducted in Nigeria, investigated gratification levels associated with the utilization of public health facilities and peer-led organizations for HIV prevention services among key populations. The findings revealed that among FSWs (57.4%) sought health services from the public sector, while (47.5%) of MSM did the same. Among MSM (53.5%) received services from peer-led organizations, compared to 43.0% of FSW. The study noted higher satisfaction levels with peer-led organizations (ranging from 90.4% to 90.8%) compared to public health facilities (ranging from 74.6% to 76.4%). Statistical analysis indicated significant differences in satisfaction, particularly regarding service providers attentiveness to problems and concerns, privacy, confidentiality, and the respect of the rights of service recipients (Ochonye et al., 2019). In Kenya , a study evaluating comfort of MSM accessing health care services revealed that 60% of them were uncomfortable seeking health care services (Okall et al., 2014).

In summary, studies across various regions shed light regarding the proportion of MSM seeking STI healthcare services and the preferences for health facility locations.

Generally, factors such as confidentiality, convenience, and HCWs attitude influenced the choices of MSM in seeking STI health services.

2.4 Factors influencing the utilization of STI healthcare services among MSM

Health-seeking behaviour determinants

2.4.1 Introduction

Health-seeking behavior is a series of curative activities that people embark on to correct perceived illness. This includes the duration from symptom inception to getting in touch with a health care provider, the kind of health care provider preferred and the patient's adherence with the treatment (Bhuiya, 2009). Several models seek to describe the steps taken by individuals to act in the interest of their health and the dynamics that affect these pathways and lead to definite service utilization. According to Anderson's health care utilization model, usage of health services is determined by three dynamics; predisposing factors, enabling factors and need factors (Andersen, 1995). Reviewing MSM's health seeking behavior, their challenges get compounded by social discrimination and homophobia within the health care systems and the community because they are thought to have a mental disorder. However, that was denounced in 1975 as being a mental disorder by the American Association Diagnostic and Statistical Manual (APA, DSM).While some of these barriers that cause MSM to delay or avoid seeking STI health care services or information are within the health systems and the community, the laws are also punitive. For example, in most of the African countries except South Africa, homosexuality is criminalized. The Kenya Penal Code, in sections 162 to 165 specifies that "unnatural violations or actions are contrary to the order of nature" and it can be reprimanded with up to 14 years in prison (Finerty, 2012).

2.4.2 Factors associated with the utilization of STI healthcare services

To minimize the occurrences of HIV/STIs among MSM it is essential to examine the factors that motivate them to access STI healthcare services. In Australia, efforts to improve the accessibility of health systems for lesbian, gay, bisexual, transgender, intersex, queer or questioning and asexual (LGBTIQA) individuals involved incorporating various elements. These included peer support, E-Health initiatives, brief interventions and reaching out to specific communities, acknowledging the importance of meeting people where they are. Among these strategies, gateway consultations emerged as a form of medical care effortlessly integrated into routine healthcare. The scope of brief interventions encompasses psychological interventions, interventions through media and rapid screening methods (Macdonald et al., 2022). Additionally, a qualitative study conducted among 61 MSM in four English cities (London, Leeds, Manchester and Birmingham) which was evaluating MSM perceptions concerning STI testing; found that Personal staff qualities were key features which could influence MSM to seek the sexual health services such as being friendly, professional, discreet, knowledgeable and non-judgmental services (Datta et al., 2018).

In Nigeria, a study carried out among HIV-positive MSM and another study conducted among clients who had STI specifically in North India, both demonstrated that factors such as a higher income, employment status, literacy, and urban residence were associated with an increased likelihood of clients seeking healthcare services for STIs (Suvirya et al., 2016; Vu et al., 2013). Additionally, peer-led models of care have been proven effective in enhancing the utilization of HIV-related services among MSM (Shangani et al., 2017). Similarly, another study conducted in Kenya revealed that marital

status, a town of residence, knowledge on the correct use of condoms, HIV test and counselling and receiving results were the factors that influenced MSM to be screened for STIs (Kong'ani et al., 2016).

In summary, factors influencing the utilization of STI health services among men who have sex with men (MSM) are multifaceted. In Australia, strategies such as peer support, E-Health initiatives, and brief interventions, including gateway consultations, were employed to enhance accessibility. Personal staff qualities, such as being friendly, professional, discreet, knowledgeable, and non-judgmental, were identified as key factors influencing MSM perceptions of seeking sexual health services in English cities.

In Nigeria and North India, higher income, employment status, literacy, and urban residence were associated with an increased likelihood of seeking healthcare services for STIs among MSM. Peer-led models of care were effective in enhancing the utilization of HIV-related services among MSM in different settings. Marital status, a town of residence, knowledge on condom use, and HIV testing were identified as factors influencing MSM to be screened for STIs in Kenya.

2.4.3 Barriers that prevent MSM from utilizing healthcare services

Legitimately governments have a duty to respect, defend and take care of the civil rights of their citizens. However, in most occasions, young people from the key populations are made more susceptible by policies and laws that criminalize their behaviors and by education and health systems that pay no consideration to or reject them. Further, the government doesn't provide sensitization and health services that guarantee MSM safety.

Also, the healthcare service providers lack understanding, skills and knowledge to work specifically with MSM (The Global Fund, 2015).

A systemic review of 155 articles of the medical literature related to MSM over the past 3 decades, both in the industrialized and unindustrialized countries was done. The findings were that MSM had exceptional health care needs, partly occasioned by biological aspects such as; their increased risk to HIV and STD acquisition and transmission because of anal intercourse and also due to the internalization of societal stigma related to same sex relationship and not complying to their sexual role. This led the MSM to have depression, anxiety and abuse substances. They recommended that responding successfully to HIV/AIDS epidemic globally, it will require embracing culturally sensitive clinical care programs for MSM to address these health discrepancy concerns as well as, root causes of societal fear of same sex relationships. Further, they reported that HCWS needed to become conversant with local outreach agencies, hotlines and media that could connect MSM with confident role models and social opportunities. Also, MSM deserved to be respected and HCWs needed to create good rapport to encourage them to open up regarding their sexual orientation. This is because an ideal clinical care for sexual minority persons is an important human right which requires health experts as partners (Mayer et al., 2012). In a separate study encompassing both low and middle-income countries, the research highlighted, insufficient documents, heavy workloads, inadequate funding, and challenges in quality assurance, emerged as significant barriers hindering the advancement of point–of–care testing. Moreover, limited economic resources in some low and middle–income countries their ability to implement comprehensive STI prevention measures (Martin et al., 2022). Further, an internet survey

conducted among 174209 MSM across 38 countries in Europe found that MSM who were living in countries with higher levels of stigmatizing MSM; MSM were unlikely to be tested for HIV and yet they had a higher risk of sexual behavior, unmet prevention needs and were not disclosing their sexual orientation to the health care workers (Pachankis et al., 2015). Addionally, another study conducted among thirty Young Black men who have sex with men (YBMSM) at Winconsin, found that, nearly 90% believed that their parents would react negatively to knowing they were gay or bisexual. Also, fewer than 2% of black MSM reported of always opening up about their sexual orientation. This indicates that homonegativity may inhibit some YBMSM from seeking HIV screening, prevention and treatment services. Also, homonegativity may make it problematic for some YBMSM to disclose their same sex relationships. These in turn, restrict them from getting social support and because they undertake sexual drug related risk behavior, they increase their risk of acquiring HIV infection (Quinn & Dickson-Gomez, 2016). Additionally, an investigation conducted in China comprising 1096 MSM suspected of being infected with STD indicated that 59.1% (648/1 096) did not pursue treatment. This occurrence could be attributed to the persistent stigma associated with STD treatment-seeking behaviour, which is still regarded as humiliating and shameful for those who are affected. Additionally, MSM face additional discrimination due to societal disapproval of same-sex relationships, leading them to evade from seeking STD treatment in health care facilities (Xu et al., 2017).

Another study conducted among 46 African countries, to evaluate their National Strategic Plans (NSPs) in relation to MSM found that the government demonstrated slight understanding of HIV disease and social dynamics in relation to MSMs HIV risk. There

was a need to incorporate MSM into NSPs and government guidelines in a way that acknowledged MSMs and their precise HIV/AIDs associated requirements (Makofane et al., 2013). Moreover, a reseach conducted in Sub Saharan Africa, among the marginalized populations such as MSM perceived or had had actual discrimination in public health settings and hospitals, as a result they opted to buy drugs from the nearest pharmacies. However, pharmacies and drug stores were likely to offer inappropriate testing and antibiotics or antibiotics doses. Private clinics were acknowledged as being less discriminating, but they were costly (Ross et al., 2015). In a separate scoping review carried out in Sub-Saharan Africa revealed that clinical settings were often insufficient in catering to the specific needs of men. For example, they are only staffed primarily by female nurses, having limited daytime operating hours, and being closed on weekends. Moreover, healthcare professionals in general, seemed inadequately prepared to tackle men`s health concerns, particularly those from minority groups. This inadequacy was ascribed to a health system being structured around traditional gender constructs, often adopting a gender-neutral or one–size–fits–all approach with an assumption of heteronormative relationship. In the context of this review, gender–neutral services were identified as those that did not explicitly consider gender–related differences in health needs and health-seeking behaviour but rather favoured a uniform programming approach (Beia et al., 2021). Similarly, another study conducted among the key populations in South Africa reported that the acceptance and efficiency of health services amongst key populations was limited due to the following: internalized stigma, reluctance of MSM to seek care, reluctance of MSM disclosing risk behaviors to health care workers, combined with ignorance and an empathetic community members and HCWs (Duby et al., 2018).

Additionally, in Zimbabwe, a qualitative study conducted among 60 key populations reported that discrimination towards the key populations contributed to late diagnosis of infections and limited access to health care. This in turn increased their risk of transmitting infectious diseases (Hunt et al., 2017). A research carried out in Mozambique focusing on the healthcare experiences of MSM and Transgender individual disclosed that individuals within these communities faced hindrances to accessing health services due to stigma from the HCWs and the potential fear of their sexual orientation or HIV status being disclosed. Such experiences not only deterred them from seeking health and support services but also intensified their vulnerabilities. Furthermore ,participants who were involved in transactional sex were more likely to encounter stigma within healthcare settings (Gamariel et al., 2020). Additionally, a study conducted in Tanzania among MSM revealed that a relatively small percentage of MSM sought HIV and STI healthcare services. This reluctance stemmed from concerns about potential stigmatization, discrimination, the absence of confidentiality, and mistreatment by healthcare personnel (Kigumi et al., 2019). In Kenya, a study conducted among 380 MSM found that 31.6% of MSM had reported being discriminated at the health facility level. This hindered MSM from obtaining access to HIV/AIDS prevention services and also 26.3% reported of being stigmaized (Otambo et al., 2016). Similarly, in another study conducted in Kenya among 51 MSM to evaluate their comfort in accessing health services found that 60% of them had reported of being uncomfortable seeking health services from a public hospital because they felt stared by people at the health clinic (Okall et al., 2014).

In summary, barriers hindering MSM from utilizing health care services include societal stigma, discrimination, and criminalization of same-sex behaviours. Among the HCWs they have inadequate skills and knowledge to work specifically with MSM. Homonegativity among people in the society and lack of disclosure among MSM about their sexual orientation to HCWs because they fear negative reactions were identified as hindrances to seeking HIV screening, prevention, and treatment services among young black MSM in the US. Other barriers include persistent stigma associated with seeking STD treatment in China, insufficient incorporation of MSM into national strategic plans for HIV/AIDS in African countries, discrimination in public health settings and hospitals, and limited access to health care services due to stigma and fear of disclosure in Mozambique. Concerns about potential stigmatization, discrimination, lack of confidentiality, and mistreatment by healthcare personnel were reported as reasons for the reluctance of MSM to seek HIV and STI health care services in Tanzania and Kenya. Overall, these findings emphasize the need for culturally sensitive, non-discriminatory, and confidential health care services tailored to the unique needs of MSM to promote better utilization of STI health services.

2.5 Summary of literature review addressing study gap

The chapter has explored previous research on the utilization of STI healthcare services among MSM globally, in Sub-Saharan Africa, and in Nairobi, Kenya. Previous studies have primarily focused on the obstacles MSM encounter when accessing HIV/AIDS services, neglecting the correlation between STIs and the increased HIV incidence. This study aims to investigate how MSM access and utilize STI health care services, exploring the motivation driving them to seek such services. This presents a novel research

opportunity, offering insights that can inform health planners and policymakers in decision–making regarding concerning the provision of STI healthcare services for MSM, ultimately aiming to prevent STIs that elevate the risk of HIV infection among the population.

Earlier studies have examined the knowledge levels among MSM, identifying gaps in understanding the correlation between knowledge levels and healthcare-seeking behaviour. Recognizing that research has indicated that well-informed individuals are more likely to seek healthcare services, this study addresses the need for health education among MSM, especially considering the threefold higher prevalence among MSM in Kenya compared to the general population. Past studies have revealed that a significant proportion of MSM do not seek STI healthcare services. A 2016 study in Kenya highlighted low coverage of key populations by interventions, with only 47% of MSM accessing healthcare services (Ministry of Health & National AIDS Control Council, 2016). This study seeks to discover the current status and challenges faced by MSM when seeking STI healthcare services, aiming to identify the factors influencing their decision to access STI healthcare services in specific health facilities. There is a lack of information regarding STI healthcare utilization rate among MSM in environment where same-sex relationships are not condoned. This research opportunity seeks to establish the factors that influence the utilization of STI healthcare services in such settings, providing valuable insights for improving healthcare services for MSM.

CHAPTER THREE: MATERIALS AND METHODS

3.1 Research Design

This was a cross-sectional analytical study which was carried out at the MSM hotspots within Nairobi City County. Hotspots are places where MSM are identified to either solicit their customers or where sexual activity was common including " cruising" areas along streets, or bars with or without lodging (National Aids and STI Control Programme, 2019). The researcher chose the design because the information was collected from a huge population within a short time and the resources were limited. This design is convenient in collecting information at one point in time from a sample selected to represent a larger population (Aggarwal & Ranganathan, 2019).

3.2 Variables

3.2.1 Independent Variables

The independent variables to this study comprised knowledge levels among MSM. This variable includes awareness of diseases transmitted through sexual intercourse, recognition of signs and symptoms of STIs and understanding of STI transmission and prevention. regarding STIs and healthcare services, proportion of MSM who sought STI healthcare services, places where MSM seek STI healthcare services and factors influencing the utilization of healthcare services among MSM. The variables were each analyzed to evaluate whether or not the MSM were utilizing the STI health care services. Additionally, the proportion of MSM who sought STI healthcare services in the past 12 months, places where they sought STI healthcare services and the factors influencing utilization of STI healthcare services among MSM. These factors influencing utilization of STI healthcare services among MSM encompasses elements such as health care

system factors, health workers' attitude, access to privacy and confidentiality, adherence to STI guidelines and the impact of health policies and legal systems.

3.2.2 Intervening variables

The intervening variables comprised of availability of MSM sensitized trained HCWs and availability of MSM friendly healthy facilities i.e. Ishtar, Liverpool, HOYMAS and SWOP.

3.2.3 Dependent Variables

The dependent variables was utilization of STI healthcare services among MSM in Nairobi City County.

3.3 Location of the study

Nairobi is the capital city of Kenya and it is one of the 47 counties in Kenya. It is located in the South-Central part of the country and 300 miles northwest of Mombasa. It was founded in 1889. Since its foundation as a railway camp in 1899, Nairobi has grown up as one of the most developed cities of Africa. Nairobi's latitude is -1.286389 and the longitude is 36.817223. . The city lies on the Nairobi River, in the south of the nation and has an elevation of 1661 m (5450 ft) above sea-level. Administratively it is subdivided into seventeen (17) sub-counties including Makadara, Kamukunji, Starehe, Mathare, Kibra, Langata, Dagoretti North and South, Westlands, Kasarani, Roysambu, Ruaraka and Embakasi Central,North,East,South and West. It is approximated that within the 17 sub-counties there are 373 MSM hotspots. The sub-counties where MSM were recruited from are as indicated in Table 1 below and the map is as illustrated in (Appendix G).

3.4 Study population

The target population was men who reported having sexual intercourse with men and key informants from both the public health facilities and MSM health provider sites.

The total MSM estimated to be in Nairobi City County was ten thousand two hundred and nine (10209) in 2019 (National Aids and STI Control Programme, 2019). We purposively selected three public health facilities and three MSM health provider sites to interview the key informants.

3.5 Sampling technique

The sampling technique employed in this study involved a combination of purposive and systematic random sampling methods. In Nairobi there are 17 sub-counties however, the 119 hotspots reported are across the 15 sub-counties. Thirty percent of these 15 sub-counties, specifically five densely populated with MSM, were purposively chosen. To determine the proportion of participants from each sub-county, the expected number in a specific sub-county was divided by the total number of participants from all five sub-counties and multiplied by 100. The number of participants to be recruited from each sub-county was then obtained by multiplying the percentage of participants by the required sample size (n=422) (Table 1).

Table 3.1: The Number of MSM in the selected Sub-Counties Hot Spots In Nairobi City County and the sampled population.

