A COMPARISON BETWEEN TRADITIONAL AND MODERN CIRCUMCISION PRACTICES IN THE PREVENTION OF HIV AND OTHER STIS TRANSMISSION IN CHAVUMA AND KAPIRI MPOSHI DISTRICTS

By

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DECLARATION

I, CLIVE GOSA, declare that this thesis represents my own work and that it has not been previously submitted for a degree, diploma or other qualifications at this or another University.

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ABSTRACT

The study made a comparison between traditional and modern circumcision practices in the prevention of HIV and other STIs transmission in Chavuma and Kapiri Mposhi districts.

Zambia is a multi-cultural society, characterized by different racial, ethnic, religious, and traditional groupings. These have significant potential for promoting good health. The report by Vern and Bonnie of 1994 documents that, circumcision is the surgical removal of the skin that normally covers and protects the head of the penis. To curb HIV and other STIs pandemic among the citizenry and in line with the UNAIDS 90-90-90 strategy, Zambia's Health Policy of 1991 advocates for safe voluntary medical male circumcision. The health policy also recognizes the efforts made by traditional practitioners in reducing the disease burden in the country through established traditional institutions (THPAZ). In Zambia, all ten (10) provinces offer a package of male circumcision services in the health facilities. In The North-Western Province, traditional circumcision is practiced among the Luvales, Chokwes, Luchazis and Lundas. Despite such efforts, STIs and HIV transmission are still common in Zambia.

The overall objective of this study was to compare the extent to which traditional and modern circumcision practices prevent the transmission of HIV and other STIs in Chavuma and Kapiri Mposhi districts. The specific objectives were: i) to compare the extent to which traditional and modern circumcision practices prevent HIV transmission. ii) and to compare the extent to which traditional and modern circumcision practices prevent other STIs apart from HIV against transmission.

The study used snowball, convenience (purposive), and quasi-random sampling in selecting the sample. The study had a total sample size of 260 participants. Out of this, 100 participants were men circumcised in hospitals and clinics. The health workers were 30, while 10 participants were elderly members of the ethnic groups and 10 traditional circumcisers. ten (10) headmen were included and men traditionally circumcised were 100. The study used both Qualitative and Quantitative Designs. Qualitative data were analyzed using content analysis, while Quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS).

The study concluded that, i) whereas HIV is a virus, an STI is actually an infection that is transmissible through sexual encounters; ii) in both practices, circumcision, to a larger extent, prevented HIV transmission; iii) the main routes to the HIV transmission were: blood mix-up procedures, unprotected sexual intercourses, using unsterilized instruments; iv) there was still a chance of STIs acquisition after circumcision, and the main routes to the STIs transmission included, sexual activities; v) circumcision performed under traditional and modern practices was not efficacious in the prevention of STIs transmission; vi) the incidence and prevalence of STIs were not impacted by the benefits of circumcision; vii) circumcision was associated with significantly increased STIs risk among circumcised men with known common STIs (gonorrhea, chancroid and syphilis);

Further, the study concluded that, viii) sterilization of surgical instruments was done under modern practice, while the use of unsterilized surgical instruments and blood mix-up procedures were noted under traditional practice; ix) only certified professional staff with a special circumcision training were eligible to perform circumcision under modern and not under traditional practice. x) Although the objective of attaining the HIV epidemic control is being actualized as evidenced by the study through the male circumcision program, the study concluded that high prevalence of STIs after circumcision still exist, and hence, there is need to attain the goal of zero new sexually transmitted infections (STIs) in Chavuma and Kapiri Mposhi districts.

To my Late Father and Mother

(Simone S. Gosa; Morrie Mweembe Gosa)

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Acronyms and Abbreviations

ANC	-	Antenatal Clinic
AFP	-	Acute Flaccid Paralysis
AIDS	-	Acquired Immune Deficiency Syndrome
ART	-	Anti-Retroviral Therapy
ARV	-	Anti-Retro Viral
CBDs	-	Community Based Distributors
CBVs	-	Community Based Volunteers
CHAZ	-	Churches Health Association of Zambia
CHW	-	Community Health Worker
CSO	-	Central Statistics Office
DAPP	-	Development Agency from People to People
DBS	-	Dry Blood Spot
DHMT	-	District Health Management Team
DR	-	Doctor
EMLIP	-	Essential Medicines Logistics Improvement Programme
EmONC	-	Emergency Obstetric and Neonatal Care
HIV	-	Human Immunodeficiency Virus

HMIS - Health Management Information System

HTS - HIV Testing Service

JSI - John Snow Inc.

MC - Male Circumcision

MDHS - Malawi Demographic and Health Survey

MOH - Ministry of Health

MSL - Medical Stores Limited

NGO - Non-Governmental Organization

NZP+ - Network of Zambian People Living with HIV/AIDS

OPD - Out Patient Department

PMTCT- Prevention of Mother to Child Transmission of HIV

SMC - Safe Male Circumcision

SPSS - Statistical Package for Social Sciences

STD - Sexually Transmitted Diseases

STI - Sexually Transmitted Infections

TAZARA- Tanzania Zambia Railway

TB - Tuberculosis

TBA - Traditional Birth Attendant

THPAZ- Traditional Health Practitioners Association of Zambia

UHC - Urban Health Centre

UN - United Nations

VCT - Voluntary Counseling and Testing

VMMC- Voluntary Medical Male Circumcision

WHO - World Health Organization

ZDHS- Zambia Demographic Health Survey

ZPCT - Zambia Prevention, Care and Treatment

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction

This Chapter presents information on the Background to the Study, Statement of the Problem, Study Objectives, Significance of the Study, Operational Definitions, Theoretical Framework, Literature Review, and Methodology. The study, even though it has some attributes of public health, is, however, not based on a medical perspective, but rather draws its lessons from an administrative point of view. It is also important to categorically state that, throughout this study, voluntary male medical circumcision (VMMC) was frequently used as a circumcision program derived from the health policy and established to prevent the transmission of HIV and other STIs in Zambia. This program, therefore, denote the tenets of the health policy. This is so because modern circumcision practice (VMMC) was drawn from its roots in the Zambia health policy of 1991.

One of the core businesses of public administration, therefore, is to review government policies and assess some parts of the policies that have gaps, and provide strategies that help close the policy gaps. Therefore, it became inevitable to adopt this study under public administration than in any other discipline, and in turn, assisted in producing circumcision strategies useful in the prevention of HIV and other STI transmission. To underscore the above, Public administration is about the implementation of government policy and also an academic discipline that studies the process of implementation. This discipline encompasses the study of Public policy. Public policy can be generally defined as a system of laws, regulatory measures, courses of action, and funding priorities concerning a given topic promulgated by a governmental entity or its representatives. Of course, a major aspect of public policy is the law. Because public policies are in place to address the needs of people, they are often broken down into different categories as they relate to society. Looking at some examples of these categories gives an idea of how public policy fits into each area of society. Specifically, public policy has several key attributes such as policy, which is made in response to sort out an issue or problem that requires attention, policy is what the government chooses to do (actual) or not do (implied) about a particular issue or problem, the policy is made on behalf of the "public.", the policy is oriented toward a goal or desired state,

such as the solution of a problem. In this case, Health policy, for example, refers to all policies related to the health of a particular group, and it has a goal to find a solution to a problem. For example, when the AIDS epidemic emerged in the early 1980s, governments around the world had to craft new policies regarding how the disease would be treated, what steps they would take to educate the public, and so on. Since Public administration brings out public policy, and public policy brings out the health policy which in this regard was VMMC, the study became important part of Public administration. The findings of the study, in turn, could assist to find ways or solutions to the problem of HIV and other STI acquisition in Zambia. Based on the above, therefore, the study was adopted as part of the Public Administration discipline in Zambia.

1.2 Background

Zambia's long-term socio-economic development agenda is guided by the National Vision 2030 which aims at transforming the country into a middle-income prosperous nation by 2030. Through the Vision 2030, the country has prioritized health and is committed to the attainment of 'equity of access to cost-effective quality health services, as close to the family as possible. In this regard, the sector's focus is the provision of a continuum of care with particular emphasis on; promotional, preventive, curative, and rehabilitative services. The provision of a continuum of care is challenged by the burden of diseases in Zambia which is very high and characterized by the high prevalence of communicable diseases and an emerging burden of Non-Communicable Diseases (NCDs). This has had a very significant impact on the morbidity and mortality levels across the country. To mitigate the challenges and improve health care services, the Government has developed several policies and strategies for specific aspects of health. Before the development and implementation of the 1991 National Health Policies and Strategies; the Government had been using the Public Health Act, Chapter 395 of 1930 of the laws of Zambia, and the successive National Development Plans as major policy instruments to guide the provision of health care services in the country.

The country has also developed and implemented successive National Health Strategic Plans (NHSPs) since 1995. However, changes in the political, economic, social, technological, and

epidemiological profile of the country have posed new challenges for the sector, creating a need to update and improve upon the National Health Policy framework and to upgrade the legal framework to be in tandem with current developments. From 1995-to date, the Government has developed national policies in specific aspects of health care provision. The National Health Policy for Zambia seeks to respond to these challenges. It has been developed within the context of the Vision 2030 and has taken into consideration other relevant national, regional, and global health-related policies, protocols, and strategic frameworks, including the Millennium Development Goals (MDGs).

This National Health Policy outlines a statement by the Zambian Government to set clear directions for the development of the Health Sector in Zambia. The policy is anchored in the Vision 2030 and shall be implemented through successive National Development Plans and National Health Strategic Plans. It sets out policy measures that shall guide strategies and programs in the health sector. The policy also takes into consideration various Regional and International Instruments, Protocols, and Commitments which will ensure that Zambia's health programs are integrated with the regional and global health system. This policy document underscores the Government's commitment to the provision of equitable access to cost-effective and quality health services as close to the family as possible in a caring, competent, and clean environment. In this regard, the Government shall prioritize, among other programs, primary health care services, hospital referral services, human resource development and management, medical supplies and logistics, infrastructure development, legal framework, and health care financing.

Communicable diseases still constitute a major share of the disease burden affecting Zambians. In Zambia, some major causes of mortality are communicable diseases. According to the National Health Policy of 1991, among the communicable diseases, sexually transmitted infections (STIs), human Immunodeficiency Virus (HIV), and AIDS are the main contributor representing around 65% of all deaths, while Malaria represents 12.5% and diarrheal diseases represent 12.9%. Zambia has a generalized HIV epidemic influenced by structural factors such as gender inequality, social norms that encourage multiple concurrent partnerships, and unequal distribution of wealth.

According to ZDHS 2007, 14.3% of adults aged 15-49 years were HIV positive which is a drop by 1.3% from the 15.6% reported in 2001. Females (16.1%) are more likely to be HIV positive than males (12.3%) due to biological, economic, and social factors. Around 80 000 Zambians are infected with HIV every year. The 2009 epidemiological synthesis highlighted the following as the main drivers of the epidemic: multiple concurrent sexual partners, low and inconsistent use of condoms, low rates of male circumcision in some provinces, mobility, Labour migration, vulnerability, and marginalized groups, and vertical mother to child transmission. Over the past 10 years, significant progress has been made in strengthening the policy, legal, institutional and strategic frameworks for multi-sector response to sexually transmitted infections. As a result, significant and consistent scaling up of effective interventions, aimed at improving counseling and testing, prevention, treatment, and care for STIs victims have been improved.

The Policy is guided by the following key principles: Equity of access; To ensure equitable access to health care for all the people of Zambia, regardless of their geographical location, gender, age, race, social, economic, cultural, or political status. The overarching objective of the National Health Policy is to reduce the burden of disease, and maternal and infant mortality and increase life expectancy through the provision of a continuum of quality, effective health care services as close to the family as possible in a competent, clean and caring manner. HIV and other STIs are some of the common communicable diseases that are part of the major share of the disease burden that continues affecting Zambians. STIs are a critical health and social problem affecting many people in Zambia. Therefore, the Government of Zambia through its health policy position on HIV and other STIs, is to end the prevalence of HIV and other sexually transmitted diseases, with increased emphasis on prevention, care, and treatment. (National health policy, MOH, 1991.p.30). To attain the fundamental objectives of the policy of halting and reducing the spread of STIs, HIV, and AIDS by increasing access to quality HIV and other STIs interventions for prevention, treatment, and care, the Ministry of Health embarked on the implementation of the Voluntary Medical Male Circumcision (VMMC) program in Zambia. Further, Government policy measures are to, strengthen the prevention and case detection of HIV and other STIs; and strengthen their management as well as other opportunistic infections.

This program was initiated in 2007 and subsequently scaled up to reduce the incidence and prevalence of HIV and other STIs in Zambia. The Ministry hopes to continue with this effort by capitalizing on lessons learned in the past years of implementation and leveraging renewed energy and support from partners. According to the VMMC Operation Plan of 2016-2020, the goal for this phase of implementation was to circumcise 1,985,083 males by 2020, representing 90% coverage of males between the ages of 10–49, with a focus on those between 15–29 years. This is in line with the UNAIDS 90-90-90 strategy to combat the HIV/AIDS pandemic. As one of the fourteen (14) sub-Saharan African countries selected for VMMC, Zambia began providing VMMC services as a method of STIs prevention in 2007. According to the National Male Circumcision Strategy and Implementation Plan for 2010-2020, two years later, in 2009, the national VMMC program was formally launched and VMMC was incorporated in all key national health policy and strategy document, elevating the intervention to a core component of Zambia's national HIV prevention strategy.

The Zambia Health Policy also recognizes the efforts made by traditional practitioners in reducing the disease burden in the country. The established institutions focus on traditional and alternative health services, and are organized under the Traditional Health Practitioners Association of Zambia (THPAZ). According to the National health policy of 1991, this association is recognized by the Government of Zambia through the health policy to provide herbal medicines within the communities. Through this policy, the Government is mandated to strengthen regulation, supervision, research, and coordination of this traditional sector and ensures that they provide safe and evidence-based health services to the communities. Traditional medicine and circumcision are some of the health services provided in the communities within Zambia. WHO of 2007 reported that, the traditional medicine is the total combination of knowledge and practices, whether explicable or not, used in diagnosing, preventing, or eliminating physical, mental, or social diseases and which may rely exclusively on past experience and observation handed down from generation to generation, verbally or in writing. In this context, one of the evidence-based knowledge passed from generation to generation is the Mukanda.

According to Chinyama Seleji, (2010), Mukanda is a traditional education process in northwestern Zambia. The Luvale are a matrilineal group and live as extended families. The Mukanda rite is performed in phases: The initial stage is the preparatory phase. A male parent referred to as Chijika-Mukunda, the Mukanda planter embarking on the event informs and discusses his intentions to conduct a Mukanda with relatives and informs their local traditional chief. Parents in neighboring villages who have uncircumcised male children may wish to join in the event. They make their intentions known and join in the preparations for the ritual. The preliminary stages involve the sounding of the lion roaring, chikwita in Luvale, or ndumba mwela in Chokwe. This is a piece of plank tied to a string that is rotated at night outside the village portrayed as the risen spirit of an ancestor. The chikweta serves as a public announcement of the pending event. It also serves to scare and test the courage of the initiates to-be, as well as scare the women and uninitiated.

The chikwita sounding is alternated on different days with dancing, kuhunga by the initiates to-be. Intensive preparation of food, beer, and tutors (chilombola- singular, vilombola- plural), a medicine man (nganga-mukanda), and a circumciser (chikeji or chipungu) begins. The preparations also involve the making of the makishi and masquerade costumes. The makishi is a prerogative of the Mukanda and serves several purposes during the rite. They are the media for the transmission of skills and cultural knowledge to the initiates. The makishi also provide entertainment throughout the Mukanda rite. They are also used to scare the women and the uncircumcised away from the Mukanda and its secrets. The secrecy acts to create a boundary separating initiated men from uninitiated, boys and women. Once the boys are taught and are ready to graduate from Mukanda, a day is set for the celebration, reveling, and beer consumption. The following day the initiates are brought before the Muyombo tree to pay homage to the ancestors to confer blessings on the boys for safety and good health during their stay in the forest at the Mukanda. Meanwhile, ochre is smeared on the foreheads of the boys as a sign of purification. Later in the afternoon, there is a highly emotional frenzy and jubilation upon the arrival of the katotola, a masquerade with a conspicuous well-decorated large headgear. The boys are challenged to touch the fierce and scary katotola to test their courage. This probably is their second test of courage and introduction to manliness after the chikwita. Only courageous boys touch the katotola's eye, but the cowards have to be dragged.

The Mukanda planter in line with his clan gives the katotola a name after he has slaughtered a goat in paying homage to the ancestors. Further, Chinyama of 2010 documents that, the Mukanda shelter becomes the sleeping place for the boys and their tutors. The boys remain at the Mukanda until their penile surgical wounds are healed. The period is referred to as tundanji vali hamafwo (the initiates are being nursed on fresh leaves). While waiting for the healing process, the boys follow strict rules and regulations. These rules pertain to meals, courtesy, sleep, elimination and hygiene, and interpersonal relationships. Violation of these results in severe punishment such as beating or starving. It is a taboo for the kandanji to visit home during the seclusion period.

According to Chinyama, circumcision is a Latin word meaning "cutting in a circle". This is a procedure performed to remove the foreskin that covers the delicate glans of the penis. Traditionally, a traditional circumciser operates on the boys in a group of peers sharing a surgical knife. Traditional male circumcision is practiced in many parts of the world and some ethnic groups in African countries such as Nigeria, Uganda, Kenya, South Africa, Tanzania, and Zambia. However, the majority of the ethnic groups in Zambia do not. Further, Turner (1953) reports that the Mukanda ritual is an important institution among the Luvale because of its perceived social benefits of legitimizing manhood. And the most critical point in Luvale men's lives is the period when they are separated from their mothers and isolated from society and brought to the forest to be circumcised. This is done to be identified with their fathers as "real men", emphasizing the gender aspect of masculinity.

It is at Mukanda where the tundanji, the initiates, are groomed into the perceived masculine roles. These roles include life skills of hunting through which they obtained meat for food and promoted group cohesion since it is done in groups, beating drums (not so much as the skill is not as important as it used to be in the past, also no limit on age nowadays), self-esteem, being good husbands, being courageous, and that the uncircumcised and women should not undermine them. In some parts of Zambia like North-western, circumcision had been practiced for traditional and health reasons and often served as a rite of passage to adulthood. Therefore, in line with the above, in Zambia, traditional circumcision originally was for cultural reasons and not sexually transmitted infections (STI) preventive strategy. Circumcision in this vein was

meant to impart posterity with ritual rites and values among the boys, as they grow into adults. The recent literature, however, documents that, traditional circumcision has surfaced to be seen as a preventive measure against the transmission of STIs, HIV, and AIDS. This is in line with and supported by Zavreiw (1994) (www.popline.org/docs/0958720), "who also documented that, the traditional practice of circumcision was bound up with issues of status, sexuality, and sexual health, hence surfacing to be seen as a preventive measure. Initially it was a symbol of purity, legitimation, and power."

The report by Vern and Bonnie of 1994 documents that, circumcision is the surgical removal of the skin that normally covers and protects the head, or *glans*, of the penis. Male circumcision, therefore, is one of the oldest and most common surgical procedures worldwide and was undertaken for many reasons: religious, cultural, social, and medical.

From the above documentation, therefore, Zambia is a multi-cultural society, characterized by different racial, ethnic, religious, and traditional groupings. According to ZDHS (2007), the country was characterized by a high level of urbanization, increasing access to the internet and other sources of information. These had significant potential for promoting good health.

However, there were some social, cultural, and religious beliefs and practices that negatively affected health. To curb some of the unsafe practices that could spread the transmission of sexually transmitted infections among the health status of the citizenry, as earlier alluded, Zambia's Health Policy advocates for safe voluntary medical male circumcision in all established health institutions throughout the country. Further, male circumcision service in Zambia was being provided not only in the established health facilities but also in mobile health services, and through special ceremonies. Under traditional practice, circumcision was mandatory for young boys who have reached puberty and ready to receive life lessons for adulthood at special ceremonies.

In Zambia, all the ten (10) provinces offer a package of male circumcision services in the health facilities. In the quest to attain this goal, the Ministry of Health set up male circumcision targets distributed among provinces in Zambia. One of the provinces with a high circumcision rate in Zambia was Central Province. According to MOH 2017, Central Province had a target of forty

thousand, five hundred and forty-six (40,546) for the year 2017. According to MOH, 2017 report, as of June 2017, the province performed well beyond the given target in circumcising men. That is to say, forty-five thousand, one hundred and thirty-one (45,131) men were circumcised. Further, in Central Province, the Male Circumcision (MC) prevalence was as low as 6% in 2006, despite having a high HIV prevalence of 17%. Science tells us that, the population with low male circumcision prevalence should have high HIV prevalence when all things are equal. In support of this, Bailey et.al. (2007) argued that this was because VMMC offered 60% protection to eligible males when used with other HIV prevention strategies.

Narrowing to districts, the past attainment of the set targets showed that the Kapiri Mposhi district had a target of 7,016. This district also tremendously performed well, exceeding the given target in male circumcision. For instance, out of the eleven (11) districts of Central province, the district was the highest with 16,111 men circumcised by June 2017, and Kabwe district followed with 8,448 circumcised men under modern practice out of 5132 targets given for 2017. However, in the North-western province, traditional circumcision, as part of religious and cultural practices, was practiced on a large scale among the Luvales and Lundas. According to ZDHS of 2014, the North-western province, despite circumcision, men traditionally had the lowest HIV rates, while the Central province had the highest sexually transmitted infections (STIs) prevalence other than HIV. What this meant was that there was a fissure that needed addressing. This gap was that a province where traditional circumcision was being practiced had the lowest HIV rates and yet Central province had the highest other STIs. When things are equal, the opposite should have been the case among these provinces.

The efforts made in the study was to establish in the first place, what occurred during and after circumcision. It was going to be difficult if not impossible to prove whether or not a given circumcision practice was efficacious in the prevention of HIV and other STIs as an outcome without identifying the institutional framework or things that were in place during circumcision under traditional and modern setting. To further the discussion, it became necessary to determine whether such things or institutional framework in place were of linkage toward the HIV and other STI prevention in men after circumcision. Similarly, the study to ascertain the effectiveness of a given circumcision practice by comparing the common areas of agreement and disparate in

both practices. The only feasible way to establish this comparison was to focus on what was being done during and after circumcision, of course, primarily focusing on only things that were peripheral to the HIV and STIs prevention among the two practices. In this regard, the study was to establish whether or not, the circumcision services in place during and after circumcision could explain the change in outcome of the HIV and STI status of men after circumcision. And ascertain the provision of the services in circumcision sites and ways in which whether or not these services were documented to track historical circumcision strategies useful in determining the efficacy of a given practice in HIV and STIs prevention for circumcised men. In this way, the efficacy of a given practice was measured by determining the HIV and STI status of men after circumcision. Likewise, when circumcised men came back to the hospitals and clinics during a follow up HIV and STI test visit, and the test results for HIV and STIs indicate a negative status, a sign of no virus or infection, then that given circumcision practice men had to undergo was deemed effective or efficacious in the prevention of HIV and other STIs transmission.

As from the preceding discussion the extent to which traditional and modern circumcision practice prevented HIV and other STIs transmission was measured using the scale of to a larger extent, to some extent and some level of less extent. In other words, the larger the scale, the more likely that a given practice prevented the transmission of HIV and other STIs. However, if the likelihood was sufficiently small, that is to say less than 1%, then the existence of relation was not there. Otherwise, any observed effect could be due to pure chance. In other words, a given practice in this study should be one observed to have some positive effect or self-efficacy in the prevention of HIV and other STIs transmission. In this regard, to a larger extent, must be effective or reducing the prevention of HIV and other STIs. And if the observation was made in this study that a given circumcision practice, to a less extent prevented the transmission of HIV and other STIs, then it was interpreted that a given circumcision practice, in this case, was purely a chance that it could prevent the STIs and HIV infections.

Therefore, the comparison in this context was not on whether modern circumcision practice was better than traditional practice or not, but the study aimed at comparing the two practices on the extent to which each of them prevented the HIV and other STIs against transmission in circumcised men in Chavuma and Kapiri Mposhi districts. This was so because the two practices

were different variables, of course, with different characteristics, performed in different conditions and also prevailing in unique environments**.** And hence, only areas of agreement and departure during and after circumcision among the two practices formed the basis of comparison on the extent to which a given practice prevented the transmission of HIV and STIs in circumcised men within Chavuma and Kapiri Mposhi districts.

1.3 STATEMENT OF THE PROBLEM

HIV and other STIs continue to be among the major public health challenges worldwide. Zambia is one of the countries in the African region seriously affected by STIs, coupled with the AIDS pandemic, as a leading cause of death. Along with efforts to continuously increase access to treatment and care, the need for effective preventive strategies remains a priority. In this regard, the Zambian government, through its health policy embarked on the implementation of the voluntary medical male circumcision (VMMC) program as a preventive strategy against the transmission of HIV and other STIs. According to Bailey R.C. et.al. (2007), male circumcision (MC) should be clinically based and not traditional male circumcision (TMC). To this end, the policy is anchored on ending the prevalence of HIV and other STIs with increased emphasis on prevention, care, and treatment.

On the other hand, traditional male circumcision continues to be an important practice and constitutes one of the ritual initiations into manhood among the Luvales, Chokwes, Luchazis and Lundas in the north-western part of Zambia. In this context, the Zambian Health Policy of 1991 also recognizes the efforts made by traditional practitioners through established institutions in reducing the disease burden in the country. The policy further recommends "the provision of traditional and alternative health services such as herbal medicine and circumcision within the communities" National Health policy (1991.p 35). However, the government of Zambia, through this policy, is mandated to strengthen regulation, supervision, research, and coordination of this traditional sector and ensures that they provide safe and evidence-based health services to the communities.

Despite the Zambian health policy measures such as the endorsement of modern circumcision program and its objectives to halt and reduce the spread of HIV and other STIs through increased access to quality HIV/AIDS and other STIs interventions for prevention, treatment, and care, and on the other hand, policy measures in place of regulating health services provided by the traditional practitioners such as herbal medicine and circumcision, the problem is that some men continue to contract HIV and other STIs in the communities. STIs can have serious consequences beyond the immediate impact of the infection itself. This knowledge gap, if left unchecked, the men who contract STIs eventually may end up with certain health complications such as HIV and other STDs. And those men who acquire HIV and other STIs over time with the progression of the virus (HIV) would result into AIDS, Cancer, Chancroid, Gonorrhea, deformities, pneumonia (a condition that causes shortness of breathing), and eventually may die. To support this, according to WHO (2016), STIs are a common problem across the world and are responsible for high morbidity and can have severe health implications, and STIs such as herpes and syphilis can increase the risk of HIV acquisition three times or more. What this means is that the country could be deprived of its citizenry especially when men die of the HIV epidemic who probably could have contributed positively towards national development.

Further, Zavreiw (1994) documented that, the traditional practice of circumcision originally was for cultural reasons and not STIs, HIV, and AIDS preventive strategy, however, it is yet to be seen as a preventive measure against transmission of HIV and other STIs. In Zambia, circumcision, according to ZDHS (2014) was traditionally practiced on a large scale among Luvales, Chokwes, Luchazis and the Lundas only in the north-western province, an area which had the lowest HIV infection rates, while the central province where there is a prevalence of the modern practice of circumcision recorded the highest STIs prevalence at approximately six (6) percent compared to the north-western province that was at 4.6 percent. Therefore, some questions remain unanswered. For instance, why do men still contract HIV and STIs even after undergoing modern circumcision? On the other hand, Chinyama Seleji, (2010) documents that, the old traditional male circumcision continued in attracting men and recorded lower HIV rates of less than 10%, compared to the central province which was at 17% in 2014. Based on this literature, it is clear that, though male circumcision was documented in some National Demographic Health Surveys like the Zambia Demographic Health Survey (ZDHS) of 2014,

data on the comparison between modern and traditional circumcision practices on the extent to which both practices prevented the transmission of HIV and other STIs was inadequate and required further development. Therefore, based on this knowledge gap and how to close it in literature, the study was conducted.

1.4 Study Objectives

These study objectives were categorized into two, namely: The General Objective and the Specific Objectives, respectively.

1.4.1 General Objective

The general objective of this study was on the comparison of the extent to which traditional and modern circumcision practices prevent transmission of HIV and other STIs in Chavuma and Kapiri Mposhi districts.

1.4.2 Specific Objectives of the study

1. To compare the extent to which traditional and modern circumcision practices prevent HIV transmission.

2. To compare the extent to which traditional and modern circumcision practices prevent other STIs apart from HIV against transmission.

1.4.3 Research Questions

To compare the extent to which traditional and modern circumcision practices prevent transmission of HIV and other STIs in Chavuma and Kapiri Mposhi districts, the following questions provided guidance:

1. To what extent do traditional and modern circumcision practices prevent HIV transmission?

2. To what extent do traditional and modern circumcision practices prevent other STIs apart from HIV from transmission?

1.5 Significance of the Study

The study aimed at producing findings on the comparison between traditional and modern male circumcision practices on the extent to which both practices prevented the transmission of HIV and other STIs in Zambia. These findings were envisaged to be useful to cooperating partners in their support of health programs, as they thought of prioritizing the best practice of male circumcision. The Government also could benefit, especially through its policymakers, in formulating and implementing better male circumcision policy options to have the health status improved of the people in the country.

The efforts made in the study helped to close the gap between research and practice by advocating for evidence-based approaches to the circumcision of men and settled for options with desirable results on the best practice that could strengthen the prevention of HIV and other STIs endangering many lives of Zambian Citizens.

1.6 Operational Definitions of Variables

In analyzing the comparison of the extent to which traditional and modern circumcision practices prevent the transmission of HIV and other STIs, several variables as part of the subject matter needed explanation. Further, variables were defined using the operational solution as a language which ensured defining words not to achieve exactness but to provide reasonable explanation of how terms were used in the study. The variables in the study had a causal-effect relationship. This meant that the independent variables were the cause, while the dependent variables were the effect in the study, and their value depended on the changes in the independent variables.

Further, the variables were very important to determine the outcome of the study. For instance, to determine whether the circumcised men who underwent modern circumcision practice had reduced chances of acquiring HIV and other STIs compared to those who underwent traditional

practice. The variables had the potential to guide the study whereby, the manipulation of independent variables could help measure the effect of this change on the dependent variable. What this meant was that the type of circumcision (Traditional or Modern) that one underwent was an independent variable, while the outcome was measured as the dependent variable, that is to say, the HIV and other STIs status of the circumcised men. In this study, therefore, the comparison was made by dividing the type of circumcision into two groups. The experimental group was those circumcised men who underwent modern circumcision practice, and the control group was those men who underwent traditional circumcision practice. The independent variable, in this case, was circumcision which varied among the two groups. The study determined the extent to which modern circumcision practice prevented the transmission of HIV and other STIs while comparing if similar changes or outcomes were common in traditional circumcision (Control group). In this case, the expected outcome (dependent variable) was the HIV and other STIs status of the men after undergoing circumcision. The breakdown of the variables below guided the study.

Independent Variables

- Extent
- Testing
- Tradition
- Modern
- Prevention
- Transmission

Dependent Variable

- Human Immunodeficiency Virus (HIV)
- Sexually Transmitted Infections (STI)

Definition of Variables

- **Extent-** the particular degree to which something is or is believed to be the case. In this study, the focus was on measuring the degree or magnitude to which a given circumcision practice prevented HIV and other STIs transmission.

- **Tradition**- an inherited pattern of thought or action passed on from generation to generation. This study referred to the surgical removal of some or the entire foreskin at the end of the penis under traditional procedures.

- **Modern**- belonging to the modern era or the characteristics of the present day. This study entailed male circumcision (MC) that was clinically based or scientifically based. That is to say, the voluntary medical male circumcision (VMMC) that was a biomedical strategy for HIV prevention.

- **Testing**- the process of checking someone or something in this case, an HIV and STI test was used to determine the negative or positive HIV and STI status of the circumcised men.

- **Prevention**- in this study, it entailed a measure that assisted in stopping an occurrence from happening, in this case, ending the transmission of HIV and other STIs.

- **Transmission**- this referred to the spread of HIV and other STIs among the circumcised men.

- **Human Immunodeficiency Virus (HIV)** – in this study, it is a very small living thing that causes disease acquired directly between individuals via unprotected sexual contact including vaginal, anal, oral sex, and sometimes spread without sex such as through childbirth or breastfeeding, blood products, as well as sharing needles or sometimes through sharing of knives during circumcision. This type of virus had the potential in entering the body through such modes as above and eventually develops into AIDS. Further, this is also referred to as a new sexually transmitted virus (HIV) in this study. This study, therefore, ends up with the acquisition of HIV, and no progression of the virus into AIDS which could turn this study into a medical one and of course outside its study scope.

- **Sexually Transmitted Infections (STIs)** – in this study, any bacteria, viruses, or parasites that attack the body and progress into a disease called Sexually transmitted Disease (STD). That is to say, a disease that one person passes to another through having

sex, and also similarly to HIV, it can also spread through childbirth especially when a pregnant woman was infected by a man with an STI like syphilis. Therefore, STIs in this study were treated as any old sexually transmitted diseases other than HIV such as Gonorrhea, Chancroid, Syphilis, Genital herpes, Chlamydia to mention a few. In the study, STIs and STDs terms were used interchangeably as synonymous with each other.

Throughout this study, Zambia's health policy on the prevention of HIV and other STIs is referred to as modern circumcision practice and also known as voluntary medical male circumcision (VMMC). Therefore, the two terms were frequently used. Also defining terminologies operationally was an important approach that was adopted in this study because it had the potential of guiding the researcher on the premise to conduct the study amidst numerous issues of comparing the extent to which traditional and modern circumcision practices prevented the transmission of HIV and other STIs in Zambia.

1.7 Theoretical Framework

The study was guided by Serrat (2017), the Theory of Change, Albert Bandura (1977), Self-efficacy theory, Rosenstock's (1944) Health belief model theory, and Victor Vroom's (1964) Expectancy value theory. These described how the perceived action of motivated behavior in a specific population would result in the desired results. This meant that individuals could have different goals and be motivated toward a particular goal, provided they have expectations or values attributed to the pursued goal.

1.7.1 Theory of change (TC)

Even though the theory of change is used in most cases at the inception of the program, during, and after, the focus in the study was after the implementation of the program and its outcome, ultimately the impact. The theory of change, therefore, was used in this study to explore the

outcome of the health policy on the prevention of HIV and other STIs transmission by comparing the extent to which modern and traditional circumcision practices prevent the transmission of HIV and other STIs. The study used this theory to ascertain if the intended and desired outcomes were achieved by the health policy. Funnell S, Rogers P (2011) defines inputs as what the program delivers, which, in this study, could imply training that the circumcisers underwent, and outcomes are real changes in people's lives. In this case, the study used outcomes to mean circumcision (traditional and modern) to prevent the acquisition of STIs and HIV infection (intended results). The desired outcome of the health policy is circumcision to bring to a halt and prevent the spread of STIs and HIV infections which, in this case, is the intended result of the policy. It is also important to firstly indicate that, every program rests on a theory of change.

A theory of change therefore, according to Serrat O., (2017), is a purposeful model of how an initiative—such as a policy, a strategy, a program, or a project—contributes through a chain of early and intermediate outcomes to the intended result. The theory of change helps how a program is expected to work. Further, it maps how program inputs are expected to lead to activities and outputs, which could drive changes in the outcomes, that is achieve impact. At times, it also documents assumptions to get from one step to another, and any possible risks along the way. In this regard, this is a useful theory in assessing whether or not the intended results of the health policy were achieved based on the study findings. In other words, according to Serrat (2017), the theory of change is an outcome-based theory, whose approach is participatory, with applied critical thinking to the design, implementation, and evaluation of an initiative such as policy, strategy, project, or program. In this case, the program was the voluntary medical male circumcision (VMMC). In short, the theory of change explores and represents a chain of assumptions or events and how the outcome or result should be realized.

A well-developed theory of change has several advantages for the understanding of the program, in this case, the VMMC program, and these are as follows:

1. **Focus on impact**

   A theory of change could give guidance, not only focusing on inputs and outputs, but exploring activities or measures of circumcision that were put in place that could

eventually lead to the desirable impact that the government wants to achieve through its health policy on the prevention of HIV and other STIs and why the impact was not achieved.

2. **Internal alignment on goals**

   When all program activities and expectations about the impact are written out and aligned in a theory of change, it could be easier for program staff to understand how the program should be run. For instance, in a VMMC program, the program staff may face tough decisions about who to prioritize: children or adults? First-come-first-served? Developing a theory of change can help in articulating these questions, and need to encourage important discussions within the team, and give better guidance on how to implement the circumcision program while keeping its mission and goals of preventing HIV and other STIs transmission.

3. **Planning**

   A theory of change allows you to describe with clarity the pathways that would lead the program to success, which, in turn, leads to a better-designed program. For example, a VMMC program to reduce HIV and other STIs rests on multiple assumptions, including that recipients will get the intended benefits after receiving circumcision. Documenting this through a theory of change brought a need in this study to investigate whether or not, men were prevented against STIs and HIV infections after undergoing modern or traditional circumcision practice, and possibly do more to explain the importance of circumcision to the recipients, although this was not the scope of this study.

4. **Generating evidence**

   A theory of change also assists in the identification of the activities, outputs, and outcomes that are essential for the program to be successful, and should, therefore, be tracked with data. This theory of change, in this vein, was useful in generating data that could be useful in concluding whether or not, the type of circumcision that one

underwent indeed reduced the chances of acquiring HIV and other STIs. In other words, through this study, using this theory, the researcher was in the position to gather this evidence-based data. It also helped the researcher to prioritize the elements of the program that were more important to track than others.

Using the previous example of circumcision, a theory of change was useful to reveal that assuming recipients (men) know the benefits of undergoing either modern or traditional circumcision, then they would choose one of the practices and get circumcised. The researcher could test this assumption by understanding recipients' knowledge of modern or traditional circumcision practice, and seeing if it is related to the prevention of HIV and other STIs among them. If it did not, this likely means that the VMMC program would not work the way it was intended to be by the Zambian health policy, and hence, it becomes important to update the theory of change accordingly.

5. External communication

Tracking progress made toward the intended results lies in the documentation of the program activities. Documenting the VMMC program activities in detail and the change process expected is an important aspect of describing the program to donors and supporters of male circumcision. Documentation in place could help in the gathering of parts in the health policy on the prevention of HIV and other STIs that have been working well and those that have not worked well and propose further support in the program if needed during or after implementation, in this case, the VMMC program.

The following summarizes of what a theory of change is at a glance:

- A theory of change is the foundation on which all other evidence-generating tools rest.
- A theory of change is a "roadmap" for a program's success – it provides a framework for how your program hopes to achieve impact.

- On its own, a theory of change cannot tell you whether your program is working. However, developing a theory of change is a critical first step in identifying important questions that can be answered by the other methods.
- Any organization can develop a theory of change.

Based on the above, since the theory of change is about how an initiative such as a policy contributes to an intended result, in this study, the theory of change was used in the understanding of the Zambia Health policy on how and why the program was to work on the prevention of HIV and other STIs transmission. And the program that was put in place by the Zambian health policy to achieve the intended results was the Voluntary Medical Male Circumcision (VMMC) program. Further, the road map was the framework put in place through the VMMC operational plan for 2016-2020. The development of this operational VMMC plan was to assist in the efficient and effective implementation of the voluntary medical male circumcision (VMMC) program in Zambia. The main goal of this program was to reduce the incidence and prevalence of HIV and other STIs in Zambia.

A theory of change, therefore, is the foundation on which all other evidence-generating tools rest as earlier alluded. Think of it as the blueprint based on which you will decide which tools you need to use. Whether you are designing interventions, tracking program implementation, or measuring impact, a theory of change lays out the steps necessary to achieve your goals. In this study, it would be important to focus on the outcome after program implementation. A combination of theory and a logic model (results framework) could be a tactical description of the process of delivering an outcome: it insists on, somewhat mechanistically, inputs and activities, the outputs they generate, and the connections between the outputs and the desired outcome. From this, the inputs in the study could be providers of circumcision, males, and instruments to mention a few. In this study, the focus was after circumcision, and the prevention of HIV and other STIs transmission was the desired goal or intended result.

Using this theory, the health policy objective is to halt and reduce the spread of STIs and HIV by increasing access to quality STIs and HIV interventions for prevention, treatment, and care. And to achieve this, the VMMC program was put in place as the institutional framework which would

guide implementation in achieving the policy objectives. Using this theory, it was important to establish whether there were gaps in the male circumcision implementation strategy. This helped to understand the strategies put in place in the VMMC operation plan and established whether they achieved the intended results or not. According to the VMMC operational Plan (2016-2020), one of the VMMC policy objectives on Pillar five (5) is the implementation science. This meant conducting research studies to fill the most critical VMMC information gaps and provide implementable recommendations for VMMC policy and practice.

Therefore, understanding such required the theory of change and assessing how VMMC has been implemented to achieve the intended goals. Hence, this theory was very important because it brought out an understanding of different implementation stages for a successful program. Drawing guidance from the theory of change was possible to establish whether the outcome of the policy was a result of the strategies put in place as inputs or not. In the study, once it was established that the intended results were not what the policy objective was primarily meant for, the Zambian government could develop a theory of change. What could be required is critical thinking and deep knowledge of the VMMC program and context. This theory of change should in this case be made as understandable and relevant to the day-to-day operations of the VMMC program as possible. This theory of change in this case could be a living document that could easily be tweaked and updated based on the lessons or gaps learned from the outcome of the VMMC program implementation.