Sub-County	Estimated number of MSM available on all hotspots	Percentage of the total MSM to be accessed	Number of MSM required for the study ((n=422)
Starehe	2000 (40 hotspots)	55%	232
Westlands	1000 (27 hotspots)	27%	114
Dagoretti South	360 (20 hotspots)	10%	42
Ruaraka	180 (15 hotspots)	5%	21
Kasarani	100 (10 hotspots)	3%	13
Total	3640	100	422

The study targeted MSM at the hotspots and recruitment occurred during the peak days (Wednesday Friday, Saturday, and Sunday) with the assistance of MSM community mobilizers. Systematic random sampling was employed, involving the issuance of two wrapped pieces of paper (Yes/No) to the first two MSM. If the second participant picked "Yes," the selection process continued until the required number was reached. If a sampled participant declined, the next exiting participant was approached. Key informants, six in total, were to be purposively selected from MSM provider sites, Sex Workers Outreach Programme (SWOP), Health Options for Young Men on HIV/AIDS/STI (HOYMAS), and Ishtar and public health facilities in Nairobi City County(Kangemi and Casino).

3.5.1 Inclusion criteria

1. Must be a man reporting of having sexual intercourse with another man.
2. Able to comprehend the informed consent and was willing to provide consent.

3.5.2 Exclusion criteria

1. Any MSM who was visibly intoxicated.
2. Any MSM who was not having a sound mind will not have capacity to make the right decision.

3.6 Sample size determination

The sample size calculation was based on (Fisher, et al., 1998), they estimated that for a sample that is more than 10,000 the formular is,

$$n = \frac{Z^2\alpha \; P\,(1-P)}{\boldsymbol{\delta}^2}$$

Where:

n = desired sample size

p = Likely value of the parameter at 50%

$\boldsymbol{\delta}^2$ = Permissible margin of error (5%)

$Z^2\alpha$= Value of standard normal deviate corresponding to a level of Significance (95%)

$$n = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} \qquad n = 384$$

Adding 10% (38.4) for non-response therefore, a total of 422 MSMs were to be interviewed. In addition to this, a total of 3 clinicians were to be interviewed from a public health facility and 3 from MSM friendly health facility. Despite aiming for 422 interviews, limitations related to COVID-19 restrictions led to the researcher conducting interviews with 404 MSM, representing a response rate of a sample of 96%. In addition to the MSM interviews, the researcher also conducted interviews with five key informants two from the public health facility and three from the MSM friendly health facility which represented a response rate of 83.3%.The health workers were all clinicians.

3.7 Construction and research instruments

All MSM who consented to take part in the study were interviewed using structured questionnaires. The questionnaire contained both closed and open-ended questions (Appendix B). Key informants from the public health facilities were interviewed using key informant guide (Appendix C) while from the MSM health provider sites key informant guide (Appendix D) was used.

3.8 Pretesting

The pre-testing was aimed to establish a collective understanding of the tool by among the research team and ascertain the approximate time needed complete one questionnaire. This was done to assess the precision and objectivity of questions. Subsequent to the pre-test, questions identified as unclear were thoroughly examined and rephrased. The lead researcher diligently supervised the research assistants throughout the data collection process at the field by being available to provide guidance. Ten percent (38 participants) of the sample size of the participants were interviewed per (Kothari & Garg, 2016). It was done to certify the tools tested what they were planned to test (validity) & they consistently measured the variables in the study (reliability).

3.9 Reliability and Validity of Study Instruments

During pre-testing of study tools, participants were probed to evaluate suitability of research instruments. During probing, participants were asked about their interpretation of each question, whether there were any unfamiliar words or offensive terminologies. Additionally, respondents were invited to give their input on items they believed should be incorporated; based on their understanding of the of the study's theme. Subsequently, the interview tools were adjusted to reflect the identified modifications. The participants' responses were examined for internal consistency and hence, reliability.

3.10 Data Collection Techniques and procedures

Data was collected using a pre-tested questionnaire for the MSM and a pretested interview guide for the key informants. During data collection, the participants of the study were informed about the study, its purpose, and its objectives and how to take part in the study at the hotspots by MSM mobilizers. The MSM mobilizers assisted to

mobilize the identified MSM to the selected suitable venue where they met the researcher and the research assitants who were interviewing the participants. The researchers sought their consent (Appendix A) before them taking part in the study. Once they had consented, the researchers administered the semi-structured questionnaire to selected participants.

Seven research assistants were enlisted and underwent training to support the data collection process. The training was designed to equip research assistants with necessary skills and knowledge for proficient field data gathering and management. The training encompassed key elements such as an overview of the research, including the problem statement, research objectives, study methods, techniques for interaction with and handling respondents, ethical considerations, data quality assurance and field data management.Health workers who had been sensitized to work with the key populations and had prior experience in conducting research were the key requirements for selection. The research assistants interviewed the selected participants and completed the questionnaires. After the day's work the researcher would review the questionnares for completeness and debrief the research assistants before conducting the next interview. For the key informant‘s interviews, the lead researcher conducted a 30-60 minute interview for each of the selected key informants who gave consent to take part in the study using a key informant interview guide (Appendix C& D). Consent from the key informants to use voice recorders to expedite capturing of the interview responses and for analysis purposes was also sought before recording the interviews. At the end of each interview, the lead researcher prepared a summary of the key points from the interview.

3.11 Data analysis

This study generated both quantitative and qualitative data. Quantitative data from the study questionnaires was coded, entered into a computer, cleaned and analyzed using SPSS version 25. Descriptive statistics, bivariate and multivariant analysis was used to describe results by use of percentages, tables and charts, in the analysis of this data. Statistical inference was inferred at 5%. The qualitative data from the key informant interviews was also coded, entered, cleaned and analyzed using the content approach with the Nvivo computer software version 11. The emerging themes were were health and legal system factors which were the major facilitators to utilization of sexual health care services among MSM while health system factors, MSM individual factors, referral challenges and political system, were the major barriers.

3.12 Logical and ethical considerations

The researcher certified that the ethical requirements of conducting the study were followed. The researcher sought approval from the Kenyatta University Board of Post Graduate studies, ethical clearance from the Kenyatta University Review Ethics committee, permit from the National Council for Science, Technology and Innovations (NACOSTI), and authorization from Nairobi City County. For purposes of confidentiality and privacy of respondents, the identities of the respondents involved in the study was protected appropriately by making sure that the names of the participants were not specified in the data collection tools. Data collected from the field was kept in a lockable box to guarantee security and confidentiality. Also, only the researcher had access to the contents of the files.

3.13 Care and Protection of Research Participants

The researcher exercised thorough care and protection for all study participants. Initially, written informed consent was obtained from every eligible respondent to ensure their voluntary participation. An informed consent form was administered, which included the purpose, duration, associated risks and discomforts, and potential benefits associated with the study (Appendix A). This measure aimed to enable respondents to make a well informed decision regarding their involvement in the study. To safeguard participants from potential risks allied with unintentional publicity of their identities, strict confidentiality and privacy were established and maintained throughout the study. Additionally, interviews were conducted at a venue preferred by the participants, minimizing the exposure to potential.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the findings of the study based on research objectives. The researcher interviewed 404 participants. This section will represent descriptive, bivariate, multivariate and qualitative results of the study.

4.2 Social-demographic Characteristics of study participants

4.2.1 Distribution of the participants based on Age, Marital Status, Religion, Education level, Occupation Level of income and Nationality (N=404)

Table 4.1 presents a summary of the age, marital status, religion, education level, occupation, level of income and Nationality of the study participants. More than half of the participants (59.9%; 242) were aged between 18-24 years and their mean age was 25 years (SD 6.4). Participants aged 45 and above years were (2.0%; 8). Majority of the respondents were single never married (80.4%; 325). As per religion most of the participants were christians (84.2%; 340) . Education level (55.9%; 226), had secondary education, (36.4%; 147) post-secondary and (7.7%; 31) primary education. Under occupation, participants who were either employed or were self-employed were (64.1%; 259), un-employed or students were (35.9%; 145) . Participants who had an income were, (70.3%; 284) while those who had no income were, (29.7%; 120). In terms of how much participants were earning, those with Kshs <5000 were, (13.4%; 54), those who were earning Kshs 5001-10,000 were (21.5%; 87), those who were earning Kshs 10001-15000 were (17.6 %; 71) and those in the category of Kshs > 15,000, (17.8%; 72). Per Nationality majority of the participants were Kenyans (98.5%;398).

Table 4.1: Socio demographics characteristics of the study participants

Characteristics	Total(n=404)	
	N	%
Age bracket		
18-24	242	59.9
25-29	89	22.0
30-34	40	9.9
35-39	15	3.7
40-44	10	2.5
≥45	8	2.0
Marital Status		
Singe never married	325	80.4
Married	54	13.4
Single ever married	25	6.2
Religion		
Christian(catholic and protestants)	340	84.2
Non-christian(Muslim,atheists and Hindu)	64	18.8
Education level		
Primary	31	7.7
Secondary	226	55.9
Post-secondary	147	36.4
Employment status		
Unemployed/ Student	145	35.9
Employed/ Self employed	259	64.1
Level of income		
None	120	29.7
<5000	54	13.4
5001-10000	87	21.5
10001-15000	71	17.6
>15,000	72	17.8
Nationality		
Kenyans	398	98.5
Non-Kenyans	6	1.5

4.2.2 Sexual behaviour of the study participants

Table 4.2 below presents the sexual behavior of the study participants. By gender most of the participants (90.6%; 366) identified themselves as men, with nearly half (47.5%; 192) reporting an insertive (Top) role during sexual activity. Those who reported a versatile (both bottom and top) role constituted (39.9%; 161), while those reporting a receptive (Bottom) role were (12.6%; 51). On the question regarding sex with whom for the last 12 months, (55.4%; 224) of the participants were having sex with men only and (44.6 %; 180) were bisexual. On being asked the number of sexual partners they had during the last 12 months, majority of the participants (88.6%; 358) reported to have had more than one sexual partner and (11.4%; 46) of the participants reported to have had one sexual partner.

Regarding the type of sexual experience they had, majority of the respondents (93.6%; 378) reported to have had anal sexual intercourse, (42.1%; 170) had vaginal sexual intercourse, oral (28.5%; 115) and mutual masturbation (19.6%; 79). On being asked if they received gifts/money in exchange for sexual intercourse, almost half (47.5%; 192) of the participants reported to have received gifts /money sometimes. Those who did not receive gifts/money were, (43.1%; 174) and those who received all the time were, (9.4%; 38).

Regarding paying money/offering gifts in exchange of sex; more than half of the participants (61.6%; 249) reported that they did not pay/ offer any gifts in exchange for sex. Those who reported to have paid money/offered gifts in exchange for sex sometimes were, (34.4%; 139) and (4.0% ; 16) of the participants reported to have paid

money/offered gifts in exchange for sex all the time. Participants who reported to have ever contracted STI were (43.3%; 175).

Table 4.2: Sexual behavioral characteristics of the study participants

Characteristics	Total(n=404)	
	N	%
Gender		
Man	366	90.6
Transgender woman	13	3.2
Intersex	8	2.0
Non-conforming	17	4.2
Roles during sexual activity		
Top (Insertive)	192	47.5
Bottom (Receptive)	51	12.6
Versatile (Both insertive and receptive)	161	39.9
Sex with whom during the past 12 months		
Men	224	55.4
Both men and women	180	44.6
Total sexual partners during the past 12 months		
only 1	46	11.3
>1	358	88.2
Type of sex		
Vaginal intercourse	170	42.1
Anal intercourse	378	93.6
Oral	115	28.5
Mutual masturbation	79	19.6
Gets gifts/money in exchange for sex		
Yes all the time	38	9.4
Yes sometimes	192	47.5
No	174	43.1
Gives gifts/money in exchange for sex		
Yes all the time	16	4.0
Yes sometimes	139	34.4
No	249	61.6
Ever contracted STI		
Yes	175	43.3
No	229	56.7

4.3 Participants' level of Knowledge regarding STIs

4.3.1 Participants' knowledge about diseases that are spread via sexual intercourse (N=404)

As indicated in Table 4.3 below, majority of the participants reported gonorrhea (92.8 %; 375), syphilis (88.1%;356), HIV (65.6%; 266), genital warts (33.9%; 137), Herpes Simplex (22.8%; 92), chancroid (20.5%;83), hepatitis B (17.3%;70), chlamydia (13.6%;55) and trichomoniasis (5.2%;21).

Table 4.3: Participants' Knowledge regarding diseases that are spread via sexual intercourse

Characteristics	Total(n=404)	
	N	%
Gonorrhoea		
Yes	375	92.8
No	29	7.2
Syphilis		
Yes	356	88.1
No	48	11.9
Chlamydia		
Yes	55	13.6
No	349	86.4
Genital warts		
Yes	137	33.9
No	267	66.1
HIV		
Yes	265	65.6
No	139	34.4
Hepatitis B		
Yes	70	17.3
No	334	82.7
Trichomoniasis		
Yes	21	5.2
No	383	94.8
Herpes Simplex		
Yes	92	22.8
No	312	77.2
Chancroid		
Yes	83	20.5
No	321	79.

4.3.2 Participants' Knowledge about Signs and symptoms of STIs (N=404)

Table 4.4 below, reveals that most of the participants were cognizant of penile discharge (66.8%; 270), burning sensation during urination (60.8%; 244), genital ulcer/sores (39.6%; 160), anal discharge (21.0%; 85), swelling in the groin region (23.0%; 93), anal ulcer/sore (25.0 %; 101), anal pain (21.3%; 86), and scrotal swelling (14.1%; 57).

Table 4.4: Participants' Knowledge regarding signs and symptoms of STIs

Characteristics	Total(n=404)	
	N	%
Penile Discharge		
Yes	270	66.8
No	134	33.2
Burning pain during urination		
Yes	244	60.4
No	160	39.6
Genital ulcers/sore		
Yes	160	39.6
No	244	60.4
Swelling in groin region		
Yes	93	23.0
No	311	77.0
Anal discharge		
Yes	85	21.0
No	319	79.0
Anal ulcer/sores		
Yes	101	25.0
No	303	75.0
Anal pain		
Yes	86	21.3
No	318	78.7
Scrotal swelling		
Yes	57	14.1
No	347	85.9

4.3.3 Participants' Knowledge on STI transimission (N=404)

As shown in Table 4.5 below, almost all the participants stated that STIs were transmitted through unprotected sexual intercourse(97.5%; 394), blood transfusion (3.0%; 12), contaminated sharp objects (5.9%; 24), unhygienic conditions (2.2%; 9) and (1.0%;4) participants stated that they didn't know.

Table 4.5: Participants' knowledge on STI transmission

Characteristics	Total(n=404)	
	N	%
Unprotected sex		
Yes	394	97.5
No response	10	2.5
Blood transfusion		
Yes	12	3.0
No response	394	97.0
Contaminated sharp objects/wounds		
Yes	24	5.9
No response	380	94.1
Unhygienic conditions		
Yes	9	2.2
No response	395	97.8
Those who stated they don't know		
Yes	4	1.0
Had reported above options	400	99.0

4.3.4 Participants' knowledge about anal exposure to STIs (N=404)

When asked whether engaging in anal sex can expose one to getting STIs , majority of the participants (83.7%; 338) were aware that they could be infected with STIs through unprotected anal sexual intercourse (Figure 4.1).

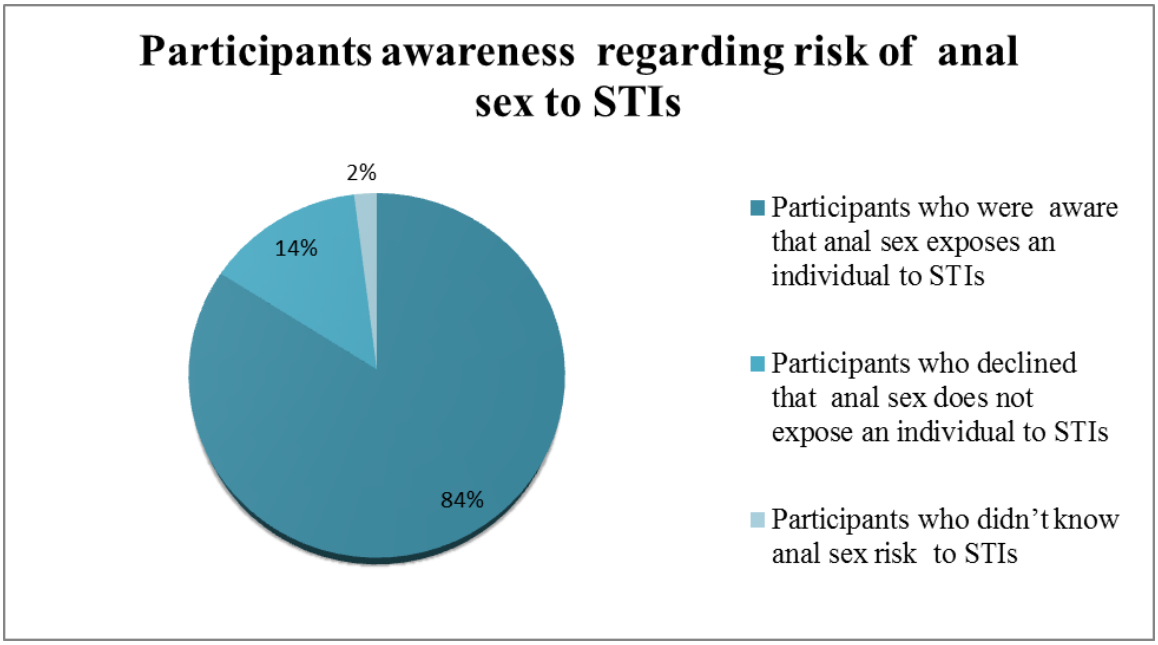

Figure 4.1: Participants awareness regarding risk of anal sex to STIs

4.3.5 Participants' Knowledge of mode of STIs transimission (N=404)

As shown in Table 4.6 below, about three quarters of the participants reported that they could be infected with STIs through semen (78.0%; 315), through blood (46.0%; 186), clothing (7.2%; 29), food (1.7%; 7), vaginal fluids (32.7%; 132), contaminated sharp objects (17.3%; 70) and anal fluid (29.2% ; 118).