Even though the impact could be a long-term outcome of implementing male circumcision as propagated by the theory of change, the strength of this theory is a causal pathway of what was needed for outcomes to be achieved as specified. This means that the implementation of the health policy through the VMMC program ultimately should lead to the prevention of the spread of STIs and HIV infections. This theory guided the actualization of this circumcision process. Hence, the Theory of Change method enables organizations to think about their program more deeply. And once an outcome has been identified, a results framework could be drawn to explain how it was reached. Since a theory of change could be used regardless of the stage in which a program was at, in this study, the theory was used at the stage of the outcome and assisted the researcher to identify areas that required improvement after investigating whether or not the

traditional and modern circumcision practices prevented the transmission of STI and HIV infection. This was in line with the theory's tenet of refining the program if it did not achieve the intended objectives.

Though the theory of change was used in the study, there might be a few disadvantages associated with it, for example, on its own, a theory of change cannot tell you whether your program is working or not, thus, the need for other models. This means that the usage of this theory requires that a program must evolve with reflective analysis and practice, hence this theory does not need to be in one single attempt. And if this narrative of the theory about how and why the program works is unstated or incomplete, it makes it difficult to anticipate risks and can lead the implementers and partners to pursue conflicting goals and strategies. Hence, it could be strongly encouraged that all organizations need to map and interrogate a theory of change for each of their programs to ensure teams have a shared vision of success. This process could also help identify any key assumptions that need further investigation in the program. Lastly, hiring an external party may be expensive to help walk through the process of the theory of change. If you develop a theory of change on your own, it could be helpful to have experts review and give input, and this process may be costly because you may need to consult experts in a specific field such as depending on your program, then consider asking someone familiar with behavioral change, and/or your sector to give feedback.

1.7.2 Self-efficacy theory (SET)

The Self-efficacy theory (SET) was published by Albert Bandura in 1977. According to Bandura (1977), self-efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments. Self-efficacy reflects confidence in the ability to exert control over one's motivation, behavior, and social environment. These cognitive self-evaluations influence all manner of human experience, including the goals for which people strive, the amount of energy expended toward goal achievement, and the likelihood of attaining particular levels of behavioral performance. In this facet, the ultimate goal of the Zambian health

policy on the prevention of HIV and other STIs was that, after men got circumcised under either modern or traditional circumcision, at least, to a larger extent, they should have reduced chances of acquiring HIV and other STIs. Even though this study is not about understanding behaviors that one should engage in before undertaking circumcision, the self-efficacy theory was useful in understanding the belief of the men who underwent circumcision intending to be prevented from acquiring and transmission of HIV and other STIs.

In other words, Bandura (1977) brought out in this study an understanding that a person will adopt a certain behavior only through the manipulation of expectations such as getting circumcised, either through traditional or modern circumcision. In this regard, the performance attainment in the study was that, once one gets circumcised, the outcome should be reduced or no HIV and STI acquisition. In this vein, if this is attained, then a circumcision practice is efficacy in HIV and other STIs prevention. Unlike traditional psychological constructs, self-efficacy beliefs were hypothesized to vary, depending on the domain of functioning and circumstances surrounding the occurrence of the behavior. Self-Efficacy Theory (SET) has had considerable influence on research, education, and clinical practice. In the field of health, for example, the construct of self-efficacy has been applied to behaviors as diverse as:

- Self-management of chronic disease
- Circumcision
- Smoking cessation
- Alcohol use
- Eating
- Pain control
- And exercise

The intuitive appeal of self-efficacy theory in these health-related domains has encouraged its use in research addressing the prevention of HIV and other STIs. According to Forsyth and Carey (1998), self-efficacy is assessed frequently in HIV prevention research but there has been mixed evidence for the relationship between self-efficacy (for safer sex) and sexual risk behavior. This pattern of findings could be interpreted to mean that self-efficacy was irrelevant

to the study of HIV-related risk behavior, and perhaps other health-related behaviors. However, it was likely that such a conclusion would be premature.

Further, Forsyth and Carey (1998) state that, what HIV research has taught us, however, is that reliable and valid measurement of self-efficacy is very challenging. Instruments intended to assess self-efficacy for safer behavior often measure constructs other than self-efficacy. For example, investigators had used measures with content reflecting HIV-related knowledge, behavioral intentions, attitudes toward safer sex behaviors, perceptions of the difficulty of enacting risk-reducing behaviors, perceived helplessness, perceived vulnerability to HIV infection, acceptance of sexuality, and other unique operationalization. The study followed this perspective of measuring content reflecting HIV and STIs-related knowledge and assessed the extent to which traditional and modern circumcision practices prevented the risk or acquisition of HIV and other STIs.

Considering the vulnerability to STIs and HIV infection by men propagated by the self-efficacy theory, the study assessed the sexual behaviors or experiences of men after circumcision and determined whether or not, circumcised men who had engaged in sexual activities at one point in time were susceptible to HIV and other STIs acquisition. This conclusion could be made, depending on the outcome (contracted HIV or STIs) or frequencies of HIV and STIs acquisition who had some sexual engagement after circumcision.

This theory (SET) became useful to this study in determining the usefulness of the Zambian health policy on the prevention of HIV and other STIs by comparing the extent to which traditional and modern circumcision practices prevented the transmission of other STIs and HIV infections, and in this case, SET viewed this as risk-reducing behaviors perspectives. HIV and other STIs research has also called attention to the limited evidence for the validity of the self-efficacy measures. For instance, Brafford and Beck (1991) reported discriminative evidence for the validity of the Condom Use Self-Efficacy Scale (CUSES) by demonstrating that scores distinguish:

(a) consistent, inconsistent, and non-condom users;

(b) sexually experienced and inexperienced participants; and,

(c) participants who did not report a history of sexually transmitted disease infection.

Taking C as a score of Self-Efficacy, this score was useful in the study to assess whether the circumcised men who were sexually active after circumcision had reduced chances of acquiring HIV and other STIs. This, of course, could be interpreted with caution, the men in question could be those after circumcision had engaged in sexual encounters without wearing protection (condom). In this way, this theory helped to set a tone in establishing if, at all, those circumcised men who had engaged in unprotected sexual activities had a history of sexually transmitted infections.

Therefore, this approach was important in this study, as this was another criterion in ascertaining the efficacy of the Zambian health policy on the prevention of HIV and STIs by comparing the extent to which traditional and modern circumcision practices prevented HIV and other STIs transmission. What this meant was how effective was circumcision conducted either under modern or traditional procedures concerning the prevention of HIV and other STIs as propagated by the Zambian health policy of 1991?

In addition to Brafford and Beck's (1991) study on CUSES scores from the preceding discussion, Brien et al., (1994); and Mahoney et al., (1995), in a series of subsequent studies, investigations have corroborated the discriminative validity of CUSES scores. In each of these studies, self-efficacy ratings distinguished college students based on self-reported consistency of condom use. Considerably less attention has been paid to predictive and constructs evidence. A related problem was that, attempts to evaluate self-efficacy measures have been limited by validation methods that employ a single assessment strategy. Such investigations are unable to demonstrate that observed correlations do not result primarily from shared method variance. This research reminds us that Campbell and Fiske's (1959) recommendations for using multitrait-multimethod matrices for the evaluation of convergent and discriminant evidence are needed.

HIV and other STIs research also reminds us that conceptual clarity about the nature of efficacy beliefs is critical to the development of measures that are consistent with SET. According to

Brien et al., (1994); and Mahoney et al., (1995), items intended to assess efficacy beliefs should be operationalized so that they:

(a) assess beliefs in the capacity to

(b) enact domain-specific behaviors in

(c) circumstances that present gradations of challenge.

Studies of HIV and STI prevention frequently do not achieve this level of precision but noteworthy exceptions exist. For example, Basen-Engquist's (1992) multi-item measure of self-efficacy for negotiating safer sex and condom use meets each criterion. The measure assesses students' beliefs in their capacities to enact risk-reducing behavior (for example, initiating a discussion of condom use) across several circumstances (discussing safer sex with a new partner before intercourse). From this measure, the study used elicitation-based scenarios to provide details about situational demands that could influence the level and strength of efficacy beliefs. In this case, the use of such elicitation (qualitative) research in advance of quantitative investigations in the study reflected another contribution of HIV and STIs research to health-behavior research. In addition to these fundamental measurement concerns regarding self-efficacy, the HIV and STIs research has also demonstrated that methodological issues may attenuate observed efficacy-behavior relationships.

According to Weinhardt et al. (1998), Self-efficacy risk reduction associations may be influenced by ceiling effects, response bias, and measurement error associated with self-report measures of risk behavior. A consistent finding in HIV and STI prevention research is that self-efficacy scores tend to be negatively skewed. In response to inquiries about perceived capabilities, respondents often report being highly efficacious to enact risk-reducing behaviors. This response tendency may lead to censored distributions wherein a considerable proportion of the sample yields maximum self-efficacy scores. Based on this finding, the researcher was cognizant of the fact that some responses could have been skewed towards what respondents perceived as a circumcision practice that had the potential to yield better results in the reduction of HIV and other STIs, and yet could not be in a position to report on the downside of the chosen practice,

making the scores high on the efficacy of the circumcision practice selected. Hence, it was important in this study to validate the results.

Further, according to Bandura, (1997), one explanation for these ceiling effects is that efficacy measures do not contain sufficient levels of challenge relevant to the target sample. In the absence of contextual cues, responses may reflect performances in "best case" scenarios that yield maximum self-efficacy scores. These responses will obscure real differences between respondents. In addition, scoring protocols that restrict the range of possible responses (quantitative) may also produce truncated data. The resulting lack of sensitivity to differences in self-efficacy limits predictions of behavioral performance. In this regard, this was useful in the study by avoiding the limited responses (quantitative), which incorporate sufficient gradations of challenge in items and sufficiently wide response (qualitative) intervals critical to the development of sensitive self-efficacy measures. This was the reason why this approach was used in the study based on this theory to compensate for one weakness of one approach by another in the elicitation of study information from the respondents.

An additional explanation for ceiling effects was that efficacy scores may be influenced by response bias. That is, research participants may respond in ways that reflected well of them. Traditional psychological assessment, which advances a trait conceptualization of social desirability responding, has been adopted in HIV prevention research. According to Forsyth et al. (1997), not surprisingly, this approach has revealed no relationship between socially desirable bias and efficacy beliefs. One limitation of these findings is that investigators attempted to predict dynamic efficacy beliefs from items reflecting stable personality traits, with the latter having no clear relevance to the HIV domain. These traditional measures of socially desirable responding treat assessment items as signs of a larger construct, ignoring the reality that behaviors conferring risk for HIV infection were uniquely stigmatizing. Failure to find significant correlations among social desirability, self-efficacy, and HIV risk behavior may be attributed to incongruences inherent in the assessment.

Using this theory, it became important to the study to take care of certain factors that had the potential in influencing the research findings negatively. For example, it was important to be aware that, in this study, participants may at times present in socially acceptable ways when asked about HIV and other STIs risk behaviors after undergoing circumcision, but do so in ways that were not detected by trait measures of presentation bias. Just as risky sexual behaviors may be under-reported, beliefs like self-efficacy for risk-reducing behaviors may be over-reported. Therefore, the assessment of response bias in the context of self-efficacy research on whether modern or traditional circumcision practice prevented HIV and STI transmission warranted increased attention in the study. Hence, it became important in this study to compare whether or not, traditional and modern circumcision (intervention programs) enhanced self-efficacy for the prevention of HIV and STI transmission.

According to the self-efficacy theory of Albert Bandura (1977), therapeutic change can be brought about by experiences of mastery arising from successful performance. He argues that a person's self-efficacy can be improved by those psychological procedures, which enhance the level and the strength of the self-efficacy. Self-efficacy can be improved by various treatment procedures. According to Bandura, perceived self-efficacy through performance successes depend on various personal and situational factors, for example, the difficulty of the task, the amount of effort subjects expends, and the temporal pattern of their successes and failures. The model posits a central role in information processing. It states that subjects process, weigh and integrate information about their capabilities, and they regulate their behavior and effort accordingly. From this, the information acquired on circumcision and its potential to reduce HIV and STI transmission probably influenced men to undergo a particular circumcision practice. Even though this was not the scope of the study on the choice of the circumcision practice that one underwent whether modern or traditional based on the information acquired, it was important to highlight the performance-based outcome brought by this theory as an important aspect in understanding whether a given circumcision practice potentially prevented the transmission of HIV and other STIs, and this could be based on circumcised men’s experience after circumcision.

On the other hand, taking psychological studies in Social Sciences as an example, there was also some evidence that seems in conflict with the self-efficacy theory. Some studies found that although self-efficacy predicted self-reported change, it did not have a significant relationship with behavioral or physiological change. More recently, Bandura extended the self-efficacy theory by stating that phobic anxiety derives from both low self-efficacies for performing overtly, and from low self-efficacy for exercising control over scary thoughts. Overall, self-efficacy seems a powerful measure in predicting dysfunctional behavior.

The self-efficacy mechanism has received considerable support from research in describing the relationship between what subjects think they could manage and what they could manage both before and after treatments for certain health problems. In this case, using this theory, assisted in the study of understanding one's confidence and ability to successfully act, that is to say, men engaged in a certain behavior (circumcised) and had confidence by having chosen either modern or traditional circumcision practice with the view of the desired outcome- the prevention of HIV and other STIs acquisition. Lastly, this theory also applied to the circumcisers' confidence and their ability to perform the circumcision process successfully be it at health facilities or traditional rites.

1.7.3 Health Belief Model theory (HBM)

In the first place, it should be clearly stated that even though the health belief model theory (HBM) brought out ways of understanding that a given behavior might result in a given outcome, this study did not focus necessarily on how subjects engaged in a certain behavior (getting circumcised) to realize certain outcomes (reduced or prevented sexually transmitted infections). However, it could have been impossible to understand outcomes without first getting to know the process of circumcised men's behaviors of engagement in an action using the HBM and relating it to the outcome of circumcision as the core of the study. In other words, the study focused on

the outcome that was attained after men had undergone circumcision. Hence, this theory became important to this process as noted in the discussion.

The Health Belief Model (HBM) is a widely used theoretical framework for health behavior studies and interventions. A total of 64% of all studies in the Medline database between 1974 and 1994 used the HBM as the main theoretical framework (Clarke et al., 2000, p. 369). According to Glanz, Rimer, and Lewis (1997), this made it by far the most frequently used theoretical framework in health education and health promotion. HBM "has been used both to explain the change and maintenance of health-related interventions" (Rosenstock, 2000, p. 79). The intervention in the study was circumcision and explored the Zambia health policy on the prevention of HIV and other STIs by comparing the extent to which traditional or modern circumcision practice achieved that goal.

The HBM evolved and became a theory aiming to explain why the public accepts (or rather rejects) healthcare programs. In this regard, this assisted the researcher to conclude on the best circumcision practice in the prevention of HIV and other STI transmission, and this could be concluded as a practice that the public would widely accept and vice versa. The foundational ideas for the HBM, a cognitive theory that places value on thinking and anticipating, date back to the 1950s when researchers were surprised and concerned by the public's failure to make use of health care offers. According to Rosenstock, (2000) and Lewin, et.al., (1944), the HBM is part of the value expectancy theory, wherein a person's behavior depends on the subjective value of an outcome, as well as on the subjective expectation that a certain action will lead to that outcome. Thus, in this study, a person could adopt a certain behavior (the dependent Variable- prevented/reduced HIV and STIs) only through the manipulation of expectations (independent variables- get circumcised either through traditional or modern circumcision practice). This meant that men who got circumcised either under traditional or modern circumcision practice probably expected that circumcision would eventually lead to them being prevented against HIV and other STIs acquisition.

More recently, other constructs have been added to the Health Belief Model Theory. Thus, the model has been expanded to include cues to action (that stimulate the behavior) motivating factors (these are individual characteristics that influence personal perceptions), and self-efficacy (one's confidence in the ability to successfully act). It is believed that perceived barriers are the most powerful construct in predicting health behavior. The theory evolved to include more than just the independent variable of expectations or value of the outcome (the benefits); thus, in its evolved form, HBM theorized that the likelihood of adopting a behavior depended on perceived benefits (dependent variable- long term to measure such as reduced or prevented STIs and HIV infection) and perceived barriers (pain, risky sexual behavior), perceived severity (Independent variables- HIV and STIs is an extremely harmful disease) and perceived susceptibility (Independent Variables- I am at risk for getting HIV and STIs) to the health issue, and modifying factors such as cues to action and demographic variables, and sometimes self-efficacy.

In addition, Smith, Chen, and Yang, (2008) stated that for this study, an additional dependent variable, attitude toward the behavior, was included because the hierarchy of effects model, used often in behavior adoption models of consumer behavior, posits that beliefs influence attitude, which in turn influences behavior. This was useful in this study, especially for those men probably who underwent traditional circumcision practice since beliefs had a bearing on the attitude engaged towards circumcision, and such beliefs were common under traditional perspective. For example, the belief that if one gets circumcised under traditional circumcision, then the chances of contracting HIV and STIs are reduced. However, this theory aspect on belief should be interpreted with caution because even under modern circumcision, a person could have a belief that influences behavior to choose this type of circumcision on the premise that the outcome could have desirable benefits such as not contracting HIV and other STIs. In other words, in this study, the perceived benefits refer to beliefs about the effectiveness of the available type of circumcision practice. It is also important to note that, there can be objective facts, as well as subjective beliefs, about the effectiveness of the counter-acting behavior in dealing with circumcision.

On the other hand, perceived barriers are circumstances that impede adopting the counter-acting behavior. In this case, an example of a barrier could be one where a person circumcised is associated with pain and would not encourage others to undertake a particular circumcision type in the future, of course, this was not the scope of this study. In addition to this, Rosenstock, et. al., (2000) suggested that typically, such barriers are pain, cost, inconvenience, or embarrassment and some researchers like Janz and Becker of 1984 believed they have the largest influence on the adoption of the behavior. Therefore, from this theory, the study used perceived susceptibility to mean the individual's perception of his risk of getting HIV and other STIs (diseases).

In a critical review of the health belief model theory, Janz and Backer (1984) found that though both perceived that susceptibility and benefits were important, susceptibility was a stronger predictor of preventive behavior. In other words, Janz and Becker, (1984) indicated that, while susceptibility is generally underestimated by the general population, some consider it the most powerful motivator to engage in health-promoting behavior. However, this is not always the case, for example, in Lewis and Malow's 1997 study of college students who perceived themselves at high risk for HIV because they did not use contraception, the students did not adopt preventive behavior. Perceived severity refers to the subjective evaluation of the consequences of a disease in terms of morbidity and mortality associated with the disease. In this study, the perceived severity referred to the circumcised men's actual medical knowledge (modern) or the myths and beliefs (traditional) held by the subject about STIs and HIV disease.

Rosenstock and Clarke et al., (2000), cues to action are events, people, or actions that trigger the recommended behavior, and can range from an occurrence such as a sneeze to an outside stimulus, such as recommendations from physicians or family members. In this regard, family members could influence the type of circumcision that one needs to undergo, especially under the traditional circumcision practice, and commonly in children undergoing circumcision under modern practice, the parents could choose for them to keep the tradition of circumcision. Self-efficacy is oftentimes included in the HBM, especially in studies that require the person to acquire a certain skill such as conducting a modern circumcision procedure, in this case,

understanding the providers or circumcisers. In this regard, this implied the circumcisers' belief in their ability to engage in the behavior.

Many people are unrealistically optimistic about their susceptibility to and the severity of the disease; "people perceive their outcomes as being more positive than those of other people in similar circumstances" (Clarke et al., 2000, p. 368). According to Clarke et al., (2000), when this perception is present among a large number of people, it is called unrealistic optimism. However, Janz and Becker, (1984), suggested that when susceptibility is recognized, very often the relationship between susceptibility and action is very strong. On the other hand, Pargament et al., (1988) argued that the relationship between perceived severity and action is curvilinear, depending on the individual's style of coping, such that after a point, the larger the perceived severity, the less the adoption of the action behaviors.

Therefore, the framework brought out by the Health Belief Model theory (HBM) had the potential in guiding the study because it helped in attempting to explain and predict health behaviors by focusing on the attitudes and beliefs of the circumcised men on what they perceived as an outcome after circumcision. In this study, using the health belief model postulates that a person will take a health-related action like male circumcision if that person feels that a negative health condition like HIV and other STIs infection can be avoided, has a positive expectation that by taking the recommended action (male circumcision), he will avoid the negative health condition (HIV and other STIs infection and its consequences) and if believes that he can successfully take the recommended health action.

In summary, the health belief model guided the study in understanding that people generally do not try to do something new unless they think they can do it. Therefore, the health belief model theory helps to predict that, individuals will act to protect or promote their health if they believe that they are susceptible to a disease, the consequences of the disease are severe, the recommended action will decrease their chances of developing a disease and benefits of the new behavior outweigh the consequences of continuing the old behavior.

In this regard, using this theory, it was possible to explore Zambia's health policy on the prevention of HIV and other STIs and compared the extent to which traditional and modern

circumcision practices prevented the HIV and other STIs transmission. This was made possible to explain the phenomenon under investigation using the theory that probably some men opted for modern circumcision as opposed to traditional circumcision and vice versa because they believed that their recommended action to undergo circumcision decreased the chances of acquiring STIs and HIV diseases, and the benefits of circumcision could outweigh the consequences of being uncircumcised.

Lastly, the health belief theory could also be useful in predicting the uptake of health-related programs, including male circumcision for HIV and other STIs prevention, as well as a guide in the design of counseling messages. This study, therefore, employed the health belief model theory in attempting to explore the Zambian health policy on the prevention of HIV and other STIs and assessed the extent to which traditional and modern circumcision practices prevented the transmission of STIs and HIV infection. Hence, the study based on this theory was of the position that good practice promotes a healthy environment for men and that the chances for HIV infection and Sexual Transmitted diseases are reduced.

1.7.4 Expectancy Value Theory

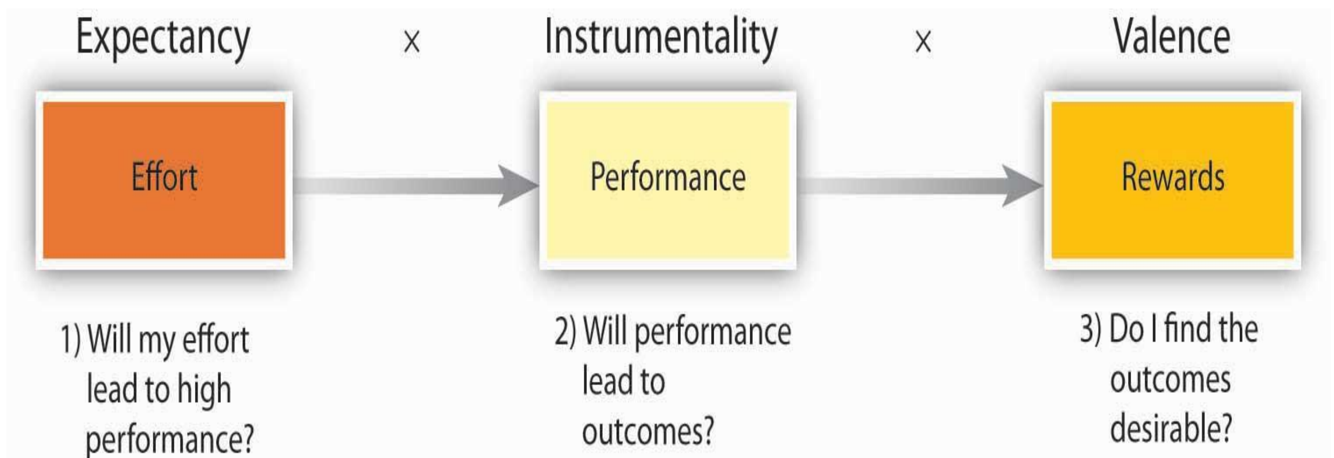
The expectancy-value theory is a motivation theory first proposed by Victor Vroom of the Yale School of Management in 1964. The expectancy-value theory says that individuals have different sets of goals and can be motivated if they have certain expectations. This theory is about choice; it explains the processes that an individual undergoes to make choices. Even though this study did not focus on choices made by circumcised men, it was, however, to apply this theory in understanding the motivation coupled with expectations and outcomes perceived by men after getting circumcised. Therefore, this theory became cardinal to this study. Motivation, according to Vroom, boils down to the decision of how much effort to apply in a specific task situation. This choice is based on a two-stage sequence of expectations (effort leads to performance and performance leads to a specific outcome/reward). First, motivation is affected by an individual's

expectation that a certain level of effort will produce the intended performance goal. For example, if men do not believe in making any effort of getting to health facilities (modern) or the Mukanda rite (traditional) for circumcision and that this will significantly increase their protection against STIs and HIV infection, probably they will remain uncircumcised.

According to Dweck, C. (2000), motivation also is influenced by the employee's perceived chances of getting various outcomes as a result of accomplishing his or her performance goal. In this regard, it was important to note that, probably, the circumcised men were motivated that the chances of acquiring STIs and HIV infection could be reduced. Finally, individuals are motivated of being circumcised either under modern or traditional circumcision practice to the extent that they value the outcomes (rewards) associated with circumcision, that is to say, prevention of HIV and other STIs transmission among them.

According to Wigfield, A., Tonk, S., & Eccles, J. (2004), Vroom used a mathematical equation (motivation = expectancy × value) to integrate these concepts into a predictive model of motivational force or strength. The relationship between expectation and value is "multiplicative" rather than additive because, to be motivated, it is necessary for a person to have at least a modest expectation of success and to assign a task at least some positive value. If you have high expectations of success but do not value a task at all (mentally assign it a "0" value), then you will not feel motivated at all. Likewise, if you value a task highly but have no expectation of success in completing it (assign it a "0" expectancy), then you also will not feel motivated at all. For our purposes in this study, however, it was sufficient to define and explain the three key concepts within Vroom's model—expectancy, instrumentality, and valence.

Figure.1.0 Expectancy-value model.



Expectancy Value Theory Expectations: **-**

- There is a positive correlation between efforts and performance,
- The favorable performance will result in a desirable reward,
- The reward will satisfy an important need and the desire to satisfy the need is strong enough to make the effort worthwhile.

Expectancy Value Theory Beliefs

Vroom's Expectancy Value Theory is based upon the following three beliefs.

1. Valence. Refers to the emotional orientations which people hold concerning outcomes [rewards]. In this study, this was the depth of the want of a circumcised man for extrinsic [benefits] or intrinsic [satisfaction] rewards after circumcision. In other words, how much the circumcised men valued the desired outcome (reduced STIs and HIV infection).

2. Expectancy. Circumcised men had different expectations and levels of confidence about what they were capable of doing. Therefore, in this study, it was important to get the views of the circumcised men on what their expectations were after undergoing circumcision. This assessment could be done on the circumcision practice that men underwent and established whether circumcision was expected to reduce HIV and STI transmission. Also to find out among the providers of circumcision whether or not, a given circumcision practice prevented STIs and HIV infection. *In this study further,*

expectancy, was actually how probable it was that a wanted *(instrumental)* outcome was achieved through the behavior or action, such as the action of getting circumcised.

3. Instrumentality. The perception of circumcised men is whether they received what they desired, even if it had been promised by a circumciser. For instance, the circumcised men should have at least knowledge of the benefits of circumcision on the prevention of HIV and other STIs transmission. And the study, therefore, assessed the health policy on HIV and STI prevention by comparing the extent to which modern and traditional circumcision practices prevented the transmission of HIV and other STIs, as this was probably the perceived ultimate goal.

Vroom suggests that an individual's beliefs about Expectancy, Instrumentality, and Valence interact psychologically to create a motivational force such that the individual will act in a way that brings pleasure and avoids pain. According to Dweck, C. (2000), motivation is large when both expectancy and value are high, but disappears when one of these factors equals zero. Vroom further differentiates two subcomponents of the factor expectancy. The first subcomponent relates to an individual's belief about their personal ability to perform a given activity at a required level, in other words, the perceived relationship between effort and performance. In this study, the aspect of belief about personal ability to perform a given task was viewed as the ability of the circumcisers to perform circumcision. This subcomponent is termed "expectancy" (just like the overall factor). The second subcomponent relates to (an individual's belief about) the probabilistic association between a performed activity and the wanted outcome (termed "instrumentality").

These two subcomponents are again integrated through multiplication, such that overall expectancy is high when an individual both believes that they will be personally able to perform a given activity and that successful performance of this activity will likely lead to the wanted outcome. Based on this, through the health policy on the prevention of HIV and STIs, the study compared whether the circumcised men under modern or traditional circumcision (effort and performance) had reduced chances of acquiring HIV and other STIs (instrumentality). It is from this background that the researcher felt that all the three described variants of the Expectancy

Value Theory were broadly consistent with this study. And the two core components *expectancy* and *value* had been incorporated into this study as determining factors of expected *extrinsic benefits, that is to say, reduced or prevented transmission of HIV and other STIs transmission.*

Use of this theory in the study

As a researcher, it was important to recognize that circumcised men had different sets of goals and expectations and that was motivated differently according to their personal preferences and choices of the circumcision type they had to undergo. The key to applying this theory in the study, therefore, was to gain a true understanding of an individual's expectations and outcomes after circumcision, and concerning the following: -

- **Valence -** What was most attractive in motivating circumcised men as individuals? – it was an intrinsic motivation (such as a simple thank you when interviewing them, and assessing the personal sense of achievement in terms of reduced frequencies of getting back to health facilities or rites for medical attention, especially for HIV and STIs associated infections) or extrinsic motivation (associating circumcision to reduced or prevented STIs and HIV infection). Understanding and appreciating what motivates individuals to tailor the right kind of reward or outcome that would be most desirable/valuable to them personally.

- **Performance –** Using the health policy on HIV and STIs prevention, to what extent did traditional or modern circumcision (men's expectation) prevent the acquisition of STIs and HIV infection? In other words, according to Vroom, the individual expectation is that a certain level of effort would produce the intended performance goal, and if not, what's holding them back? In this study, it was important to determine whether traditional or modern circumcision prevented the transmission of HIV and STIs, and a circumcision practice did not, what were the gaps? Further, there was the need to establish, based on the identified gaps, what was lacking, for instance, were the right skills lacking among the circumcisers, or were they capable but simply not bothered? By understanding their view, it was possible to establish whether or not, a lack of competence had a bearing on

the HIV and other STIs transmission. Once this was established by the study, one could recommend work on putting into place the appropriate training, coaching, or supervision, or indeed have a chat about why circumcised men felt negative about the achievement of the goal, and how others could be helped to change their views on circumcision, or what measures were put in place by the providers to ensure that men do not contract HIV and other STIs after circumcision, and lastly, were the measures put in place inadequate to meet the intended goal by the Zambian health policy on the prevention of HIV and STIs transmission ?

Instrumentality – This belief in the expectancy-value theory was also important in the study because it helped in understanding the individual's perceived chances of achieving the goal/s set? For example, what was the perception of the men after circumcision with the prevention of HIV and other STI transmission? Was their expectation that they could achieve the goals of preventing HIV and other STI transmission even though they had undergone either modern or traditional circumcision practice? By understanding this, once the circumcised men's goals/objectives were achieved or not, the researcher could conclude that the circumcision practice had the potential in preventing the transmission of HIV and other STIs. In addition, did they believe that they received a reward that they most desired, that is to say, prevented STIs and HIV infection? This could help in the study by knowing their negative HIV and STIs status at circumcision and after.

And once there is a change in variables (negative to positive) of their HIV and STIs status, then the efficacy of a chosen circumcision practice does not exist in the study or that chosen circumcision practice that men underwent had no potential to prevent the STIs and HIV infection? In other words, this helped in understanding what their expectations were at the outset (though not the study's scope), and what they had expected as a reward (outcome) after circumcision based on the type of circumcision practice underwent.

In summary, based on the above theories, the area of agreement among the discussed theories was that the intended results or outcome was the central point of agreement in the study. These theories posit that the perceived action or performance would result in the desired results provided the person was motivated and took an action that was believed in avoiding a negative health condition. This action that one undertakes was associated with a positive expectation that taking an action would result in the desired outcome. This meant that men who underwent circumcision (action) probably had a view that they were protected against the acquisition of STIs and HIV infection (desired results).

Further, another interesting area of agreement among these theories was the issue of efficacy. Suggestions among these theories were centered around the effectiveness of a given circumcision practice that would result in the reduction of the prevalence of STIs and HIV infection. These theories also did not only guide the study on the circumcised men's perception towards HIV and other STIs prevention, but collectively brought out skills of the providers of circumcision, and in this case, the circumcisers as to whether their ability to conduct circumcision or not, had a bearing on the HIV and other STIs prevention. From the preceding discussion, even though these theories had the disadvantage of not being used in isolation or not being used effectively as a single attempt in understanding a phenomenon under investigation in the study, the study position was that all the three (3) theories except for the theory of change were consistent to this study.

However, the theory of change could only effectively be applied in circumstances when a program or project was at its commencement stage or after the program has failed to meet its goal. In this case, the researcher was not of the view that the circumcision programs available under modern or traditional practices did not fail to take off, but circumcision had continued to be performed by some ethnic groups and was also being provided in most health facilities within Zambia. What was important in this study, therefore, was to explore the Zambia health policy on the prevention of HIV and STIs by comparing the extent to which traditional and modern circumcision practices prevented the HIV and other STIs transmission. And it was from this basis that the theory of change was ruled out to form a theoretical framework with the potential

in guiding the study, and hence the adoption of the three (3) theories as to the basis of theoretical framework formation for the study which in turn helped the actualization of the main objective of the study.

1.8 Literature Review

1.8.1 Introduction

This section presents reviewed literature on Male Circumcision. According to Parker et al., (1983), “circumcision was a religious or cultural ritual for many Jewish and Islamic families, as well as certain aboriginal tribes in Africa and Australia.” Circumcision was a matter of family tradition, personal hygiene, or preventive health care. Pappas, et al., (2008), document that “sometimes there's was a medical need for circumcision, such as when the foreskin was too tight to be pulled back over the glans. And in other cases, particularly in certain parts of Africa, circumcision was recommended for older boys or men to reduce the risk of certain sexually transmitted infections (STIs).” Most literature published on comparing the extent to which traditional and modern circumcision practices in the prevention of HIV and other STIs transmission were limited. Thus, this section’s focus was to review literature at the Global, Continental, and National levels.

1.8.2 The Global Picture on Male Circumcision with respect to HIV and STIs prevention

According to a WHO report in 2007, scientists had suspected that male circumcision might reduce rates of HIV transmission during sex. They observed that circumcised men were less likely to have HIV than uncircumcised men, and HIV was less common among populations that traditionally practiced male circumcision than in communities where the procedure was rare. However, for a long time, it was unclear as to what extent circumcision prevented the transmission of HIV and STIs and whether other factors could also play a role in the transmission of these infections.

During the 19th century, male circumcision became increasingly popular in English-speaking, industrialized countries, following the advent of anesthesia in surgery. According to a WHO report of 2007, the first epidemiological study such as that of venereal patients in 1855, found that 61% of non-Jewish patients (who were uncircumcised) had syphilis, compared with 19% who were circumcised Jewish patients. The report further documents that the Victorian establishment, including the medical profession, was concerned with issues surrounding the relationship between sexuality and disease. Hence, according to WHO (2007), there was a widespread belief that circumcision was beneficial, leading to statements such as "the prepuce was a frequent source of disease, often requiring its removal". By the end of the 19th century, male circumcision was advocated in these countries (North America, Europe, Australia, and New Zealand) as a preventive measure against a range of conditions and behaviors, including syphilis and nocturnal incontinence.

The WHO (2007) further documents that, as a result, neonatal and child circumcision rates in the United States of America increased to about 55% by 1938, and subsequently increased further to about 80% in the 1960s, possibly influenced by men returning from the Second World War, for whom circumcision was reportedly common to prevent penile infections while serving in North Africa and the Pacific. In this discussion, the literature reviewed brought out the aspect of the increased uptake of circumcision among the neonates and the soldiers though not a study scope, sexually transmitted diseases were also emphasized in both the circumcised and uncircumcised populations. Therefore, based on this revealed gap in the literature on potentially susceptible transmission of STIs among the circumcised men, it was necessary to conduct a study in the Zambian context and establish whether or not, circumcision conducted under traditional and modern circumcision practice to some extent reduced the transmission of the HIV and other STIs.

Further, the American Academy of Pediatrics (AAP) Report of 1999, issued several statements on neonatal circumcision since 1971, with the most recent (issued in 1999; reaffirmed in May 2005) stating that there was insufficient data to recommend routine neonatal circumcision. Despite this, there appeared to be a little decline in the prevalence of neonatal circumcision in the

United States of America. An estimated 61% of male newborns were recorded as being circumcised on hospital discharge sheets in 2000, but the true figure was higher than this because circumcision was not routinely documented on the hospital discharge sheet used to collate the data and post-neonatal circumcisions for religious or medical reasons were not captured. This study reviewed brought out the circumcision services that were being provided in the health facilities in the United States of America (USA).

Community surveys had found a higher neonatal male circumcision prevalence of 76–92% (*75*). There was also substantial regional variability, with the lowest prevalence in the western United States of America, probably due to the high proportion of Hispanics who had lower rates of male circumcision. Even though the studies brought out the prevalence of circumcision among the ethnic groupings in the USA, the literature gap was that the studies were biased toward the modern circumcision practices as opposed to traditional circumcision on the extent to which both practices prevented the HIV and other STIs transmission. However, on the other hand, it was also true to state that, based on these reviewed studies, the studies assisted to some extent in explaining the relationship between sexuality and disease within this study.

Routine documentation of circumcision services in hospitals as portrayed by the above studies, this was important because it brought out information on modern practice of circumcising men within health facilities. Further, documentation was important to the study in situations of determining the HIV and STI status of the circumcised men. These were key variables in the study of exploring Zambian's health policy on the prevention of HIV and STIs by comparing the extent to which traditional and modern circumcision practices prevented the transmission of HIV and other STIs. In this regard, it became important to review circumcision documents if at all were available in some health facilities or traditional camps as peripheral issues to the study subject. In this way, it was possible to ascertain the HIV and STIs status of the circumcised men at the time of circumcision and after undergoing circumcision to determine whether there was a relationship between HIV and STIs status of men and circumcision.

The ChampZambia Report of 2017, indicated that approximately 30% of males were estimated to be circumcised globally, of whom an estimated two-thirds were Muslims. Other common

determinants of male circumcision were ethnicity, perceived health and sexual benefits, and the desire to conform to social norms. Neonatal circumcision was common in Israel, the United States of America, Canada, Australia, New Zealand, in much of the Middle East, Central Asia, and West Africa, but was uncommon in East and Southern Africa, where the median age at circumcision arose from boyhood to the late teens or twenties. In several countries, the prevalence of non-religious circumcision had undergone rapid increases and decreases, reflecting cultural mixing and changing perceptions of health and sexual benefits.

This report by ChampZambia was important to this study because it did not only bring religious groupings that practiced male circumcision but also brought out ethnic groupings that conducted circumcision with perceived health and sexual benefits. However, even though this study by ChampZamba was important as per the preceding discussion, it did not address any issues related to the extent to which circumcision prevented the spread of HIV and other STIs, hence this was a gap in the literature. It was from this gap that it became necessary to explore the Zambian health policy on the prevention of HIV and STIs by comparing the extent to which traditional and modern circumcision prevented the transmission of HIV and other STIs transmission.

The article on Human Sexuality edited by Vern and Bonnie (1994) shows that Circumcision, once accepted as the norm in the United States, had become controversial. Technically, circumcision is the surgical removal of the skin that normally covers and protects the head, or *glans*, of the penis. The prepuce was often erroneously referred to as “redundant" tissue, which allowed the medical community and society-at-large to consider the foreskin an optional part of the male sex organ and, therefore, to condone its routine removal in a variety of procedures collectively known as “circumcision." However, circumcision was also a part of religious rituals, including Judaism and Islam, as well as others. However, eighty-five (85%) percent of the world's male population was not circumcised.

This study by Vern and Bonnie in 1994 brought out not only the religion and modern circumcision practice but also the acceptance and controversy bordering around circumcision in the USA was notable. Even though this was not within this study's scope, probably a lesson from this was learned in the context of Zambia that the implementation of the health policy on the prevention of HIV and STIs probably was associated with issues of acceptability and controversy

in the North-western province, especially in communities that practiced traditional circumcision practices. And in this vein, it became important to ascertain whether or not, the circumcision practice that was common in such areas had the potential to prevent the transmission of HIV and STIs.

Additionally, "Circumcision in 1992 was still the most commonly performed surgical procedure in America, where 59 percent of newborn males underwent this operation. Circumcision reached its peak of 85 to 90 percent during the 1960s and 1970s. The surgery, usually performed on baby boys within the first few days of life, was often considered "routine." The most popular methods, the Gomcoclamp, and the Plastibell procedures differed somewhat in technique and instrumentation but the effects on the penis and the baby were the same" Vern and Bonnie (1994, p.121). Though this study brought out the utilization of surgical instruments during the circumcision procedure under modern circumcision practice, the shortcoming of this literature was that it did not address whether or not, the surgical instruments had the potential to spread the transmission of HIV and STIs during the circumcision procedures, hence based on this ground, the study was conducted so that this gap in literature could be closed.

A study that was done by Lukobo and Bailey (2007) concluded that men were attracted to male circumcision because circumcised men were perceived as more clean and smart when compared to the uncircumcised. Circumcised men were cleaner and their sexual partners had less trouble cleaning them after sex. Meanwhile, a study by Herman R. et al., (2011) collected data confirming that women preferred circumcised men to uncircumcised men. These two studies did not bring out the aspect of how circumcision was related to the prevention of HIV and other STI transmission, and this was a gap in the literature.

Further, the two authors alluded that anesthesia was not used to alleviate infant suffering until recently because it was believed that babies did not feel pain. Additionally, it was recognized that anesthesia was risky for the newborn, thus contributing to the medical reluctance to use it for painful procedures on infants, such as circumcision. Currently, some doctors used a dorsal penile nerve block to numb the penis during infant circumcision. While not always effective, during the circumcision procedure, when anesthesia was used on the person, in some instances, the person could afford some pain relief during the surgery. However, administering anesthesia did not offer

any pain relief during the recovery period (which lasted up to 14 days) when the baby urinates and defecates into the raw wound. Of course, Anesthesia has nothing to do with this study, however, this was useful to this study in understanding the experiences of men after circumcision about the administered drug that offered pain relief.

The study by Vern and Bonnie (1994) also reported circumcision procedures performed in America on newborns and a medical perspective on the same circumcision. Additionally, circumcision methodology and the recovery period were highlighted in the article. Though this study by Vern and Bonnie (1994) supported the above study by Lukobo and Bailey (2007) on the recovery period after circumcision, this reviewed literature did not bring out a traditional perspective in this study but emphasized modern day circumcision among newborns. Further, times have changed, probably the authors could not envisage the mass circumcision by adult males in the future, which America currently performed on adult populations.

A study by Aaron and Seena (2014), through their randomized trials, has demonstrated that male circumcision (MC) had the potential to reduce heterosexual acquisition of HIV. Male Circumcision (MC) was potentially cost-saving in both the United States and Africa. The World Health Organization and Joint United Nations Program on HIV/AIDS proposed reaching 80% MC coverage in HIV endemic countries, but current rates fell far behind targets. Barriers to scale-up included supply-side and demand-side challenges. In the United States, neonatal MC rates were decreasing, but the American Academy of Pediatrics now recognized the medical benefits of MC and supports insurance coverage.

The findings by Aaron and Seena (2014) were important because they brought out an aspect of HIV prevention, a core business for this study that explored the Zambian health policy on the prevention of HIV and STIs by comparing the extent to which traditional and modern circumcision practice prevent HIV and other STIs transmission. The gap notable in this study by Aaron and Seena in 2014 was that it did not clearly state the extent to which modern circumcision reduced HIV acquisition, and this study did not cover traditional circumcision and STIs transmission. The environments may be different in the context of Africa, therefore, it became important to conduct a study in Zambia that explored the health policy by comparing the extent to which traditional and modern circumcision practices prevented HIV and STI

transmission. This study included STIs as well as traditional circumcision practices that were missing in the study by Aaron and Seena (2014).

Although Male Circumcision was globally a valuable tool in the prevention of HIV and other sexually transmitted infections, it was underutilized. Therefore, further research like this one was needed to address the over-dependency syndrome on modern and compared the extent to which traditional and modern circumcision practices prevented HIV and other STI transmission. Hence this was easily understood well once the study on the two practices was conducted.

A study by Parker et.al. (1983), on the relationship between circumcision and sexually transmissible diseases (STD), was studied on 1350 men who attended the Public Health Department Special Treatment Clinic in Perth, Western Australia. Evidence of circumcision was obtained by examination. More than 98% of the men studied gave a verbal report of their circumcision status which was consistent with the examination findings. Eight hundred and forty-eight (848) men had STD; 471 men, who presented themselves to the clinic for diagnosis and treatment but who were found not to have STD, constituted the control group. The results of the study showed significant associations between the state of being uncircumcised and four major sexually transmissible diseases-herpes genitals, candidiasis, gonorrhea, and syphilis. Estimates of the relative risk suggested that uncircumcised men were twice as likely as circumcised men to develop herpes genitals or gonorrhea, and five times as likely to develop candidiasis or syphilis.

This study by Parker and others brought out the issue of sexually transmitted diseases affecting uncircumcised men. However, the data for syphilis was to be interpreted with caution because of the small number of cases. Further, there was no significant increase in risk that was found for any of the other sexually transmitted diseases diagnosed at the clinic. A gap in the literature was drawn in line with the focus on men undergoing clinical trials at the expense of those circumcised in the traditional environment, that is to say, were such men undergoing traditional circumcision prone to sexually transmitted diseases or not? This question required answers, hence the need was to focus on the comparison of the extent to which traditional and modern circumcision practices prevented the HIV and other STIs transmission, and this was done by exploring the Zambian health policy on the prevention of HIV and STIs.

A study by Peltzer and Kanta (2009) also focused on the adverse effects reported following male circumcision performed by medical professionals after a one-day training workshop; second, reporting on the attitudes, beliefs surrounding and experiences regarding circumcision and initiation; and thirdly, assessing the HIV-risk behavior of young men attending initiation schools post medical circumcision. Initiates who had been medically circumcised by trained healthcare providers were examined, and interviewed on the seventh day after circumcision, in addition, focus group discussions were conducted with initiates. Results indicate that of the 78 initiates physically examined on the seventh day after circumcision by a trained clinical nurse, seven (9%) adverse effects (complications) were found. Initiates reported mixed attitudes towards combining medical circumcision with traditional initiation. Even though this study brought out modern and traditional circumcision practices, merely concluding on the adverse complications experienced after circumcision does not address the extent to which the two practices prevented the spread of HIV and STIs. Another gap in this study was that, there was a lack of further explanation as to whether or not, these adverse effects indeed resulted in men contracting HIV or STIs. Therefore, it was important to conduct the study to address such gaps in the literature as reviewed.

The study by Peltzer and Kanta (2009) further indicated that the majority of the initiates (70%) felt that they could be stigmatized as a result of choosing medical, rather than traditional circumcision, and 20% thought that the relationship between medical and traditionally circumcised men was hostile. Before circumcision, most initiates (92%) had been sexually active and had engaged in HIV-risk behavior. Focus-group discussions revealed that sexually active initiates, when asked about sex after circumcision, indicated they wished to abstain for a short period before resuming sexual activities with intended condom use being high. These study findings were important because they highlighted a comparison between traditional and modern circumcision, though in a passive manner. Further, this study by Peltzer and Kanta (2009) was about choice among those to be circumcised either under modern or traditional circumcision practices coupled with stigmatization associated with undergoing modern as opposed to traditional circumcision practice. This study was not about choosing between traditional and modern circumcision but was to explore the Zambian health policy on the prevention of HIV and

STIs by comparing the extent to which modern and traditional circumcision practices prevented the HIV and other STIs transmission.

1.8.3 African Picture on Male Circumcision with respect to HIV and STIs prevention

Male circumcision is common in many African countries and is almost universal in the Northern parts of Africa and most of West Africa. In contrast, according to WHO (2007), it was less common in southern Africa, where self-reported prevalence was around 15% in several countries (Botswana, Namibia, Swaziland, Zambia, and Zimbabwe), although higher than others (Malawi 21%, South Africa 35%, Lesotho 48%, Mozambique 60%, and Angola and Madagascar > 80%). Further, the report by WHO (2007) shows that the prevalence in Central and East Africa varied from approximately 15% in Burundi and Rwanda to 70% in the United Republic of Tanzania, 84% in Kenya, and 93% in Ethiopia. This variation was partly due to some groups (mainly Nilotic or Sudanic speakers) who were traditionally non-circumcising, and also to different ethnic traditions among Bantu-speaking populations (which included over 400 different ethnic groups in Africa, from Cameroon to South Africa), some of whom gradually stopped the practice many centuries ago. According to Mavhu, W. et al., (2011), the reasons for this cessation were unclear, but in more recent history it was known that in Botswana, southern Zimbabwe, parts of South Africa, and Malawi circumcision was stopped by European missionaries and colonial administrators.

In Zululand, for example, King Shaka ordered that circumcision schools be abolished during the Zulu wars in the early 19th century, presumably because of the difficulty in holding the schools during the continual fighting. For similar reasons, many other groups in Southern Africa had abandoned male circumcision at that time, including the Swazi, when King Mswati II banned the practice as it incapacitated men at times of war. These studies above were useful in understanding that circumcision did exist among some ethnic groupings but seemingly started diminishing with the demand for men’s participation in wars. However, the gap was that the study did not consider the circumcision’s role in the prevention of HIV and other STIs but was

biased towards the aftermath of circumcision of incapacitating men during wars, and hence proved difficult to hold circumcision schools during such period.

Another smaller region where circumcision was not traditionally practiced was in a contiguous area in central and eastern Côte d'Ivoire, north-western and central Ghana, and south-western Burkina Faso. However, the modern circumcision procedure became more widespread in this region over the past century as documented by the World Health Organization (WHO) in 2007: the prevalence of circumcision had increased to 68% in north-western and central Ghana (still much lower than the national Ghanaian prevalence of 96%) but remains much less common (28%) among the Lobi in south-western Burkina Faso (national prevalence 90%). Although the study by WHO (2007) brought out a mix of traditional and modern circumcision practices in this study, however, the notable gap in the literature was that this study was skewed toward the prevalence of circumcision in some countries and the practice of traditional circumcision practices among the ethnic groupings such as the Lobi, and yet even when circumcision was important, there was no mention anywhere in this study on the extent to which traditional and modern circumcision practices prevented the transmission of HIV and other STIs . Based on this gap in the literature, the study was conducted to address this fissure.

Another important finding by WHO (2007) was on age and social status in any given society. Age for circumcision was important and varied by country. Neonatal circumcision was common in Ghana, but in other countries, the median age at circumcision varied from boyhood (median age 5, age 7–10 years in Zambia, and age 8–16 years in Kenya to the late teens or twenties, for example in parts of the United Republic of Tanzania and South Africa. Age at circumcision also varied considerably within a country. For example, in Burkina Faso, families of higher socioeconomic status and education level or living in urban areas were more likely to circumcise their sons at a young age. The study by WHO (2007) brought out age variation for circumcision among countries which were key to this study. Even when the age of the children in some countries was vital for circumcision, the study focused on the adult population so that it did not expand its scope by considering pediatrics that could have involved consent from parents, and had the potential to complicate the study.

The study by WHO (2007) did not consider that age eligibility for circumcision could change in the future, and this change gradually would include every population. For example, recently in the case of Zambia, there was no age restriction for one's eligibility to get circumcised. Although circumcision age disparity among countries was important to this study, the study by WHO (2007) did not include the investigation of the age distribution for the population that got circumcised and which age was mostly affected by the HIV and STIs transmission. Therefore, it was important to investigate in this study which age distribution was mostly affected concerning the HIV and STI transmission.

A study by Wilson and de Beyer in 2006 indicated that epidemiological studies (cross-sectional and prospective observational data) revealed a consistently clear pattern regarding HIV transmission. In Uganda, being circumcised was protective. Zero percent of the circumcised men did not seroconvert while 29% of the uncircumcised men in stable relationships were seroconverted. A strong association was also revealed in Nairobi, Kenya when a group of STI clients had sex with seropositive commercial sex workers. Circumcised men with genital ulcer diseases (GUD-chancroid and syphilis) revealed an HIV incidence of 2.5%, while uncircumcised men with GUD had an incidence of 52.6%. The study by Wilson and de Beyer (2006) was consistent with this study on HIV and STIs among the circumcised me. The situation in which some men with STIs also revealed an HIV incidence according to the study by Wilson and de Beyer of 2006 was vital but subject to validation by this study that explored the Zambian health policy on the HIV and STIs prevention by comparing the extent to which traditional and modern circumcision prevented the transmission of HIV and other STIs.

The survey by Wilson and de Beyer in 2006 also revealed that in Nyanza, a traditionally non-circumcising with 10 communities, revealed that twenty-one (21%) percent of uncircumcised men had HIV infection compared to two (2%) percent of circumcised men. The study findings were important in understanding that probably uncircumcised men were susceptible to HIV infection acquisition compared to the circumcised, however, this study did not bring forward the extent to which circumcised men who underwent either modern or traditional had reduced or not,

chances of acquiring HIV and STIs in this aspect. The other gap in this study by Wilson and Beyer (2006) was that modern circumcision was emphasized as opposed to traditional circumcision practice. It is also important that the survey brought out the types of Sexually Transmitted Infections (STIs) that were common and these included chancroid, syphilis, balanitis, phimosis, penile cancer, and cervical cancer in women. These types of STIs formed the basis of this study to ascertain the type of STIs that affected men after circumcision in Zambia.

A study by Mavhu et. al., (2011) explored male circumcision (MC) prevalence, knowledge, and attitudes among rural Zimbabweans. A total of 2746 individuals participated in the study, 64% of this population were women and only 20% of the men were circumcised. Knowledge of MC and its health benefits was low. However, given the effect of MC on HIV infection, 52% of the men reported that they would undergo MC. Still, in Zimbabwe, few participants were aware of the benefits of MC. However, only 39% of the men mentioned the effect of MC on HIV and only 12% indicated that MC promoted hygiene and sexual cleanliness. From this study's findings, it could be true to indicate in the study by Mavhu that one’s knowledge of male circumcision and its benefits might be a drive for someone to get circumcised and the opposite was true. Despite this study bringing out HIV infections as an important issue to this study, the study by Mavhu et.al., (2011) did not bring out circumcision in the context of sexually transmitted infection prevention. On the other hand, Chikutsa’s study in 2011 contradicted the results by Mavhu et al. (2011).

In 2011, Chikutsa conducted a study in Mazowe, Zimbabwe, a mining and farming community. During the study, seventy-three individuals participated in the study and 54% were men. Contrary to the study by Mavhu et al. (2011), the results revealed that 90% of the participants had heard of male circumcision (MC) for HIV prevention. Radio access was significantly associated with knowledge about male circumcision in HIV prevention. Participants expressed high knowledge on awareness of male circumcision. In support of these findings, Tarimo et al., (2012) in Tanzania conducted a qualitative study utilizing in-depth interviews with a cohort of police officers. In this study, twenty-four (24) men and ten (10) women revealed that the participants were knowledgeable about MC, as a prevention method for HIV infection. The issue

of HIV infection documented by these two studies was equally of great importance to this study, however, both Chikutsa and Tarimo studies did not cover sexually transmitted infections (STIs) relating to circumcision. Because of this gap in the literature, it was important in this study to introduce STIs as the subject matter and related them to circumcision.

The authors further revealed that participants were knowledgeable about the effect of circumcision on penile hygiene, and its contribution to sexual pleasure. The participants believed that male circumcision enhanced sexual pleasure. The contribution of circumcision toward sexual pleasure was not part of the objectives of this study. The studies focused mainly on knowledge levels about male circumcision which of course was pertinent to this study, and yet, did not delve into knowledge levels on the extent to which modern and traditional circumcision prevented the spread of HIV and STIs infections. Therefore, based on this gap in the literature, it becomes inevitable to undertake a study.

A qualitative study by Pappas-DeLuca et. al., (2008) in Namibia on the acceptability of male circumcision as an HIV prevention strategy involving fifteen (13) traditionally non-circumcising communities was vital to the research because it revealed certain components that constituted traditional and modern circumcision. The study used forty-six (46) focus group discussions (FGD) of males and females. The study revealed that, regardless of whether or not male circumcision was typically done based on culture or under a specific area. Most participants had a general understanding that the moist and closed environment of the foreskin contributes to the growth of bacteria and this was related to negative health consequences.

Generally, penile hygiene was believed to be a major facilitator of male circumcision in both traditionally circumcising and non-circumcising communities. In fact, in some societies, being uncircumcised was unacceptable and it was believed to cause diseases. The foreskin aspect of being susceptible to bacterial infections was very important to this study because it formed the foundation to conduct the study and assisted in understanding whether or not, the removing of the foreskin (circumcision) regardless of the type of circumcision that one underwent reduces the chance of acquiring the STIs and HIV infection. Although the study by Pappas-DeLuca et. al.,

(2008) involved women, it is worth noting that the female participants were not part of the study but the only focus was on the circumcised men and other key participants.

Further, a study in 2007 by Niang and Boiro analyzing the cultural concepts, practices, and social relations associated with male circumcision in two West African countries, Senegal and Guinea-Bissau found out that the foreskin was believed to be dirty, a source of bad smells and disease, and even evil. The study further showed that sexual relations between a man who was not circumcised and a woman who was a virgin were perceived to cause a terrible disease whose symptoms were similar to those of AIDS. These two studies brought out culture in terms of traditional circumcision practice which was an important aspect of the study. Though the gap in this study by Niang and Boiro (2007) was that there was no discussion around modern circumcision practice. Therefore, a need was there to explore the Zambian health policy on the prevention of HIV and STIs by comparing the extent to which traditional and modern circumcision practices prevented HIV and STIs transmission.

Malawi's health policy on strategies for increasing voluntary medical male circumcision (VMMC) was to provide men with information about its benefits and to subsidize its cost. However, little was known about the effectiveness of these interventions. One concern was that information could lead circumcised men to adopt riskier sexual behavior. Another important question was whether there was enough demand or not for circumcision to make high rates of coverage possible. In 2007, a report by WHO documents that, Malawi was a high priority country for the scale-up of VMMC because of its high HIV prevalence (10.6 percent of adults aged 15-49 in 2010), and because 81 percent of men were not circumcised as of 2011. By 2015, the number of circumcisions performed in the country only reached 8 percent of the target set by the WHO in 2011.

The report was relevant to this study in the sense that it showed the Government of Malawi's health policy position on advocating for Voluntary Medical Male Circumcision even when little was known about the effectiveness of the interventions. This was important in the context of Zambia by exploring the health policy on HIV and STI prevention and comparing the parts of

Malawi's health policy that could be similar to the Zambian health policy as preventive strategies for HIV and STIs. On the other hand, as in many African countries, traditional circumcision was practiced on a large scale in Malawi. This male circumcision had deep cultural and religious roots in this country. For example, some ethnic groups conducted circumcision as part of initiation into adulthood for adolescent boys, while others did not. The practice of modern and traditional circumcision in Malawi was important to this study because conclusions were drawn based on Malawi's policy options on HIV prevention. However, the study by WHO (2011) was skewed toward modern circumcision and did not address any concerns about the effectiveness of modern circumcision in the prevention of HIV and other STIs and this was the gap in the literature. Another gap in the literature was that there was a mention of interventions by Malawi's health policy, and yet, little was known about the intervention put in place by the Government of Malawi on the prevention of HIV and STIs. As a result of these gaps, it became necessary to explore the health policy in the context of Zambia and compared the extent to which traditional and modern circumcision practices prevented the transmission of HIV and STIs.

The Malawi Demographic Health Survey (MDHS) of 2010 shows that there was a weak association between male circumcision and HIV infection in Malawi. Twelve (12) percent of circumcised men were HIV positive compared to almost ten (10) percent of uncircumcised men. This study finding made it difficult to know whether or not the men were already HIV positive during circumcision because, under traditional circumcision practices, the HIV testing services were not being done under traditional circumcision rites as reviewed by some studies. This is also in line with the 2010 Survey that indicated that most the circumcised men were circumcised traditionally, as the policy to offer medical male circumcision was only introduced in 2011 (a year after the MDHS of 2010 was conducted); hence, the results of this study referred mainly to traditional circumcision and had to be interpreted with a lot of caution.

These findings were important to the study because they were a pointer to the increased need to advocate for the best practice that was effective in alleviating the STIs and HIV infections. Therefore, it was important to critically review the findings of the Malawi's survey and compare them with the Zambian health policy on the prevention of HIV and STIs. Further, it became

necessary to compare in this study the extent to which traditional and modern circumcision practices prevented the transmission of HIV and STIs.

Additionally, MDHS of 2010 documents that, given that most circumcised males were circumcised using traditional methods, and that HIV-positive status was significantly associated with ritual sex, therefore it was important to decipher whether or not, there was a strong association between traditional circumcision practices that included ritual sex and HIV infection in Malawi. Based on the MDHS (2010), was circumcision in Malawi the reason for the high HIV prevalence? And how effective was traditional circumcision practice compared to modern circumcision in the prevention of HIV and STI transmission? Therefore, the study was conducted to find answers to these gaps in the context of the Zambian health policy on the prevention of HIV and STIs. Another limitation of the above notion even when it was not within the scope of this study was that there was a dearth of information about ritual sex and traditional circumcision in Malawi. Although not supported by literature, one wondered if at all circumcision was an important practice in Malawi for the prevention of HIV transmission based on the preceding notion.

In the preceding paragraph, another major concern was the behavioral disinhibition where circumcised men felt more protected against HIV infection and hence could engage in riskier behavior. Ironically, this survey shows that traditional male circumcision did not act as a preventive measure of HIV infection in Malawi when compared to some reviewed studies that indicated the usefulness of modern circumcision in HIV prevention. Therefore, a need arose to look at the association between type of circumcision (modern or traditional) and HIV infection in Malawi, as well as analyze the effect of ritual sex on HIV infection though not part of this study. However, a gap remains unanswered as to whether or not, circumcision that was conducted in Malawi had the potential in the prevention of HIV and STIs transmission. Further, the study in Malawi did not include STIs, because of this gap in the literature, this study explored the Zambia health policy on HIV and STIs prevention by comparing the extent to which modern and traditional circumcision practices prevented the transmission of HIV and STIs. This study, therefore, was conducted to find answers to these gaps in the context of the Zambian health

policy, and this helped to infer whether the 2010 MDHS's deductions on HIV infection were true or not in the Zambian context.

According to the Uganda AIDS Commission Report of 2012, Uganda announced a Safe Male Circumcision (SMC) Policy in 2010. Following a recommendation from the World Health Organization (WHO) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) for high-priority countries such as Uganda to reach and achieve 80% SMC coverage among 15- to 49-year-old males, the policy set a target of circumcising 4.2 million men aged 15–49 by 2016. The country had made considerable progress toward this goal, with more than 2 million men reported to have had been medically circumcised through December 2014, according to national indicators.

Estimates of the number of HIV infections averted by circumcisions conducted through 2014 by the national SMC program (including males ages 10–14) show that, even if the country halted the SMC program, the circumcisions performed through 2014 would prevent an estimated 45,000 HIV infections by 2025. This estimate was derived assuming that Uganda would scale up antiretroviral therapy (ART) coverage according to the 90-90-90 HIV treatment goals during this period. The 90-90-90 goals, advanced by UNAIDS, were an ambitious plan to control the HIV epidemic worldwide. By 2020, they called for 90 percent of people living with HIV to be diagnosed, 90 percent of those diagnosed to be on ART, and 90 percent of those on ART to be virally suppressed. Although this policy by the Government of Uganda was important to this study since it brought out the importance of modern circumcision practice in the prevention of HIV, it was not true to estimate that 45,000 HIV infections would be averted by 2025 when in an actual sense nothing was happening in the country concerning circumcision (SMC) since it was halted by the same Government.

Although this effort by Uganda's Government to put a male circumcision policy in place was an important facet of this study, the policy seemed to be hampered by factors like myths and cultural barriers. It was also worth noting that, the MC policy process in Uganda generally took a longer course compared to other countries such as Lesotho, Zambia, and South Africa, which developed their policies on MC in the immediate aftermath of WHO and UNAIDS recommendations. The delay in Uganda had been attributed to what Foucault described as

'polarization' amongst actors on a policy issue. The proponents and opponents used their power to affect the MC policy process in Uganda. The influence variables were (magnitude of power, form of power, position, and level of commitment) of each of the actors during each of the MC policy process stages. These variables were equally important to the study because they helped to highlight insights into the would-be factors that had the potential to deter the policy of male circumcision in the context of Zambia, and when such happens, what was needed to mitigate any bottlenecks in policy implementation among actors was also an important highlight to this study.

According to James Odong (2016), in Uganda, there was silence inside a vehicle carrying a group of 14 men who had come to seek free voluntary male medical circumcision. The men, from Abeko village in the Eastern Ugandan district of Soroti, came to be circumcised at Tiriri Health Centre. Among them was 38-year-old Alfred Eyatu, a father of five, and said these words:

> *"I hope my manhood will not fail to erect after circumcision. I don't know how my wife will react when I return home today. She has been telling me that if a man gets circumcised when he has a wife, he needs to first sleep with another woman because sleeping with the wife first is a curse. She will not allow me to go and sleep with other women," Eyatu complained.*

Eyatu's fears reflected myths about male medical circumcision in Uganda. Such myths had the potential to hamper efforts of encouraging men to get circumcised. Although more Ugandan men were seeking medical circumcision, the government was falling short of its 80 percent target. According to a report of 2012 by the Uganda Aids Commission, thirty-five (35%) percent of adult men had undergone safe medical circumcision by the end of 2014. This led some health experts to ask whether Uganda was to adopt a new strategy to encourage more men to come forward for circumcision. One problem however was a shortfall in funding for the circumcision program. The report also indicated that Dr. Barbra Nanteza, coordinator of National Safe Male Circumcision from the Ministry of Health, said: "Our target for 2015 was one million but we had funding for only 330,000 procedures. That was a huge funding gap that had slowed down the program implementation in the country.

Further, Medical experts also blamed misconceptions about circumcision for its low uptake. Some men were put off by the time it took for them to heal, while some women thought it lessened their partner's sexual performance. This study was vital because it brought out myths and cost implications about male circumcision program implementation though this was not part of the study. But as the campaign continued to scale up in Uganda, the government needed to tailor its efforts to the unique needs of people who were most vulnerable to HIV infection. There was an urgent need therefore by the Government of Uganda to address the funding gap to make sure men who wanted to get circumcised did so. This was an important factor in the study which assisted in understanding what was being done in Zambia concerning the health policy on the implementation of the circumcision program, and also compared the extent to which traditional and modern circumcision practices prevented the HIV and STIs transmission.

Like in many other African countries, male circumcision was traditionally practiced in several communities in Uganda. Just as Muslims got circumcised for religious reasons, it was a rite of passage from childhood to adulthood among the Bagisu, an ethnic tribe in Eastern Uganda. However, there were, sometimes, cultural barriers to medical male circumcision among these communities. Some tribes viewed taking the clinical approach as a sign of weakness because of the use of an anesthetic. According to James (2016), another myth was that male circumcision was a way of 'Islamizing' the population. Some people believed that proponents of circumcision wanted all people to convert to the Islamic faith. Despite this, Dr. Asaph Ssenoga of Kibuli Muslim Hospital said:

> *"Nowadays we receive more non-Muslims than before seeking circumcision. I am sure that people are aware that this act is not only a religious or cultural activity but also a positive, healthy step in one's life."*

This was relevant to this study in the sense that it brought out not only traditional and modern circumcision practices coupled with difficulties of implementing the modern circumcision practice due to myths and cultural barriers, but also conducting circumcision among non-religious grouping that was rare in the past as circumcision procedures were initially common only among the Muslim men in Uganda.

1.8.4 National Picture on Male Circumcision with respect to HIV and STIs prevention

From the preceded discussion on traditional circumcision in the background of this study, traditional circumcision ceremonies such as *the Mukanda* initiation ceremony in Zambia were a passage of ritual rites which had been practiced by ethnic groups in the North-Western part of the country among the Luvale, Lunda, Chokwe and Luchazi speaking people. Sometimes, a few months during the winter season, young adolescents from these tribes were taken to the camps set up in the bush near the community. At these camps, they were taught traits and dances peculiar to their tradition, cultural values, skills expected of a man from their ethnic groups, roles, duties of a good husband, and later on the teenagers were circumcised using a special knife as a symbol of initiation into adulthood.

A study by Chinyama Seleji (2010) showed that some respondents could not correlate HIV transmission with Circumcision. They did not believe that the youngest initiates could be HIV positive even when they had not yet engaged in sex. Even when this study was not centered on the modern circumcision practice, a gap in the study of Chinyama (2010), the findings were important because they formed the basis to investigate in the study the extent to which sharing of knives during circumcision under traditional circumcision practice whether or not, had a potential of increasing the chances of the initiates from acquiring the STIs and HIV infections.

Further, in the study by Chinyama (2010), some traditional circumcisers had no idea of the relationship between sharing a surgical knife between initiates during circumcision and the transmission of HIV among the initiates, especially in situations when circumcisers wiped the knife with a cloth before re-use on the next initiate. The study further indicated that at least half of the traditional male circumcisers actively used the traditional method of using one surgical knife on all the initiates under unsanitary conditions. However, there was a need to determine the extent of exposure of these initiates to the risk of HIV infection under traditional procedures. Although the finding by Chinyama (2010) on HIV prevention from a traditional point of view, however, the study did not point as to whether or not, circumcising initiates under traditional circumcision conditions prevented the spread of HIV and other STIs infections among the

initiates. Therefore, the study explored the Zambian health policy on HIV and STI prevention to close these gaps in the literature by comparing the extent to which traditional and modern circumcision practices prevented the transmission of HIV and STIs.

Chinyama's study of 2010 also helped to provide a background useful for the study because it formed a basis for comparison on the extent to which traditional and modern circumcision prevented the spread of HIV and STIs. Further, a gap in Chinyama's 2010 study was that the study did not consider the fact that the sampled ethnic groups were not conducting circumcision ceremonies for HIV prevention, but conducted circumcision for cultural reasons and also meant to impart posterity of ritual rites, and values among their boys as they grew into adults. Additionally, many teenagers especially in rural communities preferred traditional circumcision as opposed to modern circumcision practices for sexual prowess and attraction to girls as well as dominance over uncircumcised teenagers who were seen to be weaklings.

The practice of circumcision in some parts of Zambia had been mainly for traditional, health and sometimes it served as a rite of passage to adulthood. Circumcision was assumed to be associated with lower STI and HIV prevention. In line with this, the practice was investigated at the national level through a survey. Hence, the 2007 ZDHS documents that, generally, thirteen (13%) percent of men aged 15-49 and fourteen (14%) percent of men aged 30-49 were circumcised. North-Western had the highest percentage of circumcised men (71 percent) and Eastern and Northern had the lowest percentage (3 percent each). Circumcision was higher with more than secondary education (16 percent) than with less education.

The 2007 survey was conclusive and helped to plan for future investigative questions in the study as to whether educational attainment by men had a bearing on one's decision whether to circumcise or not in a traditional setting. And whether or not, this choice after circumcision eventually resulted in the prevention of HIV and STI transmission. However, the gap noticed in this survey, just like other reviewed studies, was that it was tailored towards modern circumcision as opposed to traditional circumcision practice. Further, the assertion by the survey of 2007 on north-western having recorded the highest coverage of circumcised men than any other province did not clearly state whether this coverage was a combination of modern and traditional circumcision. Since this clarity was missing, it was difficult using these survey

findings to ascertain the circumcision practice that contributed to the large numbers of men who had gotten circumcised, however, it was true based on the reviewed literature to state that north-western was heavily endowed with the traditional type of circumcision compared to modern circumcision practice, and therefore, the survey results of 2007 needed interpretation with caution. In this regard, there was a need to conduct the study to close this gap in the literature, especially on the extent to which both practices prevented the spread of HIV and STIs.

The ZDHS (2007) further focused on self-reporting of sexually transmitted infections. During the survey, respondents who had sexual intercourse were asked if they had a disease they acquired through sexual contact in the past 12 months and if at all, they had experienced some symptoms associated with STIs such as a bad-smelling abnormal discharge from the vagina and penis, or a genital sore or ulcer. The survey presented that the self-reported prevalence of STIs and STI symptoms in the population for both women and men were common. Six (6%) percent of men and five (5%) percent of women reported having had an STI or having experienced STI symptoms during the 12 months preceding the survey. Among women, three (3%) percent had an STI, two (2%) percent had a bad smell or abnormal discharge, and three (3%) percent had a genital sore or ulcer. , four (4%) percent reported that they had an STI, three (3%) percent had a bad-smelling abnormal discharge, and four (4%) percent had a genital sore or ulcer. Among both women and men, the prevalence of STIs and STI symptoms was highest among respondents who are divorced, separated, or widowed than those who are married or never married but were sexually active. Even though this study involved women who were assessed on STIs of course not part of this study, the ZDHS (2007) was silent on whether those men assessed for acquiring an STI were actually circumcised and yet measured the risk of engaging in sexual intercourses by both females and men, and hence the gap.

Additional to the survey of 2007, residents in urban areas were more likely to contract an STI or STI symptoms than those in rural areas. Among women, the prevalence of STIs or STI symptoms was highest in Lusaka province (5 percent) while, self-reported STI prevalence was highest in Central province (6 percent). The prevention of STI concerning circumcision in this survey was a good effort useful to the study. However, the survey did not explore the extent to which circumcision prevented the transmission of HIV and STIs. This was a notable gap in the

survey, for example, the central province recorded the highest STI prevalence according to the survey and yet this was the province in which modern circumcision practice was being implemented. In an ideal situation, the presence of modern circumcision practice should result in low numbers recorded of STIs, but this was not the case as documented by the survey. Therefore, it became necessary to investigate whether or not, circumcision done under modern or traditional circumcision practice prevented the transmission of HIV and other STIs in the context of the Zambian health policy position on the prevention of HIV and STIs.

A study conducted by Lukobo and Bailey in 2007 focused on the acceptability of male circumcision for the prevention of HIV infection in Zambia. Focus group discussions were conducted with urban and rural married and single unmarried men aged 18 to 39. Thirty-four (34) focus group discussions were conducted; 17 with men and 17 with women in four districts. The study assessed male circumcision practices, opinions, and acceptability as an intervention to improve male hygiene and reduce sexually transmitted infections, including HIV. Results revealed different perceptions of male circumcision. Traditional groups practicing male circumcision revealed that uncircumcised men experienced premature ejaculation, decreased penile hygiene, and were unfit for marriage. Male circumcision was believed to be a developmental milestone for a man. It was also perceived to protect one from sexual diseases. Opinions were expressed with regards to enhanced sexual pleasure, circumcised men were thought to "perform" longer, thereby increasing their female partner's satisfaction.

Further, according to Lukobo and Bailey (2007), men not practicing traditional male circumcision expressed limited interest in the practice although some considered undergoing male circumcision (MC) because of the belief that women preferred circumcised men to uncircumcised ones. In addition, non-circumcised participants revealed that they would adopt MC for themselves or their sons if it was proven to reduce the risk for HIV and STIs, and on the condition that it was offered free of charge or at a nominal cost. This study's results were an insight into a new finding rarely brought out by earlier reviewed literature, that was to say, the cost in terms of charge for men to undergo circumcision coupled with the acceptability of the circumcision based on those factors mentioned above. Even though this was not the scope of this

study, it was important to mention that once barriers to circumcision were not properly addressed, the acceptability of circumcision might be compromised and hence few men could get circumcised.

Therefore, it was important in the study to focus only on the circumcised men's perception of circumcision in line with the prevention of HIV and other STIs. This was done by comparing the extent to which traditional and modern circumcision practice prevented the transmission of HIV and other STIs while not necessarily abandoning some few factors as discussed that had the potential in resulting into a negative outcome of any type of circumcision practice in Zambia. For example, using the Zambia health policy, the study assessed what institutional framework was put in place to ensure smooth implementation of the policy on circumcision and what challenges if any existed regarding the VMMC program implementation in the country. Hence, the study was conducted to close this gap in the literature.

1.8.5 Summary of Literature Review

Most of the reviewed literature had some parts that were consistent with the study conducted, the main gap in the literature was that most of the studies' shortcoming was the failure to assess the extent to which traditional and modern circumcision practices prevented the transmission of STIs and HIV infections. However, it was also true to acknowledge the fact that most of these studies were largely biased towards the modern circumcision practice as compared to the traditional one. Therefore, it became necessary in this study to bring a mix of the two circumcision practices and relate them to the prevention of HIV and other STI transmission which was limited in most of the studies reviewed. Also worth noting is that majority of the studies bordered on HIV prevention and little coverage was given to the prevention of sexually transmitted infections (STIs), however, in some cases, the type of STIs was well documented by some studies. Further, some studies brought out very important policies on circumcision but did not address whether or not, these policies to some extent assisted in the reduction of STIs and HIV infection. Based on the gap in knowledge from these studies reviewed, the study explored the Zambian health policy

on the prevention of HIV and STIs and compared the extent to which traditional and modern circumcision practices prevented the transmission of HIV and other STIs. Therefore, the approach used in the study was to produce evidence-based knowledge envisaged to close some of the identified gaps, especially in the prevention of HIV and STI transmission.

1.9 Research methodology

1.9.1 Introduction

The section below included Confidentiality issues, Research Designs, Research Instruments, Data Collection procedures, Data Analysis and Data Processing. The study was conducted in the North-western and Central provinces of Zambia. In these provinces, the target districts were Chavuma and Kapiri Mposhi. The study dealt with two variables with different characteristics happening in different environments. The comparison therefore in the study was not on whether modern circumcision practice was better than the traditional practice or not, but the study was aimed at comparing the extent to which each of them prevented the HIV and other STIs transmission.

Due to this disparity between modern and traditional circumcision practices, the two practices were not studied in the same locality because they had different characteristics and were not only performed in different conditions but also unique environments. Therefore, the traditional circumcision practice which was considered the control group was studied in the Chavuma district while the modern circumcision practice as an experimental group was studied in Kapiri Mposhi district. The use of this approach in terms of the control group was considered to find ways of improving better models of circumcision and also as a measure to see if modern circumcision practice was doing better in the prevention of HIV and other STIs transmission.

1.9.2 Methodologies

1.9.2.1 Research Design

The study used Quantitative and Qualitative Methods. The use of qualitative approach focused on the experiences of circumcised men on the extent to which modern and traditional circumcision practice prevented the transmission of Human Immunodeficiency Virus (HIV) and sexually transmitted infections (STIs).

In line with this, circumcised men were engaged to express their views and experiences after being circumcised on the extent to which modern and traditional circumcision practices prevented the transmission of HIV and other STIs. This assisted to compare the extent to which traditional and modern circumcision practices prevented the transmission of HIV and other STIs. Further assisted in guiding the causal-effect relationships among variables. Therefore, the research design comprised both qualitative and quantitative approaches. These involved numerical representations and observation and hence made the assessment measurable.

1.9.2.2 Study Designs

Each design is explained as follows:

1.9.2.2.1 Quantitative Design

The quantitative design had the potential to generate the quantifiable results and made it possible to analyze the data. This data was in form of tables, percentages, and graphs which made data analysis easier on exploring the Zambian health policy on the HIV and STIs prevention by comparing the extent to which traditional and modern circumcision practices prevented the transmission of HIV and STIs in Chavuma and Kapiri Mposhi Districts.

1.9.2.2.2 Qualitative Design

This approach offered an in-depth explanation of the phenomenon which was under investigation and generated information related to the Zambian health policy on HIV and STI prevention by

comparing the extent to which traditional and modern circumcision practices prevented the transmission of HIV and STIs. This approach also entailed the process of collecting and analyzing the data whereby the content from qualitative instruments was categorized and coded, and this facilitated data entry and analysis.

1.9.2.3 Study Population

The Study population included all circumcised males under traditional and modern circumcision practices. However, in the case of health workers, the participants included females. Participants in the study were ethnic groups such as the Luvale and Lundas, traditional leadership (headmen), traditional circumcisers, Initiates/circumcised men, providers of male circumcision services, health workers, health Institution in-charges, and the elderly members of the community. Some health facilities providing male circumcision services were selected. Further, the health facilities conducting circumcision assisted in providing documentation on their HIV status, circumcision, contact, and address details. This assisted in locating such participants. In this case, the involvement of all the underlined participants and health facilities meant that the study participants were not studied in isolation. Hence, the study got not only findings on traditional circumcision practice but also modern practice. Therefore, the key players in the study were involved.

1.9.2.4 Sample Size and Sampling Procedure

This section was structured in a way that it briefly explains each of the sampling technique used in the study and followed by the sample sizes. This was important in the study to bring about an understanding and justification as to why, each sampling procedure was selected for a given sampling size in the study. And the sample size consisted of 260 participants broken down into 130 under modern circumcision practice and another 130 under traditional practice.

The types of sampling used in the study comprised Convenience, Quasi- Random, and Snowball Sampling. The participants in this study were selected using Convenience, Quasi-Random, and Snowball Sampling.

Some of the explanations for these sampling methods were as follows:

a) Convenience sampling

It is a non-probability sampling also known as purposive sampling. This was one of the methods adopted by the researcher where research data was collected from conveniently available respondents. This was because it was a commonly used sampling technique that was incredibly prompt, uncomplicated, and economical. In many cases, respondents were readily approachable to be a part of the sample. It was also important to note that, it was practically impossible to sample all the health workers in the entire health facility, hence the use of this method. The researcher used convenience sampling since it was easy for one to be included in the sample provided one was a health worker, accessible and provider of male circumcision services at either a hospital or clinic. Thus, it became incredibly simplified to have included the elements in this sample.