Table 4.6: Participants' knowledge of mode of STI transmission

Characteristics	Total(n=404)	
	N	%
Semen		
Yes	317	78.0
No	89	22.0
Blood		
Yes	186	46.0
No	218	54.0
Clothing		
Yes	29	7.2
No	375	92.8
Food		
Yes	7	1.7
No	397	98.3
Vaginal fluids		
Yes	132	32.7
No	272	67.3
Contaminated sharp objects		
Yes	70	17.3
No	334	82.7
Anal fluid		
Yes	118	29.2
No	286	70.8

4.3.6 Overall knowledge score of study participants

As indicated in Table 4.7 below, the mean of the knowledge score of the study participants was 12.3 (range 0-25). The median score was 12. The knowledge scores were categorised as a score of 0-11 or 12-25 based on the median split; as such 200 (49.4 %) participants were categorized as having a low knowledge score and 204(50.6%) were categorized as having a higher knowledge score.

Table 4.7 Knowledge score of study participants

Knowledge Score			
Mean=12.25, Median=12.00			
No. of right answers	**No. of participants**	**Score percentage (%)**	**Cumulative score percentage (%)**
3	1	.2	.2
4	5	1.2	1.4
5	5	1.2	2.6
6	16	4.0	6.6
7	23	5.7	12.4
8	30	7.4	19.8
9	36	8.9	28.7
10	40	9.9	38.6
11	44	10.9	49.4
12	33	8.2	57.7
13	32	7.9	65.6
14	45	11.1	76.7
15	15	3.7	80.4
16	15	3.7	84.2
17	12	3.0	87.1
18	14	3.5	90.6
19	8	2.0	92.6
20	5	1.2	93.8
21	3	.7	94.6
22	5	1.2	95.8
23	5	1.2	97.0
24	4	1.0	98.0
25	8	2.0	100.0
Total	404	100.0	

4.3.7 Association between socio-demographic characteristics and participants' knowledge level.

Analysis of results showed the following participant's independent variables to be significantly associated with their level of knowledge: education level of (χ^2= 13.846; df=2; p=0.001), occupation (χ^2=7.519; df=1; p=0.007) and their level of income (χ^2= 14.834; df=4; p=0.005). On the other hand, the knowledge level of the participants was not statistically significantly associated with their age (F.E.T; p=0.186), marital status

(χ^2=0.324; df=2; p=0.859) , religion (χ^2= 2.399; df=1; p=0.135), and their nationality (F.E.T; p=0.446) (Table 4.8).

Table 4.8: Association between socio-demographic characteristics of study participants and participants' knowledge level.

Characteristics	Total (n=404) n(%)	Knowledge score <12 (n=215) n(%)	Knowledge score ≥12 (n=189) n(%)	Significant Test
Age bracket				
18-24	242(59.9)	127(52.5)	115(47.5)	
25-29	89(22.0)	39(43.8)	50(56.2)	
30-34	40(9.9)	20(50.0)	20(50.0)	F.E.T.=0.186
35-39	15(3.7)	4(26.7)	11(73.3)	
40-44	10(2.5)	4(40.0)	6(60.0)	
≥45	8(2.0)	6(75.0)	2(25.0)	
Marital Status				
Single never married	325(80.4)	162(49.8)	163(50.2)	χ^2 =0.324,
Married	54(13.4)	27(50.0)	27(50.0)	df =2,
Single ever married	25(6.2)	11(44.0)	14(56.0)	P-Value =0.859
Religion				
Christian(Catholic & protestants)	340(84.2)	174(51.2)	166(48.8)	χ^2 =2.399 df =1,
Others (Muslim, Atheists, Hindu)	64(15.8)	26(40.6)	38(5.4)	P-Value =0.135
Education level				
Primary	31(7.7)	19(61.3)	12(38.7)	χ^2 =13.846
Secondary	226(55.9)	126(55.8)	100(44.2)	df =2,
Post-secondary	147(36.4)	55(37.4)	92(62.6)	P-Value =0.001
Employment status				χ^2= 7.519,
Unemployment/Student	145(35.9)	85(58.6)	60(41.4)	df =1,
Employment/Self-employed	259(64.1)	115(44.4)	144(55.6)	P-Value =0.007
Level of income				
None	120(29.7)	75(62.5)	45(37.5)	
<5000	54(13.4)	28(51.9)	26(48.1)	χ^2=14.834,
5001-10000	87(21.5)	38(43.7)	49(56.3)	df =4,
10001-15000	71(17.6)	33(46.5)	38(53.5)	P-Value =0.005
>15000	72(17.8)	26 (36.1)	46(63.9)	
Nationality				
Kenyans	398(98.5)	196(49.2)	202(50.8)	F.E.T. =0.446
Non-Kenyans	6(1.5)	4(66.7)	2(33.3)	

***KEY: F.E.T. = FISHER'S EXACT TEST**

4.3.8 Association between sexual behavioral characteristics and Participants' knowledge level .

The study revealed that there was a significant association between knowledge of the participants and the following sexual behavior: sex with whom (χ^2= 5.877; df=1; p=0.017), total number of sexual partners during the past 12 months (χ^2= 5.127; df=1; p=0.028) and type of sex (vaginal, χ^2= 9.335; df=1; p=0.003). However, the following sexual behavior of the participants was not significantly associated with their knowledge levels: gender (F.E.T; p=0.364), roles during sexual activity (χ^2= 3.168; df=2; p=0.209), type of sex (anal, χ^2= 0.745; df=1; p=0.423; oral, χ^2= 2336; df=1; p=0.152) and mutual masturbation, (χ^2= 1.643; df=1; p=0.212). The study further noted that there was no significant association between knowledge levels of participants and receiving gifts/money in exchange for sex (χ^2=3.607; df=2; p=0.163), giving gifts/money in exchange for sex (χ^2=2.279; df=2; p=0.337) and ever contracted STI (χ^2=1.280; df=1; p=0.151) (Table 4.9).

Table 4.9: Association between sexual behavioral characteristics of study participants and Participants' knowledge level

Characteristics	Total (n=404) n(%)	Knowledge score <12 (n=200) n(%)	Knowledge score ≥12 (n=204) n(%)	Significant Test
Gender				
Man	366(90.6)	176(48.1)	190(51.9)	
Transgender woman	13(3.2)	8(61.5)	5(38.5)	F.E.T.=0.364
Intersex	17(4.2)	11(64.7)	6(353)	
Non-conforming	8(2.0)	5(62.5)	3(37.5)	
Roles during sexual activity				
Top(Insertive)	192(47.5)	94(49.0)	98(51.0)	χ^2=3.168,
Bottom(Receptive)	51(12.6)	31(60.8)	20(39.2)	df=2,
Versatile (Both insertive & receptive)	161(39.9)	75(46.6)	86(53.4)	P-Value=0.209
Sex with whom during the past 12 months				χ^2=5.877,
Men	224(55.4)	123(56.7)	101(50.0)	df=1,
Both men and women	180(44.6)	77(42.6)	103(50.0)	P-Value=0.017
Total number of sexual partners during the past 12 months				χ^2=5.127,
Only 1	46(11.3)	37(11.9)	9(9.6	df=1,
>1	358(88.2)	273(87.5)	85(90.4)	P-Value=0.028
Type of sex				
Vaginal	170(42.1)	69(40.6)	101(59.4)	χ^2=9.335, df=1, P-Value=0.003
Anal	378(93.6)	185(48.9)	193(51.1)	χ^2=0.745, df=1, P-Value=0.423
Oral	115(28.5)	50(43.5)	65(56.5)	χ^2=2.336, df=1, P=Value=0.152
Mutual masturbation	79(19.6)	34(43.0)	45(57.0)	χ^2=1.643, df=1, P-Value=0.212
Gets gifts/money in exchange for sex				
Yes, all the time	38(9.4)	14(36.8)	24(63.2)	χ^2=3.607,
Yes, sometimes	192(47.5)	93(48.4)	99(51.6)	df=2,
No	174(43.1)	93(53.4)	81(46.6)	P-Value=0.163
Gives gifts/money in exchange for sex				
Yes, all the time	16(4.0)	5 (31.3)	11(68.8)	χ^2=2.279,
Yes, sometimes	139(34.4)	71(51.1)	68(48.9)	df=2,
No	249(61.6)	124(49.8)	125(50.2)	P-Value=0.337
Ever contracted STI				χ^2=1.280,
Yes	175(43.3)	81(46.3)	94(53.7)	df=1,
No	229(56.7)	119(52.0)	110(48.0)	P-Value=0.151

4.3.9 Participants characteristics independently associated with Participants' knowledge about STIs.

Further logistic regression analysis was done for the socio-demographic significant factors associated with knowledge. The study revealed significant association between STI knowledge and participants' level of education. Precisely, participants who had tertiary education were 2.7 times more likely to have a higher STI knowledge score compared with the participants who had primary education (Adjusted odds ration aOR=2.729, 95% CI 1.18-6.29). On the other hand, employment status, level of income, sex with whom and total number of partners the participants had were not siginificantly associated with participants STI knowledge score. (Table 4.10).

Table 4.10: Participants characteristics independently associated with Participants' knowledge about STIs.

Variable	B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I. for EXP (B)	
							Lower	Upper
Highest reported education Level Reference-"Up to completed primary)								
"Up to completed Secondary	0.258	0.405	0.406	1	0.524	1.295	0.585	2.866
" Up to completed Post-secondary	1.004	0.426	5.554	1	0.018	2.729	1.184	6.289
Employment status Reference Not employed								
Employed	-.093	0.423	0.048	1	0.827	0.911	0.398	2.089
Level of income Reference (No income)								
<5000	0.591	0.485	1.490	1	0.222	1.806	0.699	4.669
5000-10000	0.910	0.474	3.682	1	0.055	2.483	0.981	6.289
10001-15000	0.637	0.492	1.675	1	0.196	1.891	0.721	4.960
>15000	0.884	0.527	2.814	1	0.093	2.421	0.862	6.801
Sex with whom Reference (Men)								
Bisexual	0.341	0.217	2.469	1	0.116	1.407	0.919	2.154
Total number of sexual partners Reference(one sexual partner)								
>1 sexual partners	0.621	0.351	3.132	1	0.077	1.861	0.935	3.701

4.4 Proportion of participants who had ever sought STI healthcare services

4.4.1 Utilization patterns of STI healthcare services among participants (N=404)

When participants were asked if they had ever sought STI healthcare services, the majority (73.3%; 296) of the participants reported to have ever visited a health centre facility for STI sexual health care services (Figure 4.2). The study revealed that participants who reported to have ever sought routine STI screening services were (43.3%; 175), while those who sought STI treatment were (20.5%; 83). The study indicated that those who were suspected to have had an STI were (19.1%; 77), had unprotected sex (7.9%; 32) and had been sexually assaulted (0.5%;2) (Table 4.11).

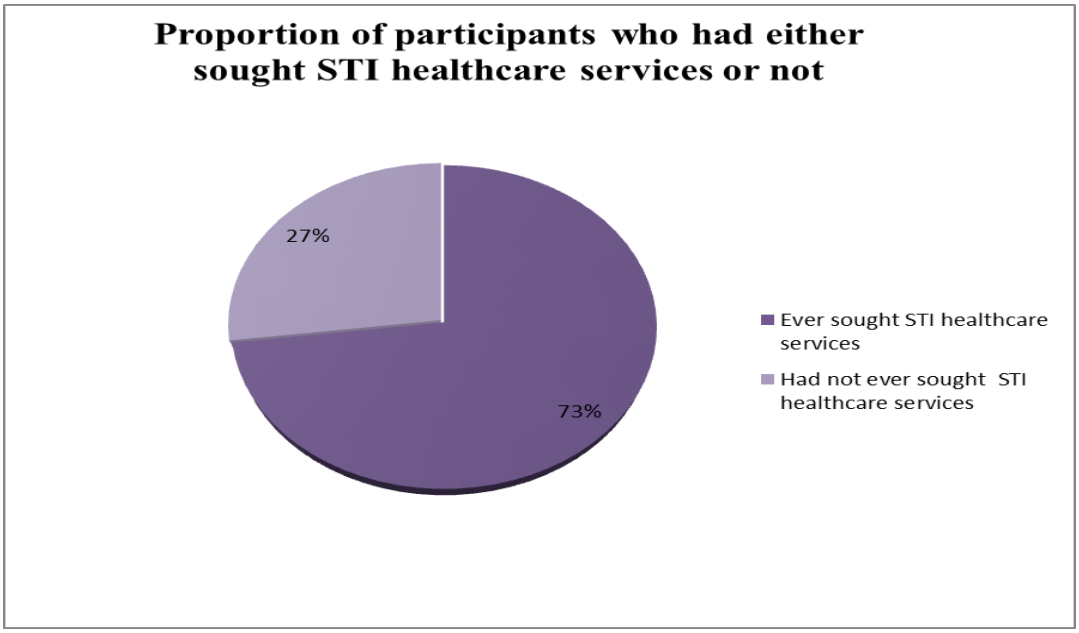

Figure 4.2: Proportion of participants who had either sought STI healthcare services or not

Table 4.11: Type of sexual healthcare services sought by participants

Characteristics	Total (n=404)	
	N	%
Routine Screening		
Yes	175	43.3
No	229	56.7
STI treatment		
Yes	83	20.5
No	321	79.5
Sexual assault		
Yes	2	0.5
No	402	99.5
Unprotected sex		
Yes	32	7.9
No	372	92.1
Suspected to have STI		
Yes	77	19.1%
No	327	80.9%

4.4.2 Participants who had sought sexual healthcare services within the last 12 months and services sought

On the question regarding if the participants had sought any sexual health care services within the last 12 months, (74.5%; 301) had sought the sexual health care service (As shown in Figure 4.3 below). Additionally, as shown in Table 4.12 below, (60.4%; 244) of the participants had reported to have gone for HIV testing, (60.4%;244) for counseling (45.8%;185), (22.3%;90) had gone for condoms & lubricants, (26.0%;105) STI diagnosis and treatment, (3.5%;14) HIV care & treatment, (6.7%;27) PEP and (14.4%;58) PREP.

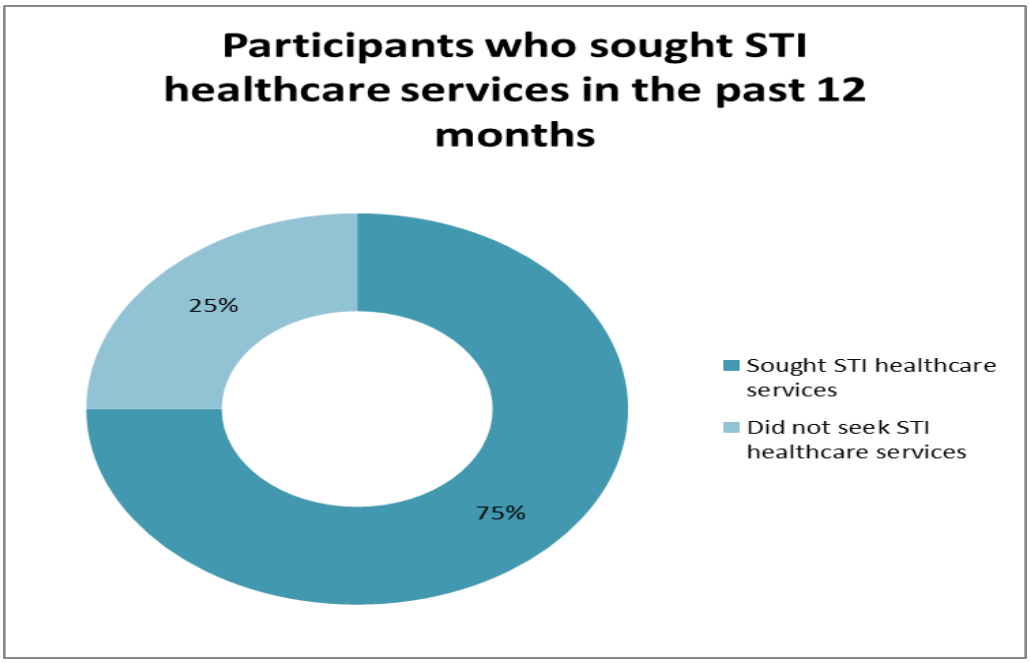

Figure 4.3: Number of participants who sought sexual healthcare services in the past 12 months

Table 4.12: Sexual healthcare services sought by Participants in the past 12 months

Characteristics	Total(n=404)	
	N	%
HIV test		
Yes	244	60.4
No	160	39.6
Counseling		
Yes	185	45.8
No	219	54.2
Condoms & lubricants		
Yes	90	22.3
No	314	77.7
STI diagnosis & treatment		
Yes	105	26.0
No	299	74.0
HIV care & treatment		
Yes	14	3.5
No	390	96.5
PEP		
Yes	27	6.7
No	377	93.3
PREP		
Yes	58	14.4
No	346	85.6

4.4.3 Number of participants who were aware of their HIV status and reasons that influenced them to undergo HIV testing

Regarding the question of how many participants who knew their HIV status, almost all the participants (98.8%; 399) knew their status (Figure 4.4). Also, as illustrated below in figure 4.5 , majority of the participants (91.6%; 370) stated that they had voluntarily gone for the test, while (6.7%; 27) had been asked to do the HIV test by the health care workers or their sexual partners because of the antenatal clinic request by the HCWs.

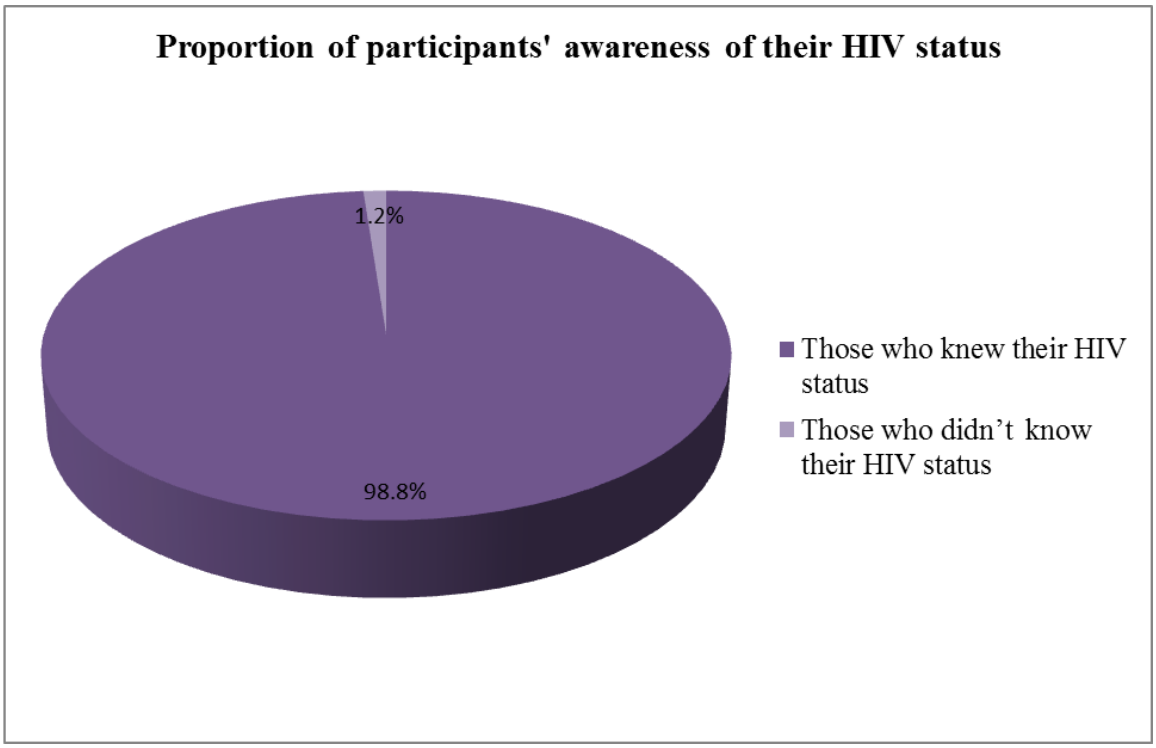

Figure 4.4: Proportion of participants' awareness of their HIV status

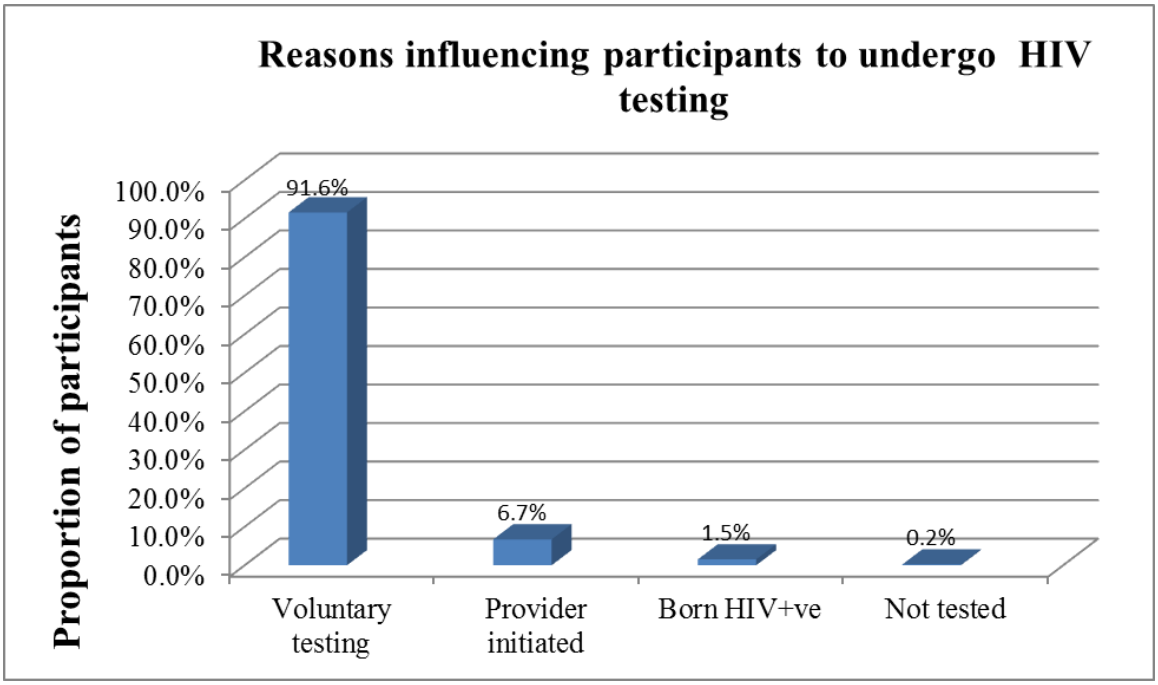

Figure 4.5: Reasons influencing participants to undergo HIV testing

4.4.4 Number of participants who were aware that MSM do get tested for STIs at hotspots

On the question regarding if the study participants were aware that they can be tested for STIs at the hotspots, as shown in Table 4.13 below, (46.8%; 190) were aware. Among those who were aware (31.2%; 126) had been screened for various STIs.

Table 4.13: Proportion of participants who are aware that they can be tested for STIs at the hotspots

Characteristics	Total(n=404)	
	N	%
Aware that MSM are tested for STIs at the hotspots		
Yes	190	47.0
No	214	53.0
Have been tested for STIs at the hot spot		
Yes	126	31.2
No	65	16.1
N/A	213	52.7

4.4.5. Participants who had ever contracted any STI

When participants were asked if they had ever contracted STIs, (43.3%; 175) reported that they had ever contracted STIs. The study showed that almost all of them had sought treatment (43.1%; 174). Those who reported that they had never contracted STI were (56.9%; 230). The study indicated that, (55.4%; 224) of those who had never contracted STI stated that they could seek treatment incase they fell sick (Table 4.14).

Table 4.14: Participants who had ever contracted STI and if they could seek Treatment

Characteristics	Total(n=404)	
	N	%
Ever contracted STI		
Yes	175	43.3
No	229	56.7
Did you seek treatment		
Yes	174	43.1
No & N/A	230	56.9
Incase you had STI will you seek treatment		
Yes	224	55.4
No & N/A	180	44.6

4.5 Places where participants had sought STI healthcare services in Nairobi City County.

4.5.1 The facility participants will seek STI healthcare services incase sick and why

As shown in Table 4.15 below, the health facilities the participants could visit in the event they fall sick were reported as follows; more than half of the participants (54.7%;221) stated that they could go to NGOs, public health facility (24.5%;99) and private health facility (21.0%;85). The reasons why the participants could visit these

facilities include convenience (46.3%; 187), MSM services were being provided there (40.1%; 162), privacy (26.2%; 106) and that staff were caring (19.6%; 79).

Table 4.15: Various health facilities participants visited and reasons that influenced them to prefer those facilities

Characteristics	Total(n=404)	
	N	%
Type of facility visited		
Private		
Yes	85	21.0
No	319	79.0
Public		
Yes	99	24.5
No	305	75.5
NGO		
Yes	221	54.7
No	183	45.3
Why visit various facilities		
MSM services provided there		
Yes	162	40.1
No	242	59.9
Convenient		
Yes	187	46.3
No	217	53.7
Staff caring		
Yes	79	19.6
No	325	80.4
Privacy		
Yes	106	26.2
No	298	73.8

4.5.2 Whether the participant had ever visited a public health facility and experience gained

Regarding the question if the participants had ever visited a public health facility for sexual healthcare services and what their experience were. The study revealed that less than half percent of the participants (36.4%; 147) had ever visited a public health facility

and among them (26.2%; 106) stated that they were satisfied with the services they had received (Table 4.16).

Table 4.16: Participants who had ever visited a public health facility for sexual healthcare services and their experience

Characteristics	Total(n=404)	
	N	%
Visited public health facility for sexual healthcare services		
Yes	147	36.4
No	257	63.6
How was their experience		
Satisfactory	106	26.2
Unsatisfactory	42	10.4
N/A	256	63.4

4.5.3 Relationship between health facilities sought and utilization of STI health care services

When further analysis was done on the relationship between health facilities sought by MSM for services and utilization of STI healthcare services, the study established a significant relationship with NGOs facilities ($\chi^2=6.260;df=1, P=0.013$) (Table 4.17). The study didn't establish a significant association between STI health care services and visiting a private facility (χ^2=0.817; df=1,P=0.408) and Public facility (χ^2=0.015, df=1,P=1.000). For those who visited various sites the following were reasons that was significantly associated with STI healthcare services provided: MSM services were provided there *($\chi^2=4.557$, df=1,P=0.039),* and because of Privacy (χ^2=2.899, df=1, P=0.097). There was no significant relationship between the seeking STI health care service and other reasons given including convenience (χ^2=0.201, df=1,P=0.735), staff caring (χ^2=0.781, df=1,P=0.400). (Table 4.17). The study found that seeking for STI health care services was signicantly associated with ever visiting a public health facility

(χ^2=6.968, df=1,P=0.010). Satisfaction of participants with services offered at the public health facility (F.E.T= 0.002) was significantly associated with utilization of STI health care services (Table 4.17).

Table 4.17: Health facilities that Participants had sought STI healthcare services, and reasons that influenced them to prefer those facilities that are associated with utilization of STI health care services.

Characteristics	Total (n=404) n(%)	STI utilization Yes (n=296) n(%)	STI utilization No (n=108) n(%)	Significant Test
Type of facility visited				
Private facility				χ^2=0.817,
Yes	85(21.0)	59(69.4)	26(30.6)	df=1,
No	319(79.0)	237(74.3)	82 (25.7)	P-Value=0.408
Public facility				χ^2=0.015,
Yes	99(24.5)	73(73.7)	26(26.3)	df=1,
No	305(75.5)	223(73.1)	82(26.9)	P-Value=1.000
NGO (MSM sites)				χ^2=6.260,
Yes	221(54.7)	173(78.3)	48(21.7)	df=1,
No	183(45.3)	123(67.2)	60(32.8)	P-Value=0.013
Why visited various health facilities				
MSM services provided there				χ^2=4.557,
Yes	162(40.1)	128(79.0)	34(21.0)	df=1,
No	242(59.9)	168(69.4)	74(30.6)	P-Value=0.039
Convenient				χ^2=0.201,
Yes	187(46.3)	139(74.3)	48(25.7)	df=1,
No	217(53.7)	157(72.4)	60(27.6)	P-Value=0.735
Staff caring				χ^2=0.781,
Yes	79(19.6)	61(73.3)	18(22.8)	df=1,
No	325(80.4)	235(72.3)	90(27.7)	P-Value=0.400
Privacy				χ^2=2.899,
Yes	106(26.2)	71(67.0)	35(33.0)	df=1,
No	298(73.8)	225(75.5)	73(24.5)	P-Value=0.097
Ever visited public facility				χ^2=6.968,
Yes	147(36.4)	119(81.0)	28(19.0)	df=1,
No	257(63.6)	177(68.9)	80(31.1)	P-Value=0.010
Their experience at the public facility				
N/A	256(63.4)	176(68.8)	80(31.3)	
Satisfactory	106(26.2)	81(76.4)	25(23.6)	F.E.T.=0.002
Unsatisfactory	42(10.4)	39(92.9)	3(7.1)	

During the key informant interviews, one of the HCWs from MSM health provider site reported that, MSM visited their site because they are not being stigmatized by the staff:

> *Also, you might get someone travelling from Nanyuki to get medication at our site because MSM can't walk in any facility and disclose to the health care providers that he is an MSM and he gets accepted straightforwardly. Most of them question them and probably they will not offer the service to them. That is why some travel as far as Nanyuki because they know that regardless of the situation he will be examined comfortably and be offered medication as much as that medication could have been very cheap and he could even spend 10 times the money to come to our site than buy the drugs the other side. So, there is that comfort of them coming to us, mmh they know that their issue will be addressed (HCW from MSM provider site 1.*

Another HCW from MSM provider site 3 reported that:

> *I think what makes them seek services from this place is being MSM-friendly. So they have no issue explaining like i am having this and this unlike when they go somewhere else and you have now to explain you know, I am having this and someone is like, why? Do you get it?so being an MSM-friendly facility could be a contributing factor.*

4.6 Factors influencing the utilization of STI healthcare services among participants in Nairobi County

4.6.1 Socio-demographic characteristics associated with the utilization of STI health care services

The study found that utilization of STI healthcare services was significantly associated with participants age (F.E.T; p=0.014), occupation (χ^2= 10.376; df=1; p=0.002), and the level of income (χ^2= 19.883; df=4; p<0.001). The study did not establish a significant associated relationship between utilization of STI healthcare services and marital status (χ^2= 3.105; df=1; p=0.230), religion (χ^2= 0.560; df=1; p=0.213), education level (χ^2= 2.652; df=1; p=0.236), nationality (F.E.T; p=0.153) (Table 4.18).

Table 4.18: Association between socio-demographic characteristics of study participants and the utilization of STI healthcare services

Characteristics	Total (n=404) n(%)	STI utilization		Significant Test
		Yes (n=296) n(%)	No (n=108) n(%)	
Age bracket				
18-24	242(59.9)	164(67.8)	78(32.2)	
25-29	89(22.0)	72(80.9)	17(19.1)	
30-34	40(9.9)	34(85.0)	6(15.0)	F.E.T.= 0.014
35-39	15(3.7)	11(73.3)	4(26.7)	
40-44	10(2.5)	10(100.0)	0(0.0)	
≥45	8(2.0)	5(62.5)	3(37.5)	
Marital Status				
Single never married	325(80.4)	232(71.4)	93(28.6)	χ^2=3.105,
Married	54(13.4)	44(81.5)	10(18.5)	df=1,
Single ever married	25(6.2)	20(80.0)	5(20.0)	P-Value=0.230
Religion				
Christian(Catholic & protestants)	340(84.2)	246(72.4)	94(27.6)	χ^2=0.560,
Others (Muslim, Atheists, Hindu)	64(15.8)	50(78.1)	14(21.9)	df=1, P-Value=0.213
Education level				
Primary	31(7.7)	22(71.0)	9(29.0)	χ^2=2.652,
Secondary	226(55.9)	159(70.4)	67(29.6)	df=1,
Post-secondary	147(36.4)	115(78.2)	32(21.8)	P-value=0.236
Employment status				
Unemployment/Student	145(35.9)	93(64.1)	52(35.9)	χ^2=10.376,
Employment/Self-employed	259(64.1)	203(78.4)	56(21.6)	df=1, P-Value=0.002
Level of income				
None	120(29.7)	77(64.2)	43(35.8)	
<5000	54(13.4)	42(77.8)	12(22.2)	χ^2=19.883,
5001-10000	87(21.5)	56(64.4)	31(35.6)	df=4,
10001-15000	71(17.6)	62(87.3)	9(12.7)	P-Value=0.001
>15000	72(17.8)	59(81.9)	13(18.1)	
Nationality				
Kenyans	398(98.5)	290(72.9)	108(27.1)	F.E.T.=0.153
Non-Kenyans	6(1.5)	6(100.0)	0 (0.0)	

***KEY: F.E.T. = FISHER'S EXACT TEST**

4.6.2 Sexual behavioural characteristics of study participants associated with utilization of STI health care services

The study found that utilization of STI healthcare services was significantly associated with the following participants sexual behavioural characteristics: gender (F.E.T; p=0.022), total number of sexual partners the past 12 months (χ^2=4.074; df=1; p=0.052), having vaginal sex (χ^2= 4.626; df=1; p=0.040), giving gifts/money in exchange for sex (χ^2=8.278; df=2; p=0.015) and ever contracted STI (χ^2=55.313; df=1; p<0.000). On the other hand, the study did not find a significant association between utilization of STI healthcare services and the following participants sexual behavioural characteristics: roles during sexual activity (χ^2=2.014; df=2; p=0.374), sex with another person during the past 12 months (χ^2=2.593; df=1; p=0.114), having anal sex (χ^2= 3.442; df=1; p=0.070) , oral sex (χ^2= 0.034; df=1; p=0.901) and mutual masturbation (χ^2= 0.781; df=1; p=0.400 and receiving gifts/money in exchange for sex (χ^2=2.869; df=2; p=0.247) (Table 4.19).