All components of the health workers' population were eligible for this study; however, it was dependent on the researcher's proximity to select the subjects for the sample. The researcher chose members merely based on proximity and using this technique, the researcher observed their opinions and viewpoints in the easiest possible manner. These respondents were picked on the condition that they provided relevant information for the study. Further, the study used convenience sampling because it was quick and easy to deliver the results and also assisted in getting insights in a shorter period. Therefore, some of the advantages of adopting a convenience sampling approach in the study were:

- Data was collected quickly.
- Inexpensive to create samples.
- Easy to do research.
- Low cost.
- Readily available sample.

- And fewer rules to follow.

b) Quasi-Random Sampling

The method was used for circumcised men who underwent modern circumcision practice. It is also known as probability sampling. Under certain conditions, largely governed by the method of compiling the sampling frame or list, a systematic sample of every nth entry from a list was equivalent for most practical purposes to a random sample. This method of sampling is sometimes referred to as quasi-random sampling. The researcher used quasi-random sampling as long as the sample was picked after the nth entry from a list of names of circumcised men under modern circumcision practice and within the age group of 15 to 49 years. In this study, the list of names was obtained from the male circumcision registers that were available at the clinics and hospitals.

This type of sampling was intended to increase sample representativeness and adequate sample size to come up with reliable inferences. This meant that Quasi-random sampling in the study provided a chance that every nth of each element or subject in the population was selected in the sample. In this regard, the Quasi-random sampling was used among circumcised men attended to by medical professional staff at the selected clinics. These men were those who had received a service safely before the study and between the ages of 15 and 49 years. Male circumcision registers available at clinics were used to obtain a list of men who had appointments or had booked the circumcision services on specified dates.

The sampling of 100 circumcised men Quasi-Random technique is called the linear systematic sampling. The sampling interval, K, was to be derived as **K=** N/n**.** where **N** was the total number of the subjects in the sampling frame, and in this case, 1000. In this sampling, **n** was the sample size of 100. Therefore, using the linear systematic sampling formula, the chance of an element (circumcised man) to be included in the sample size was ten (10) sampling intervals. It was worth noting that, Excel software was used to select the sampled elements in the study. In this

case, it was easier to assign a number to each individual. And the first individual was chosen at random and subsequent individuals were then selected at a regular sampling interval of ten (10), which then meant selecting the name of every 10th element. After the names of circumcised men were collected from the registers, then they were subjected to the excel software that rearranged serially and randomly selected the 10th name from the list of the 1000 population. Thereafter, sampled men were located using their contact details such as phone numbers, and addresses. In addition to this, below explains the process:

This method was chosen because its merits outweighed the demerits, and it assisted to account for the bias that could arise from other sampling techniques used in the study. This method used in the study had the following advantages:

- was quick and easy given a sampling frame.
- and it was reasonably random provided there was no pattern in the population.

However, though this method was chosen, some few demerits were that it required a sampling frame, and required direct access to every circumcised man in the population which to some extent made it costly, especially for those who stayed in distant places and another disadvantage was that only combinations of items were chosen, this meant that if the 10th individual was chosen, then the 11th person had no chance of being in the sample.

c) Snowball sampling

This is a recruitment technique in which research participants were asked to assist the researcher in identifying other potential subjects. In some instances, especially on the HIV status of the respondents, the topic was sensitive and personal, and therefore, in this case, snowball sampling was justified for its use in the study. However, care was taken to ensure that the potential subjects' privacy was not violated. Snowball sampling also known as chain-referral sampling is an example of non-probability sampling. Under this sampling technique, the available respondents provided referrals to recruit samples (other respondents) required for a research study. This sampling method involved a primary

data source of nominating other potential data sources that were able to participate in the research study.

The Snowball sampling method is purely based on referrals and that is how a researcher can generate a sample, hence, a name chain-referral sampling method. The snowball sampling method in this study was extensively used especially in the case where a population of traditionally circumcised men was unknown. This sampling technique could go on and on, just like a snowball increasing in size (in this case the sample size) till the time a researcher had enough data to analyze and draw conclusive results that could assist in making informed decisions. The types of Snowball Sampling involved Linear and Exponential non-discriminative Snowball Sampling. The application of these types of Snowball Sampling is below:

Types of Snowball Sampling used in the study

1. ***Linear Snowball Sampling:*** During the study, the formation of a sample group started with one individual subject providing information about just one other subject, and then the chain continued with only one referral from one subject. This pattern was continued until enough subjects were available for the sample. In this method, the headmen, traditional circumcisers, and elderly men in the study were engaged and provided a referral to other respondents within the community.

2. ***Exponential Non-Discriminative Snowball Sampling*:** In this type, the first subject was recruited and then he provided multiple referrals. Each new referral then provided more data for referral and so on, until there were enough subjects for the sample. This approach was used among the circumcised men who underwent traditional circumcision practice. This meant that, once a circumcised man was recruited for the study, then he provided multiple referrals of other circumcised men in the community, and then the new referral also in turn provided more data till there were enough respondents.

Some of the advantages of Snowball Sampling were that:

It allowed this study to take place where otherwise it could have been impossible to conduct because of the lack of participants in the study.

- It was quicker to find samples, referrals made it easy to find subjects as they came from reliable sources.
- It was a cost-effective method.
- Reference provided to some subjects motivated them to participate in the study who initially were not willing to participate in the study.

In the above sampling method, the subjects known that could provide information were targeted to collect qualitative and quantitative data. Under purposive or convenience sampling, the researcher relied on judgment or hand-picking cases subjectively. In this case, using purposive sampling, subjects were selected on the basis that they contributed to or provided information that was needed in the study. Therefore, purposive sampling was used on key informants with the view that they provided relevant data for the study.

In this study, 260 participants were targeted, and when these were interviewed, the data was put on the software known as Excel Sheet and exported to SPSS. The participants included the service providers that were working in the health facilities in Kapiri Mposhi, traditional leadership, the circumcised men, and the elderly members of ethnic groups such as the Luvale, Lunda, Luchazi, and Chokwe in the Chavuma district. Under the purposive or convenience method the researcher interviewed 30 respondents in total, and these comprised, one (1) VMMC Program Co-ordinator, one (1) district health director, two (2) doctors, three (3) clinical officers, three (3) health clinics in-charges, and twenty (20) nurses were conveniently included in the study and these were those who provided the circumcision services at the clinics and hospitals. While under Quasi-Random Sampling, the researcher interviewed

circumcised men under modern circumcision and these were one hundred (100) circumcised men under modern practice

Firstly, twenty (20) clinics were conveniently selected from a total of 30 health facilities in the Kapiri Mposhi district. Secondly, two separate lists from the selected health facilities were generated. These lists comprised male circumcision service providers and circumcised men. The lists were generated from male circumcision registers in the case of the circumcised men, and the other one was gotten from Kapiri Mposhi's human resources database of 2020. These health workers in total were 90 and out of this, a sample size of 30 was drawn as categorized above. While the health workers were accessed at their workplaces such as clinics and hospitals, particularly in their screening and operational rooms.

The total population of all men circumcised under the modern procedure sampled was 1000. The sampling frame included the male children aged from 0 to 14 years, were circumcised males between the age of 15 and 49 years, and also adult males who were above 50 years. A sample for circumcised men between the age of 15 and 49 years was picked using the Quasi-Random Sampling as from the preceding discussion. The total sample size consisted of 100 respondents circumcised at outreach and static clinics. These respondents were accessed from their residences, business, and workplaces. Each of the research assistants went to interview circumcised men using the list of the names already selected using the linear systematic sampling of picking the 10th of every subject within the population. This list made it easy to contact the respondents and if this was not done, the research assistants would have been forced to go around streets or houses and picked every 10th house for looking for circumcised men to interview. If the 10th home did not have a male circumcised, then the research assistants moved on to the eleventh (11th) house in the row and then continued to every fifth household.

If the household had more than one circumcised man, the interviewee was selected randomly. Before the interview, the selected circumcised men were handed the informed consent form to read; if they agreed to participate in the study they were requested to provide signed consent.

Altogether, 1000 circumcised men were shortlisted to get a total of 100 respondents. The respondents were arranged according to 15 to 49 years and above 49 years. However, anyone found to be less than 15 years and older than 49 years was removed from this sample, unless in an exceptional instance where a few between the ages of 15 and 49 years were not available, that is when a few from the ages above 49 years were included.

While under Snowball Sampling, the respondents were selected on premise that they lead to other respondents. Respondents were accessed from their residence and circumcision camps such as *Mukanda* Camps. And under the Snowball method, the researcher interviewed 130 participants. These were ten (10) headmen, ten (10) elderly members from ethnic groups who were the custodians of *Mukanda* tradition, ten (10) traditional circumcisers, and a hundred (100) circumcised men from ethnic groups under traditional circumcision practice within the ages of 15 to 49 years. The selection of the headmen, elderly members, and traditional circumcisers was done using Linear Snowball Sampling as per preceding discussion, while the traditionally circumcised men were selected under Exponential Non-Discriminative Snowball Sampling.

In this study, the respondents were categorized into three (3) groups. These were:

- Under modern circumcision practice, the focus was on: the thirty (30) health workers. These included district health directors, VMMC Program Co-ordinator, Incharges, doctors, clinical officers, and nurses.

- One hundred (100) men who were circumcised at health facilities under modern procedures and within the ages of 15-49 years.

- Under traditional circumcision practice, the focus was on 130 participants. These were ten (10) headmen, ten (10) elderly members from ethnic groups who were the custodians of *Mukanda* tradition, ten (10) traditional circumcisers, and the hundred (100) circumcised men under traditional circumcision practice the ages of 15-49 years.

In this study, below is the explanation of the qualification of respondents to be included in the study:

Selection criteria for Study participants:

- Only those circumcised men aged between 15 and 49 years were attended to by any professional staff at either the hospital or clinic level.
- Only those circumcised men between 15 and 49 years who at one point underwent the traditional procedure of circumcision or any rite.
- The health workers or the male circumcision providers eligible in the study were those providing the service, trained and available during the study period.
- Only traditional circumcisers who still performed or had practiced traditional circumcision on initiates during the study period.
- Only traditional leadership such as headmen who were available in an area where traditional circumcision was being practiced.
- Only elderly members with the knowledge of the traditional circumcision practices especially the activities performed during the Mukanda initiation ceremonies.
- Circumcised men who visited the health facilities without having their HIV and STI testing performed during and after circumcision were excluded from the study.
- All those men who made visits to the clinics and refused to be tested for HIV and STIs were excluded from the study.
- All those men whose HIV and STI results were documented in clinical records as positive during circumcision were excluded from the study.

- Lastly, only participants that had been residents of Chavuma and Kapiri Mposhi districts before the study were eligible for this study.

1.9.2.5 Research Instruments for Data Collection

The period for the data collected for the study was for the past two-year period before the study. In other words, the period was between 2019 and 2020 which helped in understanding the phenomenon that was under investigation. The data collection instrument was a questionnaire in English, a language commonly spoken and understood in Kapiri Mposhi and Chavuma districts. The questionnaires were developed after a comprehensive reading of the literature on theories with a focus on, the theory of Change (TC), Self-efficacy theory (SET), Health belief model theory (HBM), and the Expectancy value theory (EVT). The questionnaire collected demographic and health characteristics data such as age, education, HIV and STIs testing history, their HIV and STIs status, also whether participants had been told to come to the clinic once a day to be checked for an STI and HIV, and if at all participants had been diagnosed with an STI or HIV in the past months before the study. And also a collection of data was done based on the variables from the three (3) theories namely the Self-efficacy theory (SET), Health belief model theory (HBM), and the Expectancy value theory (EVT).

The independent variables for the HBM were measured as follows:

- perceived susceptibility ("*I am at risk for getting STIs and HIV*"), perceived severity ("*STIs and HIV are extremely harmful diseases*"), and the perceived benefits ("*I can be protected against STI and HIV infection*"). And this was also explained using self-efficacy theory that determined the effectiveness of a given circumcision practice, and which when all things being equal, an effective circumcision practice had the potential to reduce if not, prevent the transmission of HIV and STIs. This was supported by the Expectancy Value theory that predicted that some men were motivated to get circumcised either under traditional or modern circumcision practice since they attached a value as an outcome of protection against HIV and STIs.

- Using these theories, the study aimed at the evaluation of behavioral outcomes ("*Was undergoing either modern or traditional circumcision by men a good thing towards reducing their chances of acquiring the HIV infection?*")

Questionnaires consisted of both open and closed questions. The selection of such questions was because, the Open-ended questions invited expansive answers and provided a lot of information on the study topic such as, "*What extent," "how," and "tell me about. .. . .*". This type of question gathered the most information and allowed the participant to do most of the talking. While the Closed-ended questions were answered in a few words. However, even though these questions did not give a lot of information, they were specific to the topic in the study and assisted to direct further questioning.

Generally, some of the closed-ended questions used in the study were as follows, *did you test for HIV and STI? If yes, ask: was the test positive? At times an open-ended question was started after the conversation, for example, if the answer was positive: Tell me about the kind of drugs that were given to you?* The questionnaires, therefore, were constructed and administered to circumcised men (both circumcised under modern and traditional practice) and health workers providing male circumcision services at some selected health facilities. In-depth interviews using the Interview Guide was another mode of data collection, especially for VMMC Program Co-ordinator, those in charge of clinics, health directors, headmen, traditional circumcisers, and the elderly members of the community. These respondents were assumed to be knowledgeable about male circumcision.

In addition, interviews with the health workers were carried out independently, mostly in their private rooms, and this was to ensure that privacy and anonymity were observed. Further using the expectancy-value theory by Vroom (1964) on Valence and Performance, the intrinsic motivation was used by a simple thanking of a respondent after an interview (*Valence*), and on *performance*, the researcher brought out questions that bordered around skills whether both MC service providers under traditional or modern circumcision practices were trained to conduct circumcision, and if at all, no training was done, what impact existed among the circumcised men about the HIV and STIs prevention as a result of lack of training by the circumcisers?

Hence, the researcher interrogated the responses that were given and sought the answers to these questions. In this study, the selection of some health facilities was based on the assumption that the circumcised men sought circumcision service from these facilities at one point and were attended to by professional staff. In this case, such health facilities had also key informants such as in-charges, who in turn reported to the health directors following the organization structure, and these were also regarded as knowledgeable on circumcision cases.

In-depth Interviews helped the researcher to solicit more detailed information that was not captured in the questionnaires. For instance, interviews helped the researcher to go into detail and provided more reliable information than questionnaires. In this way, *reliability* was upheld. Therefore, this study involved both qualitative and quantitative designs because such methods involved numerical representation and observation and hence made the assessment measurable. Clinical records were reviewed for circumcised men who underwent HIV and STI testing while attending either HIV or STI checkups during and after circumcision. In this regard, the study used an Assessment Check List (ACL) to review the documentation at the hospital and clinical levels. Further, an assessment checklist (ACL) therefore was developed and used to collect primary data available in the registers at both clinics and hospitals. These included Male Circumcision (MC), HIV and Testing (HTS), and Sexually Transmitted Infections (STI) registers. The utilization of these registers is explained below:

- Male Circumcision (MC)- this was useful in determining the number of the men who underwent circumcision and had a negative HIV and STI status at circumcision.
- HIV and Testing (HTS)- this was useful in determining the numbers of men who were circumcised and tested positive for HIV after circumcision.
- and Sexually Transmitted Infections (STI) registers- in this register, all those men who tested positive for STIs, and in some instances, were found to have an STI that ended into an HIV- positive case.

The above process was done to ensure that data validation during the study was upheld. Then results obtained from this validation exercise from registers were then compared to those got from the field visit after interviewing the respondents. This action of data checking or validation

from the registers helped to prove the validity or accuracy of the responses obtained by the study and ascertain the levels of reliability of the study findings. And once the results from both the registers and the field visit were similar, then it became possible for the study to officially accept or declare that indeed circumcision to some extent reduced the spread of STIs and HIV infection. However, when a disparate occurred among the results, then the opposite would be true in the study.

1.9.2.6 Pre-test

After study instruments had been developed, the researcher took them to nearby communities and health facilities in Kabwe and Kabompo districts. These districts were not part of the study sample. Kabwe was regarded as a prevalence of modern circumcision practice, while Kabompo was a place of prevalence for traditional circumcision practice. The purpose of this was to pre-test the data collection instruments under a similar environment. A pre-test was conducted to help in the designing of the research instruments and methodology properly. The pre-test further enabled the researcher to ascertain three things namely:

- Reliability and validity of the data collection tool.
- Duration of administering the questionnaire in terms of time. That meant time management was carefully considered during questionnaire administration to respondents.
- The appropriateness and clarity of the questions that were asked.

After the pre-test phase was concluded, then adjustments to the research instruments were made appropriately. After this, data was collected from primary sources as indicated above, and the study also used secondary sources. Additionally, the collection of data was done through literature that was not available in the selected districts on circumcision by the use of the Internet and Health Management Information Systems (HMIS). This was important for the study because it facilitated access to the recorded literature on the subject matter nationally and worldwide.

1.9.2.7 Data Processing

The research instruments were edited thoroughly and this helped in discarding all data that was not used as part of the study. After the correction of errors/mistakes from the research instruments that had the potential to influence the analysis of data was done, a coding system was developed. This system facilitated ensuring that all raw data entry and storage were made in Statistical Package for Social Sciences (SPSS). What this meant was that data processing helped the researcher to ensure that raw data was edited, categorized, coded, and entered into tables using excel. Once this was done, the data was, then, exported to Statistical Package for Social Sciences (SPSS) software for analysis.

1.9.2.8 Data Analysis

Statistical Package for Social Sciences (SPSS) Version 16.0 was used in the analysis of quantitative data, whilst qualitative data from interviews were analyzed using content analysis. Closed-ended questions in the questionnaires were coded. The responses to the open-ended questions were categorized, coded by assigning figures, and this made it easier for data entry in SPSS and analysis purposes. Content analysis was used to analyze responses from the key informants. This meant that all responses that were given by the study participants were isolated according to the study topic. The common responses were grouped and a number assigned for purposes of coding them, and this process was applied to those interview questions that were different.

Thereafter, assigning codes with figures made it easier to enter data in SPSS. The SPSS software package was used because it offered some of the following merits: it was user-friendly, it had enough space for the long range of numbers, and mathematical manipulations were easily dealt with using its in-built functions. It also permitted various ways of presenting data in the form of tables, frequencies, cross-tabulations, percentages, bar charts, and other figures. Therefore, data were presented using percentages, tables, bar charts, and any figure forms.

1.9.3 Study Ethics

1.9.3.1 Ethical Consideration

After the study was approved by the School of Humanities and Social Sciences under the department of Public Administration, the proposal was later taken for ethical clearance from the University of Zambia Postgraduate Ethics Committee. The ethics clearance was granted by the ethics committee and the reference number, **HSSREC: 2021 – FEB - 005** was obtained. Once the approval to conduct the study was granted, the approved proposal was then submitted to the Ministry of Health (MOH) and Provincial Health Office (PHO) of Central and North-western provinces with an application letter for permission to go into the selected health facilities and communities for data collection.

The researcher was granted an opportunity to go ahead with the study within the short period amid Coronavirus (Covid-19) pandemic. The Introductory letter about the study was then gotten as authority to proceed in conducting the study.

1.9.3.2 Issues of Confidentiality

The study considered issues of confidentiality, thereby instilling confidence and trust in the participants. For example, when interviewing the key informants, the study used a one-to-one approach and made it clear that whatever responses they gave remained confidential. In this case, the respondents did not hide anything but felt free and brought out the information required by the study. In other words, the study considered ethical issues such as participants' rights to participation, confidentiality and anonymity, privacy, and self-confidence.

In addition, the researcher got information from the participants; hence the right to know was upheld. It was also worth noting that before interviews, the participants in the study were first briefed on the aim of the study and clearly stated how relevant their contributions were to the study. It was also made clear in the first place that there was no form of intimidation and completely voluntary and free participation in the study was encouraged. Also, in cases when some participants decided not to take part or withdrew due to one reason or another during the study, it was clearly stated that no form of coercion or penalty was sanctioned on them.

Language as a tool of the study was used in soliciting information. Interpretation of the participant's language when necessary was used in situations where the respondent did not speak the language in use. This was done by getting verbal consent from such participants and in cases that warranted giving of consent forms, this was done.

1.9.4 Problems Encountered During Research

The study was conducted during the difficult moments when the fight against Coronavirus (Covid-19) was at its peak in the Country. This meant restrictions in gatherings, traveling, and complete adhering to Coronavirus (Covid-19) measures such as *Social Distancing, Handwashing, and Sanitizing*. The Covid-19 pandemic made it difficult in some instances to reach out to some of the study participants, as physical meetings were not allowed during this period. Although the collection of information in this regard almost proved futile, however, a ZOOM or ECHO platform was used as a means of soliciting the information that was required by the study. Therefore, the collection of data took a longer period than it was expected, as the process involved setting up appointments for participants via phones and arrangements of talk time for internet bundles.

Some roads were also impassable for vehicles during the exercise which made the researchers hire other means of transport like bicycles. Worse still, this means of transport led to delays in reaching clients and consequently, missed a lot of clients who were ready for interviews on such a research day. Lastly, illiteracy levels and language barriers among research subjects made it costly in terms of time and finances for the researcher because additional research assistants in the villages were engaged to translate the instruments for the people. Therefore, this meant that additional time was allocated to the orientation of these community-based research assistants on the questionnaires.

A lot of time was incurred not just on waiting for the next appointment on missed clients, as above, but also the state of waiting for the few of the research subjects to finish being attended to by a health worker(s), especially among the few who came for medical attention at some health facilities before commencing the research exercise. Nonetheless, these problems put aside, research was successfully conducted.

1.9.5 Structure of the Thesis

There are five (5) chapters in this thesis. Chapter one (1), presents information on the Introduction, Background to the Study, Statement of the Problem, Study Objectives, Significance of the Study, Theoretical Framework, Literature Review, and Methodology, Problems encountered during the research, and the Structure of the thesis. The focus of Chapter two (2) was on the Socio-Economic and Health Delivery Contexts of Kapiri Mposhi and Chavuma districts.

Chapter three (3) presents information on the Zambian health policy and Circumcision practices in the prevention of HIV. Chapter four (4) discusses the Zambian health policy and Circumcision practices in the prevention of other STIs apart from HIV against transmission. Chapter five (5) is the last chapter whose focus was on conclusions made by the study.

CHAPTER TWO: THE SOCIO-ECONOMIC AND HEALTH DELIVERY CONTEXTS OF KAPIRI MPOSHI AND CHAVUMA DISTRICTS

2.1 Introduction

This chapter will focus on the social and economic profile of Kapiri Mposhi and Chavuma districts. It is important to note that Kapiri Mposhi district is, in this study, representing an area of modern circumcision practice, whereas traditional circumcision practice is common in Chavuma district.

2.2 Overview of the socioeconomic and health service delivery in Chavuma and Kapiri Mposhi districts

Kapiri Mposhi district is one of the districts among the eleven (11) for Central Province. The other districts are Chisamba, Chibomba, Kabwe, Ngabwe, Mkushi, Serenje, Luano, ITEZHI TEZHI, Mumbwa, Kapiri Mposhi and Shibuyunji. This district is centrally situated in the Central province of Zambia along Great North Road. Geographically, it is about 215 Km from Lusaka and 65 Km North of Kabwe town, which is the provincial capital. According to the 2010 Central Statistical Office Census, in 2021, the district has a current population of 305,552, with an extrapolated growth rate of 2.5 percent.

Its geographical surface area is 18,250 square kilometers. Kapiri Mposhi is linked to the road and rail networks. The Great North Road passes through this small town en route to the Northern Provinces of Zambia. Furthermore, two rail lines, namely Tanzania-Zambia Railway (TAZARA) lines meet in Kapiri Mposhi town from Livingstone and from Dar-es-salaam to the Copperbelt. Several feeder roads in the district are very useful for commercial and subsistence agricultural activities. Its health services are provided in 36 health facilities that include two first-level referral hospitals, 23 health centers, and 12 health posts. There were plans to recommend St Paul and Mukonchi health centers be upgraded to zonal health center level.

Kapiri Mposhi district provides the following health services: Laboratory, X-ray, Theatre, Counseling and Testing, Prevention of Mother to Child Transmission of HIV (eMTCT), Anti-retroviral Therapy (ART), Out Patient Department (OPD), Obstetrics and Gynecology, Medical and surgical services, Dental services, Physiotherapy, Maternal, and Child Health, Adolescent Health, Nutrition, Ophthalmic, and Environmental health services. Some of these services are also offered at the outreach and community levels. The theatre, counseling, OPD, medical and surgical services are important services in the circumcision program in this district without which it becomes impossible to conduct the procedures.

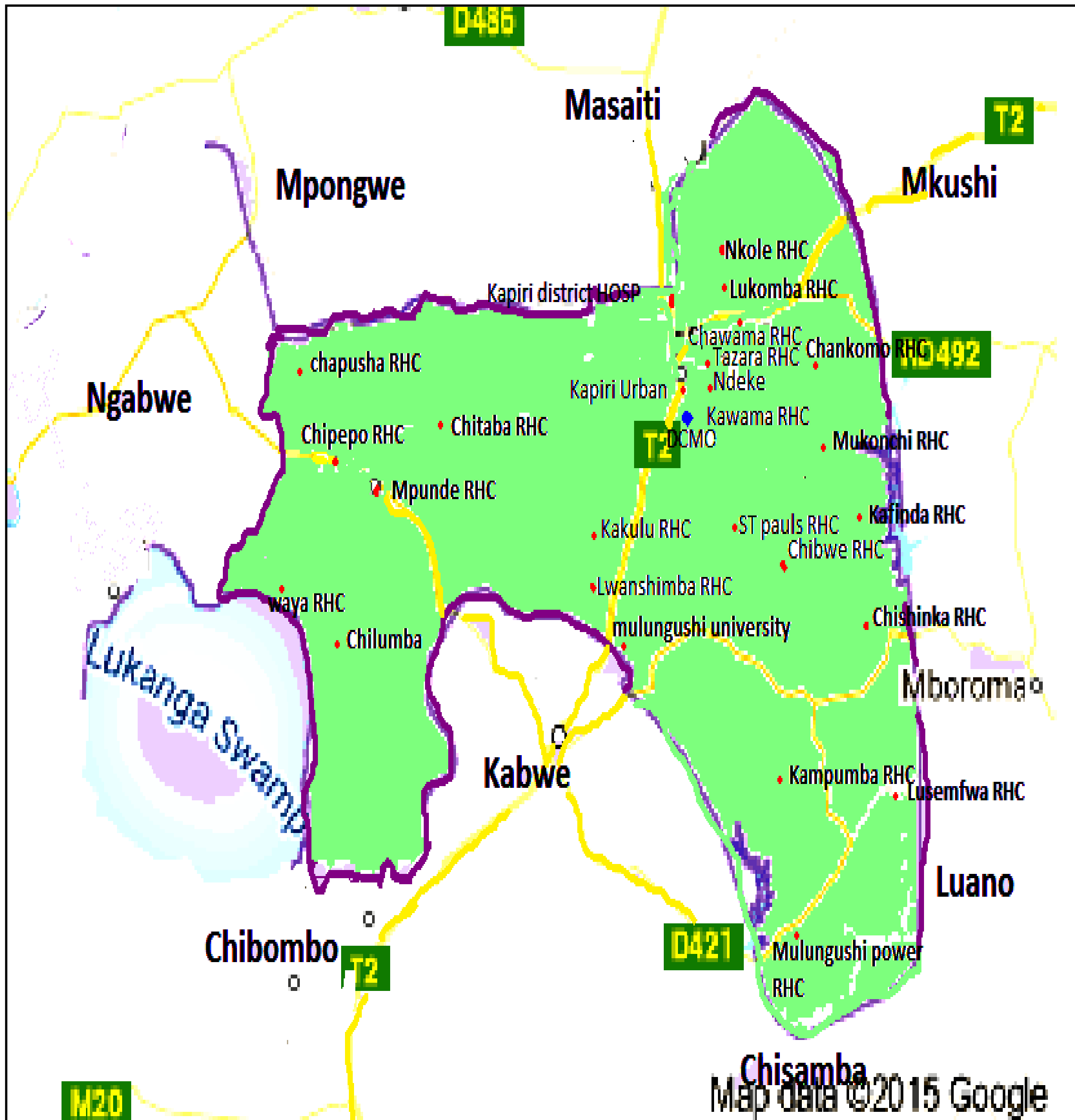
Chavuma district on the other hand is located in the North-Western province. The province has nine districts namely, Chavuma, Ikelenge, Kabompo, Kasempa, Manyinga, Mufumbwe, Mwinilunga, Solwezi, and the Zambezi. It is about 607 kilometers west of Solwezi and the furthest of the nine districts in the province. In 2018, according to the 2010 Central Statistical Office (CSO) Census of population and housing, the district had a population of 37,338 and had only one constituency. The district covers 7,347 square kilometres of land and shared an international boundary with Angola in the northwest and Zambezi district to the south-east.

The district lies between 914 and 1,218 meters above sea level. Chavuma district is divided into two parts. The Zambezi River with the biggest portion is on the western side, which is sparsely populated with undeveloped and hard-to-reach areas. These areas are characterized by a lot of villages. The uneven distribution of population coupled with the widespread of villages across becomes important areas where traditional circumcision was being practiced. Further, much of the area is flooded for almost half of the year between January and May, while the east bank of the Zambezi River is more developed and highly populated, as it hosts most of the government departments.

The district has a sub-tropical climate with temperatures ranging from 20 to 28 degrees Celsius in the cool-dry season, while the maximum temperature in the hot-dry season is about 35 Degree Celsius. Chavuma has a relatively moderate climate that is determined by the humid Congo Air mass and the Inter-Tropical Convergence Zone (ITCZ) which brings rains from early November to December.

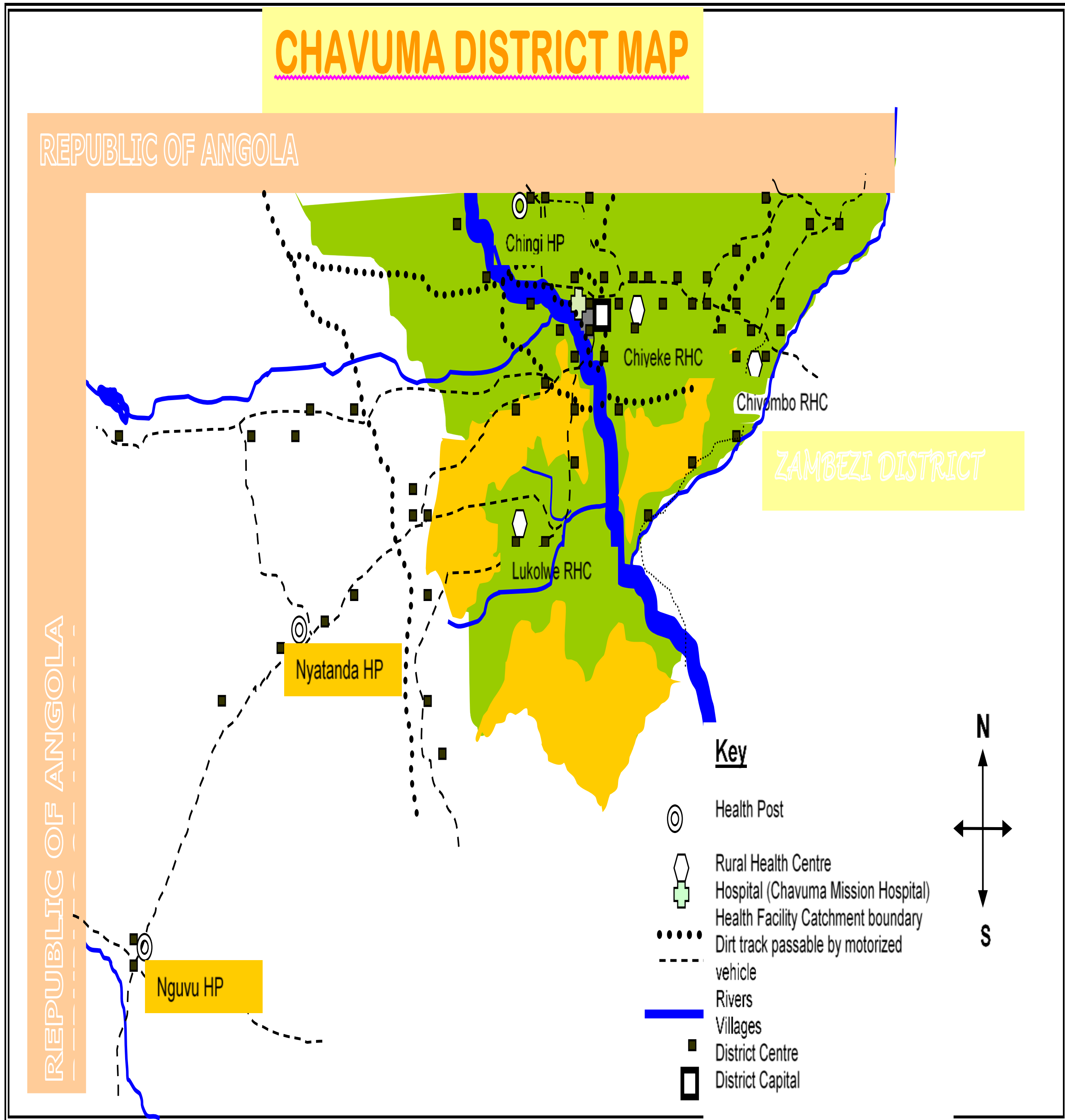
The maps below show Kapiri Mposhi and Chavuma Districts' health facilities such as hospitals, health centers, health Posts, rivers, villages, and catchment boundaries.

Figure 2.1.1 Kapiri Mposhi District Map



(***Source***: Kapiri DHO)

Figure 2.1.2 Chavuma District Map



(***Source***: Chavuma DHO)

The distribution of the population for Kapiri Mposhi and Chavuma districts are below.

Table 2.1.1 Kapiri Mposhi district Population

Category	**2018**		**2019**		**2020**	
	Number	**%**	**Number**	**%**	**Number**	**%**
Children 0 – 11 Months	10,854	3.64	10, 836	3.64	11,122	3.64
<5 Years	55,167	18.5	55, 074	18.5	56,527	18.5
5 – 14 Years	84,986	28.5	84, 844	28.5	87,082	28.5
Women 15 – 49 Years	66,498	22.3	66, 386	22.3	68,138	22.3
All Adults 15 Years+	161,325	54.1	161, 054	54.1	165,304	54.1
Total Male (All ages)	146,117	49	145,872	49	149,720	49
Total Female (All ages)	152,081	51	151, 825	51	155,832	51
Total Population[\1]	**298,198**	**100**	**297, 697**	**100**	**305,552**	**100**
Population Growth Rate		***2.8***		***2.8***		***2.8***
Expected Pregnancies	13,031	4.37	13, 009	4.37	13,353	4.37
Expected Deliveries	12,554	4.21	12, 533	4.21	12,864	4.21
Expected Live Births	11,958	4.01	11, 938	4.01	12,253	4.01

*(**Source:*** 2010 CSO census extrapolated by KDHO*)*

The population distribution in the above table of Kapiri Mposhi district shows that male population accounted forty-nine (49%) percent of the total district population across three-year period. This translated to two (2%) shy of the female population (51%) in the district. The focus

however was to tailor the study towards the male population. Out of this population, the sample size of men circumcised under hospitals and clinics was drawn and used to conduct the study interviews. Therefore, age distribution became a key component to this study.

Table 2.1.2 Chavuma district population

Category	2018		2019		2020	
	Number	**%**	**Number**	**%**	**Number**	**%**
Children 0 – 11 Months	1590	4	1622	4	1744	4
<5 Years	7951	20	8110	20	8716	20
5 – 14 Years	11450	28.8	11679	28.8	12550	28.8
Women 15 – 49 Years	8746	22	8921	22	9587	22
All Adults 15 Years+	20355	51.2	20763	51.2	22311	51.2
Total Male (All ages)	19083	48	19465	48	20917	48
Total Female (All ages)	20673	52	20763	52	22660	52
Total Population\1	39755	100	40552	100	43576	100
Population Growth Rate		**2.8**		**2.8**		**2.8**
Expected Pregnancies	2147	5.4	2190	5.4	2354	5.4
Expected Delivers	2075	5.2	2117	5.2	2266	5.2
Expected Live Births	1968	4.95	2007	4.95	2158	4.95

(***Source***: 2010 CSO extrapolated by Chavuma DHO)

The population distribution in the above table of Chavuma district shows that male population accounted forty-eight (48%) percent of the total district population across three-year period. This translated to four (4%) lower than the female population (48%) in the district. The focus however was to tailor the study towards the male population. Out of this population, the sample selection of men circumcised under traditional circumcision practice was drawn and used to conduct the study interviews. Therefore, age distribution became a key component to this study.

2.2 Socio-economic profile

This section presents information on socio-economic profile of Kapiri Mposhi and Chavuma districts.

2.2.1 Kapiri Mposhi district

After the closure of the mine in Kabwe and the retrenchments in the Zambia Railways, many of the retrenchees came to settle in Kapiri Mposhi district which at the moment has enough land for settlement. Many of these people had opted to become peasant farmers, while the rest were either minibus/taxi operators or marketers. It was against this background that the population of Kapiri Mposhi kept growing. A large population consisted of poor people. The district has special groups of people such as the ZIONISTS, who tend to be monitored closely, especially during immunization because they do not want any conventional medicines, let alone immunization.

The advent of HIV/AIDS in the district was one of the limiting factors to development. However, deaths from AIDS had reduced due to the accessibility of ARVS, though some people were stigmatized, hence shunned the Voluntary Counselling and Testing (VCT) services. A lot of sensitization was still required to make the people access the VCT services which were offered in many of the institutions, as well as by partners, some of whom were offering mobile VCT services as well. In this regard, the prevalence of HIV has led to the introduction of the male circumcision (MC) program in the quest of curbing the HIV pandemic. The MC services are being provided in the health facilities within the district. Therefore, it become important to

explore the Zambian health policy on HIV and STIs prevention and determined whether its objective was met through the Voluntary Medical Male Circumcision (VMMC) program.

In addition to HIV-related ailments, the district has continued to grapple with other diseases like sexually transmitted infections (STIs). These diseases (HIV and STIs) mostly lead to the deaths of many people if interventions are not put in place by the government. Therefore, the district, through its 2019–2021 Strategic Plan (SP) had outlined measurable objectives of the health policy, expected outcomes, program outputs, indicators, and targets. The plan gives details of proposed strategies on how the male circumcision program would be implemented in all the health facilities offering circumcision services to reduce the spread of HIV and STI transmission. Among the many strategies in the plan for 2019-2021 SP, the following were key to this study:

1. To contribute to the reduction of HIV transmission through the provision of Male Circumcision services.

2. To contribute to the reduction of STI transmission through the provision of Male Circumcision services.

Further, the human resource crisis remained one of the major challenges the district continues facing in the delivery of health services. However, in the past years, the district received some staff to a level where all centres had at least one health professional. This was important because if the hospitals and clinics do not have adequate personnel then it would be impossible if not difficult to conduct circumcisions. In this case, male circumcision providers would be few and this had the potential to impede reaching out to men within the district for circumcision. And transport both for administrative and referral of patients was another major challenge for the district. At times, district teams had outreach circumcision sites, and this required transport to move men from some location to the circumcision sites in this way, the MC targets for the district could be attained. However, the district was struggling with transport available for the provision of male circumcision services at both static and outreach sites.

The other major problems identified during the study included:

- *Malaria incidence increased from 193/1000 in 2016 to 628/1000 in 2018.*
- *A High hypertension Case Fatality Rate of 102/1000 was recorded in 2018.*

- *To reduce HIV incidence from 25/1000 in 2016 to 10/1000 in 2018.*
- *TB cure rate reduced from 80% in 2016 to 73% in 2018.*
- *To reduce sexually transmitted infections (STIs) incidence from 2/1000 in 2016 to 1/1000 in 2018.*
- *A high Incidence Rate of Diarrhoea in Under 5s of 302/1000 was recorded in 2018.*
- *A high Case Fatality Rate of Diarrhoea in Under 5s of 132/1000 was recorded in 2018.*

Given the above, the district had set priority areas for 2019-2021, with various objectives at different levels. High impact interventions with minimal resources have since been targeted to help achieve the maximum outcomes and impact.