Table 4.19: Association between sexual behavioral characteristics of study participants and the utilization of STI healthcare services

Characteristics	Total (n=404) n(%)	STI utilization Yes (n=296) n(%)	STI utilization No (n=108) n(%)	Significant Test
Gender				
Man	366(90.6)	264(72.1)	102(27.9)	
Transgender woman	13(3.2)	11(84.6)	2(15.4)	F.E.T.= 0.022
Intersex	17(4.2)	17(100.0)	0(0.0)	
Non-conforming	8(2.0)	4(50.0)	4(50.0)	
Roles during sexual activity				
Top(Insertive)	192(47.5)	139(72.4)	53(27.6)	χ^2=2.014,
Bottom(Receptive)	51(12.6)	34(66.7)	17(33.3)	df=2,
Versatile (Both insertive & receptive)	161(39.9)	123(76.4)	38(266)	P-Value=0.374
Sex with whom during the past 12 months				
Men	224(55.4)	157(70.1)	67(29.9)	χ^2=2.593,
Both men and women	180(44.6)	139(77.2)	41(22.8)	df=1, P-Value=0.114
Total number sexual partners during the past 12 months				χ^2=4.074
Only 1	46(11.4)	28(60.9)	18(39.1)	df=1,
>1	358(86.6)	268(74.9)	90(25.1)	P-Value=0.052
Type of sex				
Vaginal	170(42.1)	134(78.8)	36(21.2)	χ^2=4.626, df=1, P-Value=0.040
Anal	378(93.6)	281(74.3)	97(25.7)	χ^2=3.442, df=1, P-Value=0.070
Oral	115(28.5)	85(73.9)	30(26.1)	χ^2=0.034, df=1, P-Value=0.901
Mutual masturbation	79(19.6)	61(20.8)	18(16.5)	χ^2=0.781, df=1, P-Value=0.400
Gets gifts/money in exchange for sex				
Yes, all the time	38(9.4)	31(81.6)	7(18.4)	χ^2=2.869,
Yes, sometimes	192(47.5)	144(75.0)	48(25.0)	df=2,
No	174(43.1)	121(69.5)	53(30.5)	P-Value = 0.247
Gives gifts/money in exchange for sex				
Yes, all the time	16(4.0)	11(68.8)	5(31.3)	χ^2=8.278,
Yes, sometimes	139(34.4)	114(82.0)	25(18.0)	df=2,
No	249(61.6)	171(68.7)	79(31.3)	P-Value=0.015
Ever contracted STI				χ^2=55.313, df=1,
Yes	175(43.3)	161(92.0)	14(8.0)	P-Value=0.000
No	230(56.7)	135(59.0)	94(41.0)	

4.6.3 Association between study participants' Knowledge score and the utilization of STI healthcare services

The study didn't find a significant associated relationship between participant knowledge on STI and the utilization of STI healthcare services (χ^2=0.011; df=1; p=1.000) (Table 4.20).

Table 4.20: Association of study participants' Knowledge score and utilization of STI health care services

Characteristics	Total (n=404) n(%)	STI utilization		Significant test
		Yes (n=296) n(%)	No (n=108) n(%)	
Knowledge score				χ^2=0.011;df=1;
<12	200(76.8)	147(73.5)	53(26.5)	p=1.000
≥12	204(23.2)	149(73.0)	55(27.0)	

4.6.4 Challenges participants face in their general life or when they are seeking sexual healthcare services

On the question about the challenges the participants or other MSM were facing in their general life or when seeking sexual health care services, as shown in Table 4.21 below, more than half percent of the participants (53.5%;216) stated that they had faced stigma and discrimination, had been abused(physically/ sexually/ verbally/ blackmailing), (30.2%;122), health issues/lack of treatment (12.4%;50), psychological issues (5.7%;23), conned or betrayed (7.9%;32), lack of sensitization among HCWs about MSM (4.0%;16), economic hardship (3.2%;13), negative effects on their sexual relationships (5.7%;23), disclosure issues due to societal norms or culture (8.4%;34) and legal issues (6.7%;27). Regarding if they had disclosed that they were MSM to their family members, it was

found out that majority had not disclosed (79.0%; 319) and a few had disclosed (21.0%; 85).

Table 4.21: Challenges participants face either in their general life or when utilizing sexual healthcare services

Characteristics	Total(n=404)	
	N	%
Abuse(Physical, sexual, verbal, blackmail		
Yes	122	30.2
No	282	69.8
Stigma and discrimination		
Yes	216	53.5
No	188	46.5
Psychological		
Yes	23	5.7
No	381	94.3
Conned/Betrayed/sexual partners stealing		
Yes	32	7.9
No	372	92.1
Ignorance/lack of Sensitization about MSM		
Yes	16	4.0
No	388	96.0
Economic hardship		
Yes	13	3.2
No	391	96.8
Health issues/Lack of treatment		
Yes	50	12.4
No	354	87.6
Negative effects on sexual relationships		
Yes	23	5.7
No	381	94.3
Disclosure issues due to society norms/culture		
Yes	34	8.4
No	370	91.6
Disclosed to their family that they are MSM		
Yes	85	21.0
No	319	79.0
Legal issues		
Yes	27	6.7
No	377	93.3

4.6.5 An association between participants' challenges with the utilization of STI healthcare services

The study did further analysis to determine whether there was a significant relationship between participants'challenges and utilization of STI healthcare service or not. The study established no significant association between utilization of STI health care services and the following participant's challenges: abuse (χ^2=2.263; df=1; p=0.113), stigma/discrimination (χ^2=0.539; df=1; p=0.500), psychological issues (χ^2=0.171; df=1; p=0.808), conned (χ^2=1.131; df=1; p=0.310), lack of sensitization of health workers (F.E.T; p=0.575), economic hardship (F.E.T; p=1.000), health issues (χ^2=0.311; df=1; p=0.609), negative effects on sexual relationship (χ^2=1.914; df=1; p=0.223), disclosure in general (χ^2=2.742; df=1; p=0.109), disclosure to family (χ^2=0.006; df=1; p=1.000) and legal issues (χ^2=0.010; df=1; p=1.000) (Table 4.22).

Table 4.22: Participants' challenges associated with the utilization of STI healthcare services

Characteristics	Total (n=404) n(%)	STI utilization Yes (n=296) n(%)	STI utilization No (n=108) n(%)	Significant Test
Abuse (Physical/sexual/verbal/blackmail)				χ^2=2.623,
Yes	122(30.3)	96(78.7)	26(21.3)	df=1,
No	282(69.7)	200(70.9)	82(29.1)	P-Value=0.113
Stigma/discrimination				χ^2=0.539,
Yes	216(53.4)	155(71.8)	61(28.2)	df=1,
No	188(46.6)	141(75.0)	47(25.0)	P-Value=0.500
Psychological issues				χ^2=0.171,
Yes	23(5.7)	16(69.6)	7(30.4)	df=1,
No	381(94.3)	280(73.5)	101(26.5)	P-Value=0.808
Conned/betrayed/sexual partners stealing				χ^2=1.131,
Yes	32(7.9)	26(81.3)	6(18.8)	df=1,
No	372(92.1)	270(72.6)	102(27.4)	P-Value=0.310
Ignorance/lack of sensitization				
Yes	16(3.9)	13(81.3)	3(18.8)	F.E.T.= 0.575
No	388(96.1)	283(72.9)	105(27.1)	
Economic hardship				
Yes	13(3.2)	10(76.9)	3(23.1)	F.E.T.= 1.000
No	391(96.8)	286(73.1)	105(26.9)	
Health issues/lack of treatment				χ^2=0.311,
Yes	50(12.3)	35(70.0)	15(30.0)	df=1,
No	354(87.7)	261(73.7)	93(26.3)	P-Value=0.609
Negative effects on sexual relationship				χ^2=1.914,
Yes	23(5.7)	14(60.9)	9(39.1)	df=1,
No	381(94.3)	282(74.0)	99(26.0)	P-Value=0.223
Disclosure in general				χ^2=2.742,
Yes	34(8.4)	29(85.3)	5(14.7)	df=1,
No	370(91.6)	267(72.2)	103(27.8)	P-Value=0.109
Disclosure to family				χ^2=0.006,
Yes	85(21.0)	62(72.9)	23(27.1)	df=1,
No	319(79.0)	234(73.4)	85(26.4)	P-Value=1.000
Legal issues				χ^2=0.010,
Yes	27(6.7)	20(74.1)	7(25.9)	df=1,
No	377(93.3)	276(73.2)	101(26.8)	P-Value=1.000

4.6.6 Participants' facilitators to the utilization of STI healthcare services

4.6.6.1 Health system-related factors

4.6.6.1.1 Sensitization of healthcare workers

Health care worker's attitudes towards care for MSM have widely been documented as significant barriers to accessing sexual and reproductive health services for this key population's community. To address the HCWs' attitude therefore sensitization of HCWs on the provision of MSM-focused health services is recommended. In Nairobi, MSM site organizations have been training HCWs in public hospitals as a way of strengthening their skills to improve health care services for MSM in the county. One of the providers from the MSM sites when reporting on how they undertake the sensitization said:

> *Yes we usually do sensitization through our County AIDS & STI Coordination officers (CASCO) then there are sub county ART coordinators so we go with them to the facilities especially the public facilities. (HCW MSM provider site 2).*

Also, acknowledging the importance of sensitization in providing proper care to the MSM community a health provider from a public facility reported that:

> *Yes, we have been trained and sensitized by NGOs like University of Maryland (SWOP and Afya Jijini).* (*HCW Public health facility 2).*

4.6.6.1.2 STI guidelines updated

The study wanted to know whether the current STI guidelines have been updated to incorporate some specific STIs associated with MSM such as anorectal STI. In acknowledging the milestone, one of the participants noted that:

> *If you look at the latest national guidelines that came out, i think it was in 2019, in that guideline they have incorporated some of the STI like anal discharge in*

MSM. Previously they were not there. The difference came when we complained that MSM were being left out of the STI guidelines.

Also, using syndromic management the health care providers stated that if it's used as illustrated, majority of the patients could recover. This was reported by one of the participants who said that:

If you follow the algorithm as indicated about 99% will recover from the STIs, so the ones we refer are the ones that don't respond to the treatment that we offer and they are very few cases. (HCW MSM provider site 1).

4.6.6.1.3 Referrals and linkages

The study established that public health facilities and MSM health provider sites have networked with other health facilities that offer services that they don't offer for instance laboratory tests, recurring cases of STI and surgical interventions for genital warts. One of the HCWs reported that:

For genital warts that require surgical intervention when we have the funds we coordinate with Kiambu county referal hospital. That is where we take them because we don't have a theatre, surgery is done and then they come back. We have also partnered with other several facilities such as: STC CASINO, Mama Lucy and Mathare referral. For example, Mathare referral helps us when it comes to investigations because someone comes with a case we really need investigations and we partner with Mathare referal because they run alot of investigations. (HCW from MSM provider site 3).

What was also noted is that when MSM are linked to a public health facility by the peer leaders they did not have disclosure challenges. One of the HCWs reported:

> *We have formed a link between the MSM provider site and our site. When the peer educator enters my room he already knows the MSM issues so for me it's just to clarify the problem the MSM have and then from the experience I have with them they are very comfortable and don't have any problem when you ask because they know their problem. (HCW from public health facility site 1).*

4.6.6.1.4 MSM provider sites offering both preventive and curative services.

MSM provider sites being able to provide both the preventive and curative services complementing services offered by the public health facilities. It also gives the MSM an alternative place to seek STI healthcare services apart from the public and private health facilities. The study wanted to know whether this was happening for the facilities which participated in the study.One of the HCWs during the key informant interview reported that:

> *Mostly we offer preventive and curative services i.e. Preventive being the method that will limit the number of STIs you get among our population which includes the use of condom, lubricants and safe sex practices. In the treatment of STIs we usually use the government guidelines i.e. the STI treatment algorithm which use the syndromic approach, and teach our client on health education sessions. (HCW from MSM provider site 1).*

In addition, the HCW also stated that the MSM health provider sites have outreaches at the hotspots where they test for HIV among key populations and also use the syndromic algorithm to screen and treat STIs. This is what the HCW said:

Yes, we usually hold outreaches at the hotspots; actually according to our program we have 30% within the site and 70% outreach. Mostly it's HIV and screening of STIs, for syphilis if the kits are available we test but mostly we use syndromic algorithm to treat the STIs. (HCW from MSM provider site 1).

4.6.6.2 Legal systems

The MSM health provider sites do work with different organization to handle MSM legal issues such as Kenya Sex Workers Alliance (KESWA), FIDA, and Gay Lesbian Transgender coalition and advocacy teams. They handle MSM cases in court which is as a result of their rights being violated such as those who are beaten, raped or mistreated by their clients. They do also enlighten the lesbian, gay, bisexual, transgender, intersex, queer or questioning and asexual (LGBTIQA) community on legal issues. Further they also sensitize Police around their area about the key population. This was confirmed by the (*HCW from MSM provider site 3)* who said that:

Every year there is a budget allocated to sensitize police so we have sensitised police around this area. Also our paralegals have been trained to talk to the policemen and they are the ones who go to the police station if a key population has any issue to sort it out, which makes it easy.

Table 4.23 below illustrates a summary of MSM facilitators to the utilization of STI healthcare services.

Table 4.23: Participants' facilitators to the utilization of STI healthcare services

Theme	Subtheme	Key emerging issues
Health system factors	Sensitization of HCWs	(i)Sensitized HCWs on MSM focused services.
	Updated STI guidelines	(i)STIs guidelines updated to manage specific STIs associated with MSM
	Referrals	(i)Referrals, linkages: Peers accompanying MSM to health facilities.
	MSM health provider sites	(i)Ability of MSM health provider sites to offer both preventive and curative services on site and at the hotspots
Legal system factors	Legal support by key stakeholders	(i)Court representation (ii)Legal education and sensitization for LGBTI community (iii)Law enforcement officers sensitization on the LGBTI human rights

4.6.7 Participants' Barriers to utilization of STI health care services

Barriers were categorized into 4 themes: health system factors, MSM individual factors, referral challenge and political system.

4.6.7.1 Health system factors

4.6.7.1.1 Negative HCWs attitude

Stigma towards MSM was reported to be high especially among the HCWs who were not sensitized. They openly discriminated and stigmatized MSM patients when seeking health services. One of the HCWs during the key informant interview said:

> *Apart from the HCWS who have been trained and sensitized; with the other health care providers there is that stigma about MSM because they are feeling that how can one be MSM, actually there is that judgmental perspective. Even other clinicians say that "usiniletee"(*don't bring*) such and such a person, so it feels bad, because there is a reason they come to that facility. (HCW Public health facility 1).*

Another one also explained:

> *Also I had previously worked in another public health facility. There is one MSM who encountered a Community Health Volunteer (CHV) at the Comprehensive Care Clinic, and he identified himself as LGBTI. The CHV turned everywhere calling people "kujeni muone".yes "kujeni muone" (come and see) here is an MSM around, yes that creates stigma. (HCW Public health facility 2).*

4.6.7.1.2 Infrastructure-Lack of privacy

Participants reported that in most public health facilities, patients that are seen there are assumed to be heterosexual. Besides, in most of the facilities there are no youth friendly rooms. As such, effeminate MSM who visit these facilities stand out and they are easily recognized and pointed at. One of the participants mimicking the murmurs that go on in such instances reported that:

Yes, "ona" look at these people, how are they behaving, how can a man want to become a woman). What kind of men are these who behave as women? If the clinician does not intervene quickly the place might turn chaotic. (HCW Public health facility 1).

Most of the participants therefore felt there is a need for MSM to understand the community and avoid behaviors that would create attention to them in the midst of an extremely homophobic community. Moreover, some participants felt having a youth-friendly centre within public health facilities will be helpful as the MSM can also receive their services in those centers and away from the public. One of the clinicians interviewed remarked that:

MSM age it's like from 20 years to around 35 years. Yes I think we need a youth-friendly service centre; So that the Key Populations can be incorporated in it. We can have a room which is youth-friendly. Whoever gets there it doesn't matter which service you give, it should be confidential between the client and the clinician. Even when we look at clients who are on treatment they are still MSM. (HCW Public health facility 1).

4.6.7.1.3 Drugs stockouts and inadequate laboratory services

There is a drug stockout and inability for the laboratory tests to be done in both the public health facility and the MSM provider sites. However, for the public facilities they rely on Kenya Medical Supplies Authority (KEMSA); of which if drugs are out of stock the clients are advised to go and purchase from private drug stores. For laboratory tests, they are often referred to other facilities. Not all patients can go to another facility hence they remain untreated. For the MSM health provider sites have partnered with other

stakeholders who fund their drug supply or source from other budgets and stakeholders. One of the participants explained:

> *Yes, there is a gap a very big gap for the Key Population. Even in terms of drugs and referrals, because a Key Population will come to you, you prescribe drugs when they get to pharmacy they are being told they are out of stock so they need to go and buy. So they either end up buying it/not and they stay with the same problem. In terms of percentage, I can say among the patients we refer, 30% can go and 70% are not able to go. (HCW Public health facility site 1).*

Another from one of the MSM sites also said:

> *Okay if we depend on KEMSA a bigger percentage of the time drugs will be out of stock that is if we decide to depend on KEMSA but i think for our case, stock has not been an issue because we have a partner who just funds drugs alone. (HCW MSM provider site 3).*

4.6.7.1.4 Encounter with a new health care provider

When the MSM are used to a certain health worker and with time if the HCW leaves the facility, it becomes a challenge to trust a new HCW or open up about their sexual and reproductive health issues. Similar observations have also been made regarding MSM not disclosing their health issues when they are referred to other health facilities. A participant noted:

> *You use the minimal information they give you. The next visit you find they are able to open up a bit and you continue you don't chase them away, with time they are free and they report that the firstt time they were scared. When you ask why?*

They say that they were used to another health worker but because of staff turnover they find a new health worker so it takes time before they open up. (HCW from public health facility 2).