The district, through its strategic plan, prioritized the following:

(A) In terms of 1st level referral services, the district plans:

- *To reduce the case fatality rates for the top ten causes of mortality through the provision of quality medical services.*
- *To reduce maternal and neonatal mortality through safe maternal health services.*
- *To contribute to the reduction of HIV transmission through the provision of male circumcision services.*
- *To reduce the spread of sexually transmitted infections through the provision of male circumcision services.*

(B) For the health centers clinical services, the district plans:

- *To reduce HIV incidence from 25/1000 in 2016 to 10/1000 in 2018.*
- *To reduce the case fatality of malaria from 48/1000 in 2017 to 32/1000 by 2021.*
- *To reduce sexually transmitted infections (STIs) incidence from 2/1000 in 2016 to 1/1000 in 2018.*
- *To increase the percentage of 0-59months children with pneumonia treated by IMCI- trained workers from 42% in 2017 to 49% by 2021.*
- *To increase the percentage of TB cure rate from 79% in 2017 to 88% by 2021.*

- *To increase the percentage of TB conversion rate from 78% in 2017 to 80% by 2021.*
- *To increase the percentage of SAM clients cured of 60% in 2017 to 70% by 2021*
- *To increase the percentage of health centres with proper clinical waste disposal facilities from 64% in 2017 to 70 % by 2021.*

(C) For the health centres schedulable services**,** the district plans:

- *To reduce the incidence of non-pneumonia from 517/1000 in 2017 to 480/1000 by 2021.*
- *To increase the percentage of 1st ANC clients accessing PMTCT services from 68% in 2017 to 84 % by 2021.*

(D) At the community level, the district plans:

- *To reduce the incidence of malaria in all ages from 518/1000 in 2017 to 480/1000 by 2021.*
- *To reduce the incidence of non-bloody diarrhea cases treated from 98/1000 in 2017 to 90% by 2021.*
- *To reduce the incidence of eye infections from 26/1000 in 2017 to 18/1000 by 2021.*
- *To reduce the incidence of skin infections from 71/1000 in 2017 to 60/1000 by 2021.*
- *The focus also was placed to reduce the spread of STIs and HIV infections in the communities within the district.*

In terms of Geographical area and transport, Kapiri Mposhi's geographical surface area is 18,250 square kilometers. It is linked to the road and rail networks. The Great North Road passes through this small town to the Copperbelt and Northern provinces of Zambia. It is important to note that the township roads in the district were taking shape. During the study, the roads were being graded and the tarmac was yet to be put. These constructions of urban roads were under the Pave Zambia Road Construction Project (PZRCP) launched by His Excellency, the President of Zambia, in 2013.

Furthermore, the two rail lines namely, Zambia and Tanzania-Zambia Railway meet in this town from Livingstone and from Dar-es-salam to the Copperbelt. There were also several feeder roads in the district which are very useful for commercial and subsistence agriculture. Kapiri Mposhi district has some streams, and the Kafue River is one of the main rivers of Zambia that pass through the district.

Kapiri Mposhi District, in its Western zone, has many streams and physical features like the Lukanga Swamps which is west of the District. The Kafue River passes through the newly created Ngabwe District. When the District experiences heavy rainfall, Chilwa Island and Ngabwe Rural Health Centres become inaccessible. Thus the swamps and rivers are a means of transport in delivering health services to people. Management, however, was in the process of rehabilitating the old speed boat which broke down four years ago by procuring a new engine to be based at Waya Rural Health Centre.

It is important also to note that other than canoes and the passenger train, as means of transport, taxis, minibusses, buses, ox-cart are used by patients/clients. Those who cannot afford fares from such means of transport resort to walking to access health services, or in trying to conduct their businesses. The eastern zone is easily accessible because Mulungushi, Lunsemfwa, Mubalashi, Changondo, and Kashitu streams are never flooded. After all, the area is not swampy, as compared to the west of the district. The normal rainfall ranges from 1200mm to 1400mm, while the average temperature, ranges from 18 degrees Celsius to 30 degrees Celsius, with an altitude of 1200m to 1400m above sea level.

In terms of the education sector, there are 193 basic schools, 8 high schools, and 48 community schools in the District. There are also several private schools in the district.

In the district, for communication, Airtel, MTN and Zamtel are the main providers of communication services which make the district accessible to the other parts of Zambia and the outside world. Bordering Kapiri Mposhi district are Mumbwa and Kasempa to the West, Kabwe, and Chibombo to the southwest, Mkushi to the northeast, and Mpongwe district to the North

West. These neighbors are vital to the DHMT, as it is easy to consult other districts on health-related issues. However, during the study, it was found that the communication system was getting developed in the district.

With regards to the economy, Kapiri Mposhi is a small upcoming District. The district was recently divided into two with the creation of the Ngabwe district. The District has industries like Chimsoro Group of Companies which started operating in 2002, Kapiri transport provides transport services, and so did TAZARA. The district has many shops which provide employment opportunities to the people. Because of its location, Kapiri Mposhi district is known to have a big number of Commercial Sex Workers, who earn their living by offering their bodies for money, while the other section of the population is unemployed. The main occupations in the district are fishing, farming, charcoal burning, and marketing, as sources of income for the community.

Due to the geographical arrangement bordering other districts, its central location between Northern and Copperbelt provinces, and Tanzania-Zambia (TAZARA) railways, the district has a lot of business activities that have the potential to increase the transmission of STIs and HIV infections. These activities as earlier alluded ranged from business and commercial sex activities. Therefore, it became important in this study based on such profile to find out if at all or not, HIV and STIs cases were being averted by the circumcision program that was being implemented by the health facilities within the district. Therefore, the more foreigners come for business via TAZARA and sexual activities through commercial sex workers continue, the likelihood is that HIV and STIs will go beyond the above-provided figures already and if the situation remains unchecked probably many people may die, and hence it is called for the investigation of the efficacy of male circumcision towards alleviating STIs and HIV infections in Kapiri Mposhi district.

In other words, Kapiri Mposhi district township provides an interconnecting feature that links many towns and districts. This district is characterized by, rapid urbanization, cultural diversity, a fast-growing economy, various traders frequently passing through, and conducting businesses in the district. This, however, is the recipe for STIs and HIV transmission in the Kapiri Mposhi district. Therefore, understanding nomadic populations with the potential of bringing STIs and

HIV into the district was important because, it could assist the study to establish whether or not, male circumcision practice prevented the STIs and HIV transmission in the district. Further, because of the location of the TAZARA- railway intersection, coupled with the preceding factors, the population in transit, in some cases, has the potential to increase the prevalence of STIs and HIV in the district. And if this happens, then the circumcision program could be affected negatively since adherence by the local community members to circumcision would be compromised.

Further, the preceding areas such as the economy, education, communication, income, and poverty levels among the people were key to the study because they gave insights into the situation that was prevailing in the Kapiri Mposhi district. For example, the researcher had to assess an assumption that when men's income levels are high in the case of Kapiri Mposhi, then there is a likelihood that some men could afford transport fares to reach some health facilities for circumcision.

And when it came to communication in this context, it was important in the first place to know the available communication networks before embarking on data collection. This way, the researcher carried the right communication devices for data collection purposes and could be in a position to reach out to a lot of men reachable via mobile networks. Furthermore, the assumption that communities with high-income levels could afford the cost of accessibility to some social amenities, and in this case, some men could be kept busy and avoid engaging in sexual activities that are recipes to the HIV and STIs transmission. Therefore, this background was very important to understand different factors that were pertinent to the study.

2.2.2 Chavuma district

The district had twenty-five percent (25%) of the total population in formal employment within the Government departments and parastatal organizations. It is worth noting that seventy-five percent (75%) of the population consisted of people in the informal sector. This meant that the majority of the people in the district were unemployed or engaged in some business activities such as fishing and farming. In this district, taking farming as an example, the main farming

activities were rice, maize, and cassava.

In terms of settlement patterns, almost half of the total population is located on the east bank where there are fertile soils for agriculture. Most settlements are located at the district center and sub-centers where there are health facilities and amenities. Further, along the Chavuma-Mutanda M08 Road and other main roads, these made accessibility easier even when it comes to reaching out to farming areas such as Kamisamba, Chivombo, and Mbalango. And on the west bank of the Zambezi River, villages are mostly found along rivers and dambos because of the good soils and the availability of water, fish, and pasture. These villages located on the west bank of the district are generally scattered.

Concerning the economy, the major activity that sustains the economy of Chavuma is small-scale farming with maize, cassava, and rice being some of the crops that are grown by farmers. The district receives an annual average rainfall of 1,000 milliliters. Chavuma generally has flat lowland areas on the west bank and a plateau-like formation on the east bank. Generally, the soils in the district are sandy with low base nutrients, high acidity, leached, and have aluminum toxicity.

The district had the potential for mineral extraction, especially for industrial minerals and semi-precious stones. However, explorations were not done. The vegetation of the district is characterized by open savannah grasslands, with some parts covered with Livunda woodlands. The west bank is mainly covered with scattered savannah grasslands and dambos. Chavuma has some rivers, streams, wetlands, springs, and lagoons. The main perennial rivers are the Zambezi, Lungwevungu, and Kashiji. All rivers and streams in the district drain into the Zambezi River.

In terms of income and poverty levels, according to the living conditions survey by the Central Statistical Office in 2010, the Chavuma district was ranked the second poorest district in Zambia. This meant that most people were unable to acquire basic and social needs. The district was connected to the national grid, NATSAVE Bank, tarred road, and telephone facilities. However, it had poor roads and inadequate water supply. Sixty-five percent (65%) of the population lived in absolute poverty. The most affected people are orphans, female-headed and child-headed

households.

Therefore, there is a great need for the district to address poverty at all levels. To alleviate or redress the poverty situation, the district was managing a food security program, the Food Pack Program (FPP), through the District Food Security Committee. The program was coordinated nationwide by the Department of Community Development. The Food Security Pack Program aims at reducing poverty levels in the communities through crop diversification and sustainable agriculture. This is usually done through the distribution of fertilizer and seed to vulnerable but viable farmers to increase food production. The Ministry of Agriculture and Co-operatives is also working on improving livestock production through the prevention and management of livestock diseases.

In the education sector, the Chavuma district has eight (8) Government Secondary Schools and one (1) Private secondary school which provided educational services to local people. There are also forty-one (41) Primary Schools and seventeen (17) Community/IRS Schools and three (3) institutions for Early Child education. The schools in the district are not evenly spread but situated in areas that were densely populated. The district at the border with Angola is manned by, among other security men, soldiers. Further, during the study, according to Mr. Kaumba, the district commissioner, the government was constructing Chavuma Boarding Secondary School for K27 million and the project was almost complete with over ninety (95%) percent of work done. He further said that Government also had upgraded two primary schools into secondary schools, namely Nyantanda and Moses Luneta, this helped to improve access to secondary education. The government had since released K900, 000 for the construction of additional classroom blocks and staff houses at the two schools and the project was nearing completion. Further, it was found out that Government was constructing three (3) classrooms at Kalombo Primary School, using the 2013/2014 Constituency Development Fund (CDF).

For communication purposes, Airtel and MTN are the main providers of communication services which made the district accessible to the other parts of Zambia and the outside world. The communication system was getting developed in the district and served to improve the quality of service. The stability of electricity supply (ZESCO) and NATSAVE bank further encouraged

accessibility and availability of more trained staff to come to the district. This led to migration to urban areas. The upgrading of this area as a district and the installation of power, cell phone networks, and construction of NATSAVE Bank, the tarring of Mutanda-Chavuma M08 Road, the mining prospects, and pipe water attracted people to come to the district to look for job opportunities. Further, the district had a community radio station that was recently built. This enabled the district to disseminate information easily within communities.

The preceding areas such as the economy, education, communication, income, and poverty levels among the people were key to the study because they gave insights into the situation that was prevailing in the Chavuma district. For example, the researcher had to assess an assumption that when men's income levels are low, then they could not afford transport fares to reach a health facility for circumcision. And when it came to communication in this context, it was important in the first place to know the available communication networks before embarking on data collection. This way, the researcher carried the right communication devices for data collection purposes and could be in a position to reach out to a lot of men reachable via mobile networks. Furthermore, the assumption is that communities with high poverty and income levels might not have adequate social amenities and in this case, some people may indulge themselves in activities that could be recipes for HIV and STI transmission. Therefore, this background above was very important to cast the net wider in such areas peripheral to the study.

2.3 HEALTH DELIVERY

This section's focus is on the health delivery contexts of Kapiri Mposhi and Chavuma districts. The health sector plays a major role in ensuring that the people in the districts have access to the services as close to their families as possible.

2.3.1 Kapiri Mposhi district's Health Facilities and Service Delivery

Health facilities are, in this case, institutions where health services are provided. These included the hospitals and clinics where circumcised men sought services from. And service delivery refers to, activities provided by the health care providers who have either direct or indirect

contact with clients/patients. These include health care professionals such as clinicians, nurses, or non-professionals like cleaners, and other workers trained for purposes of providing health care and are based either at the health facility or in communities. In this vein, the health care providers in the study were health workers such as the professional male circumcision providers and nurses.

During the research exercise, Kapiri Mposhi district had a total of 34 health facilities, out of these, health centers, health posts, and a hospital was included, as earlier shown. Table 2.1.3 (a) shows a list of health facilities where circumcised men sought health services, such services included voluntary medical male circumcision, HIV, and other STIs. Further, the presence of the health facilities in the district brings another important opportunity for the provision and implementation of modern male circumcision services. This is coupled with the availability and support from stakeholders towards male circumcision provision as notable in the next section. In this regard, these stakeholders, are also known as implementing partners.

The presence of the health facilities and partners, therefore, makes it possible to conduct male circumcision because an enabling environment is created for carrying out male circumcision activities in the district. This is why this understanding of Kapiri Mposhi's profile was important to the study because it brought out the linkage between health facilities and partner support towards the provision of male circumcision services in the district.

Table 2.3.1 Health Facilities in the Kapiri Mposhi District

Health Facility	Ownership	
	GRZ	MISSION
1. Chipepo	GRZ	
2. Chitaba	GRZ	
3. Mpunde Hospital		MISSION
4. Waya	GRZ	
5. Chilumba	GRZ	
6. Mulungushi University	GRZ	
7. Luanshimba	GRZ	
8. Kakulu	GRZ	
9. Mulungushi Power Station	GRZ	
10. Kampumba	GRZ	
11. Lunsemfwa	GRZ	
12. Chibwe	GRZ	
13. St. Pauls		MISSION
14. Mukonchi	GRZ	
15. Chankomo	GRZ	
16. Nkole	GRZ	
17. Chawama	GRZ	
18. Tazara	GRZ	
19. Ndeke	GRZ	
20. Kawama	GRZ	
21. Kapiri Urban	GRZ	
22. Kafinda	GRZ	
23. Lunchu B	GRZ	
24. Chapusha	GRZ	
25 Lukomba	GRZ	
26. Chishinka	GRZ	
27. Chambulumina	GRZ	
28. Likumbi	GRZ	
29. Kaswende	GRZ	
30. Chawama	GRZ	
31. Ilungu	GRZ	
32. Renato	GRZ	
33. Matitilyo	GRZ	
34. Kapiri District Hospital	GRZ	

(Source: Kapiri DHO)

Table 2.3.1 shows that the District Health Office had always undertaken routine technical support to facilities as above bi-annually and mentorship on identified health problems related to HIV, STIs, and the provision of male circumcision services in the hospitals and clinics.

2.3.2 Chavuma district's Health Facilities and Service Delivery

The following section presents the health delivery of the Chavuma district. It is important in the first place to mention that even though Chavuma communities have traditional rites such as *"Mukanda"*, the health facilities are key in case men circumcised under traditional circumcision practice wish to access treatment at the hospitals and clinics in case of complications arising from circumcision. This is an important aspect of the Zambian health policy of 1991 stipulates that the provision of health services shall be taken as close as possible to the family and every person has the right to access the health services without any limitation due to boundaries.

In this regard, the District Health Management Team (DHMT) had the 1st level referral hospital and clinics. The district has, therefore, ten (10) health centers, and one mission hospital. Further to accommodate the high demand of patients within the district, the Government was constructing a district hospital for K22 million. In the construction of a district hospital, the first and second phases had been completed, and hence the project had just entered the third phase of its construction. This was an important aspect in the expansion of certain services like male circumcision across the health facilities.

In addition to the expansion of health facilities, nine (9) new health posts were under construction in Chavuma. The health posts were being built at Kamisamba, Lingundu, Likhoma, Mandalo, Kakhoma, Sewe, Kambuya, Chikongolo, and Chavuma Central. Other projects that were being undertaken in the district included the construction of a maternity ward at Nguvu Rural Health Centre, a maternity annex at Nyantanda Rural Health Centre, a health post at Kalombo, and staff houses at Chiingi clinic, using the CDF. The study also found out that, despite the efforts by the district to build more health facilities to close the gap of the few existing facilities, some people still accessed *Mukanda* for circumcision as opposed to medical facilities. This meant that traditional practices continued such as circumcision despite the mushrooming of health facilities that provided modern circumcision practices.

Additionally, though not pertinent to the study, one of the highlighted problems common in the district apart from HIV and other STIs was Malaria. The malaria control program, through

mass distribution of ITNs, had continued and Indoor Residual Spraying (IRS) was introduced in the quest to reduce the malaria incidence rate. The DHMT, together with the community, had continued to work tirelessly towards achieving the district objective of malaria elimination and contributed to the attainment of the MDGs. The Provincial Health Office had continued with technical support to the district at the same time conducting Monitoring and Evaluation activities within the district to provide checks and balances of the running of the district.

The table below shows the number of health facilities in the Chavuma district.

Table 2.3.2 Health Facilities in Chavuma district

Health Facility	Ownership	2022
	GRZ	Mission
Chavuma District Hospital HAHC	GRZ	
Chavuma Mission Hospital		Mission
Chikanji Health Post	GRZ	
Chikongolo Health Post	GRZ	
Chingi Rural Health Centre	GRZ	
Chivombo Rural Health Centre	GRZ	
Chiyeke Rural Health Centre	GRZ	
Kakoma Health Post	GRZ	
Kalombo Health Post	GRZ	
Kambuya Health Post	GRZ	

(***Source:*** Chavuma DHO)

2.4 Services

This section highlights the services that were being offered by the health facilities of Kapiri Mposhi and Chavuma districts.

2.4.1 Kapiri Mposhi district's Services

The district hospital provides health services like Laboratory, X-ray, Theatre, Mortuary, Voluntary Medical Male Circumcision (VMMC), Counseling and Testing, Sexually Transmitted Infections (STIs), and Prevention of Mother to Child Transmission of HIV (eMTCT), Antiretroviral Therapy (ART). All the health facilities without, Inpatient Department, Obstetrics and Gynecology, Medical and surgical services, Dental, Physiotherapy, Basic and Comprehensive EmONC, Adolescent health, Nutrition, Ophthalmic, and Environmental health services send their patients to the hospital. Some of these services are also offered at the outreach and community levels.

The Health Centres provided preventive, promotional, and curative services (primary health care). Out of the Six (6) health posts that were being constructed in the district; Ilungu, Likumbi, Renato Chambulumina, Shamputa, and Kato, four had been completed and are now operational (Likumbi, Renato, Chambulumina, and Ilungu). These health posts were meant to help improve access to primary health services by bringing these services as close to the family as possible. As earlier indicated, the theatre services such as surgical, HIV, and STIs were key services in data collection especially on the respondents' views when they assessed health services at health facilities at one point.

2.4.2 HIV and STIs Services in Kapiri Mposhi district

The district had seven (7) health facilities that were offering HIV/ART and STIs services, of which one (1) conducted mobile circumcision services. There were thirty-four (34) health facilities that offered PMTCT services, fourteen (14) health facilities collected Dried Blood Samples (DBS), and four (04) health facilities were using DBS SMS to receive their results, thereby enhancing early infant diagnosis and treatment of HIV. All the facilities offered Counseling and Testing for HIV and STIs. Most of the health facilities as noted were offering

male circumcision (MC) with support from partners such as Discover Health, Marie Stopes, and JSI to mention a few.

2.4.3 Chavuma district's Services

Like in the case of Kapiri Mposhi, the services that were being offered in the facilities under the Chavuma district were similar, hence reference was made to the above services. Further, the most common diseases that affect Chavuma just like the case of the Kapiri Mposhi district population include malaria, non-pneumonia, STIs, HIV, and diarrhea non-blood. These diseases in both districts were common in both children and adults. In other words, these were common diseases causing morbidity and mortality among the people in Chavuma and Kapiri districts.

Taking STIs for example, in 2014 according to Chavuma's (HMIS, 2016) report, Genital-urinary diseases (STI) was among the top ten diseases that caused death in the Chavuma district. Isolating HIV and other STIs, the districts were implementing the circumcision program to reduce the transmission, hence it became necessary that the study be conducted to ascertain whether or not, a circumcision performed in hospitals and clinics reduced the transmission of STIs and HIV in Kapiri Mposhi and Chavuma district.

2.4.4 Staffing levels in Kapiri Mposhi district

The following constituted the staff status in the district:

Table 2.4.1 Staffing Levels by Category of Staff

Category of staff	**Establishment**			**Existing**		
	DHO	Hospital	H/Cs	DHO	Hospital	H/Cs
Medical Doctors	1	5	0	1	3	1
Nursing Staff	1	80	67	2	65	118
Clinical Officers	3	8	5	1	10	33
Medical Licentiates	0	1	1	0	4	0
Environmental Staff	1	1	24	3	3	23
Paramedical staff	1	20	21	2	27	35
Non-medical professional staff	6	3	0	6	2	0
Other	8	37	66	18	32	76
Total	**21**	**155**	**184**	**33**	**146**	**286**

*(**Source**: District Human Resource Data Base, 2020)*

Table 2.4.1 indicates both professional and non-professional staff were available and enhanced service delivery in the Kapiri Mposhi district. However, some discrepancies might also be noted between the actual numbers of staff existing and that of the institutional establishment. The staying levels were important to the study because they assisted to assess the availability of the

male circumcision providers in the hospitals and clinics. This in turn helped to select the sample size based on the staff according to the establishment.

2.4.5 Staffing levels in Chavuma district

Table 2.4.5 Staffing Levels by Category of Staff

Category of Staff	Establishment	Existing
Medical Doctors	8	2
Nursing Staff	93	79
Clinical Officers	13	9
Medical Licentiates	1	0
Environmental Staff	13	10
Paramedical Staff	51	44
Non-medical professional staff	86	86
Grand Total	262	230

(***Source***: Chavuma DHO)

Table 2.4.5 indicates that both the professional and non-professional were available and enhanced service delivery in Chavuma district. However, there is a discrepancy between the existing and per establishment in terms of staff structure. This information was vital to this study so as to ascertain the profession staff who were available whenever circumcised men sought for

services at these facilities regardless of whether the visit was as a result of the referral from the circumcision camps or not.

2.5 Drugs and Medical Supplies in the districts

Kapiri Mposhi and Chavuma district employed two types of Supply Systems, **PUSH SYSTEM**, in the case of Community Health Centre Kits and, **PULL SYSTEM** in case of the Supplementary and Antiretroviral Drugs, in acquiring Drugs and Medical supplies from Medical Stores Limited (MSL). The district's major health facilities were on EMLIP hybrid program. Only the Pull system applied for the local purchases of drugs and medical supplies.

Most of the Pharmacy store rooms in the facilities were inadequate, considering that the maximum stock level was four (4) months of stock, following the eLMIS, hence increasing the number of stocks the facilities receive. The space in the store rooms was also inadequate due to the increased volume of commodities. There was a need to improve and create more space in the storerooms.

The districts were receiving health center drug Kits from MSL. The increase in the number of health facilities in the districts demanded an increase in the number of health center drug kits. It was also important to note that, HIV and STIs test kits, Antiretroviral drugs (ARVs) were supplied by MSL. This section was important because it brought out not only HIV and STIs test kits but ARVs and other drugs that were useful in case a client tested positive for either HIV or STIs. The status of the circumcised men during and after circumcision would only be made known by having HIV and STIs test kits available in all the districts.

2.6 Stakeholders

This section presents information on stakeholders in Chavuma and Kapiri Mposhi districts. It is important to note that even though some stakeholders that did not provide support for HIV and STI prevention in the districts, the study brought out every stakeholder who was

available and emphasis was placed on those that provided support for the prevention of HIV and STIs.

2.6.1 Stakeholders, Other Health Providers and Government Departments in the Chavuma district

This section highlights the stakeholders, health providers, and other government departments that work hand in hand with the Chavuma district health office. It is important to note that even though some stakeholders that did not provide support for HIV and STI prevention were mentioned, the study brought out every stakeholder who was available and emphasis was placed on those that provided support for the prevention of HIV and STIs. The Ministry of Health in collaboration with other line ministries and support from stakeholders was implementing different health-related activities within the district. Table 2.6.1 depicts the stakeholders and government departments that worked hand in hand with the Chavuma district health office. The table further categorizes the stakeholders in terms of their organization type, the catchment area, that is to say, the area of coverage or operational, and lastly their program focus.

Table 2.6.1 Stakeholders in the Health Sector

Organisation	Catchment Area	Programme Focus and Activities
CHAZ	Chavuma district	Male circumcision (VMMC) and Malaria
UNDP	Chavuma district	System strengthening
UNFPA	Chavuma district	IRH
JSI	Chavuma district	Logistic management

The church	Chavuma district	Nutrition
DATF	Chavuma district	HIV and STIs
Ministry of Education (MOE)	Chavuma district	HIV, School Health and Nutrition (SHN)

(***Source*:** Chavuma DHO)

As depicted by the table, the District Health Management Team (DHMT) in the Chavuma district was working with cooperating partners and stakeholders that assisted in the implementation of health-related activities within the district. In the year 2016 budget, the district had received funds from cooperating partners and GRZ. Strategic partners like UNFPA, JSI, CHAZ, and ZPCT II continued to support the district health office with capacity-building workshops for both community and rural health centre staff such as HIV adherence counselling, STIs, ART, PMTCT, and Logistics management.

CHAZ, on the other hand, also continued to implement HIV, STIs, ART, malaria prevention, and control programs in the district. CHAZ was also implementing the Voluntary Medical Male Circumcised (VMMC). UNFPA's support in community health service (SMAGs, CBDs, and YFS) and professional pieces of training were also highly recognized. In the same vein, DATF had continued with the HIV/AIDS activities, whilst the Ministry of Education (MOE) also continued running School Health and Nutrition (SHN) program and HIV/AIDS in schools and at the workplace. And lastly, other key stakeholders were the Ministry of Energy and Water development, Faith-Based Organizations, Department of Agriculture, and ZANIS.

2.7 Stakeholders, Other Health Providers, and Government Departments in Kapiri Mposhi district

The Health Department in Kapiri Mposhi district (KDHMT) did not work in isolation about the provision of the health services, but work with various stakeholders. The stakeholders were mandated by KDHMT to provide health-related services to the community. Therefore, Table 2.1.8 brings out organizations, their area of operation, programs, and activities conducted each of them.

Table 2.7.1 Stakeholders in the Health Sector

SN	ORGANISATION	CATCHMENT AREA	PROGRAM FOCUS	ACTIVITIES
1.	ZAMBIA RED CROSS SOCIETY	Town, Kakulu, Nkole and Waya	- STI/HIV/AIDS - Home Based Care services	- IEC material on behavioral change - Project on truck drivers and sex workers - Training of identified community groups
2.	DISTRICT AIDS TASK FORCE (DATF)	The whole District	- STI/HIV/AIDS - Home Based Care	- Resource mobilization for CBO/NGOs - Supervision, monitoring and evaluation - Coordinating all the HIV/AIDS activities - Providing Home Based Care services
3.	MINISTRY OF EDUCATION	The whole District	- Programme for the advancement of	- improving the education level of the Girl Child in order to

SN	ORGANISATION	CATCHMENT AREA	PROGRAM FOCUS	ACTIVITIES
			Girl Child Education (PAGE) - SHN	reduce the level of teenage pregnancies and STI/HIV/AIDS infections - inclusion of the disabled in normal school program
4.	WOMEN FOR CHANGE	KAMPUMBA AREA	- HIV/AIDS - Training - Literacy for women	- Training of community Health workers and TBAs - Sensitize community on HIV/AIDS
5.	DAPP	Town area	- HIV/AIDS	- offer post-test service - community sensitization on PMTCT and HIV/AIDS in general - advocacy on positive living
6.	MARIE STOPPES	Mpunde, Mukonchi, Waya, Tazara, Waya & Kapiri District District Community Hospital	-Family planning and HIV/AIDS prevention	-Family planning -Circumcision -IRH
7.	NZP+ (Network of Zambian people living with HIV/AIDS)	Whole district	-HIV/AIDS	-Counselling and testing -Adherence

SN	ORGANISATION	CATCHMENT AREA	PROGRAM FOCUS	ACTIVITIES
8.	PEACE CORPS	Whole district	HIV/AIDS, Malaria & Nutrition	Sensitization/IEC in: HIV/AIDS, Malaria & Nutrition
9.	John Snow Inc. (JSI)	Whole District	Supply Chain Management System	-Strengthening of logistic systems -Forecasting, quantification, & procurement planning for pharmacy and laboratory commodities and MC kits. -Conduct M&E visits with MOH/MCDMCH staff to health facilities to monitor implementation of Pharmacy and Laboratory Logistics System
10.	Open Doors	Whole District	HIV/AIDs	-Support for special group
11.	Global Funds	Whole District	Malaria TB/STIs, HIV	-IRS -HIV and STIs -Circumcision -TB prevention and control

(***Source***: Kapiri DHO)

In line with the Zambian health policy on HIV and STIs prevention, the stakeholders were implementing HIV and other STIs related programs. It was through this process that the Zambian health policy through the VMMC was being actualized and the only way to know if, at all, STIs

and HIV infections were being averted was through this study that assessed the effectiveness of circumcision in the prevention of HIV and STIs transmission.

2.8 Conclusion

In summary, this chapter brought in the vital health facilities that provided an enabling environment for the implementation of the circumcision program. The provision of STIs and HIV services in the hospitals and clinics can never be over-emphasized in this study. Further, the staff levels available in the health facilities and also the variance between establishment and staff existing on the ground is also highlighted in this chapter. Even though, most of the stakeholders that offered HIV and STIs prevention support existed in Kapiri Mposhi compared to a few in Chavuma district, the stakeholder availability brought out the opportunity that exists in both districts of having partners and stakeholders coupled with some line ministries that are key in the implementation of HIV and STIs-related activities. These are the few among many issues discussed that are key to understanding whether circumcision performed in Kapiri Mposhi and Chavuma districts was effective or not in reducing STIs and HIV infections. Therefore, it became necessary to conduct a study that assisted to close this gap in the literature.

Though the preceding discussion is on modern practice, on the other hand, the traditionally circumcising communities continues to uphold the cultural values, beliefs and norms of circumcision under traditional setting. Some of the reasons advanced in undertaking traditional circumcisions in their communities are that, even though, most of the people are aware of the introduction of modern medical male circumcision in the hospitals and clinics, the communities will continue to practice traditional circumcision so as to maintain tradition which was inherited from their founding fathers and would not be comfortable that the newly introduced modern medical male circumcision practice alter their cultural values and beliefs. Therefore, the reasons for traditional circumcision was predominantly for cultural, though surfacing to be for the prevention of HIV and other old sexually transmitted infections among men in the district.

In the preceding discussions, the geographical profiling of Chavuma district presents the opportunity for traditional circumcision practice in many areas such as the settlements and villages. Further, some of the communities practicing traditional circumcision are within urbanized areas where health facilities are available presenting another opportunity for traditionally circumcising communities to access these circumcision services from these health facilities.

Further, the geographical arrangement of Kapiri Mposhi of having the major intersection of Tanzania - Zambia Railways (TAZARA), great North truck Road and cosmopolitan, inhabited by many people from different parts of the country coming from neighboring countries like Tanzania and Congo DRC, presents an increased prevalence of HIV and STIs in the district. Whereas, Chavuma district on the other hand, not having such population that is mobility in nature puts the district on an advantage over Kapiri Mposhi with respect to HIV and STIs prevalence.

CHAPTER THREE: A COMPARISON BETWEEN MODERN AND TRADITIONAL CIRCUMCISION PRACTICES IN THE PREVENTION OF HIV TRANSMISSION IN KAPIRI MPOSHI AND CHAVUMA DISTRICTS

3.1 Introduction

Zambia's Health policy through VMMC advocates for an end to the transmission of HIV and STIs as a primary goal. To realize this goal, the circumcision program is one of the interventions of the Zambian health policy that was developed as a preventive strategy against HIV and STIs transmission among the citizenry. The focus in this chapter is HIV while STI is discussed in the next chapter. Therefore, it is from this background that this chapter presents information on the comparison of the extent to which modern and traditional circumcision practices prevent HIV transmission in Kapiri Mposhi and Chavuma districts.

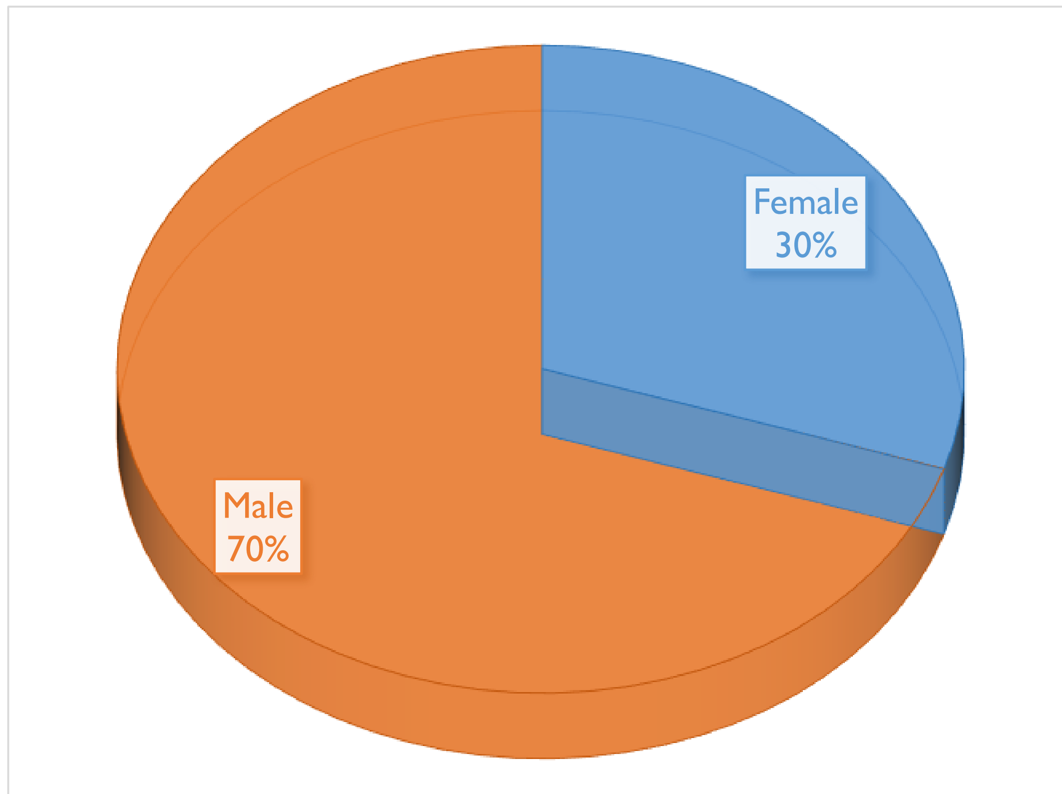
3.2 Demographic characteristics of the respondents

This section discusses the gender, age of circumcised men, education levels, employment status, and residence of the selected respondents such as the health workers, traditional circumcisers, and circumcised men that were available during the study. These variables provided basis on the foundation in which comparison on the extent on which traditional and modern circumcision prevented the HIV transmission in the two districts. Before reaching a conclusion of whether or not, a given practice was efficacious in the prevention of HIV, it was important to understand the demographic profiling of the participants and compare them in the two districts because that was key in understanding the phenomenon investigated. Further, even though these variables had no direct influence on the impact of circumcision, they were important to some extent because they provided comparison on that was related to the study, and hence of their value to the study.

3.2.1 Gender distribution

The following were the gender reported by the respondents during the study:

Figure 3.2.1 Gender of Health Workers (HWs) of Kapiri Mposhi District



*(**Source**: Primary Data)*

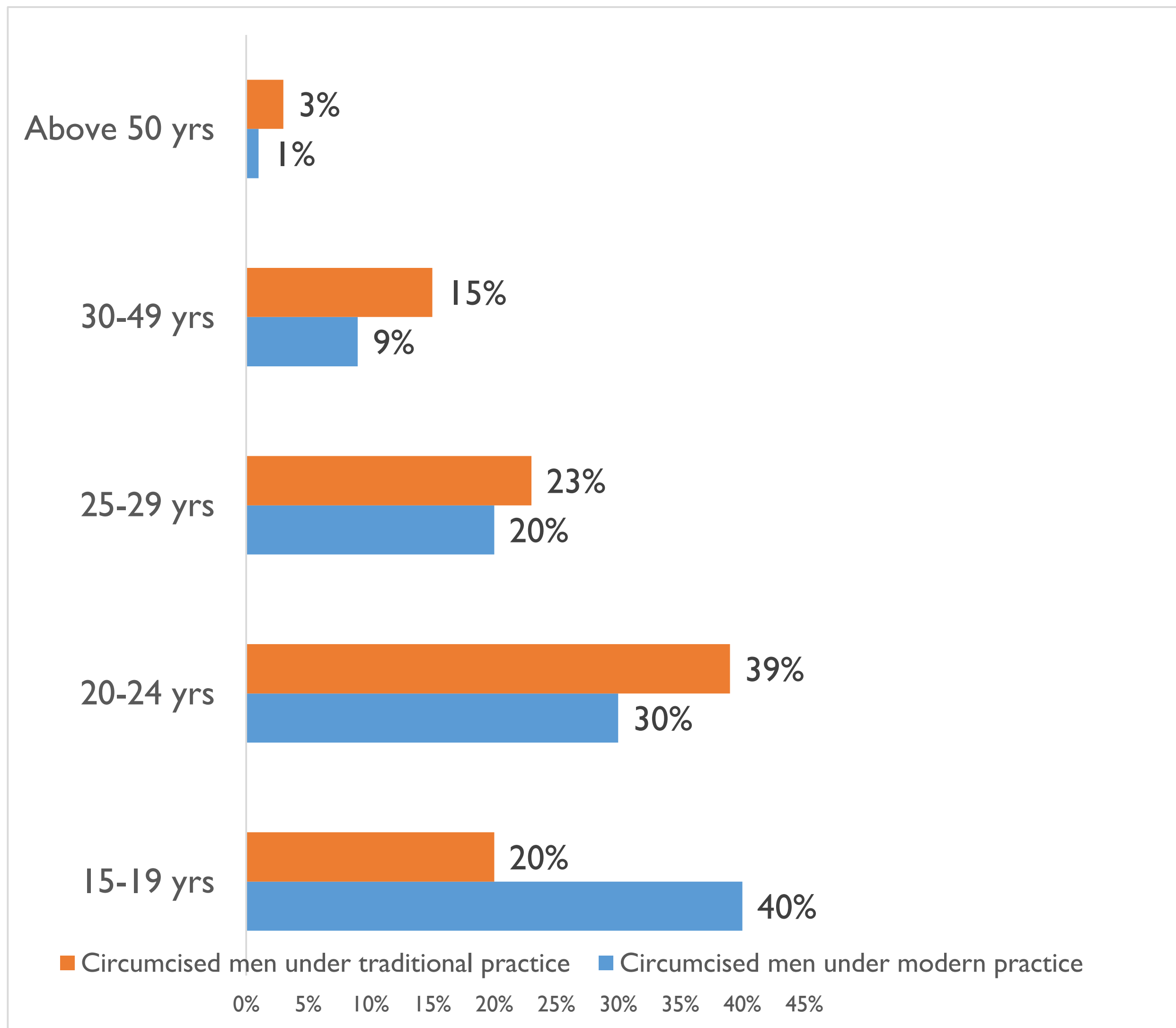
Figure 3.2.1 shows the sex of the health workers. The results on the health workers show that there were more males (70%) than females (30%) interviewed during the study. Given this gender distribution in terms of the health workers, the hospitals and clinics in Kapiri Mposhi

district had more males than females conveniently picked and provided information related to HIV prevention and modern circumcision practices during the study. Further, the study findings show that, other than the above health workers' gender disparity in Kapiri Mposhi district. On the other hand, only males by gender were common among the traditional circumcisers, traditional leadership, community members, and circumcised men under traditional practice. Similarly, participants circumcised under medical setting were all men in the study.

3.2.2 Age distribution of the circumcised men

The demographic characteristic of age was reported in the study by the respondents, and the following was the age distribution of the circumcised men:

Figure 3.2.2 Age distribution of the circumcised men



***(Source**: Primary Data)*

Figure 3.2.2 shows that more males (40%) between 15 and 19 years old were circumcised under the modern circumcision practice than those under traditional practice (20%). However, a higher number of men (39%) between the ages of 20 and 24 years were traditionally circumcised compared to the same age category of men (30%) circumcised at hospitals and clinics. Further, traditional circumcision practice recorded higher numbers of circumcised men compared to the modern practice in the following age bands; 25 to 29 years (23%), 30 to 49 years (15%), those above 50 years (3%), and for modern circumcision, the circumcised men between 25 and 29 years were twenty percent (20%), while those between 30 and 49 years were nine percent (9%),

and circumcised men above 50 years were one percent (1%). It is important to note that, although the age of the circumcised men above 50 years was not part of the study age, it provided some basis for comparison among age groups in the study.

The results of age distributions in figure 3.2.2 were consistent in the study with the information on modern circumcision practice obtained from the male circumcision (MC) register (2019-2020) reviewed at Kapiri urban clinic in Kapiri Mposhi district. The results showed that the total number of men circumcised at the clinic between the ages of 20 and 24 was two hundred and forty-three (243) in the year 2020, followed by one hundred and seventy-eight (178) recorded in 2019. In terms of the ages from 15 to 19 years, the total number of circumcised at the clinic was two hundred and seven (207) in 2020 and one hundred and eight-seven (187) in 2019. While in 2020, men circumcised between the ages of 25 and 29 were one hundred and ninety-two (192) in total, and in 2019 recorded one hundred and three (103). In 2019, Kapiri urban clinic recorded eighty-nine (89) men circumcised under modern practice between the ages of 30 and 49, while fifty-six (56) men with this same age band were circumcised in 2020.

Therefore, this study finding documents that the majority of the males were circumcised between the ages of 15 to 49 years in both circumcision practices. This circumcision age group is very important as recorded by the study because it is the age when men are sexually active, and susceptible to exposure to HIV infections. In this regard, the study results are consistent with the findings documented by the Zambia Demographic Health Survey (ZDHS) of 2018 which reported that the age between 15 and 49 is the sexually active age. Further, there is a high trend percentage of circumcised men between the age categories of 20 to 24 and lower between 30 and 49 years in the Kapiri urban table. This study finding was consistent with the ZDHS (2018) which documented that "the percentage of men who are circumcised is highest among those age 20-24 (39%) and lowest among those aged 40-49 (23%) *(Figure 13.7 on page 230)."*

Under traditional circumcision practice, a higher (39%) number of circumcised men between the ages of 20 to 24 years than those above 50 years (3%) suggests that participants circumcised in the past were between the ages of 20 to 24 at the point of this study, and this did not imply that they were circumcised during these ages but circumcision was done during their younger ages while being prepared for adulthood at *Mukanda Camps*. This finding is consistent with the report

by Zavreiw (1994) that documented that circumcision was initially for cultural reasons preparing initiates for a pathway to adulthood but also surfaced to be a preventive strategy against HIV transmission. Though to be discussed later in detail, based on the numbers of the circumcised men, the results in this study further show that the *Mukanda Camps* under traditional circumcision practice and the health facilities (hospital and clinics) under modern practice could conduct circumcision in Chavuma and Kapiri Mposhi districts.

3.3 Education Levels

This section focuses on the educational attainment of some of the selected respondents such as the health workers, traditional circumcisers, and the circumcised men. And the following were the levels of education attained by the respondents:

3.3.1 Education attainment of the health workers

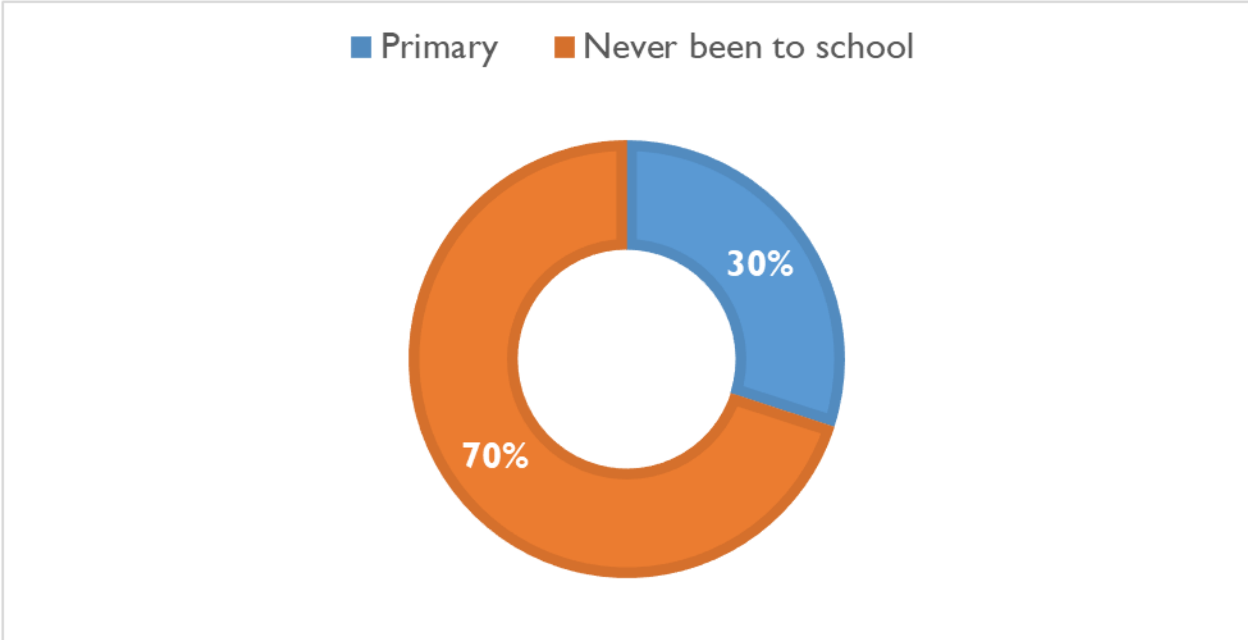
In terms of education levels among the health workers, the study shows that the highest level attained was tertiary. This meant that the health workers had graduated from colleges and universities as part of the requirement in Zambia for one to own a job in the health sector. The results further show that education was the only demographic characteristic that distinguished health workers from traditional circumcisers and circumcised men in the two male circumcision practices. In this regard, the knowledge and awareness of circumcision and HIV prevention were more likely to be higher among the health workers who have completed tertiary or greater education than any other group of respondents (traditional circumcisers and circumcised men) in the study.

3.3.2 Education attainment of the traditional circumcisers

This section discusses the education levels of the traditional circumcisers in the study. It is important to report that in this study, the absolute numbers of the traditional circumcisers though few as covered in the methodology were in this chapter mathematically converted into percentile. This way helped to account for the responses in terms of percentages and avoid the usage of

absolute figures during interpretation and discussion. For example, out of the ten (10), traditional circumcisers had a common response, then the measure would be ten (10) out the ten (10) chose the same answer and this depicts a hundred percent (100%). Further, proportions were used to break the responses into various percentages representative of the traditional circumcisers.

Figure 3.3.1 Education attainment of the traditional circumcisers



***(Source**: Primary Data)*

Figure 3.3.1 shows the education levels attained by the traditional circumcisers. In terms of education attainment, out of the ten (10), seven (7) had never been to school translating into seventy (70%) percent and three (3) had primary educational level translated into thirty (30%) percent. This suggests that traditional circumcisers who had never been to school were highest (70%), followed by the primary level of education (30%). This meant that some (30%) of the traditional circumcisers were more likely to be knowledgeable and aware of circumcision and HIV infection, while those (70%) without any school background were least likely to perceive any relationship associated with circumcision and HIV infection. Therefore, the study found that traditional circumcisers with primary were at least able to speak and write in English. In support of the study findings on education levels especially those circumcisers with primary levels. What

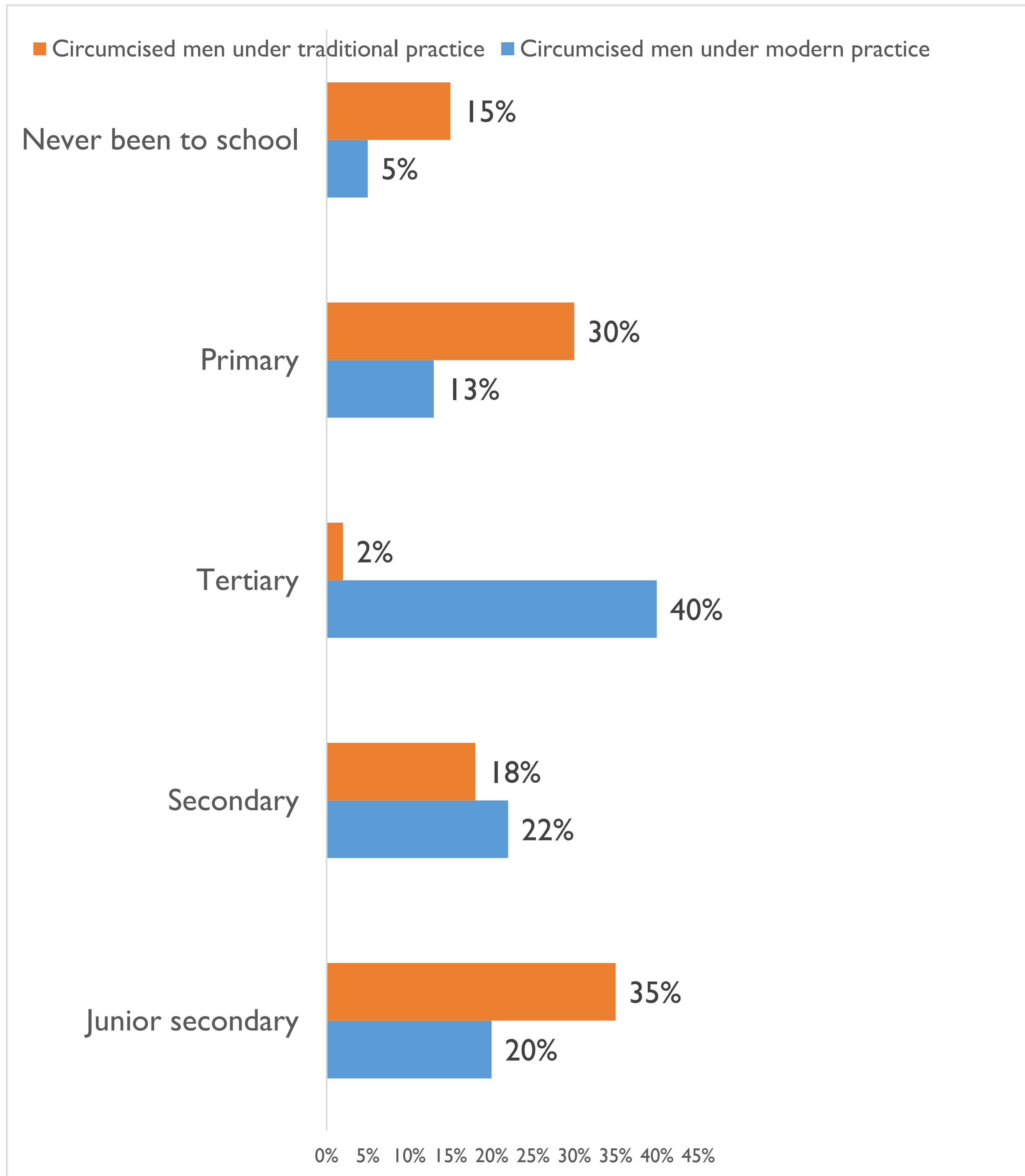
this means is that, although some traditional circumcisers had primary level of education, some of them needed assistance during the questionnaire administration during the study.

In this context, the researcher applied more close supervision and guidance among the traditional circumcisers with a primary level. This was so because even though they read and wrote, they did not understand some of the selected questions in the questionnaires and hence needed clarity from the researcher, especially on circumcision and HIV infections-related questions. Therefore, the fact that one could read and write does not guarantee one to comprehensively understand the study questions in the questionnaire. To this end, close supervision and monitoring of traditional circumcisers when answering structured questions was necessary. On the other hand, those who had never been to school needed interpretation of research questions during the study.

3.3.3 Education attainment of the circumcised men

The following section focuses on the education levels of circumcised men. The circumcised men in this context were in a different category concerning circumcision type, that is to say, the study assessed the education levels of the circumcised men under the traditional and modern circumcision practices.

Figure 3.3.2 Education attainment of the circumcised men



*(**Source**: Primary Data)*

Figure 3.3.2 presents information on the circumcised men under modern circumcision practice. The largest number was reported among the circumcised men with a tertiary level of education attained (40%) more than those with a secondary level of education (22%). Further, twenty percent (20%) of the circumcised men had junior education, 13% of them had primary education and the least (5%) had never been to school. The figure further shows that out of the men circumcised under traditional circumcision practice, the highest (35%) had a Junior secondary level of education, this was followed by men with a primary level (30%). Eighteen percent (18%) had attained the secondary level of education compared to those that had never been to school (15%). As opposed to the preceding discussion on traditional circumcisers who had never been to school (70%), on the other hand, at least some circumcised men (2%) under traditional practice had attended tertiary level of education though this was the lowest category of educational attainment in this section.

The study findings, therefore, depict that the highest level of education attained by circumcised men was tertiary. In terms of education type particularly tertiary level attained, the circumcised men under modern circumcision practice were more educated (40%) than those under traditional circumcision (2%). Under the traditional practice, more circumcised men (15%) without any education background were reported than those under modern circumcision practice (5%) in the same category. This finding presents an opportunity for the Zambian government to invest in and strengthen the education policies towards addressing gaps of not having any education background. Further, regardless of the circumcision type, circumcised men with a high level of education are more likely to be enlightened on matters of circumcision and HIV infections compared to those without an education background.

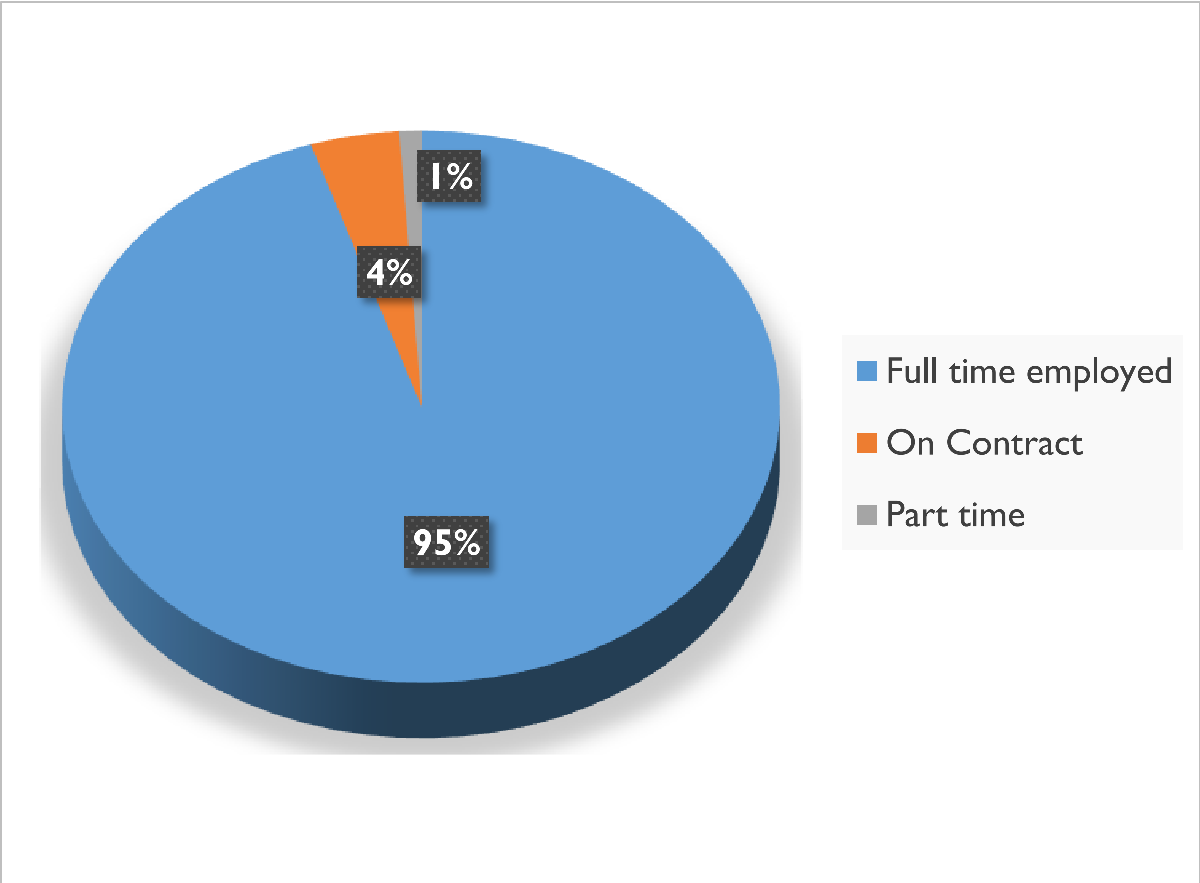
3.4 Employment Levels

This section presents information on the employment status of the selected respondents such as the health workers, traditional circumcisers, and the circumcised men. And the following was the employment status of the respondents:

3.4.1 Employment status of Health Workers (HWs)

This section presents information on the employment status of the health workers that were available at hospitals and clinics during the study.

Figure 3.4.1 Employment status of Health Workers (HWs)



(***Source***: *Primary Data)*

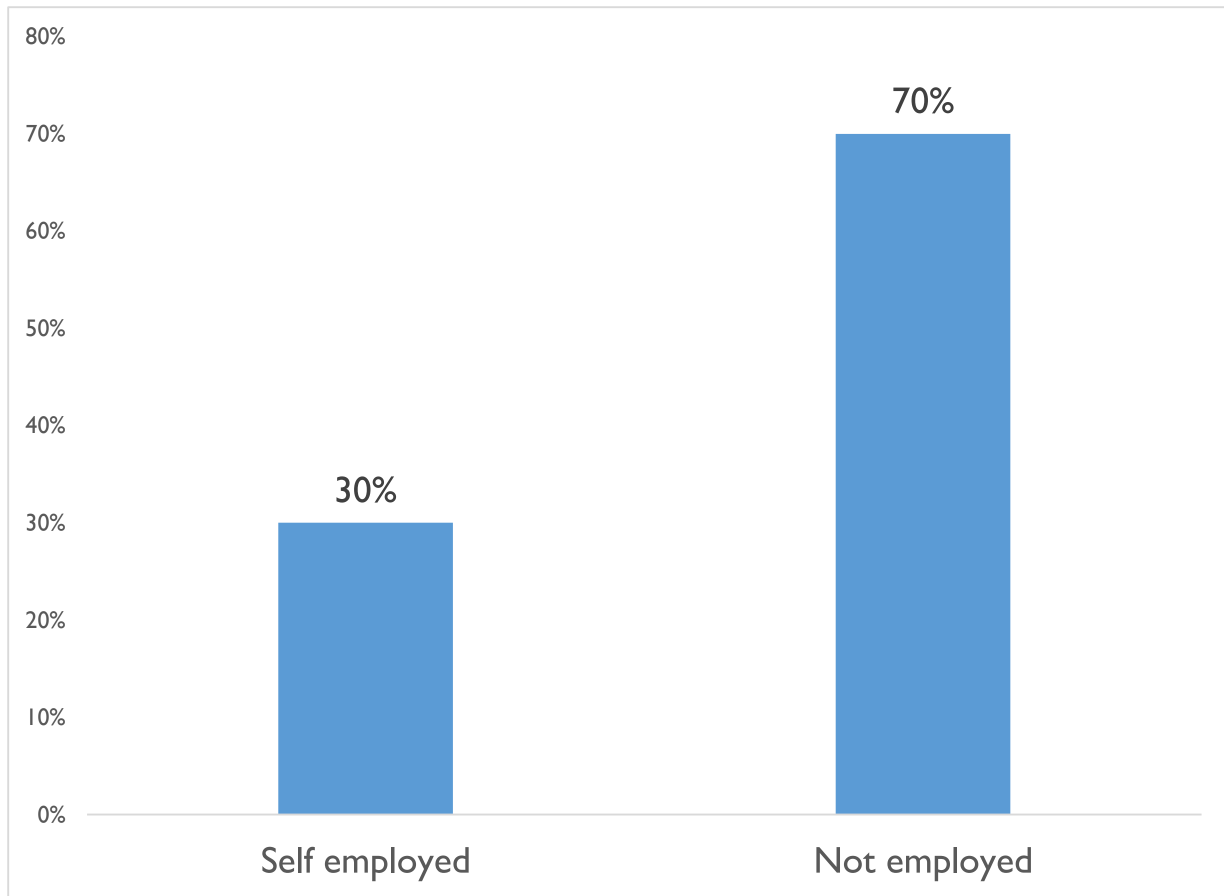
Figure 3.4.1 shows that health workers with full-time formal employment (95%) were more than those on contract (4%) and part-time (1%). The study findings, therefore, show that the majority of the health workers were in full employment, followed by those on contract and only a few of them were part-time. This picture however was different from the employment status of the traditional circumcisers in the sense that the majority (70%) of them were unemployed. These results depict that all the health workers including those in part-time employment who were the lowest (1%) had the capacity of earning an income monthly.

Further, circumcision was a routine service and free at all hospitals and clinics. However, there were times when mass circumcision campaigns when health workers offered services at both static and outreach sites to circumcise huge numbers of men in communities, this is the only time when circumcision service was associated with incentives, and of course, the allowance paid to health workers was from implementing partners (IPs) and not from the clients. As discussed in the preceding chapters particularly in the stakeholders' section, implementing partners (IPs) had the mandate to support the hospitals and clinics with all necessary logistics for the circumcision service provision.

3.4.2 Traditional Circumcisers' employment status

This section presents information on the employment status of the traditional circumcisers that were available during the study.

Figure 3.4.2 Traditional Circumcisers' employment status



*(**Source**: Primary Data)*

Figure 3..4.2 shows the employment status of the traditional circumcisers. The traditional circumcisers without employment were the highest (70%) and the lowest was those in self-employment (30%). The findings, therefore, are an indication that the unemployment levels among the traditional circumcisers were high. Based on the preceding discussion of traditional circumcisers' level of education whereby the majority (79%) had never been to school, one can assume that low education levels might be a reason attributed to high unemployment levels among the circumcisers.

In this vein, probably, there could be a likelihood that traditional circumcisers do not just conduct circumcision at *Mukanda camps* for free but a little charge is placed on an initiate as part of income-generating activity. As one traditional circumciser indicated that during the last phase

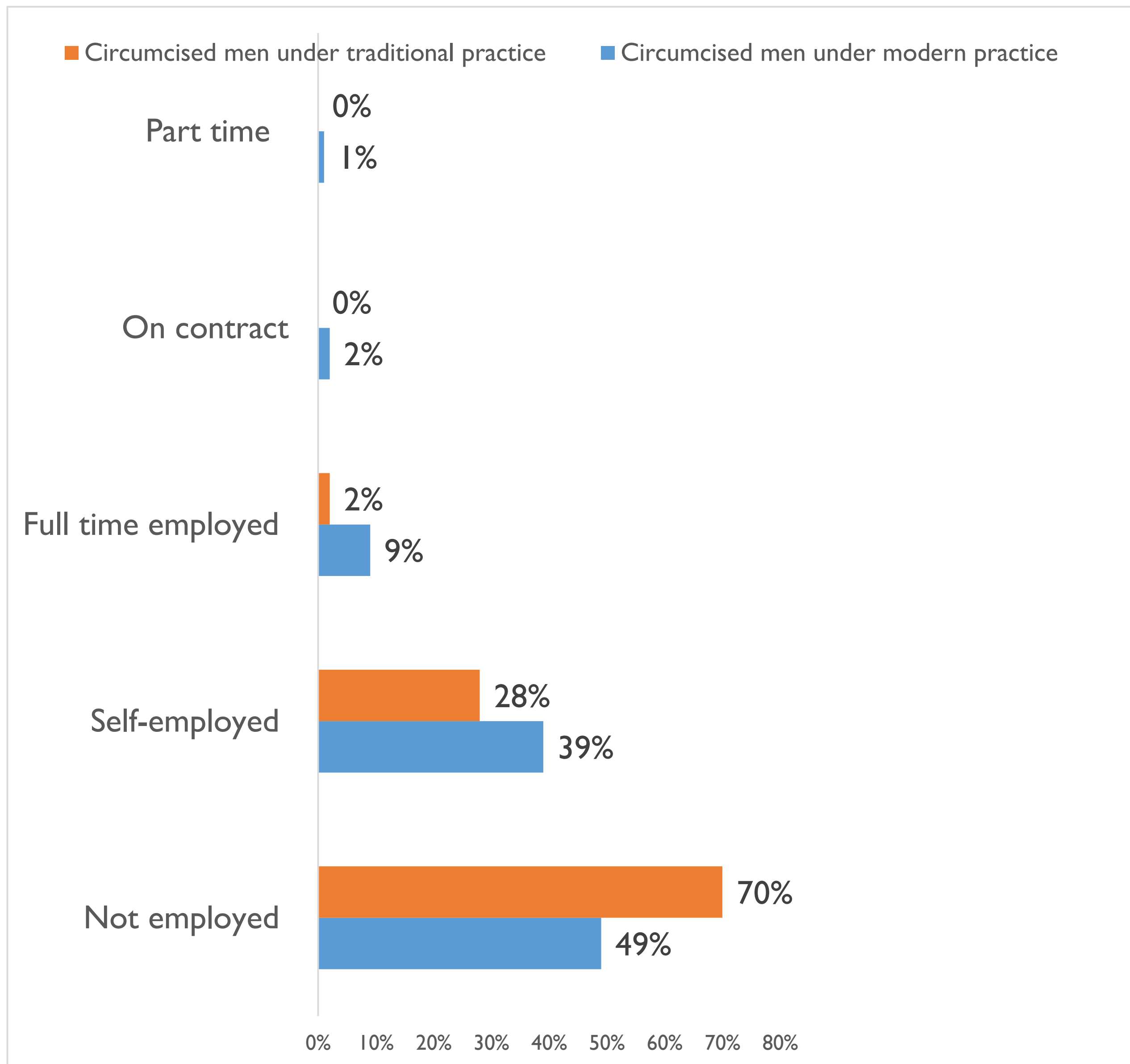
of the initiates coming out of the camps, celebrations do happen especially when the people are invited and food and beer are brought. However, there were no clear patterns of wealth or incentives associated with the *Mukanda camps,* and based on the scanty information that was provided during the study by some traditional circumcisers, one could assume that circumcisers were less likely to disclose any information about rewards associated to circumcision at the rites as it was considered secretive. This might be true according to a case study by Vincent L (2007), "in the past few years, increased concerns have been expressed about the emergence of young, inexperienced, bogus traditional circumcisers. Rather than trying to do their job well, they are primarily interested in making money in the name of tradition and, more importantly, in risking the lives of young people. Promoting male circumcision in communities where the practice is not traditional might have the undesirable effect of creating job opportunities for such fraudulent people."

On the other hand, self-employed tradition circumcisers (30%) had a source of income rather than being dependent on the circumcision practice at the rite. This meant that they were engaged in some business activities that generated income. As opposed to this finding, most of the health workers (95%) were informal employment and this meant they had a stable income.

3.4.3 Employment status among the circumcised men

This section presents information on the employment status of the circumcised men during the study.

Figure 3.4.3 Employment status among the circumcised men



(***Source****: Primary Data*)

In figure 3.4.3, under traditional circumcision practice, the number of circumcised men unemployed was highest (70%), followed by the self-employed (28%) and the circumcised men with full-time employment was lowest (2%). No one among the circumcised men under traditional practice reported having been employed on either contract or part-time. Figure 3.1.8

further shows that, out of the men circumcised under the modern practice, forty-nine percent (49%) had no employment, thirty-nine percent (39%) reported that they were self-employed, and nine percent (9%) were in full-time employment. Circumcised men who reported being on the contract were two percent (2%) and only one percent (1%) were part-time.

In these study findings, there was a disparity in employment levels among circumcised men from both practices. This was evidenced by not having employment among circumcised men under traditional circumcision practice (not employed-70%, on contract-0%, part-time-0%) compared to the circumcised men under modern practice (not employed-49%, on contract-2%, and part-time-1%). However, a similar pattern under the categories of self and full-time employment was observed in both practices. Further, though there was a difference in employment status among circumcised men in both practices, at least there were more self-employed men (modern-39%, traditional-28%) compared to those with full-time employment (modern-9%, traditional-2%). As per the preceding discussion on age and education coupled with employment demographic characteristics, more circumcised men with similar age and education were likely to have reported a higher household income and employment rates compared to those without employment. This finding is consistent with Bailey R.C. et al. (2007) that reported that men with similar age and education levels are more likely to have high income and employment levels than the unemployed.

In the context of HIV and circumcision, circumcised men with some education and income levels are most likely to perceive the risk associated with HIV than those without education as from the preceding discussion on education levels. Therefore, it was assumed that when circumcised men with some income regardless of the circumcision practice, there is a likelihood that they could potently afford to get back to the hospital and clinic after circumcision for an HIV checkup or review based on the next appointment after circumcision and or for a medical checkup and treatment arising from an adverse event or complication after circumcision.

Further, circumcised men with an income are more likely to afford an HIV test slip after circumcision to know their HIV status, and this could be done after procurement of an HIV self-test kit available in drug stores throughout the country. However, there are no clear patterns by wealth among the employed circumcised men on the risk of HIV infections, although according

to ZDHS (2018), men with the highest wealth quintile are less likely than other men (11%) to perceive themselves as being at high risk for HIV infection (12%).

Further, since the study focused on after circumcision, though not part of the study scope on the choice and decision to undergo circumcision and the economic status of the circumcised men, the economic status influences one's circumcision they can undergo. This finding is supported by the WHO report of 2007, which documented that in Burkina Faso for example, families of higher socioeconomic status or living in urban areas were more likely to circumcise their sons. Similarly, parents in Burkina Faso in rural settings probably circumcises their children under traditional circumcision practice regardless of their economic status. Further, it is not always assumed that a person with a sound economic muscle is likely to afford the cost of transport for accessibility to male circumcision services at health facilities after circumcision regardless of distance and location.

However, accessibility to circumcision services is relative. For instance, a client staying near a health facility and its proximity maybe just a minute away, and yet, this client decides to shun the services offered by the nearby facility after circumcision and goes to another clinic located far away. In other words, socioeconomic affordability and accessibility to male circumcision services are not always obvious, but a preserve of the client's choice and income as to whether or not gets back to the facility after circumcision. Therefore, from the preceding discussion, it is not true to assert that, only men in formal employment usually get back to the health facilities after circumcision. As evidenced by the findings of the study, in both practices, even those men in informal employment went back to a facility at one point for an HIV test to be seen in the next sections.

In addition, there may be other factors attributed to acceptability to male circumcision services other than one's economic status. For example, in the case of Kapiri Mposhi district's geographical arrangement, the Tanzania- Zambia Railways (TAZARA) has continued to increase the number of people coming to conduct businesses in Kapiri Mposhi communities. And as the population increases, the assumption is that, the prevalence of HIV and other STIs may be common and high if left unchecked. Therefore, this calls for increased circumcision provision in the district. One way of scaling up male circumcision provision services is to ensure increased

outlets where circumcision services can be provided and these could be health facilities and outreach sites especially for communities that are outskirts of Kapiri Mposhi township. The study further established that heightened community sensitization through social media platforms (Radios, Televisions and social gatherings) on the importance of circumcision and its benefits on the HIV and other STIs prevention has led to the increased acceptability to male circumcision services by the men within the communities of Kapiri Mposhi district.

In this regard, the communities easily accept the medical staff regardless of the sex of the providers to conduct male circumcision services at health facilities and sometimes offering male circumcision through mobile services at outreach sites. The adaption of male medical circumcision in communities has led to smooth provision of male circumcision services by the medical staff and has led to increased numbers recorded in the study of men who got circumcised under medical setting in Kapiri Mposhi district which was not the case under traditional circumcision practice in Chavuma where only a small number of traditionally circumcised men was reported. The study concluded that the acceptability of medical staff in some traditionally circumcising communities was low and since medical personnel were not allowed to offer circumcision as outreach services at Mukanda by traditional circumcisers and community elders.

Accessibility by medical staff to traditionally circumcising communities was limited. In this study, it was established that there were trends of acceptability of introducing male medical circumcision services in traditionally circumcising communities of Chavuma. The study showed that generally, circumcision performed under medical setting was slowly beginning to be accepted in traditionally circumcising communities by the elders, traditional circumcisers and local leadership. For instance, in the past, this was not possible, but nowadays, there seems to be progress of men from traditional circumcision setting being referred to the hospitals and clinics for circumcision. With the increased number of health facilities in Chavuma district, there is also a growing demand for circumcision services in the health facilities by the men under traditional practice. This has been coupled with increased accessibility by men in getting circumcised under clinics. Although male circumcision under traditional practice is an integral part of the ritual of coming of age in some communities in Chavuma district, separation in place or time may occur between the performance of male circumcision and the initiation period. A range of possible

combinations has been recorded in some communities and health facilities. Male circumcision may be carried out in a clinical setting, with initiation being performed traditionally, either before or after circumcision.

The health workers may not be allowed to go to Mukanda Camps to conduct medical circumcision since these camps were restricted to the initiated persons and circumcisers, but once the elders, traditional circumcisers and traditional leadership are engaged timely on the need to circumcise under medical settings and authorization is granted, the boys who go through the initiation ceremony at a traditional initiation school are then brought in groups to hospital and clinics in town for circumcision to be performed. In this regard, the cost of transportation, circumcision supplies and commodities used to perform circumcision at the health facilities is placed on part of the health workers and not the men undergoing circumcision from traditionally circumcising communities. And once the men or the initiates are circumcised at the health facilities, they are then transported back to Mukanda for further lessons or initiations. In this way, tradition in terms of teaching to adulthood, culture and beliefs are preserved or upheld and this process has assisted in continuity of traditions. The study also shows these are clear demonstration of circumcision efforts of bridging the gap between traditional and modern circumcision practices in traditionally circumcising communities, also referred to as, a mix of circumcision which can only be possible to implement once there is a political will of engagement towards accessibility to male circumcision services at health facilities between modern and traditional stakeholders.

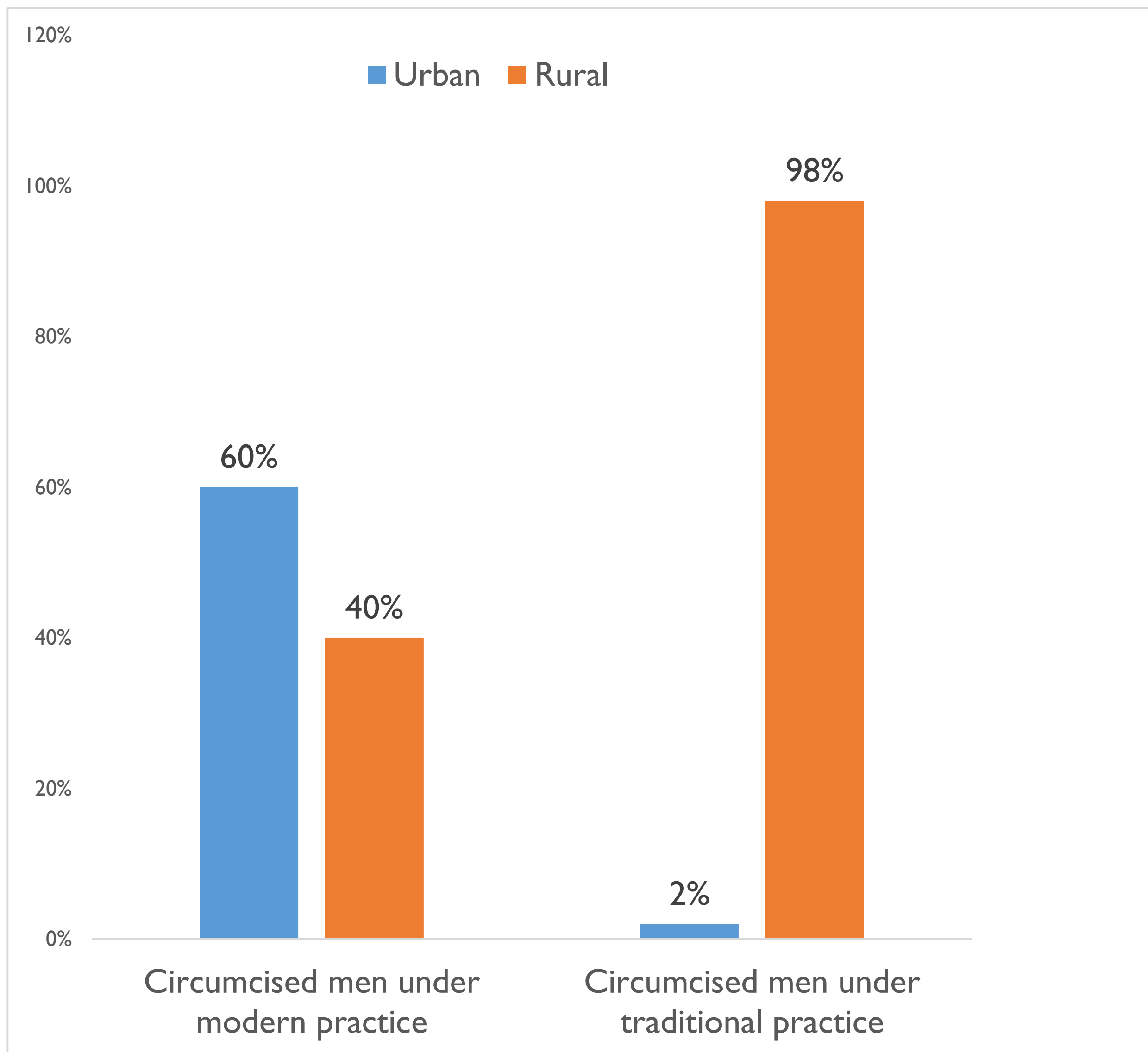
Therefore, though employment status coupled with other factors has an impact on accessibility to male circumcision services regardless of the practice as per preceding discussion, in Zambia and globally at large, when it comes to formal employment, no institution coerces its employees to undergo a mandatory circumcision procedure and even forces them to get back to health facilities after circumcision for an HIV checkup. This means that circumcision is elective, and one has to choose, whether to, or not, undergo circumcision and/or get back to the health facilities after circumcision. The study established that circumcision status, which is linked to socioeconomic status, may impact healthcare-seeking behaviors. If, for example, circumcised men are more likely to visit an STD clinic for reassurance purposes, they would be more likely to be placed in

a no disease situation. This means that, after circumcision, one associates the outcome of not contracting the HIV virus and the only want to be certain of this outcome is make a follow-up visit to the facility for an HIV test assuming that the results would be negative.

3.5 Residence of the circumcised men

This section presents information on the residence of the circumcised men during the study.

Figure 3.5.1 Residence of the circumcised men



(***Source***: *Primary Data*)

Figure 3.5.1 shows that by location, the high number of circumcised men under modern circumcision practice (60%) was reported to be in urban areas than those that were in rural (40%) by residence. However, under traditional circumcision practice, most circumcised men (98%) stayed in rural areas and a few were in urban by residence (2%). These findings generally show that circumcised men by location lived in both rural and urban areas. This disparity in location by residence explains the prevalence of modern circumcision practice in urban areas and traditional practice in rural areas. These findings are consistent with the Zambia Demographic Health Survey (2018), the survey documented that, forty percent of urban men were circumcised as compared with only twenty-five percent (25%) of men in rural areas.

As in the case of Kapiri Mposhi and Chavuma discussed in chapter two (2), the location of the residence of the circumcised men was key to this study since men were kept busy at some social amenities instead of being idle. Urban areas tend to have more recreation centers as social amenities than rural areas. In this regard, there is a likelihood that circumcised men in urban areas are not more likely to engage in sexual activities vulnerable to HIV infections compared to those in rural areas with fewer social amenities. However, there is a caveat in the interpretation of this finding since the opposite among the circumcised men could happen, for example, the presence of many social amenities in the case of urban areas is a recipe for HIV infection transmission, particularly among those men that indulge in unprotected sexual activities. Therefore, the researcher was cognizant of this interpretation but assumed that the residence of the circumcised men had a bearing on the HIV status of some men, of course, this needed future investigation to establish this relationship.

By location type, in terms of rural versus urban settings, the study established that, there was a low prevalence of traditional male circumcision in an urban setting in Chavuma, and this was explained as being attributable to the fact that traditional circumcision is rooted in the ancestral land especially in villages deep in the bushes or forests. Worth noting that traditional circumcision will continue being practiced mainly for cultural and traditional purposes as revealed by the participants. Additionally, the study revealed that circumcision under traditional setting had some health benefits, and hence many tribes continued practicing it. However, if the cultural link of circumcision under traditional practice be weakened, circumcision could be either

performed in a medical setting or not at all in Zambia. In this regard, location in this study had a bearing on the provision male circumcision services in the districts.

Further, as earlier discussed on dissemination messages of circumcision services on social media platforms, there is an opportunity for circumcised men in urban areas to get information about the need to check HIV status after circumcision compared to those in rural areas. Information on circumcision services tends to be more easily disseminated in urbanized places than in rural. The report by WHO (2007) supports this assertion and reported that wide coverage by the media on community sensitization of male circumcision exists in urban than rural areas. The report by WHO further documents that people tend to get messages on where circumcision services are being offered and also read on benefits of circumcision through various platforms such as; the internet, radios, and Televisions in urban areas compared to rural areas. And the geographic arrangement in terms of clusters of hospitals and clinics in urban areas make accessibility and utilization of circumcision services more easily for the circumcised men than in rural areas where health facilities tend to be sparsely distributed in a distant location.

3.6 Comparison of the extent to which traditional and modern circumcision practices prevent the transmission of HIV

This section will present information on the extent to which traditional and modern circumcision practices prevent the transmission of HIV in Kapiri Mposhi and Chavuma districts. It brings out the assessment on the health policy. This was important in understanding whether or not health workers were knowledgeable of tenets of the policy with respect to VMMC on the prevention of HIV. Worth noting that this was not a comparable variable but helped to provide some foundation of the implementation of VMMC and if at all, or not, was preventing the spread of HIV transmission.

3.6.1 Awareness of the VMMC program by the health workers

The health workers were asked if they were aware of the VMMC program derived from the Zambia's health policy on the prevention of HIV. In this study, the health workers that were available at the hospital and clinics during the study were aware and well informed of the

existence of the VMMC program derived from the health policy on HIV prevention. Further, they reported that the policy was clear and provided guidance on the process of ensuring that the spread of HIV was halted among the people in Zambia. The knowledge and awareness levels exhibited among the health care workers were an indication that the right efforts in the hospitals and clinics existed towards curbing the HIV pandemic. Therefore, it was deduced that the Zambian health policy is key in the implementation of the male circumcision program in Zambia.