4.6.7.2 MSM individual Factors

4.6.7.2.1 Internal Stigma

Internal stigma causes a stigmatized person feel a certain way about him or herself as a result of experiencing or anticipating external stigma. In health care facilities because same sex behavior is illegal in Kenya, MSM most of the time do not disclose their sexual orientation for fear of being turned away. As a result they continue suffering silently because it makes it difficult for the health care worker to come up with a diagnosis. One of the HCW reported:

Even when they come they don't say they are MSM. They give complaints that are baseless and I end up telling them to bring me their partner for them to be treated together but most of them are never willing to come with their partners. If they have an anal complaint it is easy for me to pick up, I ask if they usually have anal sex. Those with oral STIs it's hard for me to pick up because even from the triage when they are asked what their problem is and they say it's the throat they are sent to the general clinician and they will get the wrong treatment but if they say it's genital STI they will definitely be sent to the STI clinic. Rarely will oral STIs come to the STI clinic unless they have both genital and oral complains (HCW from public health facility site 2).

However in another public health facility where there was a link there were no disclosure issues as MSM were being escorted by the peer leader.

We have formed a link between the MSM provider site and our site. When the peer educator enters my room he already knows the MSM issues so for me it's just to clarify the problem the MSM have and then from the experience I have with them they are very comfortable and don't have any problem when you ask because they know their problem. (HCW from public health facility site 1).

4.6.7.2.2 MSM characteristic

4.6.7.2.2.1 Mannerisms

Gender norms and inequalities including expectations regarding sexual behavior are the root cause of the stigma and discrimination the MSM face. In the public health facilities, patients at the site mostly are heterosexual. When MSM who have feminine gender expression visit the site, they are easily recognized and pointed at. One of the HCW mimicking the murmurs that go on reported that:

Yes, "ona" look at these people, how are they behaving, how can a man want to become a "woman"?. what kind of men are these who behave as women. (HCW from public health facility site 1).

Most of the participants therefore felt there is need for MSM to understand the community and avoid behaviors that would create attention to them in the midst of an extremely homophobic community.

4.6.7.2.2.2 Party goers

Also MSM are party goers because that is where they meet their potential clients. Those who are on medication for STIs may refrain from carrying the treatment drugs to avoid potential stigmatized from their clients. Hence single dose drugs work best for them to avoid resistance to the antibiotics. This was reported during the key informant interview.

MSM is a dynamic population and it is difficult to handle them when it comes to them following instructions about how to take the drugs considering 1: they are party goers because this is their point of connection; that has been a challenge and also there is a lot of stigma when a client is spotted by a partner taking medication they raise a lot of issues so they tend to leave that medication home as they head to parties especially if the partner is new to them.(HCW MSM provider site 1).

As previously mentioned above concerning MSM regarding non-adherence to prescribed HIV/STI medication dosage, this behaviour could potentially lead to resistance, as revealed in a study conducted in Malaysia. The study explored the factors contributing to incorrect use of antibiotics which indicated that such misuse leads to antibiotic resistance, resulting to increasing morbidity and mortality rates, and reduced efficiency of health delivery services.The researchers recommended that knowledge about the risks associated with misuse of antibiotics is the essential for addressing this issue (Wong et al., 2021). This non adherence among MSM may be a contributing factor to elevated incidences of HIV/STIs.

4.6.8.3 MSM health provider site referral challenge- External stigma

Discrimination stemming from external stigma results in unfair and incongruent treatment for certain individuals. For example, a person identifying as MSM may face denial of treatment by HCWs or be segregated into a separate waiting area from other patients. During the key informant interview this is what one HCW reported:

Initially, I used to give them referral letters but at some point I stopped giving them because some of the facilities will stigmatize them based on where the

referral is coming from i.e. our site we are associated with being homosexuals. Most of the clients used to report a lot of stigma especially from faith based organization and public facility.

For instance, one of the MSM who I referred back in 2018 actually was HIV-positive; he walked with his referral for more than six months before we decided to start our ART program. The reason was he kept coming back; we had not started our ART program clinic by then. The first place he had gone he was told that he was HIV- positive because he was a homosexual, so he did not wait for any other second person to attend to him he just walked away. As much as we are trying to fight stigma all MSM sites I would wish them to be called men's wellness centres instead of MSM sites. (HCW from MSM provider site 1).

4.6.8.4 Political system

MSM to be supported politically it's not easy because the community is homophobic and the politician will not like to lose their political mileage by supporting what his or her community is against. One of the HCWs from a public health facility stated:

Politically nothing can be done, even if the politician went to church or the society and talked to people to support MSM they fear losing support of the people because it's a heterosexual society. Most of the time the politician will support what the community wants so as not to lose votes. So politicians will consider what to support if they are getting political mileage they will support it. It's more of societal perspective. (HCW from public health facility site 2).

Table 4.24 illustrates a summary of participants' barriers to the utilization of STI healthcare services.

Table 4.24: Participants' barriers to the utilization of STI health care services

Theme	Subtheme	Key emerging issues
Health system factors	Negative attitude of HCWs	(i) Stigma and discrimination of MSM by unsensitized HCWs at public health facilities.
	Infrastructure	(i) Lack of private, youth friendly clinics especially in public health facilities
	Drugs stock out and inadequate lab services	(i) MSM don't get drugs and right diagnosis hence stay with same problem (ii) Over reliance on one supplier e.g. KEMSA that if they fail to restock drugs are out of stock (iii) Inability of some patients to facilities they have been referred to for further management.
	MSM encounter with new HCWs in new facility or due to staff turnover	(i) MSM not able to disclose their health issues to new HCWs
MSM individual factors	Internal stigma (self-stigmatization)	(i) Not able to disclose their sexual orientation to HCWs and their family members.
	MSM characteristics/ Mannerisms Party goers	(i) Effeminate MSM who draw attention from the heterosexual community. (ii) MSM not carrying medication to parties while anticipating to get their potential clients.
Referral challenges	External stigma	(i) MSM friendly clinics fear giving official referral letters to MSM to other health facilities as they may be stigmatized and discriminated based on where they have been referred from.
Political system	Lack of support of MSM from the politicians	(i) Fear of supporting MSM in the community for fear of losing political mileage.

4.7 Study Participants characteristics independently associated with participant's utilization of STI healthcare services.

When the study participants' significant variables were regressed, the multivariant modeling revealed a significant association between participants' utilization of STI healthcare services and participants who had ever contracted STI compared to the ones who had never contracted STI (adjusted odds ratio aOR=6.58, 95% CI 3.36-12.82). Additionally, participants' utilization of STI healthcare services was associated with the

privacy they had when visiting the MSM-friendly health facilities compared to visiting a public or a private health facility (aOR=1.86 (1.02-3.37). Conversely, the study did not find any significant association between utilization of STI health care services and age, employment status, level of income, gender, total number of sexual partners, transactional sex and visiting a public or private healty facility (Table 4.25 below).

Table 4.25: Study Participants characteristics independently associated with participants' utilization of STI healthcare services.

Characteristics							95% C.I.(B)	
	B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Age bracket Reference 18-24yrs								
25-29	0.038	0.367	0.010	1	0.919	1.038	0.505	2.134
30-34	-0.125	0.562	0.049	1	0.824	0.883	0.294	2.655
35-39	0.517	0.788	0.430	1	0.512	1.677	0.358	7.860
40-44	-18.329	12201.638	0.000	1	0.999	0.000	0.000	
45>	1.202	0.845	2.026	1	0.155	3.328	0.636	17.419
Employment status Reference (Not employed)								
Employed/self employed	-0.802	0.550	2.127	1	0.145	0.449	0.153	1.318
Level of income Reference (No income)								
<5000	0.273	0.603	0.205	1	0.651	1.314	0.403	4.284
5001-10000	0.843	0.600	1.975	1	0.160	2.323	0.717	7.527
10001-15000	-0.221	0.663	0.111	1	0.739	0.802	0.219	2.940
>15,000	0.216	0.712	0.092	1	0.762	1.241	0.307	5.006
Gender Reference (Man)								
Transgenderwoman	-0.370	0.857	0.186	1	0.666	0.691	0.129	3.705
Intersex	-20.296	8700.440	0.000	1	0.998	0.000	0.000	
Non-conforming	0.216	0.822	1.117	1	0.291	2.383	0.476	11.923
Total Number of sex partner Reference (1 sexual partner)								
>1	-0.403	0.392	1.057	1	0.304	0.668	0.310	1.441
Pays money/offers gifts in exchange for sexual intercourse Reference (Doesn't pay)								
Pays money/offers gifts in exchange for sexual intercourse sometimes	-.332	0.712	0.217	1	0.641	0.718	0.178	2.896
Pays money/offer gifts in exchange for sexual intercourse all the time	0.168	0.680	0.061	1	0.804	1.183	0.312	4.484
Ever contracted STI	1.884	0.340	30.624	1	0.000	6.577	3.375	12.815
NGO	-0.562	0.354	2.514	1	0.113	0.570	0.285	1.142
MSM services provided	-0.036	0.357	0.010	1	0.919	0.964	0.479	1.940
Privacy	0.618	0.304	4.128	1	0.042	1.855	1.022	3.365
Visited public health facility	-18.710	40191.665	0.000	1	1.000	0.000	0.000	0.000
Reference had not visited a public health facility								
Satisfactory	-19.144	40191.665	0.000	1	1.000	0.000	0.000	0.000
Unsatisfactory	-19.932	40191.65	0.000	1	1.000	0.000	0.000	0.000

4.8 Distribution of Coefficients

Distribution of coefficients showed the relationship between the independent variable (knowledge score) and its influence on utilization of STI healthcare services. From Table 4.26, there was a negative relationship between knowledge score of participants and utilization of STI health care services ($\beta = -0.024$).

From the regression model the following regression equation is derived:

$Y=\text{Constant}+ (\text{Beta Coefficient}*X1) +\varepsilon$

$Y = -0.997+ (-0.024*X1) +\varepsilon$

Where:

X1= Knowledge score of participants

ε = Error Term

Constant = -0.997 shows that if the factors are rated as zero, utilization of STI health care services would change by a factor of -0.997. The independent variables have varying degree of Impact on utilization of STI health care services depending on beta coefficients values. The distribution of coefficients is illustrated in Table 4.26 as follows.

Table 4.26: Distribution of Coefficients

Variables in the equation

	B	S.E	Wald	df	Sig	Exp B
Knowledge score	-0.024	0.225	0.011	1	0.917	0.977
Constant	-0.997	0.158	39.900	1	0.000	0.369

**a variable entered on Step 1: knowledge Score*

4.8.1 Testing of hypothesis

The hypothesis was tested at a significance level of 0.05. The P value in the distribution of coefficients in table 4:26 was greater than 0.05 and it implied that there was no significant evidence against null hypothesis as illustrated in Table 4.27 below.

Table 4.27: Hypotheses Testing

Hypothesis statement	p Value	Implication	Result
H0 1: There is no significant relationship between MSM knowledge levels regarding STIs and utilization of STI health care services in Nairobi City County.	0.917	P value is greater than 0.05	Null hypothesis is accepted

CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section presents discussions, conclusions and recommendations of the study based on the study objectives.

5.2 Discussion

This section discusses the study and past study findings in relation to the study objectives as follows: determining MSM's knowledge levels regarding STIs, determining the proportion of MSM who seek health care services, places where MSM seek STI health care services in relation to the utilization of STI healthcare services and factors influencing the utilization of STI healthcare services.

5.2.1 MSM knowledge levels regarding STIs

Comprehension and awareness of STIs are fundamental in mitigating their prevalence, especially among populations at an elevated risk. Nevertheless, the findings of this study indicated that participants exhibited a low level of knowledge concerning STIs.

Notably, participants who identified HIV as one of the STIs were fewer in contrast to those who recognized Gonorrhoea and Syphilis. It's anticipated that all the participants should be aware of HIV due to its incurable nature and global impact (UNAIDS, 2020). This discrepancy among some of the participants might be attributed to the fact that individuals on antiretroviral drugs often appear healthy, thus altering the perceptions of HIV/AIDs from a highly lethal condition to a chronic and potentially controllable disease. Furthermore, the widespread availability and accessibility of antiretroviral therapy has significantly reduced mortality and opportunistic infections associated with HIV/AIDS (Oguntibeju, 2012). This gap of recognizing HIV as one of the STIs among

certain participants raises concerns, as progress in controlling the spread of HIV could be compromised. Health care workers must continue to emphasize to STI patients and other people in the society that HIV is incurable.

Similarly, other studies have revealed similar findings. For instance, research involving sixty racially–and ethnically different MSM and transgender women reported low levels of STI knowledge among the participants (Balán et al., 2019b). Likewise, a study carried out among fifty at-risk MSM in Boston, USA, discovered a lack of knowledge about the signs and symptoms of STDs among MSM (Mimiaga et al., 2007). However, it is essential to note that the procedures of STI knowledge used on the above mentioned studies significantly differ from those employed in this study. There is a need to emphasize the importance of educating participants about STIs, as some studies have demonstrated that informed patients are more likely to seek healthcare services compared to those who are not educated on the subject (O'Donnell O, 2018).

In this study, some participants reported of engaging in oral sexual intercourse. Similarly, a study conducted in Nigeria revealed the prevalence of oral sex among MSM and transgender women (TGW) (Robbins et al., 2020). The study also found the correlation between oral sex and an increased incidence of oropharyngeal STIs. Hence, it's fundamental to promote the use of condoms and pre-exposure prophylaxis among participants to prevent oral STI. Additionally, participants are strongly encouraged to undergo at least annual screening of extra-genital sites (rectum and pharynx) (Kimberly & Gail 2015).

This study did not reveal statistical significant association between knowledge of the MSM and their age. Contrary, to the findings of this study, a study that was conducted among MSM in Ireland reported that participants who were aged 18-24 years had lower knowledge about STIs compared with the older MSM (Carey et al., 2021b). Low knowledge about STIs among the youth could be brought about by government policies and laws that criminalize key population behaviours and by education and health systems that pay no consideration to or reject them (WHO, 2016). Additionally, participants in this study who had tertiary education were three times likely to have a higher knowledge score compared with the participants who had primary education. Consistent with our findings is a study which was conducted in Melaka Malasyia; they found that participants who were studying in a degree program were two times likely to be knowledgeable about STIs than the one who were not (Mansor et al., 2020).

Further, this study revealed that sexual behaviour of the study participants in terms of sex with which person, bisexual men had higher odds of knowledge about STIs compared to gay men. These findings are contrary to (Daneback et al., 2008; Feinstein & Dodge, 2020) who reported that bisexual men had limited availability of culturally sensitive education materials or health information that is specifically targeted to their needs. However, worth noting is that their settings are different from our Kenyan context. Also, the majority of the participants had several sexual partners and they had low knowledge. Contrary to our findings, a study conducted among MSM in the UK revealed that men who possessed awareness of STIs and had many sexual partners exhibited different patterns. The authors of that study proposed that, beyond knowledge, behaviours were influenced by a multifaceted range of psychological and eco-social factors (Wayal et al.,

2019). Still consistent with the UK study, is a study which was conducted among 772 subjects in Estonia. They found that higher knowledge scores were not associated with lower HIV infection rates (Parker & Rüütel, 2010). This affirms that while knowledge is a crucial factor of behaviour modification models, by itself it is often insufficient to effect behaviour modification. Models such as the Information-Behavioural Skills Model suggest that to reduce risk of STI infection, individuals would need not only knowledge about STIs, but also inducements to avert it and the skills needed to implement risk reduction actions, such as getting frequently tested for STIs (Balán et al., 2019a).

5.2.2 Proportion of MSM who seek healthcare services

Almost three-quarters of the participants had ever sought sexual healthcare services in their life time and during the last 12 months respectively. However, its not good enough as more than three-quarters of the participants had several sexual partners. There is a need for MSM to be encouraged to have at least quarterly STI screening. Furthermore, comparing our study with the (Ministry of Health & National AIDS Control Council, 2016) which had reported that MSM had a low service coverage among the key population which was at 47%, there is an improvement. The majority of the MSM had gone for routine STI screening and during the past 12 months more than half of the participants had gone for HIV testing. Overall, 98.8% of the participants knew their HIV status. They had voluntarily gone for the testing except for a few whom the health care providers initiated or for those who were bisexual, their sexual partners initiated because of antenatal clinic attendance. MSM are part of the key population, so the findings of this study are in line with the HIV/AIDS Joint United Nations program. They had proposed that by 2025, 95% of people living with HIV ought to be aware of their HIV

status (Heath et al., 2021). Contrary to findings in this study, a study conducted in Natal reported a lower frequency of HIV testing (62.6%) among younger MSM (Bay et al., 2019) and in Myanmar in Southeast Asia YMSM prevalence estimates of lifetime HIV testing was also found to be (60.6%) (Pham et al., 2017).