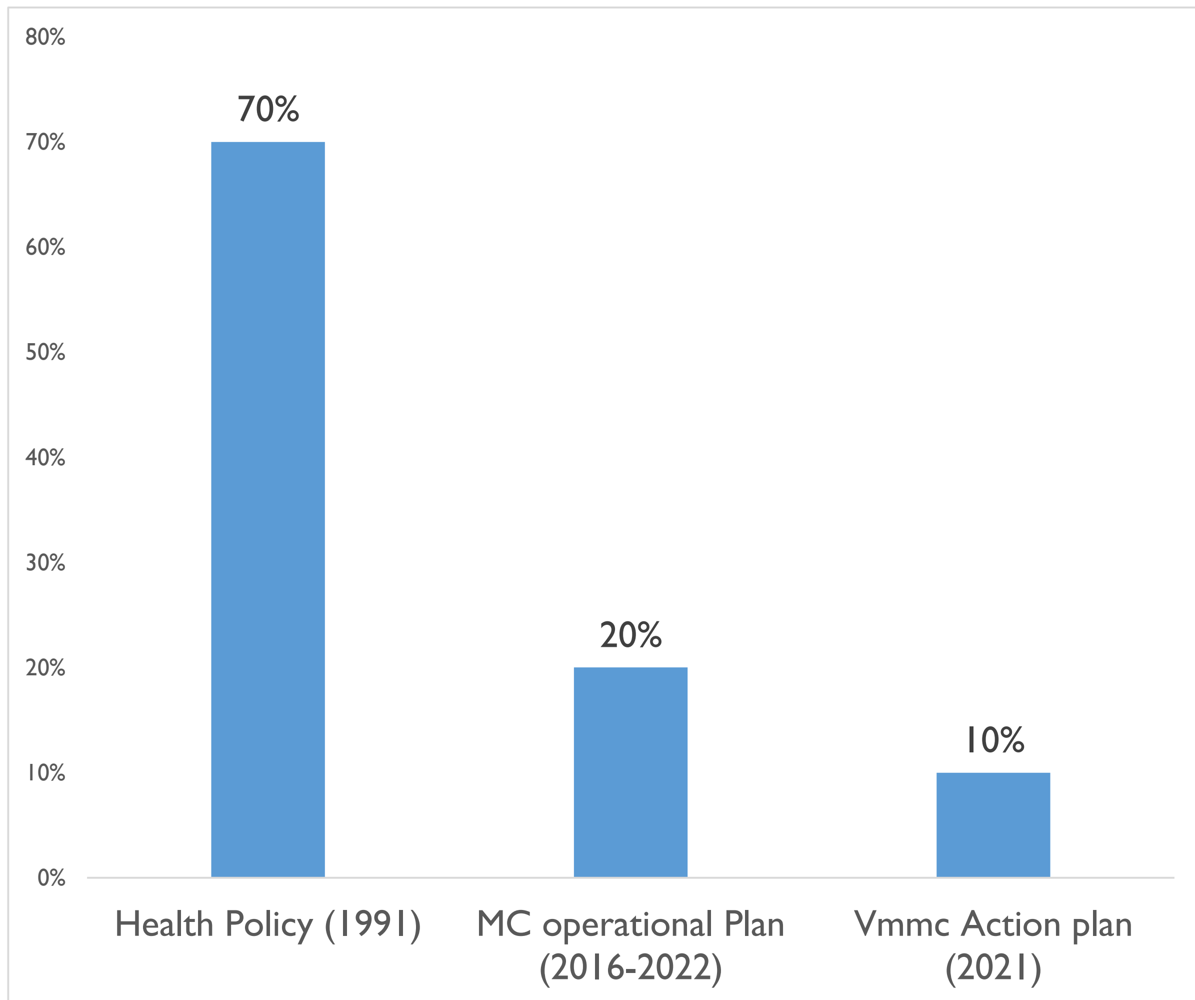
The health workers were also familiar with the main objective of the Zambian health policy and reported that the objective through the implementation of VMMC program was to bring to a halt the spread of HIV in Zambia. Further, the respondents indicated that they were aware of the availability of the documents that clearly show the strategies put in place of ensuring that the policy objective was being met. The study findings clearly show that it was easy to ascertain what the health policy on male circumcision has achieved based on knowledge exhibited by the health workers and come up with the conclusion as to whether or not, the objective of halting the spread of HIV was being met.

The following shows the health workers' knowledge levels on the type of documentation that was related to HIV prevention in Zambia.

3.6.2 Knowledge levels on HIV prevention and documentation

This section shows the responses of the health workers on their levels of knowledge on documentation related to HIV prevention.

Figure 3.6.2 Knowledge levels of health workers on documentation



(Source**: Primary Data**)

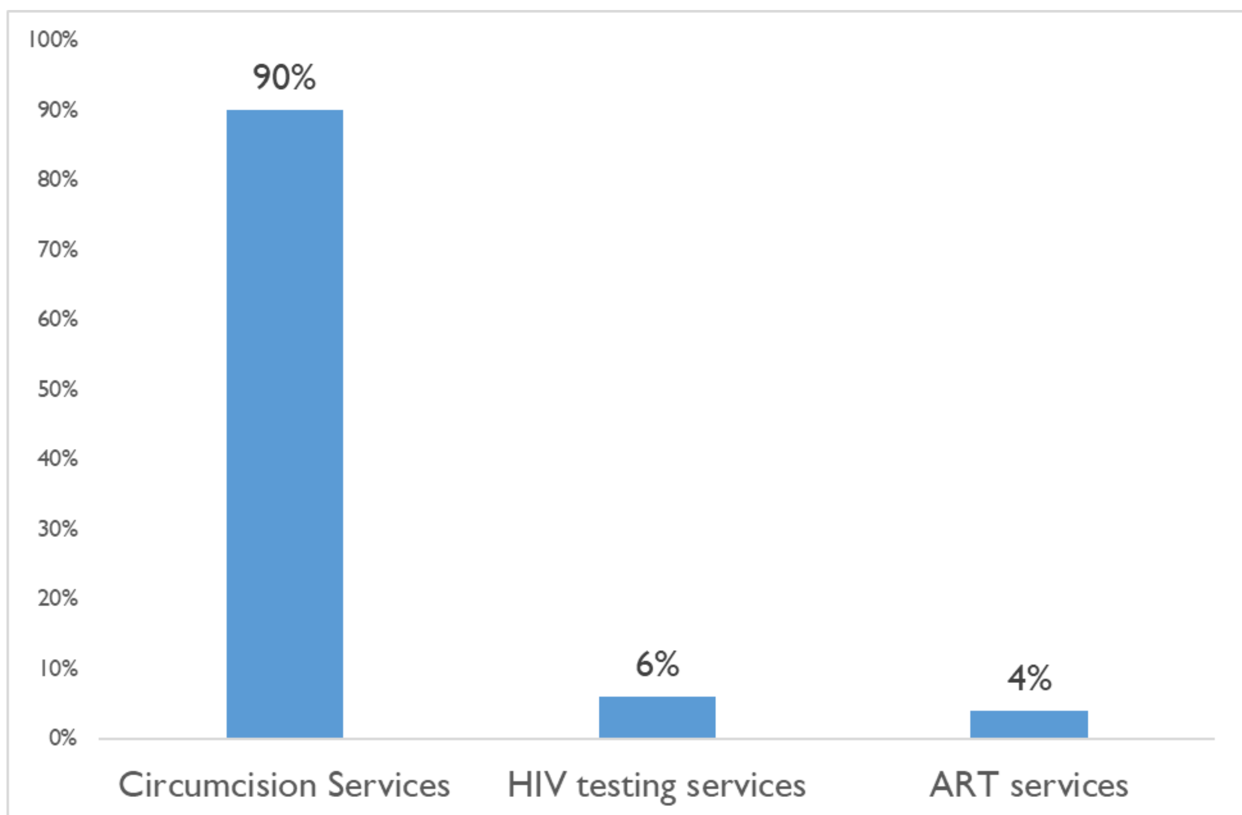
Figure 3.6.2 shows that the health policy was the most known document by the health workers (70%), followed by the male circumcision (MC) operational plan of 2016 to 2022 known by health workers (20%), and only ten percent (10%) of the health workers knew voluntary male medical circumcision action plan (VMMC) for 2021.

Generally, the main documents related to strategies used in the prevention of HIV were known by the health workers in the hospitals and clinics. The findings further revealed that these were the key documents that were used to review if at all, or not, the health policy was achieving its objective of halting the transmission of HIV among people.

3.7.1 Implementation of the VMMC program

This section's focus is on what was being done in implementing the objectives of the VMMC in hospitals and clinics. The approach to assessing how the male circumcision program was being implemented as to find out what services related to HIV prevention were being provided in the health facilities and the following were the services. In this study, the assessment of how VMMC was being provided was key in establishing whether or not some common areas of agreement with respect to implementation existed among the two forms of circumcision.

Figure 3.7.1 Health Workers' (HWs) implementation of the VMMC



(***Source***: *Primary Data*)

Figure 3.7.1 shows that the common service that was reported by the health workers (90%) to be implemented and related to the HIV prevention was circumcision services, followed by the HIV services (6%) and Art services were last (4%). Therefore, the implementation of the health policy was evident in circumcision, HIV testing, and ART services in the hospitals and clinics. These services were important in determining the progress by VMMC program. For example, after

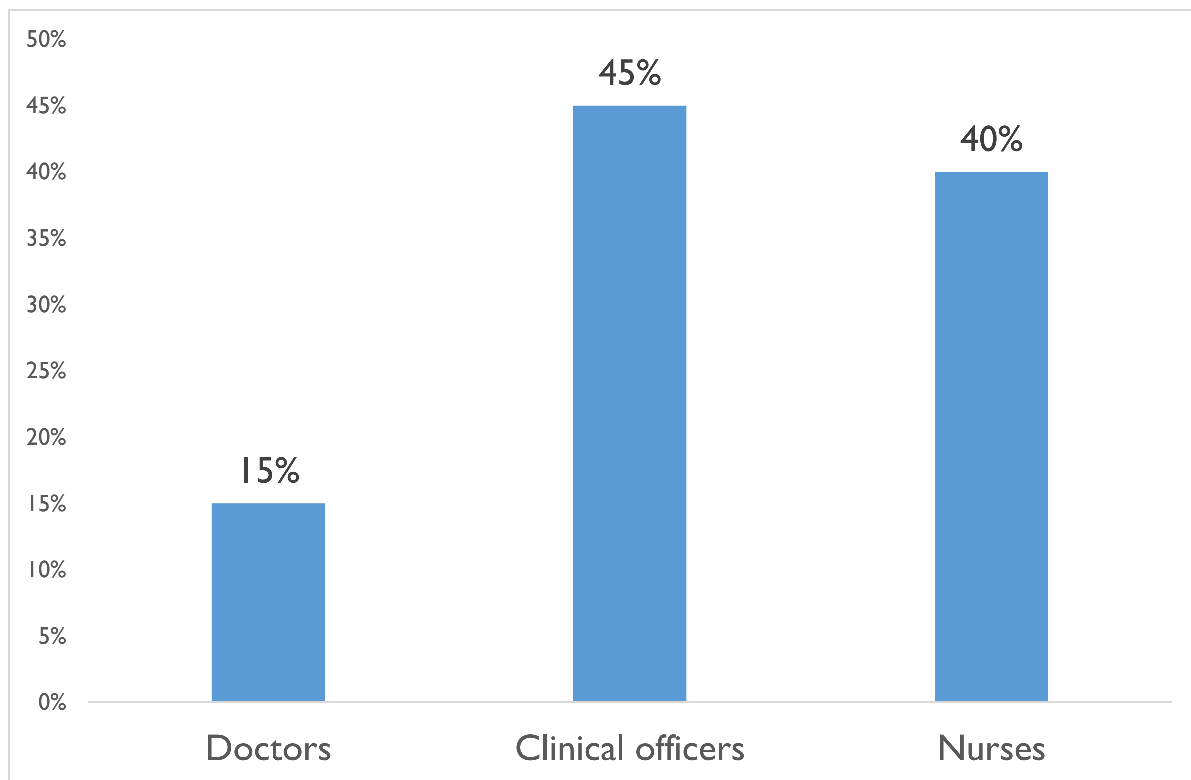
circumcision (circumcision services), men needed to visit the hospital or clinics to check and know their HIV status (HIV testing services) and in situations where one tested positive for HIV, they would be put on treatment (ART services). The study revealed that these were the key services in monitoring progress after circumcision, especially where HIV prevention was concerned.

3.7.2 Providers of male circumcision (MC)

This section revealed the main providers of male circumcision services at health facilities among the health workers. The study focused only on the health workers and did not extend to know the type of traditional circumcisers who provided the service since they were already known as traditional male circumcision providers at Mukanda camps.

It is also worth noting that even though there were many other health workers available at the hospitals and clinics during the study, the focus was placed on the main providers of voluntary male medical circumcision (VMMC) and the following were the providers.

Figure 3.7.2 The main providers of male circumcision (MC) at health facilities



*(**Source**: Primary Data)*

According to figure 3.7.2, the highest number of the main male circumcision providers at the hospitals and clinics were the clinical officers (45%), followed by the nurses (40%) and the lowest were the doctors (15%). The study findings revealed that the main players in the provision of the male circumcision services were the clinical officers, nurses, and doctors, though this category of doctors had a small share of the providers as documented.

The study deduced that only the professional staff were the main providers of male circumcision, and these were the same staff who attended to men who came back to health facilities after circumcision as opposed to the traditional providers under traditional practice. These findings were supported by the Zambia Demographic Health Survey (2018). The ZDHS (2018) survey documented that, in Zambia, the percentage distribution of qualified male circumcision providers was that, who got circumcised in 2018, twenty-five percent (25%) were attended to by professional health workers, and those of traditional practitioners was at seven percent (7%).

Further, these results were supported by Peltzer and Kanta (2009) that reported that male circumcision was conducted and or performed by medical professionals who had attended a training program as MC providers. In addition to this, the study findings indicated that to increase the number of health workers trained as VMMC providers, the training was focused on and targeted doctors, nurses, and clinical officers. And according to the Ministry of Health VMMC operational plan of 2016, the professional training program lasted for a maximum of 10 days and the breakdowns of the days were as follows: three (3) days of classroom sessions and seven (7) days of practical or hands-on in health facilities.

Further, the study established that on the other hand, traditional circumcision practice had no professional trained providers of circumcision. Instead, the traditional circumcisers were conducting circumcision services based on experiences. This was coupled with limited providers as opposed to adequate providers under the modern circumcision practice. This however, should be interpreted with caution, only limited number of circumcisers under traditional setting were notable during the study. This finding was only limited to Chavuma district, and the study scope did not extend to other parts of the country offering traditional circumcision probably where a larger number of circumcisers may do exist. As a result of this inadequate information on male circumcision providers under traditional practice, generally the circumcision service provided in the few visited sites in Chavuma district may not be in position to offer the circumcision services daily and yet other places with adequate person may actually provide it on a daily basis.

Circumcision services under modern circumcision practice were also established to be provided routinely. In this regard, the study findings show that the majority of male circumcision procedures under modern practice were conducted at the health facilities (hospitals and clinics), while a few were offered during outreach services at some clinics. On the other hand, circumcision under traditional practice was offered only during some relatively fixed periods. For example, the male circumcision (MC) service was equally carried out only during certain traditional ceremonies. This was evidenced by the fact that all the traditional circumcisers indicated that they had performed male circumcision at certain ceremonies.

As opposed to health facilities as places where male circumcision procedures were carried out in the case of modern circumcision practice, the study found out that, the traditional circumcision

procedures were carried out at a place called *Mukanda,* sometimes referred to as *Mukanda Ritual.* This ritual was a transformation rite in which boys were initiated into manhood among the Luvale and other tribes that conduct the practice. The rite was customarily conducted at puberty characterized by performing circumcision on the initiates during this rite and it was coupled with the celebration to mark the end of the ritual process.

The circumcision setting in the study was broken down into various sites where circumcised men sought the services from, and the result showed that, under traditional circumcision practice, of course, eighty-nine percent (89%) were circumcised at *Mukanda camps* and still under traditional setting, eleven percent (11%) were referred and circumcised from hospitals. This as earlier discussed shows that, slowly, medical circumcision is beginning to be accepted by traditionally circumcising communities in Chavuma district. However, despite the efforts of men from traditionally circumcising communities in accessing hospitals and clinics, on the other hand, acceptability to *Mukanda* Camps by the medical personnel was limited.

Medical staff were not allowed to access *Mukanda* camps because such places were considered a taboo to outsiders and sacred. Further, under traditional circumcision practice, there was a high level of secrecy associated with the ritual of male circumcision making research into this practice not only difficult, but also leading to a low level of knowledge about what exactly happens during initiation. This was because traditionally circumcised men, traditional leadership, community members and traditional circumcisers were prohibited from discussing this topic. In this vein, the study established that, it was not allowed to discuss and talk about the experiences in the bush camps to uncircumcised men or anyone, as it was considered a taboo, and this, served as a mechanism of control to distinguish traditionally circumcised men from those who are non-circumcised or medically circumcised.

Therefore, the study's position is that, a lot may be unknown of what prevails or goes on at the *Mukanda* Camps since accessibility was limited to only a few who manned such sacred places or considered as a taboo to outsiders such as females or medical staff to access such camps. Even though the study did not specifically focus on attitudes of the variety of ethnic groups towards accessibility of male circumcision services provided at the health facilities, it could hence, be difficult to conclude that, ethnic groups easily accept modern circumcision practice since the

scope of the study was limited in reaching to a variety of ethnic groups in other localities outside Chavuma district. However, the people interviewed were generally most concerned about pain, cost and safety associated with traditional circumcision practice compared to the modern practice. Therefore, in this study, it might be true to indicate that, traditional circumcision would be less acceptable, because the pain is a key feature of traditional male circumcision, and also a growing awareness about significant complications associated with traditional procedures. This assumption could be true among ethnic groupings in urbanized areas with increased knowledge on accessibility to male circumcision services at health facilities, and more acceptability towards traditional circumcision practice may only exist among those ethnic groupings practicing it especially that it is rooted as central in their ancestral lands. Further, the study did not assess people's preferences for traditional male circumcision as opposed to the modern one, but focus in the study was to assess and compare whether or not, men had reduced chance of acquiring HIV and other STIs after undergoing circumcision performed under traditional and modern circumcision settings in Chavuma and Kapiri Mposhi districts. The quantified differences in this study, were based on the outcome of circumcision with regard to HIV and other STIs prevention, and the findings could be generalized across generations in the choices that people make between traditional and medical circumcision practices. In this regard, the findings could assist in closing gap in literature on how cultural practices evolves and change over time as evidenced in the integration of traditional and modern circumcision practices towards the HIV and other STIs prevention.

The study concludes that, there is a possibility of linking medical male circumcision to traditional initiation practices in Zambia. This is because in some cases, where arrangements are sometimes made for circumcision in hospital by a male nurse or treatment of initiates with complications arising from traditional initiation ceremonies, and later with subsequent immediate return of the circumcised boys to the bush for the traditional initiation activities were beginning to bear fruits and working in Chavuma district. Probably, this possibility may only be actualized once there is community involvement in male circumcision whereby Community involvement before, during and after traditional male circumcision is strong, and each stakeholder (families, health workers, circumcised men, traditional circumcisers and community elders) has a role to play in the provision of male circumcision services at *Mukanda* or health facility. Therefore,

once there is considerable community support for medical male circumcision and its health benefit in HIV prevention, probably in future, some communities would slowly be taking their children to get circumcised under modern setting.

As opposed to traditional practice, under the modern circumcision practice, the highest number of men (69%) were circumcised under clinics, while those circumcised under hospitals were thirty percent (30%) and only one percent (1%) were circumcised under Non-governmental circumcision setting, that is to say, outreach sites. These results, under modern practice, were consistent with the human resource distribution of the health workers as per figure 3.1.3 which shows that only (15%) of male circumcisers were doctors and this could explain the circumcised men under modern practice translated into 1 to 2, doctor and circumcised men' ratio at the hospital level. This study meant that there was a likelihood that on average, one doctor provided circumcision services to two (2) men at any given circumcision procedure and after circumcision. This presents an opportunity for the government and partners to increase investment in male circumcision providers (doctors) and scale up the provision of circumcision services in hospitals across the country.

In support of this, Chinyama Seleji (2010) documented that, *Mukanda* had phases in its performance: the first phase was the preparatory phase. This was a stage when intentions were made and traditional leadership informed. Then ancestors could be invoked to confer blessings and power upon the initiates. Second, was the seclusion phase when the initiates were isolated from the village into the forest. This was the time when the initiates were circumcised and underwent Mukanda Ritual. When their surgical wounds got healed, the initiates were taken for ***Kulyachisa*** (the bathing ritual) at a river or stream. However, keeping circumcised clients for a longer period at the circumcision site could not necessarily be accepted by clients who are in employment or involved in business activities, and to this effect, they may prefer to undergo modern circumcision practice that does not make them get confined to someplace while waiting for the wounds to heal, hence, the departure of the two practices. In this study, the two practices brought out the length it takes for someone to bathe after undergoing circumcision.

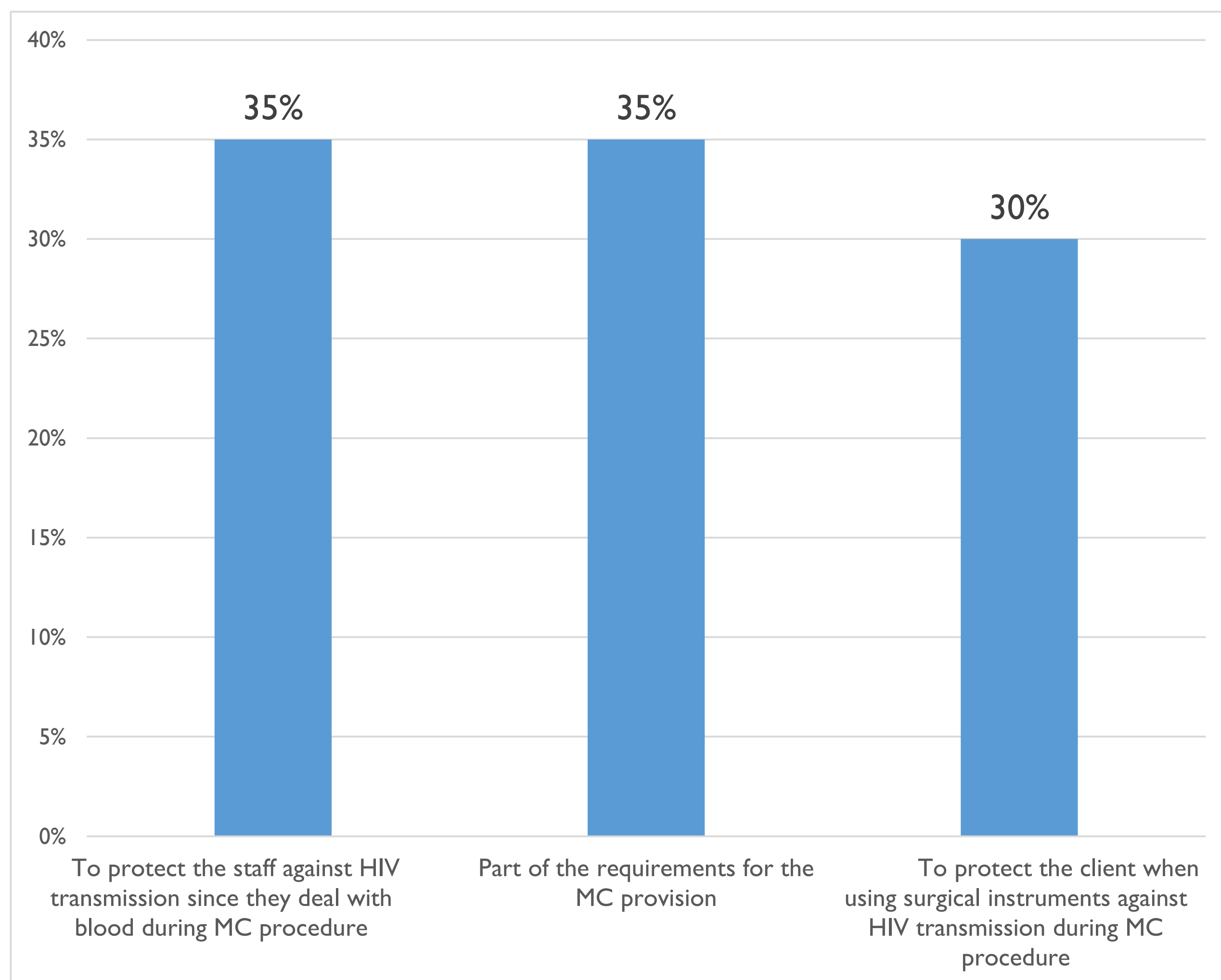
The period, of course, is shorter with modern practice, and men were encouraged to bathe before undergoing circumcision as opposed to traditional circumcisions whereby initiates could be

encouraged to stay without bathing for three weeks while being in the forest or *Mukanda*. But what was important was the findings that both practices had the circumcision service available and accessible to their clients, irrespective of the place where the service was provided. The study also established that, similarity also existed between traditional and modern circumcision practices in terms of sexual activities after circumcision. Men after circumcision were encouraged to engage into sexual activities after two (2) weeks under modern circumcision practice, whereas, under traditional practice, after circumcision, circumcised men were not allowed to have sex with their wives during the first six days. This period of abstinence from sexual intercourse was very important for the healing or recovery process to take into effect in both circumcision practices. In this regard, under traditional circumcision practice, it was a symbol among circumcised men to demonstrate their newly learnt resistance to sexual attraction before reintegration into society where they could engage into sexual activities after undergoing life lessons. Why is this important to HIV and other STIs prevention, the period of waiting was regarded as important in hardening of the skin of the penis, which meant that, the hardened layer on the skin of the penis made some level of protection against any infections arising from sleeping with a sexually transmitted infected partner.

3.7.3 Certification of male circumcision (MC) providers

This section brings out the importance of certification among male circumcision providers in hospitals and clinics. The study established that providers had to undergo some male circumcision provision as a prerequisite for certification. This meant that one needed to be certified before qualifying to be a male circumcision provider. Figure below depicts the importance of why each provider needed certification before providing the service.

Figure 3.7.3 Importance of certifying MC providers



***(Source**: Primary Data*)

Figure 3.7.3 shows that thirty-five percent (35%) of the health workers reported that staff protection against HIV acquisition during the male circumcision (MC) procedure at the health facilities was the reason why provider certification is important. Further, another set of health workers (35%) indicated that certification of the male circumcision providers was part of the requirements for male circumcision provision at hospitals and clinics. And only, thirty percent (30%) of the health workers reported that a client should be protected before and after circumcision through the surgical instruments against HIV transmission and this was another reason why they considered certification was important for the providers.

What the study deduces is that, some men could be living with HIV probably were born with the HIV transmitted at childbirth and if such a person visited the health facility for circumcision, a health worker certified to provide the service should be in a position to ensure that the surgical instruments are sterile so as not to transmit a virus to another person when using the MC surgical instruments. In this vein, protection is on the part of the client, however, on the other hand, the service provider is also protected if certified because they will know the preventive measures and would be conscious of how to deal with blood during the procedure.

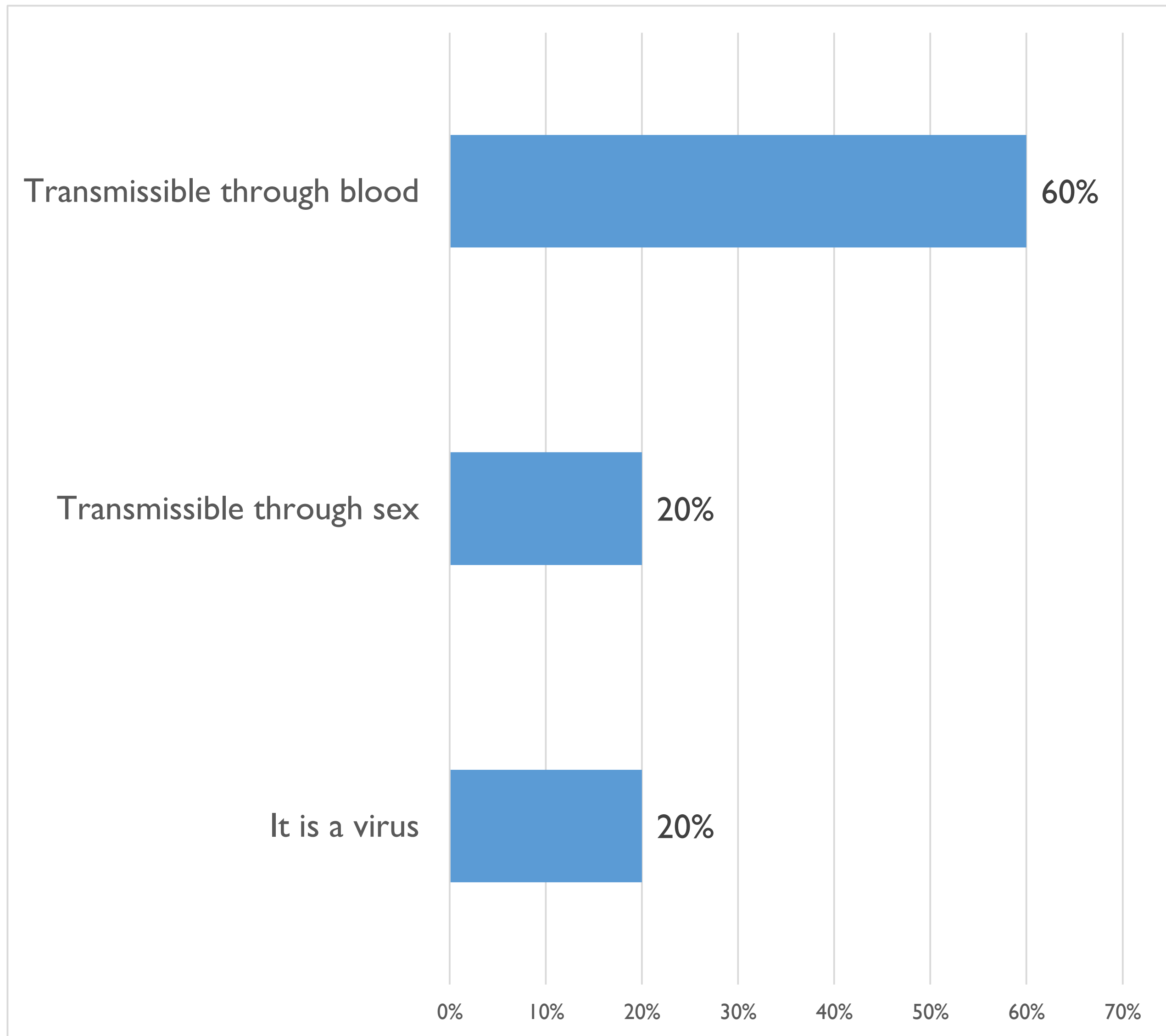
In other words, certification comes with infection prevention control (IPC) guidelines that one needs to follow while conducting the male circumcision procedure and hence certification becomes part of the key requirement that is needed before conducting circumcision and also important after circumcision especially when circumcised men come back for an HIV test to avoid transmission of HIV through HIV test kits. Therefore, certification for the providers of circumcision was key in the protection of both the staff and clients against HIV transmission during and after circumcision.

3.7.4 HIV transmission and circumcision

This section focus on whether HIV could be transmitted after circumcision or not. Further, the routes by which HIV can be transmitted were discussed.

During the study, the study established that the health workers reported that HIV was a virus that could be transmitted through sex and blood. These findings were consistent with WHO (2007) which reported that more than 30 different bacteria, viruses, and parasites are known to be transmitted through sexual contact and blood. In terms of understanding HIV among traditional circumcisers, the following figure 3.7.4 depicts this information.

Figure 3.7.4 HIV knowledge among the traditional circumcisers

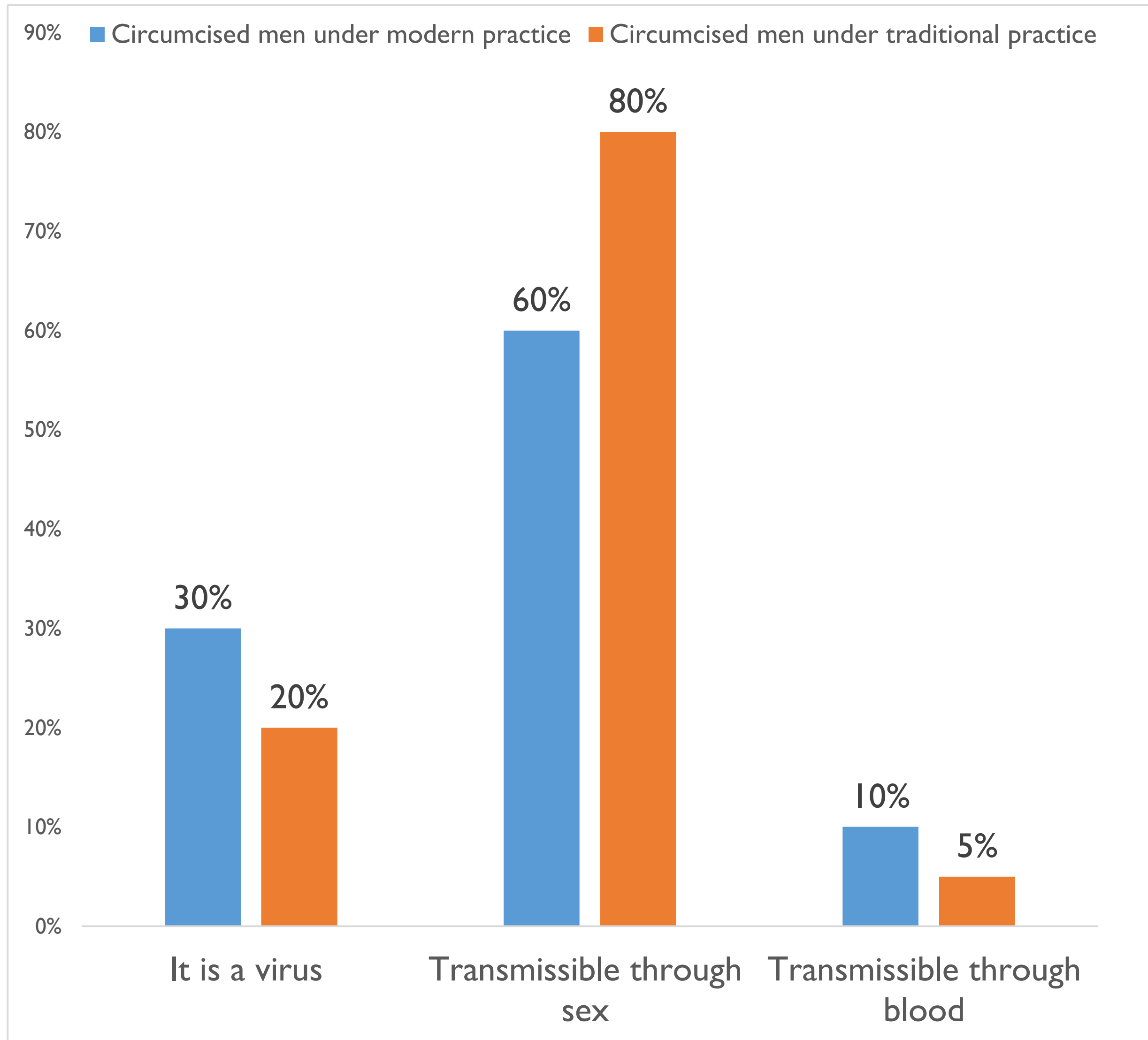


(***Source***: *Primary Data*)

Figure 3.7.4 shows that most of the traditional circumcisers (60%) reported that HIV was transmissible through blood, while twenty percent (20%) indicated that it was transmissible through sex and another twenty percent (20%) of the traditional circumcisers reported that HIV was a virus. These results were consistent with those of the health workers that indicated that at least knowledge about HIV was common among the health workers.

In terms of the circumcised men's knowledge of HIV, figure 3.7.5 depicts the knowledge levels.

Figure 3.7.5 Circumcised men's knowledge level on HIV transmission



*(**Source**: Primary Data)*

The figure 3.7.5 shows that under modern circumcision practice, the highest number of the circumcised men (60%) reported that HIV was transmitted through sex, followed by those (30%) who indicated it was a virus and the lowest were those who indicated that it was transmissible through blood (10%). Figure 3.1.6 further shows that under traditional circumcision, most of the

circumcised men (80%) reported that HIV was transmissible through sex, followed by those (20%) who reported that it was a virus and a few (5%) indicated that it was transmitted through blood. The knowledge levels among the circumcised men from both practices show that generally everyone was conversant on what HIV was and the majority was of the view that HIV was transmitted through sexual activities.

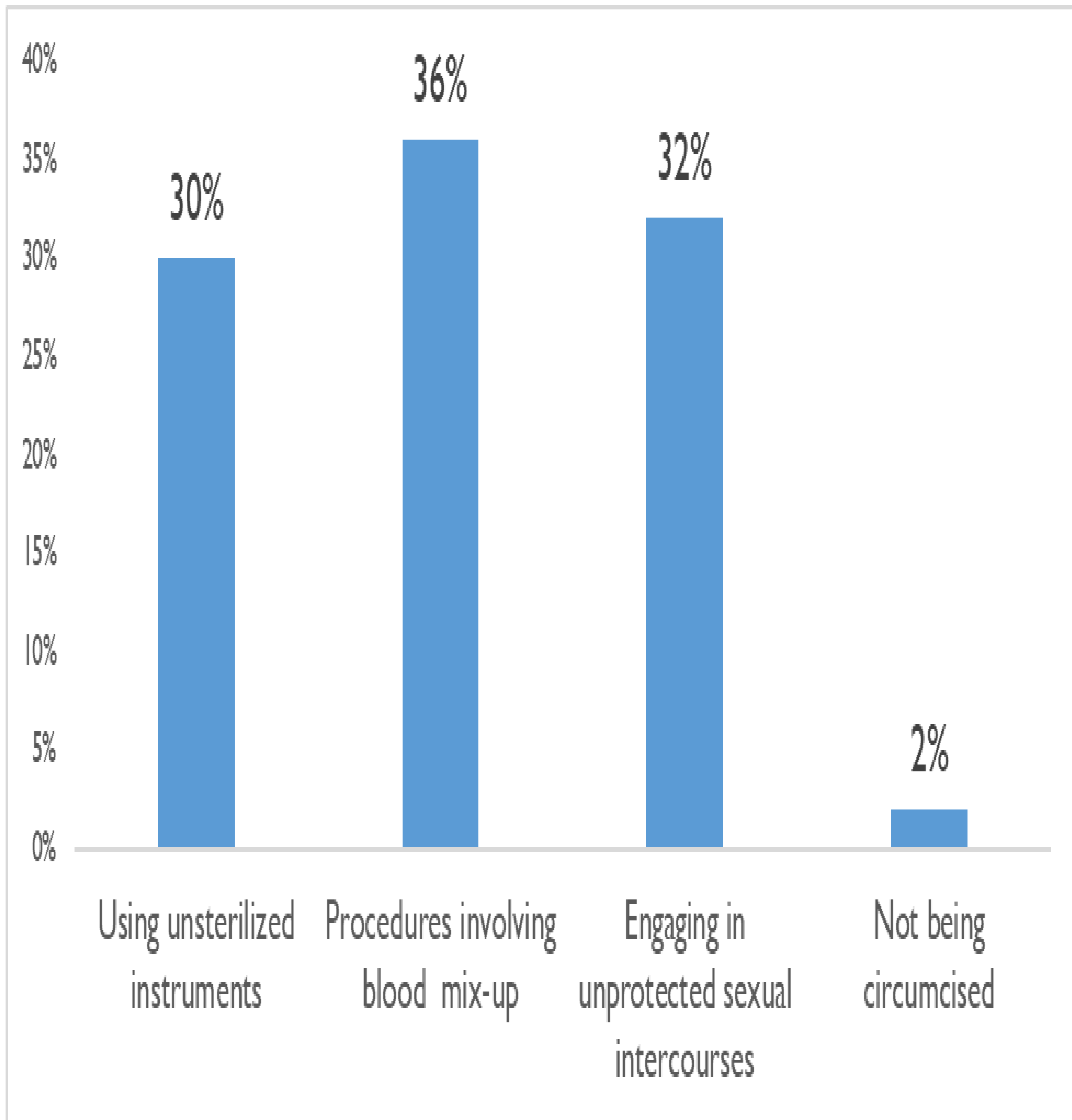
The study therefore established that HIV was a virus that was not only transmitted through sex but also blood. Further, even though circumcised men knew how HIV is transmissible, this may not necessarily be enough in the prevention of HIV. For example, it is possible that among the circumcised men, low self-efficacy may exist among the circumcised men which could be associated with a high proportion of sexual risk behavior. This is because people learn how HIV is transmitted or learn how to talk to their sexual partners about using a condom to avoid unprotected sex, but they still get involved in high-risk sexual behaviors. This is because behaviors are not directly influenced by knowledge and skills, and instead, behavior may be changed in a cognitive process, a process formed by integrating awareness, expected outcome, determining emotions, and past experiences to judge one's abilities in difficult situations.