5.2.3 Places where MSM seek STI healthcare services

More than half of the participants reported to have sought or could seek STI health care services from NGOs. This was because of the following reasons: Convenience, provision of MSM services, privacy and staff caring. During an in-depth interview, the HCWs from the MSM site also accepted that MSM visited their sites because the staff were not judgmental and they were friendly. Similar to the results of this study, a cross-sectional study conducted in Southeast Asia Myanmar among young men who are having sex with men (YMSM) indicated a higher percentage (80%) of participants who sought services from NGOs stating that, it was due to confidentiality and non -discriminatory attitudes from the health care workers (Pham et al., 2017). The proportion of YMSM in Southeast Asia Myanmar who sought services from NGOs was higher compared to our study. Fewer MSM in our study could be as a result of MSM trying to conceal their sexual orientation by preferring to go to either a public or private health facility rather than going to MSM provider sites. Participants who reported to have ever visited a public health facility for sexual health care services were less than half and a third of them had stated that they were satisfied with the services they had received. Participants who had stated that they were satisfied with the healthcare services might have been occasioned by the fact that some of the healthcare workers had been sensitized to work with MSM as it was reported in both the public facility and MSM friendly site in this study.

5.2.4 Factors influencing the utilization of STI healthcare services among MSM

5.2.4.1 Social-demographic characteristics

In this study the social-demographic characteristics of the participants were not significantly associated with utilization of STI healthcare services. Contrary to the findings; a study conducted among 383 self-identified gay men in San Francisco- found that, younger men and the once who had a higher income tended to seek HIV/STI medical care services more often than older men and the ones with a low income (Green et al., 2018). Furthermore, contrary to the findings of this study, another study conducted in Kenya among 353 MSM which was evaluating factors that influenced the utilization of wellness center services among MSM; they found that marital status of MSM was a significant influence on the uptake of screening for STIs among married MSM compared to the MSM who were ever married (divorced/separated/widowed) (Kong'ani., et al., 2016).

5.2.4.2 Sexual behavioral characteristics of the participants

In this study, participants who had ever contracted STIs demonstrated a significant association with the utilization of STI healthcare services compared to MSM who had never contracted STIs. This correlation is not surprising, given that the presence of symptomatic STIs might have prompted them to seek the STI health care services. On the contrary, a research conducted in South Africa, specifically in KwaZulu Natal investigating factors influencing men's decisions to utilize sexual reproductive health services; indicated that individuals with STIs may not promptly seek such services unless they perceived the illness to be severe. This delay was attributed to health care

workers exhibiting a negative attitude and stigmatizing the men with STIs (Nyalela et al., 2023).

5.2.4.3 MSM knowledge levels regarding STIs associated with utilization of STI healthcare services

When knowledge assessment on STIs was done on participants, more than half of the participants had scored less than half of the questions that had been administered; indicating limited knowledge about STIs among the participants. However, the knowledge score did not have any significant effect on utilization of STI health care services. Worthy noting is that the majority of participants in our study were having anal sexual intercourse and they knew that they could be infected with STIs through anal sexual intercourse. We noted that almost three-quarters had sought STI health care services. Contrarly with this study, a study conducted in Kenya, specifically Kisumu, found that MSM who reported having anal sex were not as much likely to uptake STI screening services. Therefore, there is a need for the participants to be educated about anal sexual intercourse as a risk to contracting STIs, hence the need to be screened (Kong'ani et al., 2016).

5.2.4.4 Facilitators and barriers to utilization of sexual health care services

In-depth key informant interviews, from this study found that health and legal system were the major facilitators to utilization of sexual health care services among MSM in Nairobi City County. Health system, MSM individual factors, referral challenges and political system, were found to be the major barriers to utilization of sexual health care services among MSM in Nairobi City County.

5.2.4.4 .1 Participants facilitators to utilization of sexual health care services

Sensitizing the HCWs about MSM and places where some of the MSM sought health care services (MSM provider sites and public health facilities) partly contributed to positive changes as noted in this study. We found that MSM were seeking STI healthcare services not only from the MSM provider sites but from the public health facilities too. In this study we also found that peer leaders were a better link to other health care facilities. This is because MSM who were accompanied by their peer leaders disclosed their health issues easily to the new HCW without any hesitation. Similarly,peer-led models of care have been proven effective in enhancing the utilization of HIV-related services among MSM (Shangani et al., 2017). Additionally, a study carried out in South Africa evaluating an integrated key populations sensitivity training programme for HCWs found that, sensitizing and training HCWs on MSM healthcare services; HCWs increased their capacity in better handling specific HIV and psychosocial related health needs among the key populations. That reduced critical and judgmental attitudes among HCWs and it resulted in HCWs feeling more enlightened to offer correct and sensitive services to the key population (Duby et al., 2019). This concurs with this study findings. Also another study reported an association between improvements in knowledge and decrease in homophobic attitudes among HCWs who have been sensitized (Elst et al., 2013). As a result they are able to give holistic services to MSM.

Moreover, the current STI guidelines in Kenya have been updated to incorporate some specific STIs associated with MSM such as anorectal STI. This has improved the care of STI health care services among MSM. Even though it is syndromic management being used, the HCWs reported that if used well most of the patients will recover except a few

who could be referred to other facilities for laboratory tests or further management for cases such as genital warts surgery. Furthermore, privacy in the MSM provider sites was significantly associated with the participants seeking STI health care services. Similarly a research done in Bangladesh among key populations examining the willingness to receive STI services from public healthcare facilities revealed that majority of the participants exhibited resistance or hesitancy to seek STI healthcare services from public healthcare facilities due to their past encounters. These encounters included instances of disrespectful, judgemental attitudes and behaviour from the HCWs, perceived discrimination, anticipatory fear and a lack of privacy (Gourab et al., 2019).

Additionally,MSM provider sites being friendly, offering privacy to the participants, providing both preventive and curative STI services at their sites and the hotspots; has influenced more than half of the MSM to seek health care services in those sites. However, MSM who have not come out were not comfortable seeking services at the MSM provider sites for fear of being known that they were MSM. Hence, they sought the STI health care services from either a public or private health facility. Also the MSM provider sites relied on donors who were supporting their day today activities and when the funds are less they were not able to offer some services. There is need for the government of Kenya to have an integrated model of national MSM STI health care services so that they can build a sustainable health care system for MSM.

Regarding legal systems, in this study, a few MSM had reported being harassed by the police compared to a report from a national study which was conducted by NASCOP in 2014 which had found that 24% of MSM had reported being detained or beaten by police. This was not expected, the number of MSM being harassed by polie could have been

higher than what is reported above because same sex relationships are illegal in Kenya. Contrary to the expectation, few cases of police harassment might be attributed to the sensitization efforts by MSM provider sites, enlightening the Police about the Key population. An investigation carried out in sub-Saharan Africa, examining obstacles and potential opportunities among MSM involved in health research through public or community engagement, yielded comparable findings. The research indicated that engaging diverse community gate keepers could mitigate stigma and discrimination among the key populations. However, it is significant to note that substantial ethical challenges may arise during this process (Molyneux et al., 2016).

5.2.4.4 .2 Participants' barriers to utilization of sexual health care services

In this study, findings from a quantitative analysis, stigma and discrimination was reported by more than half of the participants which was either emanating from the HCWs or the community. Similarly from in-depth interviews with key informants, stigma towards MSM was reported among the HCWs who were not sensitized. They openly discriminated and stigmatized MSM patients who sought healthcare services. Homophobia in a heteronormative society due to gender-related beliefs and norms is what makes some of the health workers and the society to stigmatize MSM due to their sexual orientation. This is because they are seen to have conflicting gender roles as per the society's expectations. Similar to this findings, is a study conducted in Tanzania. They reported the mix-up between homosexual behavior and gender role norms could activate discrimination, because MSM were not conforming to an expected heteronormative behavior. Furthermore, stigma and discrimination are the root cause of most of the challenges that MSM experience such as: being turned away from some of

the health facilities, abuse, rape and psychological issues. As a result, there is fear among some MSM to reveal their sexual orientation to the HCWs when seeking STI health care services (Ross et al., 2020). Similar to our findings, A study conducted in Kenya among MSM exploring their encounters and difficulties challenges in accessing sexual health services, discovered noteworthy findings. The participants expressed hesitations relating to the professionalism of certain staff in public hospitals and felt that several sexual health services were not regarded as safe places for discussing MSM-specific sexual behavior (Bourne et al., 2022).

On the other hand, the study revealed that internal stigma among MSM's hindered them from disclosing their health issues related to sexual orientation to HCWs. This barred the HCWs ability to make an accurate diagnosis. The challenge of disclosing sexual orientation was not confined to interactions with the HCWs but extended to their families and the general public. Therefore, it is important to provide counselling for MSM to foster self-acceptance. We also advocate for community support and the establishment of a legal framework that legitimizes same sex relationships. As supported by a research conducted by (Whitehead et al., 2016), that has highlighted that increased levels of disclosure regarding sexual orientation is associated with greater utilization of health service.

A shortage of drugs resulted in certain participants being referred to pharmacies to purchase medications, while the absence of laboratory services led some participants to be referred to alternative health facilities for further management. The linking and referral of the participants to other facilities providing the necessary services proved beneficial. Nevertheless, a significant number of those referred encountered difficulty in

acquiring the prescribed drugs. Additionally, some of them who were directed to alternative facilities did not seek further treatment citing fear of encountering new HCWs. Subsequently, this reluctance increased their risk of transmitting STIs as they remained untreated. Additionally, a case study done in Narok County, revealed that drug shortages were due to challenges faced in procurement. This was occasioned by insufficient funding and delay in disbursing the supplies due to bureaucracy required to obtain money from County offices (Muhia et al., 2017). However, in our study we did not go further to find out what caused the drug stock outs but probably they might be facing the same challenges.

Harmful gender-related beliefs related to MSM do exist in our society such as; men are not expected to behave in a feminine way (Resource-Linkages-Kenya-Msm-Gender-Analysis-2016.Pdf, n.d.). In the public health facilities, patients at the site mostly are heterosexual and there is no youth-friendly room. So MSM who behave in a feminine way when they visit these facilities they stand out and are easily recognized and criticized. Furthermore, a research carried out in Bangladesh exploring the willingness of the key populations to receive STI services from public healthcare facilities, revealed that the judgemental attitudes and behaviours from the society can make MSM be hesitant to seek STI health care services from the public health facilities (Gourab et al., 2019).

The homophobic nature of the community makes it difficult to gain Political Support for MSM. According to sections 162, 163 and 165 of the Penal Code which was added to Kenyan law by British colonisers more than a century ago, states that it is illegal for grown-up men to consent to engage in gross indecency with one another, as it is

punishable up to 14 years in jail (Finerty, 2012) . Contemporary campaignes argued that the laws criminalising consensual same-sex relations between adults deprive them their fundamental rights as they violate the constitution. Hence they say that the state should not control intimacy between same sex partners. The laws also foster a climate of fear and harassment among the gay people. However, the government of Kenya still states that it does not consider same sex rights appropriate as it is contrary to the cultural beliefs of Kenyans. This is a societal issue of society regardless of which society one came from (Home Office Kenya, 2020). With this stand, there is no way a politician can publicly support MSM. Acknowledging the obstacles in sub-Saharan Africa, the researchers emphasised in their study that community engagement was a crucial way of ascertaining fundamental challenges and predicaments connected to stigma and discrimination of MSM even though it had significant ethical challenges (Molyneux et al., 2016).

5.3 Conclusions

Based on the study findings, this study makes the following conclusions:

i) MSM's knowledge level regarding STIs was low as more than half of the participants scored less than half of the questions administered.

ii) More than three-quarters of the participants had accessed sexual health services during the past 12 months and the majority (99.0%) knew their HIV status. This is in line with the HIV/AIDS Joint United Nations program (UNAIDS) expectations i.e. by 2025, 95% of people living with HIV ought to be aware of their HIV status. However, still there is a need for MSM to be encouraged to have at least quarterly STI screening. Since they are at a higher risk of contracting STIs.

iii) More than half of the participants reported to have sought or could seek STI healthcare services from NGOs. This was occasioned by the following mentioned reasons: Convenience, provision of MSM services, privacy and staff caring.

iv) Within the socio-demographic characteristics, education was a significant factor influencing participants to utilize STI healthcare services. Sexual behavioral characteristics of the study participants, participants who had a history of ever contracting STI were significantly associated with utilization of sexual healthcare services. Moreover, from the in-depth key informant interviews, health and legal system factors are the major facilitators to utilization of sexual health care services among MSM while health system factors, MSM individual factors, referral challenges and political system, are the major barriers.

5.4 Recommendations

5.4.1 Recommendations from the study

Based on the study conclusions, the study recommends that the Ministry of Health at the National and County levels, associates and other crucial health care stakeholders:

1. There is a need to step up STI health education to the MSM.
2. More than three-quarters of the participants accessessed STI healthcare services. MSM being at a higher risk of contracting STIs they should be encouraged to have a quarterly STI screening for early diagnosis and management.
3. Most participants were accessing STI healthcare services from MSM–specific healthcare provider sites. The Kenyan government needs to integrate the health service requirements of the key population into the mainstream healthcare delivery system. This integration will aim to enhance efficiency and sustainability, ensuring

the continuous provision of STI healthcare services to MSM, even in instances where funding for MSM NGOs might be unavailable.

4. (i) Barriers hindering MSM from utilizing healthcare services include societal stigma, discrimination, and criminalization of same-sex behaviours. It is crucial in a heteronormative community to sensitize the community about different sexual orientations to avert stigma and discrimination among MSM.

   (ii) Among the HCWs, a notable observation is the insufficient skills and knowledge to effectively engage with MSM. It is important all the HCWs to be sensitized about key populatios and the training on the delivery of healthcare services tailored specifically for key populations should be incorporated in the medical and health sciences curriculum.

   (iii) There needs to be a streamlined provision of STI drugs and medications for other ailments, ensuring that MSM can access comprehensive healthcare services in a single location. This approach aims to minimize the risk of lost follow-ups caused by complex referral systems.

5.4.2 Recommendations for further research

i) Which psychological and eco-social factors influenced the MSM to have high-risk sexual behaviours?

ii) What makes MSM to be resilient in a hostile heteronormative community?

iii) Factors affecting the procurement of pharmaceutical drugs from Kenya Medical Supplies Authority.

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APPENDICES

Appendix A: Informed Consent Form

My name is…Delvin Kwamboka Nyasani I am a Master student from Kenyatta University). I am conducting a study titled "Utilization of sexually transmitted infection health care services among men who have sex with men in Nairobi City County, Kenya" The purpose of this study is to assess utilization of sexually transmitted infection health care services among men who have sex with men in Nairobi City County. The findings from this study will help me obtain A **DEGREE OF MASTER OF SCIENCE IN PUBLIC HEALTH AT KENYATTA UNIVERSITY** and they can also be used to inform the health planners and policy makers in making informed decision regarding strengthening and supporting both structural and environmental STI health care services to MSM.

Procedures to be followed

Participation in this study will require that I ask you some questions and I will record the information you provide in a questionnaire.

Voluntarism

You have the right to refuse participation in this study. You will get the same services and care whether you agree to join the study or not and your decision will not change the care you will receive. Please remember the participation in this study is voluntarily. You may ask questions related to the study at any time.

You may refuse to respond to any questions and you may stop an interview at any time. You may also stop being in the study at any time without any consequences to the services you receive here or any other organization now or in the future.

Discomforts and Risks

Some of the questions you will be asked are on intimate subject and may be embarrassing or make you uncomfortable. If this happens, you may refuse to answer these questions if you so choose. You may also stop the interview at any time. The interview may take approximately half an hour.

Benefits

If you participate in this study your answers and views will help us understand more on what needs to be done to improve utilization of sexually transmitted infection health care services among men who have sex with men**.** You will be reimbursed 200 Kenyan shillings for your time taken to answer the questions.

Reward

If you agree to participate in this study, you will be reimbursed 200 Kenyan shillings for your time taken to answer the questions.

Confidentiality

The interviews and examinations will be conducted within the hot spots. Your name will not be recorded on the questionnaire. The questionnaires will be kept in a locked cabinet for safe keeping at Kenyatta University. Everything will be kept private and only shared with the study team.

Contact Information

If you have questions about the study call the principal investigator Delvin Kwamboka Nyasani 0720898197 or My Supervisors Dr Justus Osero 0724869330 or Dr Meshack Onyambu 0726099487.

However, if you have questions about your rights as a study participant: You may contact Kenyatta University Ethical Review Committee Secretariat on chairman.kuerc@ku.ac.ke, secretary.kuerc@ku.ac.ke,

Participant's statement

The above information regarding my participation in the study is clear to me. The study has been explained to me and I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will still get the same care and medical treatment whether I decide to leave the study or not and my decision will not change the care that I will receive from the clinic today or that I will get from any other clinic at any other time.

Name of Participant ……

_____ _____

Signature or Thumbprint Date

_____ _____

Name of Representative/Witness (where necessary) Relationship to Subject

Investigators statement

I, the undersigned, have explained to the volunteer in a language he understands, the procedures to be followed in the study and the risks and benefits involved

Name of Interviewer

……

Signature **Date**

Appendix B: Participant's Questionnaire

TOPIC: UTILIZATION OF SEXUALLY TRANSMITTED INFECTION HEALTH CARE SERVICES AMONG MEN WHO HAVE SEX WITH MEN IN NAIROBI CITY COUNTY, KENYA.

A Project Submitted in partial fulfillment of the requirements for the award of the degree of Master of Science in public health at Kenyatta University

INSTRUCTIONS

i. Do not write name of the participant on the questionnaire.
ii. The information given on this questionnaire will be held in strict confidence and will be used only for the purpose of study.
iii. Answer the questions correctly
iv. Tick where appropriate.
v. If you have participated in this study, do not participate a second time

A. DEMOGRAPHIC & SOCIO-ECONOMIC CHARACTERISTICS

1. **What is your DOB? _____ (age bracket)**
   - □18- 24years (1)
   - □25- 29 years (2)
   - □30 – 34 years (3)
   - □35 – 39 years (4)
   - □40 – 44 years (5)
   - □45 and above years (6)

2. **Marital status:**
   - □Single never married (1)
   - □Married (Specify to either a man/woman or both) (2)
   - □Single ever married (Separated, Divorced, Widow) (3)
   - □Other, please specify (4) _____

3. **What is your opinion regarding you marrying a woman?**

   _____

4. **Religion**
   - □Catholic (1)
   - □Protestant (2)
   - □Muslim (3)
   - □None (4)
   - □Other, specify (5) _____

5. Education level

□None (1)
□Primary (2) < this would include some primary up to completing primary
□Secondary (3) < this would include some secondary up to completing secondary
□Post-Secondary (4) < this would include some post-secondary up to completing post-secondary

6. What is your employment status?

□Unemployed (1)
□Employed (2)
□Self-employed/businessman (3)
□Student (4)
□Other, Specify (5) _____

7. Level of income

□None (1)
□<5000 (2)
□Between 5001-10,000 (3)
□10,001-15,000 (4)
□ >15,000 (5)

8. What is your nationality?

□ Kenyan (1)
□ Other, specify (2)_____

9. Where do you reside? _____

10. On the basis of gender how do you identify yourself?

□Man (1)
□Woman (2)
□Intersex (3)
□Don't know (4)

11. How would you describe yourself on the basis of sexual behavior?

□Top (insertive) (1)
□Bottom (receptive) (2)
□Both top & bottom (versatile) (3)

12. What is your view on disclosure of MSM status/sexual orientation to your family members?

_____
_____
_____

13. During the past 12 months, who have you had sexual intercourse with?

□Men (1)
□Both men & female (2)

14. How many sexual partners in total have you had sex with during the last 12 months?

□Total_____
□Men_____
□women_____

15. What type of sexual experience have you had with your partner/partners for the past 12 months? (Select all that apply)

□Vaginal intercourse (1)
□Anal (2)
□Oral (3)
□Mutual masturbation (4)
□ Others (5)_____

16. Do you get gifts/money in exchange for sexual intercourse?

□Yes all the time (1)
□Yes sometimes (2)
□No (3)

17. Do you pay money/offer gifts in exchange for sexual intercourse?

□Yes (1)
□Yes sometimes (2)
□No (3)

B. KNOWLEDGE LEVELS REGARDING MEN STIs

1. Which diseases are spread through sexual intercourse (Tick all mentioned)

□ Gonorrhea (1)
□Syphilis (2)
□Chlamydia (3)
□Genital warts (4)
□HIV (5)
□Hepatitis B (6)
□Trichomoniasis (7)
□Herpes simplex virus (8)
□Chacroid (9)
□Other, Specify (10)_____
□ Don't know/ none mentioned (11)

2. **How will you know that you /someone has a Sexually Transmitted Infection (STI) (Tick all mentioned)**
   - Penis discharge (1)
   - Burning pain during urination (2)
   - Genital ulcers/sores (3)
   - Swelling in groin region (4)
   - Anal discharge (5)
   - Anal ulcer/sores (6)
   - Anal pain (7)
   - Scrotal swelling (8)
   - Other, specify (9)_____
   - Don't know (10)

3. **How can you be infected with an STI?**
   _____
   _____

4. **Can engaging in anal sex expose you to get a STI?**
   - No (1)
   - If yes- explain (2)_____

5. **Through which media can one get a STI causing organism (Tick all mentioned)**
   - Semen (1)
   - Blood (2)
   - Clothing (3)
   - Food (4)
   - Vaginal fluids (5)
   - Use of contaminated sharp objects (6)
   - Anal fluid (7)

6. **Would you disclose to your partner if you had an STI apart from HIV?**
   - Yes, why (1)_____
   - No, why (2)_____

C. HEALTH SEEKING BEHAVIOUR FOR STI SERVICES

1. **Have you ever sought STI health care services (Screening, diagnosis & treatment?)**
   - Yes (1) - **If yes why did you seek the services?** proceed to 1A below & tick all mentioned
   - No (2) - **If No skip to Q2**

   1A
   - Routine screening (1)
   - STI treatment (2)
   - Sexual assault (3)

□Enrolled in a research study (4)
□Partner's status unknown (5)
□Had unprotected sexual intercourse (6)
□Suspected to have had a STI (7)
□Other_____(8)

2. **What first step will you take if you suspected you had a STI?**
□Go to a health facility (specify if its private/public/NGO –**please indicate name of facility mentioned**) (1)
□ Chemist (2)
□Consult a private doctor/clinician (3)
□Consult a friend (4)
□Take medicine available at home (5)
□Nothing (6)
□Other, specify (7)_____

3. **In the past 12 months, have you attended any health care facility for sexual health care services? Probe**
□Yes (1)
□No (2) Skip to Q5 below

4. **If yes what services did you seek?**
□HIV test (1)
□Counseling (2)
□Condoms& lubricants (3)
□STI diagnosis and treatment (4)
□HIV care& Treatment (5)
□PEP (6)
□PREP (7)
□Other, specify (8)_____

5. **Do you know your HIV status? If yes, proceed to question 6, 7 8 & 9 below.**
□Yes (1)
□No (2)- **proceed to Q10**

6. **If yes, what made you get tested**
□Voluntary (1)
□ You were asked (2)
□ Don't know/remember (3)
□ No response (4)

7. **How frequent do you get tested?**
□ Every after 3 months (1)
□ Every after 6 months (2)
□ When there is an offer (3)

8. When was the last time you were tested?

9. What is your view on disclosure of your HIV status to your sexual partner/partners?

_____

_____

10. Are you aware that MSM are tested for STIs at the hotspots?

□Yes **(proceed to Q11, 12 & 13 below)** (1)

□No (2) **(Skip to Section D below)**

11 Have you been tested for STIs at the hotspots?

□Yes, (1) which hotspot? _____

□No, (2) Why_____

12. How frequent do you get tested at the hotspots?

_____

13. Which STIs were you tested for?

D. BARRIERS IN ACCESSING STI HEALTH CARE SERVICES

1. Have you ever had any STI? (Specify if diagnosed/suspected)

□Yes (1) If Yes, proceed to Q1A below

□No (2) Proceed to Q1B below

1A. If Yes, did you seek treatment?

□Yes - then proceed to Q2 below

□No - **Skip to Q4**

1B. If you had an STI will you seek treatment?

□Yes- then proceed to Q2 below

□No

2. If yes where did you seek treatment from/ where will you seek treatment from?

□A health facility (specify if its private/public/NGO (**please indicate name of facility mentioned)_____** (1)

□ Chemist (2)

□A private doctor/clinician (3)

□A friend (4)

□Took medicine available at home (5)

□Other, specify (6)_____

3. **Why did you seek /why will you seek treatment from that area and not any other place? (Tick all that apply)**
   - MSM health services are provided there (1)
   - Convenient (2)
   - Staff are caring (3)
   - Privacy (4)
   - Other, specify (5)_____

4. **If you did not seek treatment, what was the problem? (Tick all that apply)**
   - The health facility is far (1)
   - Fear (2)
   - Medical mistrust (3)
   - Cost (4)
   - Culture (5)
   - Other, specify (6)_____

5. **If you have ever visited a public health facility for sexual health services how was your experience like?**
   (1)_____

   (2) I have never visited a public health facility for sexual health services

   _____

---

6. **If you have ever attended a public health facility for sexual health care services what was your perception about the health workers in that facility you attended?**

   _____
   _____

7. **If you had an anal STI can you disclose to a health worker to help them make a diagnosis?**
   - Yes explain (1)_____
   - No, explain (2)_____

8. **What would be your ideal health facility for taking care of MSM be like?**
   _____
   _____
   _____

9. **Is there any other suggestion you have on what needs to be done to improve sexual health services to MSM?**

_____
_____
_____
_____
_____
_____

10. **Health wise, have you faced any challenges getting the sexual health care that you need? -Specify the place where you did not get what you required**

_____
_____
_____
_____
_____

11. **In your general life/ sexual health seeking, what are some of the challenges/difficulties that you/other MSM have faced as a result of being a MSM?**

_____
_____
_____
_____
_____
_____

Appendix C: Key Informant Interview Guide for a public health facility

Designation..... Date.....

Duration you have worked at the site.....

Questions:

1. Do MSM seek STI health care services in this facility?
2. How comfortable are you providing health services to the MSM? (in a scale of 1-5 1 being not comfortable at all and 5 being very comfortable)
3. How easily do the MSM find it in disclosing their sexuality when they come here?
4. What would you say about the current health care system in regards to service delivery among MSM community?
5. Are there guidelines for providing user friendly STI health services specifically to MSM? If yes, how have the guidelines operationalized? Probe for MSM service provision guidelines, service review reports)
6. From your own experience, what are the main factors that influence utilization of STI health care services among MSM? Probe for past experiences, privacy, confidentiality, harassment, education and awareness programs, social support networks, HIV status, staff attitudes, education level, income level and personal beliefs.

8 Are there STI cases you have had to refer? if yes (i) which ones (ii) to which facility and do you do follow ups? (Find out if there are any partners they work with)

9. Have you encountered any challenges when providing STI health care services to the MSM? **(if yes probe further to know the challenges If possible find if they have any suggestions on how the challenges can be addressed)**
10. What would you say about the current system on STI services among MSM? Are there any areas that you think are perfect and need to be replicated everywhere or areas that need any kind of improvement?

Appendix D: Key Informant Interview Guide for MSM Sites

Designation..... Date.....

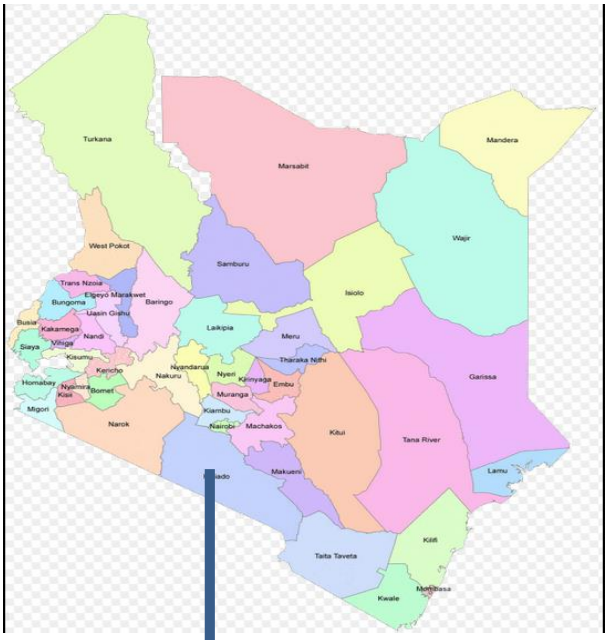
Duration you have worked at the site.....

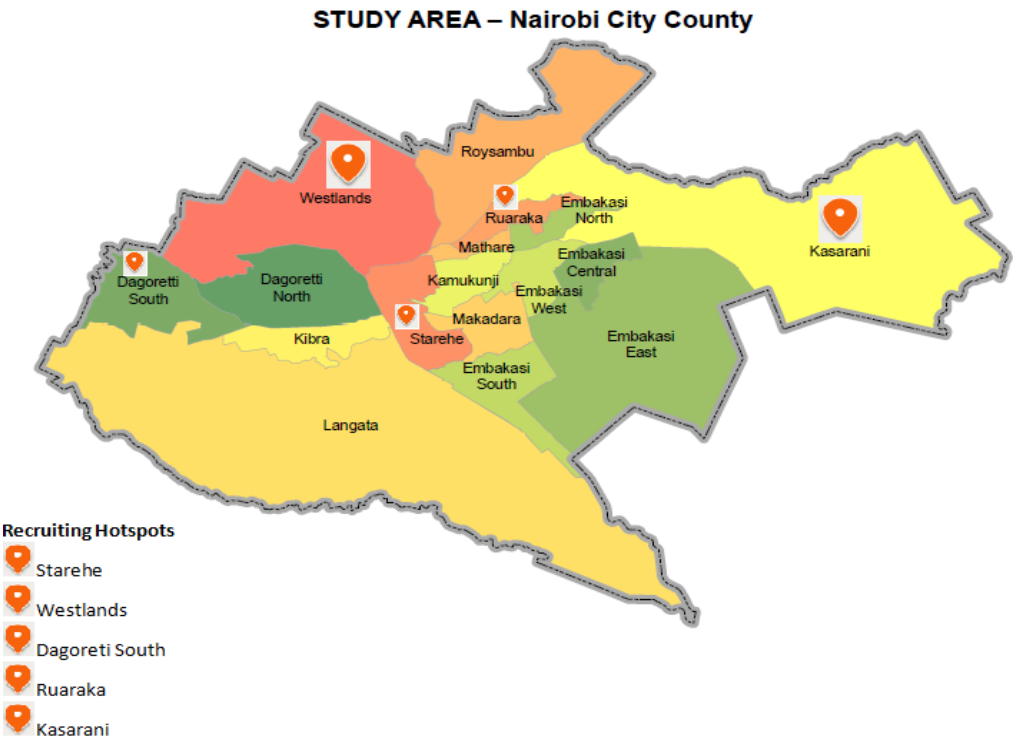
Questions:

1. What type of STI health care services do you offer?
2. Geographically how far do your clients come from? (Probe further which clients frequent the facility)
3. Approximately during the last one year how many MSM who have sought STI health care services in your organization? (If possible review the actual records)
4. Are there STI cases you have had to refer? if yes (i) which ones (ii) to which facility and do you do follow ups? (Find out if there are any partners they work with)
5. How would you want an ideal MSM friendly facility or clinic providing STI health care services to be like?"
6. What would you say you have done/you are doing or intending to do to enlighten the MSM community on their STIs risk?"
7. Are there any challenges that you face in providing STI health care services to MSM?

Appendix E: Map of Kenyan Counties & Nairobi City County

Map of Kenya counties





Appendix F : Ethical Review Letter From KUERC

Kenyatta University
P.O Box 43844-00100
Nairobi-Kenya

REF: KU/ERC/APPROVAL/VOL1/11 Date: 17th September, 2019

Delvin Kwamboka Nyasani

P.o Box 43844-00100

Nairobi

Dear Mr. Nyasani,

RE: UTILIZATION OF SEXUALLY TRANSMITTED INFECTION HEALTHCARE SERVICES AMONG MEN WHO HAVE SEX WITH MEN IN NAIROBI CITY COUNTY, KENYA

This is to inform you that ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE*** has reviewed and approved your above research proposal. Your application approval number is **PKU/1071/I1121.** The approval period is ***10th September, 2019-10th September, 2020.***

This approval is subject to compliance with the following requirements;

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

vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE***.

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

Yours sincerely

KENYATTA UNIVERSITY
OFFICE OF THE CHAIRMAN
23 SEP 2019
ETHICS REVIEW COMMITTEE
P.O BOX 43844 - 00100 NAIROBI

Prof. Judith Kimiywe

CHAIRPERSON- KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE.

Appendix G : Research Licence From NACOSTI

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **657108**

Date of Issue: **23/October/2019**

RESEARCH LICENSE

This is to Certify that Miss.. Delvin Nyasani of University of Nairobi, has been licensed to conduct research in Nairobi on the topic: UTILIZATION OF SEXUALLY TRANSMITTED INFECTION HEALTH CARE SERVICES AMONG MEN WHO HAVE SEX WITH MEN IN NAIROBI CITY COUNTY, KENYA. for the period ending : 23/October/2020.

License No: **NACOSTI/P/19/1839**

657108

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 30124-00100, NBI
TEL: 341666

Appendix H : Research Authorization Letter From Nairobi County Government

NAIROBI CITY COUNTY

grams: "PRO-MINHEALTH", Nairobi
phone: Nairobi 217131/313481
: 217148
ail: pmonairobi@yahoo.com

COUNTY HEALTH OFFICE
NAIROBI
NYAYO HOUSE
P.O. Box 34349-00100
NAIROBI

n replying please quote

. No. CMO/NRB/OPR/VOL1-2/2019/144

COUNTY HEALTH SERVICE

Delvine Nyasani
University of Nairobi
P.O BOB 30197-00100
NAIROBI
28/11/2019

RE: RESEARCH AUTHORIZATION

This is to inform you that the Nairobi City County Operational Technical Working group reviewed the documents on the study titled, **"Utilization of Sexually Transmitted Infection in Health Care Services among men who have Sex with Men in Nairobi City County."**.

I am pleased to inform you that you have been authorized to undertake the study in Nairobi County, in collaboration with Nairobi County health sector.

The researcher will be required to adhere to the ethical code of conduct for health research in accordance to the Science Technology and Innovation Act, 2013 and the approval procedure and protocol for research for Nairobi County

On completion of the study, you will submit one hard copy and one copy in PDF of the research findings to our operational research technical working group.

Raphael Muli

FOR COUNTY DIRECTOR OF MEDICAL SERVICES

CC: **All SCMOH –Nairobi County**

Medical Superintendent – Mama Lucy, Pumwani Hospital, Mbagathi