3.7.5 En-route to the HIV transmission

This section will address the potential routes to the transmission of HIV infections after circumcision. During the study, the respondents when asked whether or not, it was possible for a person to contract HIV infection after circumcision, the study established that it was possible that potentially, there are possibilities that a circumcised person can still contract the HIV infection after circumcision as advanced by all respondents.

The study further explored how HIV infections could be transmitted after circumcision and the following were the findings:

Figure 3.7.6 Health workers' views on the routes to the transmission of HIV



(***Source***: *Primary Data*)

Figure 3.7.6 indicates that there were more health workers (36%) who had reported that procedures involving blood mix-ups were the route to the transmission of HIV. And the

participants who indicated that procedures involving blood mix up specified that a person may be infected during or after circumcision through, not only contaminated surgical instruments, but also through blood transfusion. This was followed by those (32%) who reported that engaging in unprotected sexual intercourse was the route to the transmission of HIV. While some health workers (30%) had the view that using unsterilized surgical instruments was the route to the transmission of HIV and only two percent (2%) of them indicated that the route to HIV transmission was not being circumcised.

In this study, the unsterilized surgical instruments and blood mix-up procedures should be interpreted with caution. For example, taking using unsterile surgical instruments as a route to the HIV transmission, it should be pointed out that this to some extent is still a method that involves blood mix-up during circumcision, however, the researcher was cognizant of this fact and it became important to isolate the two carefully. This meant that, a procedure that could involve HIV transmission in circumcised men after the circumcision was associated with the use of HIV contaminated and unsterile surgical instruments. The researcher, on the other hand, had the view that it was still possible to acquire HIV infection without necessarily using surgical instruments and this was why procedures involving blood mix-ups came about. That is to say, during and after circumcision, there is blood mix-up on the surfaces on the operating table during circumcision or after circumcision, an uninfected circumcised man gets into contact with the blood of an infected HIV person, and there could probably be a chance that the uninfected person after circumcision gets the HIV infection from that contaminated blood through blood mix.

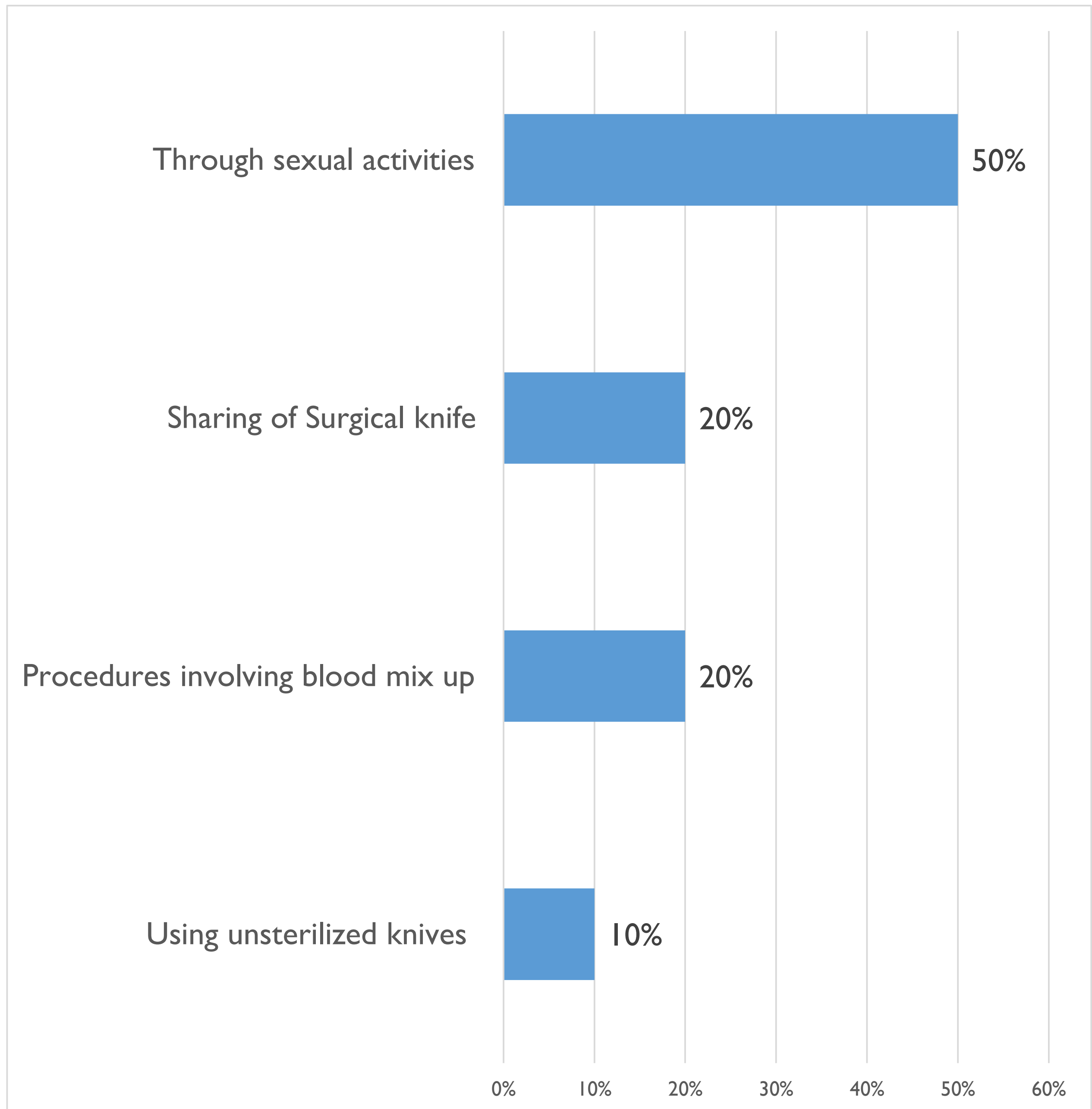
Therefore, the study findings indicate that even though there is a thin line in separating unsterilized surgical instruments and procedures involving blood mix, the two are different from each other. In this case, the contaminated blood may be smeared on the surgical instruct and once the instrument is used on the person, then the likelihood of HIV transmission is high during this process, whereas, blood mix involves not only using the surgical instruments but blood spill over with a mix of contamination and spread to another person with uninfected blood. It is also worth noting that HIV transmission using unsterilized instruments tends to occur only during the process of conducting circumcision, while the HIV transmission through blood mix-up may be possible during and after circumcision.

Additionally, the study established that there is a chance of acquiring HIV infections through blood transmission without necessarily engaging into sexual activities. This, to some extent, can also explain the blood mix method which might be possible if a client loses a lot of blood during or after circumcision and this situation may warrant that blood transfusion be carried out to save the life of the client who has lost a lot of blood during the procedure. For example, transfusing blood infected with HIV to a healthy person, the probability of acquiring HIV in this case is high or HIV acquisition is possible in this case. However, at health facilities, it is a requirement that blood is screened for HIV infections before being transfused into a healthy person. To achieve this process of preventing any possibility of transmission of HIV infections during transfusion, the medical staff uses certain equipment for screening blood and these include; Rapid Diagnostic Test (RDT) and Polymerase Chain Reaction (PCR).

The efficacy of these screening tools differ from one equipment to another, and preferably, PCR utilization is the best recommended method, as opposed to the use of RDT, in detecting an infected blood of a person before transfusion. However, the cost attached to each equipment determines its availability and affordability within the hospitals and clinics coupled with the skills needed to use it. Therefore, the possibility of infecting a healthy person may be there, in situation whereby, the medical staff uses a blood screening tool that fails to detect infected blood within three (3) months of a person's HIV infection at the health facilities, and in this case, the possibilities of acquiring HIV through blood transfusion may be high. Based on the above findings, therefore, the study deduces that the routes to HIV transmission are; blood mix-up procedures (36%) through contaminated surfaces and blood transfusion, engaging in unprotected sexual intercourses (32%), using unsterilized instruments (30%), and though not the study scope, not being circumcised (2%).

The following section discusses the views of the traditional circumcisers concerning the routes to HIV transmission:

Figure 3.7.7 Routes to HIV transmission according to traditional circumcisers



*(**Source**: Primary Data)*

In the study, figure 3.7.7 shows that the highest considered main route to HIV according the traditional circumcisers (50%) was through sexual activities. The sharing of a surgical knife was

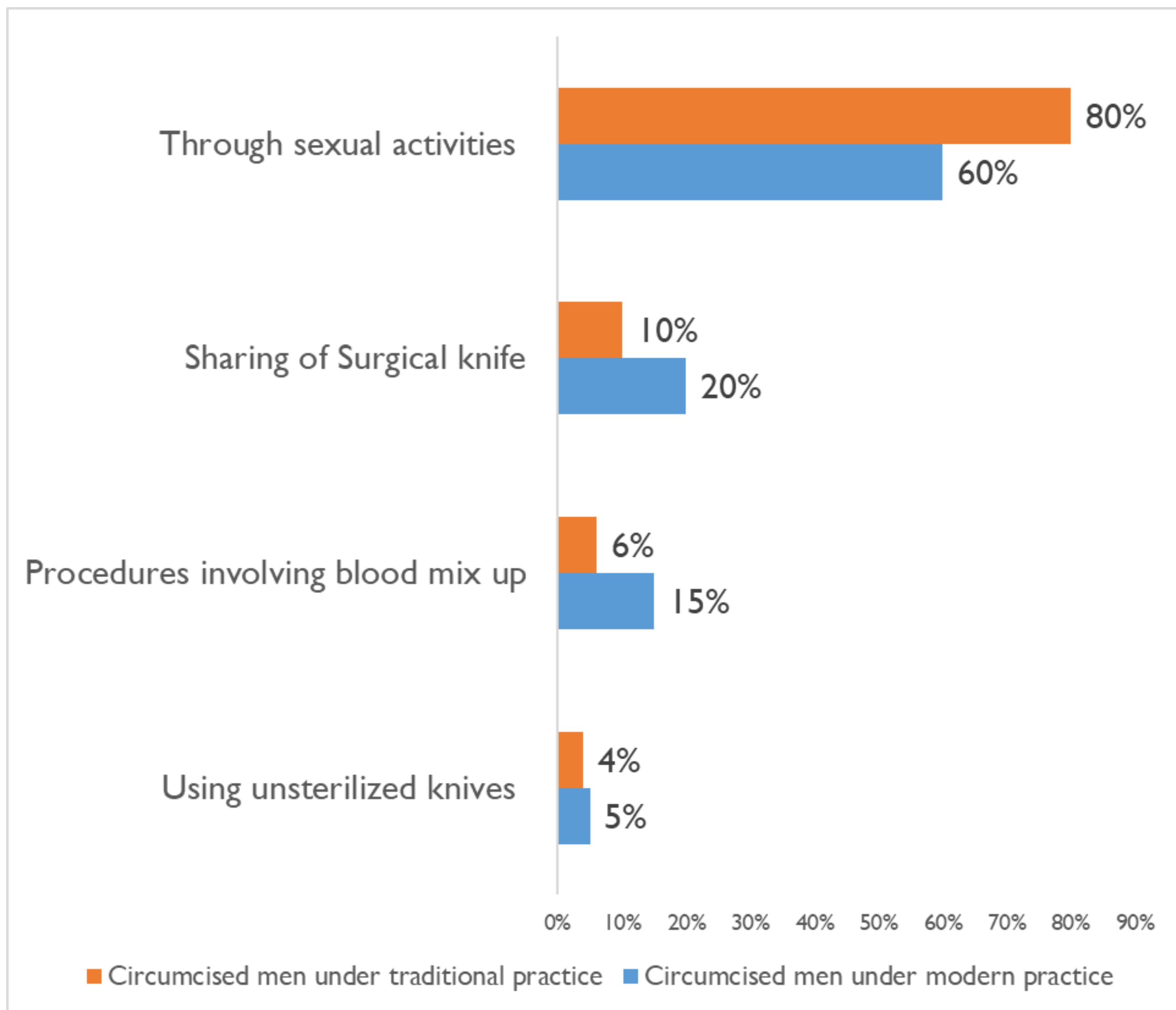
accounted for by other traditional circumcisers (20%) who were of the view that it is a route to HIV transmission. Another twenty percent (20%) of the circumcisers indicated that procedures involving blood mix-ups were the route to the transmission of HIV. And the lowest considered route to HIV transmission by traditional circumcisers (10%) was the usage of unsterilized knives from one initiate to another during circumcision procedure at the rites.

As from the preceding discussion, contrary to the health workers (36%) who reported that procedures involving blood mix-up were the major route to the transmission of HIV, sexual activities accounted for the overwhelming majority (50%) of the traditional circumcisers as the main route to the HIV transmission. Generally, there was a common understanding among the health workers and traditional circumcisers concerning the routes to HIV transmission, for example, when men engaged in unprotected sexual activities, procedures involving blood mix-up, and also through the usage of unsterilized surgical instruments.

However, in some instances, what was common in one practice could not exist in the other practice as the route to HIV transmission. In this vein, the health workers (2%) reported that not being circumcised was another route to HIV transmission and this was not common among the traditional circumcisers. On the other hand, the traditional circumcisers (20%) were of the view that sharing the surgical knife during circumcision among the initiates was the route to HIV transmission and this route reported was also not common among the health workers. And these traditional male circumcisers' actively used the method of using one surgical knife on all the initiates under unsanitary conditions, exposing them to the risk of HIV infection.

The following section discusses the views of the circumcised men concerning the routes to HIV transmission:

Figure 3.7.8 Circumcised men's view on routes to HIV transmission



*(**Source**: Primary Data)*

Figure 3.7.8 depicts that under traditional circumcision practice, sexual activities accounted for an overwhelming majority (80%) of the circumcised men as the main route of HIV transmission, and ten percent (10%) of the circumcised men reported that sharing the surgical knife was the route. Another category of the health workers (6%) revealed that the procedures involving blood mix-up were the route to HIV transmission and only a few (4%) had reported that the route of HIV transmission was through the use of unsterilized knives.

Figure 3.7.8 further shows that under modern circumcision, most circumcised men (60%) reported that sexual activities were the main route to HIV transmission. Twenty percent (20%) of them regarded re-using or sharing of the surgical knife as another route. Those who reported that the procedure of blood mix-up was the route to HIV transmission were fifteen percent (15%), and only a few (5%) indicated that the route to HIV transmission was through the use of unsterilized knives.

The study, therefore, concludes that even though all the four (4) routes to HIV transmission were common among the circumcised men from both practices, the most expected route to HIV transmission among the four (4) was through sexual activities (80% - traditional and 60% - modern) and the least was using unsterilized knives among the initiates (5% - modern and 4% - traditional).

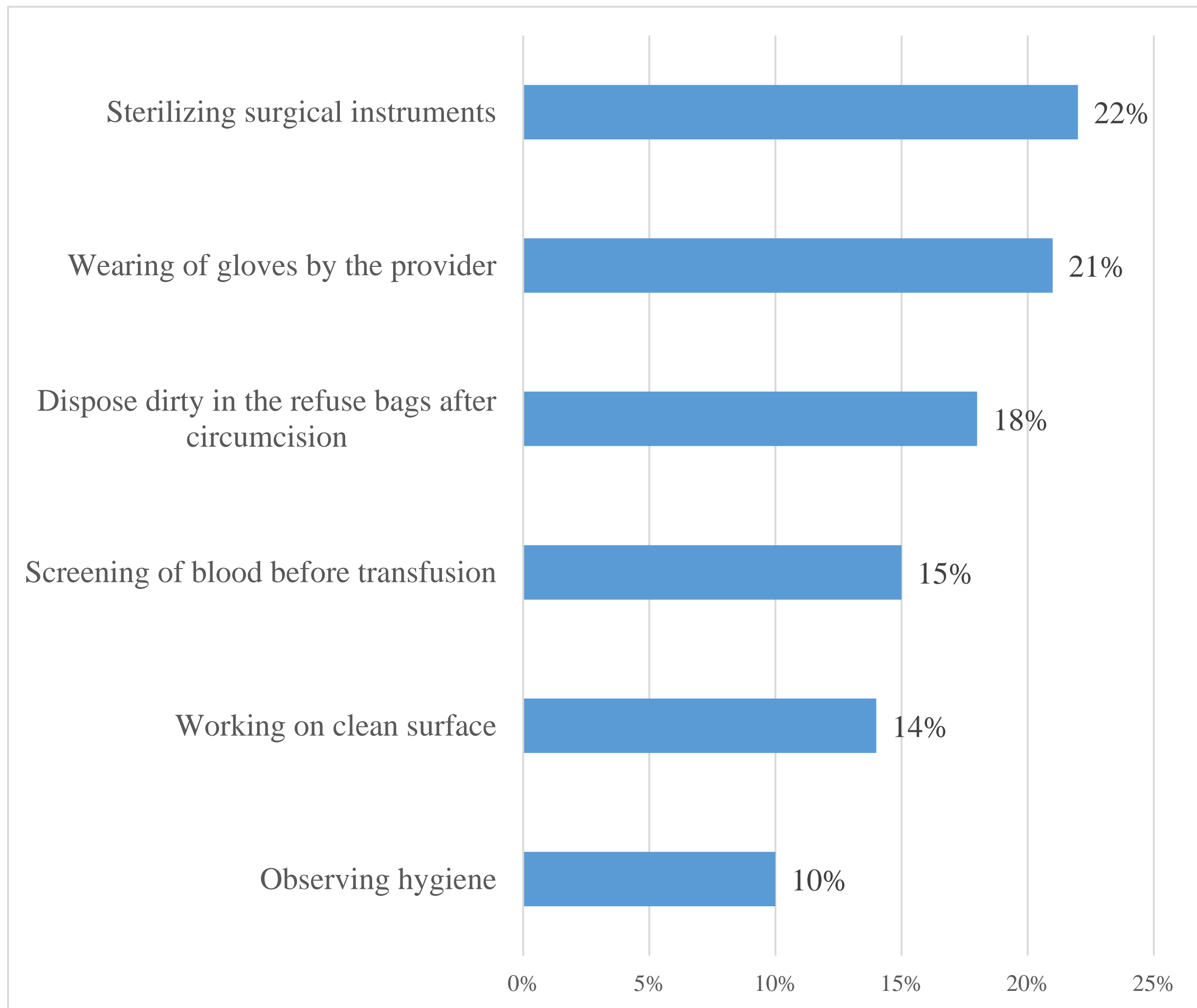
The circumcised men's view on sexual activities as the main route to HIV was adequately covered and consistent with those of the traditional circumcisers (50%) and the health workers (32%). And the least among the traditional circumcisers and the circumcised men was the use of unsterilized surgical instruments. These findings evident in this study provided an initial understanding of the main routes of how HIV is transmissible before measuring the extent to which traditional and modern circumcision practices prevent HIV transmission to be discussed in the next section. Therefore, it became important to provide a detailed explanation in the study on the routes of HIV transmission in Kapiri Mposhi and Chavuma districts.

3.7.6 Preventive measures against HIV infections available at health facilities and Mukanda Camps

In the study, it was important to whether or not, there were measures in place to protect men against HIV transmission during and after circumcision. To find out the measures in place, the study established what was being done under modern circumcision practice (health facilities) and traditional practice (*Mukanda camps*). And the following section presents the preventive measures that were put in place to protect the men when providing the circumcision services.

The services in context meant, the actual circumcision procedure, HIV testing, and treatment to mention a few.

Figure 3.7.9 Measures put in place to avoid infections during and after male circumcision at the Hospitals and Clinics



(***Source***: *Primary Data*)

Figure 3.7.9 shows that more health workers (22%) supported the sterilization of surgical instruments before circumcision as the main measure that was put in place to safeguard clients against acquiring HIV infection. This was followed by health workers (21%) who reported that the wearing of gloves by the male circumcision (MC) providers were a measure of protection

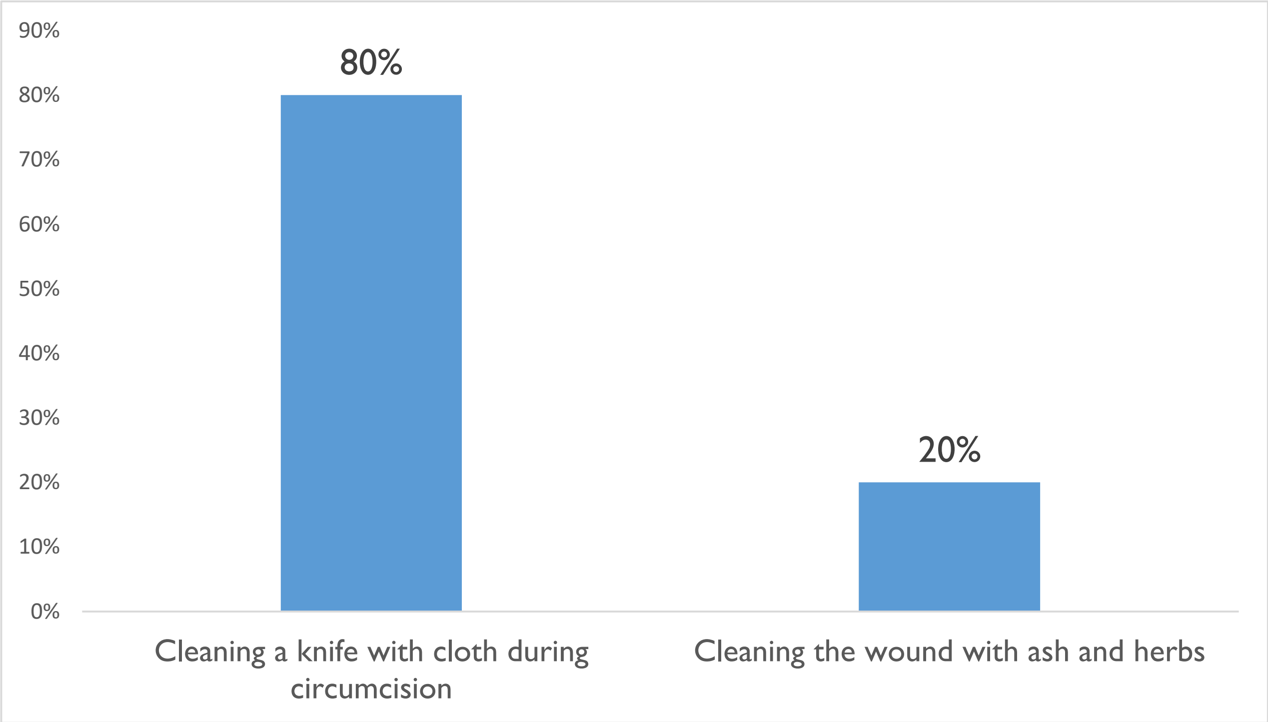
against HIV transmission for both the client and the provider. Eighteen percent (18%) of the respondents disclosed that the disposal of dirty into the refuse bags was done after conducting circumcision. Fifteen percent (15%) reported that the blood was being screened for HIV infections before conducting transfusion. The availability of a clean working surface was another measure advanced by some of the health workers (14%). Further, the keeping of surfaces clean assisted in the avoidance of blood spillovers on the operational tables and this had the potential to infect the person. And only a few (10%) of the health workers reported that hygiene was being observed at the hospitals and clinics. To further the discussion on the importance of blood transfusion as reported by health workers (15%), the study established that there is a chance of acquiring HIV infections through blood transmission without necessarily engaging into sexual activities. In this case, the study found out that there were measures put in place to prevent transmission of HIV infections during blood transfusion in hospitals. The medical personnel used two methods of ensuring that the blood meant for transfusion was safe and did not contain any infections before transfusing to a patient.

The study revealed that, there may be several methods of screening blood worldwide, but the most common methods used in the hospitals in Zambia were the two types of screening tests for blood. These included Rapid Diagnostic Test (RDT) and Polymerase Chain Reaction (PCR). Using these screening tools, the blood is screened for infections such as HIV and other STIs, inclusive of Malaria disease. RDT is a basic equipment used to detect antibodies that the body has formed against the HIV, and this, in some cases, is known as the use of basic equipment to screen for blood. Another method is the use of PCR, an advanced equipment which detects genetic material (DNA) of HIV. PCR replicates genetic material in order to detect and analyze the HIV in the blood. However, this test is very expensive, time consuming (it takes about not less than 24hrs) and labor intensive (it takes a lot of time when conducting it), but it has a capacity to detect infections acquired within few days. RDT only detects blood infected with HIV after three (3) months. The usage of RDT may not detect HIV infections during the window period (within 3 months), and hence, if this screening tool is used on an infected blood within three (3) months, then possibilities of acquiring HIV through blood transfusion is high. Therefore, sterilization of surgical instruments, the wearing of gloves by providers, screening of blood before transfusion, hygiene observation, cleaning of work surfaces, and disposal of dirty in

the refuse bags after conducting circumcision procedures were the main measures at hospitals and clinics put in place to protect clients against contracting HIV during and after circumcision. And these study results, clearly show that, these measures in health facilities put in place were not only for protecting men against HIV infections, but also adhered to the standard of infection prevention and control (IPC) implemented in Zambia. And concerning infection prevention and control (IPC) measures, if not adhered to, there may be a chance of high health risk of HIV infection transmission not only among the circumcised men, but also to the providers of male circumcision services at the health facilities.

The measures of protecting circumcised men during and after circumcision at the traditional rites were reported by the traditional circumcisers in figure 3.3.1 below.

Figure 3.8.1 Measures put in place by traditional circumcisers to protect initiates against HIV transmission



(***Source***: *Primary Data*)

Figure 3.8.1 shows that cleaning a knife with a cloth before using it on another initiate during circumcision accounted for an overwhelming majority of the traditional circumcisers (80%), and only a few (20%) reported that cleaning the wound with ash and herbs after circumcision. These results show the efforts by the traditional circumcisers to keep initiates during and after circumcision safe. However, though some protective measures were observed during the study, there was no clear pattern as to whether or not, they indeed protected the clients during and after circumcision. As opposed to modern circumcision practice where sterilization of surgical instruments before circumcision (22%) as in figure 3.3.0 was the main measure, there may be a high likelihood of chance that an HIV could remain on the knife even after cleaning with a cloth before re-using it and potentially infect the next initiate, and in this regard, sterilization of the knife is key like in the case of the health facilities were surgical instruments are boiled to some temperature that kills all bacterial infections that are transmissible through blood via surgical instruments.

These findings were consistent with the case study of Vincent L. (2007) on Male Circumcision Policy in South Africa that documented that, traditional circumcisers were most commonly blacksmiths/shoemakers in Guinea-Bissau, village elders in Kenya, village doctors, or traditional birth attendants in Nigeria, and village doctors in Zambia. Traditional control mechanisms for HIV and STIs prevention, which aim to maintain standards among traditional circumcisers (for example, not using the same blade for several boys, having the necessary experience before carrying out the procedure, and not consuming alcohol during the circumcision session), seem to have lost their efficacy in some settings. Whereas traditional circumcisers used to be overseen by the elders of a community, it is said to have become easy to claim to be a traditional circumciser. The author recognizes the gaps that are seemingly arising from traditional circumcisions compromising the efficacy of circumcision performed under traditional practice towards HIV prevention.

Further, the study deduces that efforts of keeping the clients safe after circumcision also existed under traditional practice, for example, the smearing of ash to stop the blood from oozing during circumcision coupled with the administration of herbs of infected wounds after circumcision. The giving of herbs found under traditional circumcision practice is similar to the treatment

given in the case of modern practice after circumcision when circumcised men after they come back to the hospital or clinic with a complication. The provision of traditional medicine in this context is a clear indication of the past-based knowledge and experiences of the traditional circumcisers. This is consistent with the report by WHO (2007) that documented that the traditional medicine is the total combination of knowledge and practices, whether explicable or not, used in diagnosing, preventing, or eliminating physical, mental, or social diseases and which may rely exclusively on past experience and observation handed down from generation to generation, verbally or in writing. In this context, one of the evidence-based knowledge past from one generation to generation is the *Mukanda*.

Further, as opposed to circumcised men under modern circumcision practice going back to the hospitals and clinics after circumcision for review or treatment, under traditional practice, once men from traditional setting are taken and circumcised at hospitals or clinics, they are then, immediately taken back to the *Mukanda* Camps for further rituals or life lessons to mark their pathway to adulthood. In case of minor complications arising after circumcision among initiates, management of such complications will be done within the *Mukanda* Camps. Something to note is that, once major complications happen among the circumcised men, then the initiates in this case, are referred or taken back to hospitals and clinics for treatment. However, strict restrictions for referred men from traditional setup at health facilities apply, especially complications that require hospitalization.

The study established that, when it is virtually impossible to guard the initiates from coming into contact with the predominantly female nursing staff or female providers, then it was not possible to take initiates to the health facilities. And only when conditions were met of ensuring that circumcision in hospital or clinics would be performed only by a male provider, and treatment given by male physicians, then, an immediate referral to the hospital from the traditional cultural setting would be made. This was accompanied by the medical personnel's assurance that, traditional rules of no contact with female nurses would be upheld especially on those cases based on traditional methods that might subsequently require hospital admission due to complications. The study further established that, referral of men for circumcision and treatment from traditional setting to health facilities was common in communities near urbanized areas, but

not common under hard to reach villages in Chavuma, and such areas had traditional circumcision practice being done.

From the preceding discussion on IPC, the study deduces that the availability of measures in both practices does not guarantee hundred percent (100%) protection against HIV infections among the men, but what was key is adhering to the infection prevention and control (IPC) standards during and after circumcision to reduce the HIV risk transmission from both the male circumcision (MC) providers and the circumcised men. As observed under the traditional circumcision practice, the study's position is that, since there was no clear pattern of protection against HIV transmission regarding the measures that were put in place, and hence, the chance of contracting HIV infection probably may occur during and after circumcision compared to modern practice.

Therefore, some measures under traditional circumcision practice increase, to some extent, the vulnerability of men towards HIV infection acquisition during and after circumcision. Further, the measures or health-related interventions put in place in this discussion and, explaining the change as a result of these interventions and the outcome was the true reflection of the utilization of the health belief model theory (HBM).

Further, the study established that the government of the Republic of Zambia has put measures in place that ensured that male circumcision practice protects men against the transmission of HIV and AIDS virus. According to the 2016 VMMC Operational Plan of the Zambia National Health Policy, prevention against the transmission of HIV and AIDS virus was done through the promotion of the use of condoms, even after circumcision each time clients had sexual intercourse with their spouses. These findings by the study were in agreement with those of Chikutsa that revealed that ninety percent (90%) of the participants had heard of male circumcision (MC) for HIV prevention and radio access was significantly associated with knowledge about MC in HIV prevention.

Therefore, HBM theory assisted in understanding the change arising from these measures and interventions put in place in the Zambian health policy on HIV prevention through the voluntary

male medical circumcision program whose results to some extent had statistically significant in the reduction of the HIV transmission(outcome) among the men after circumcision.

3.8 Efficacy by circumcision type on HIV prevention

This section established the extent to which traditional and modern circumcision practices prevented the transmission of HIV in Kapiri Mposhi and Chavuma districts. And defines efficacy as the ability by a given circumcision practice to yield a negative HIV result, that is to say, the HIV status of the circumcised men after circumcision should be negative implying the absence of the HIV virus in the body.

3.8.1 HIV services at hospitals and clinics

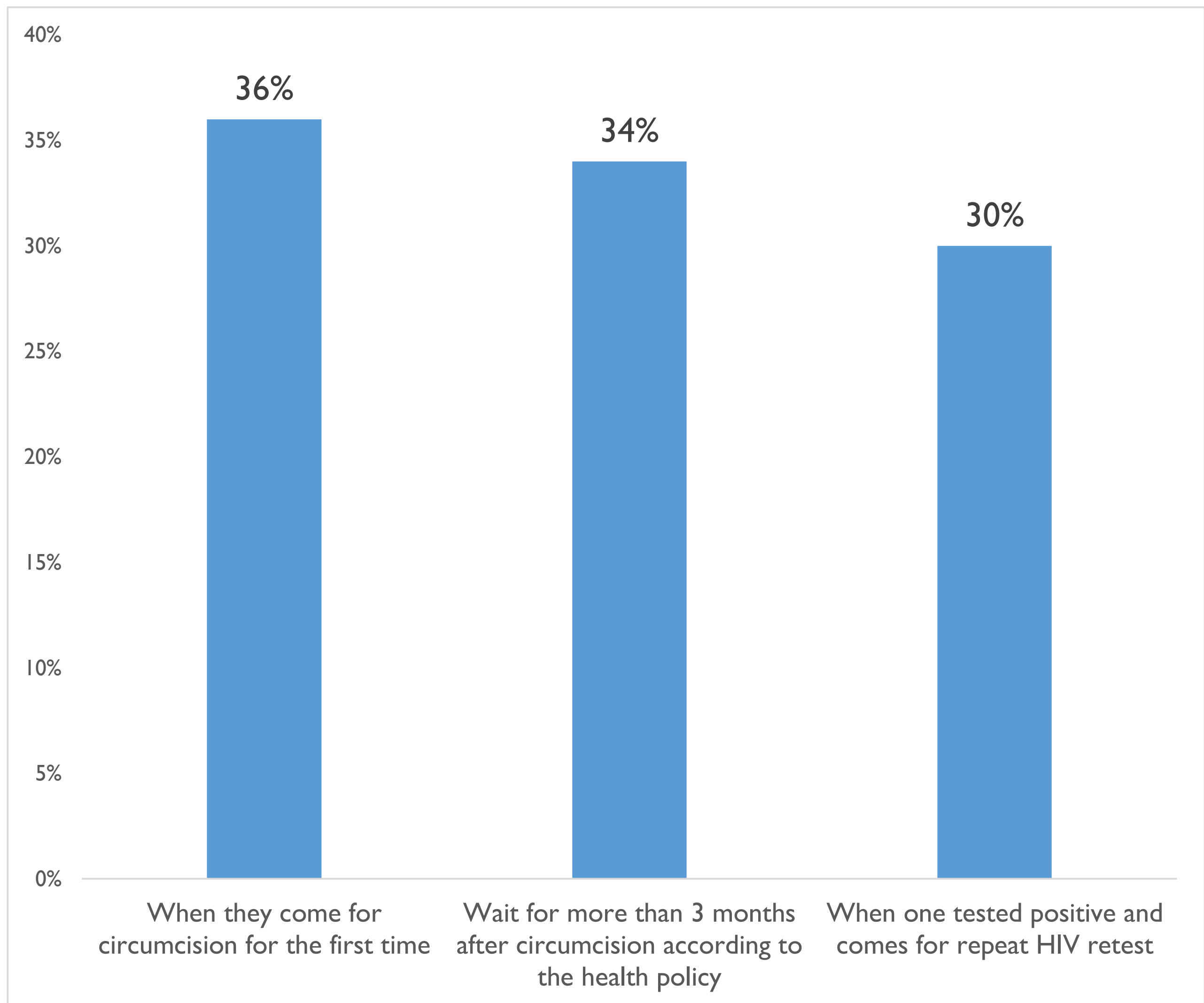
This section will discuss and measure the extent to which modern and traditional circumcision practices prevent the transmission of HIV. Further, it presents information on availability of services and documentation. Note that these might not be comparable characteristics between modern and traditional practice, but were prerequisites for the outcome variable (HIV) that was comparable between the two practices. For instance, one needed to verify the documents on the circumcised men who got tested for HIV (testing services) at the health facility and the two (testing service and documentation) assisted to compare the information generated on whether or not, circumcised men who came to test for HIV after circumcision had a track record of being circumcised under traditional or modern, and hence the outcome was determined on whether an undergone practice by circumcised men had a negative HIV outcome an indication of efficacy in the prevention of HIV transmission by that practice.

In this regard, the study demonstrated the process that assisted in knowing whether or not, modern and traditional circumcision prevented the spread of HIV infection. In this vein, the study considered the key aspects before concluding on this matter, and these were the HIV status of men during and after circumcision, it is important to indicate that the research was cognizant of the fact that views alone might not account for determining the extent to which a given practice can prevent or cannot, HIV transmission, but brought in another measure of validating

the results by the use of the actual client information that was obtained from the registers at the hospitals and clinics.

Figure 3.8.2 below depicts the health workers' information on the timing of HIV testing by circumcised men during a visit to the hospital and clinics.

Figure 3.8.2 Health workers' view on the timing of HIV testing for Clients



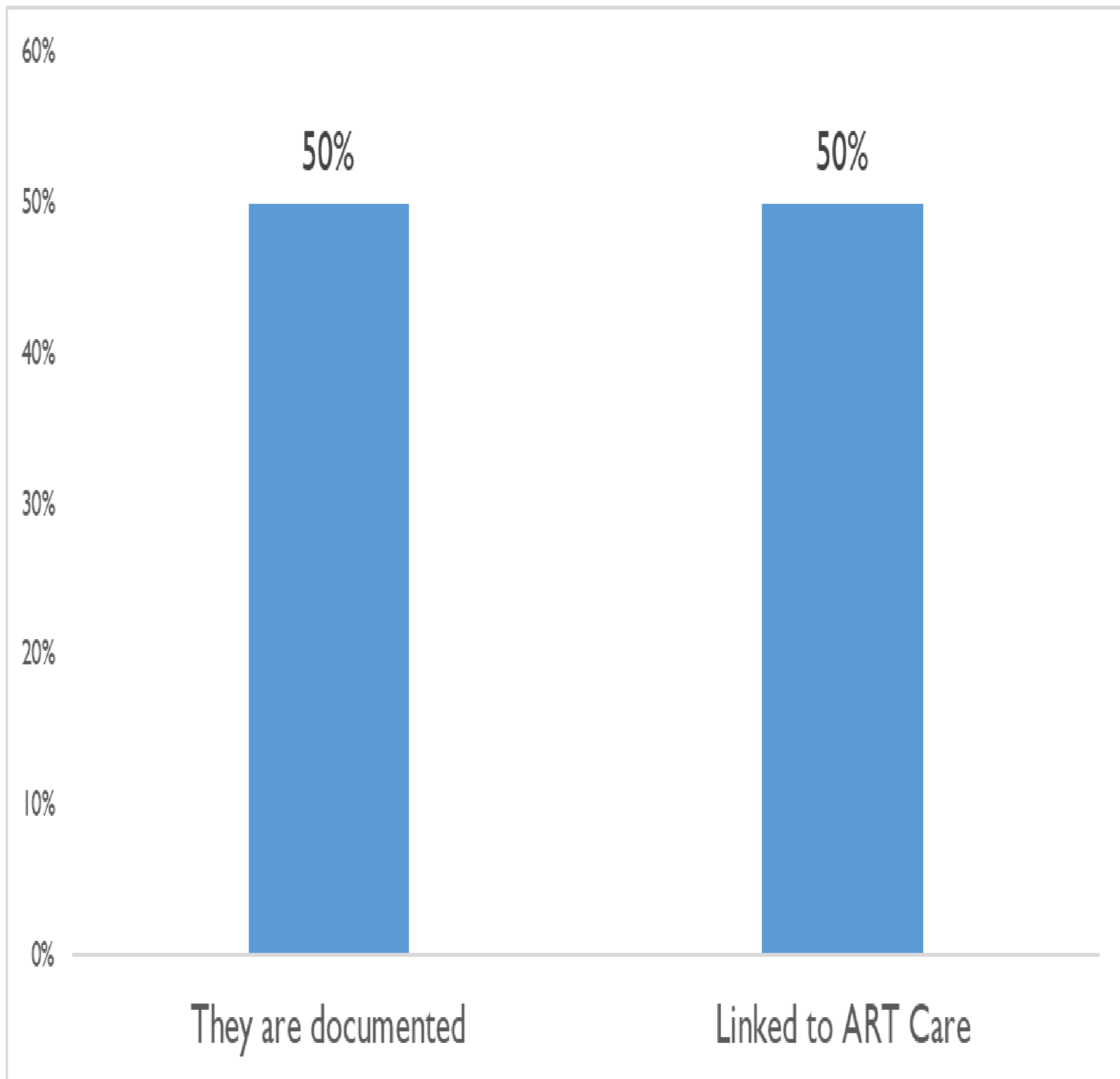
*(**Source**: Primary Data)*

Figure 3.8.2 shows that there were more health workers (36%) who reported that HIV testing was offered to men for the first time when they visit the health facilities for circumcision. Some of the health workers (34%) indicated that, circumcised men could wait for more than three (3) months after circumcision before getting tested for HIV. And those who reported that an HIV test was done when a person tested positive during the initial test and came back for an HIV repeat test at the hospital or clinic. The study results show that, there was the availability of HIV testing services for circumcised men at hospitals and clinics. The testing for HIV at the health facilities was done not only for the first time when men for circumcision, but also when a person tested positive for HIV, and comes for an HIV retest three (3) months after circumcision per the testing guidelines by the health policy of 1991. Testing for HIV was important to rule out any HIV infection in one's blood and ascertain whether or not, a given circumcision practice was yielding the desired results of HIV prevention.

The testing of HIV after three (3) months was also in accordance with the World Health Organization (2017) HIV guidelines on the requirement that all clients testing for HIV should retest after three (3) months. Further, these guidelines also indicate that if a person tests for HIV and the results are negative, they could still visit any health facility after three (3) months for another HIV test. These findings were important in this study to assess the testing interval for the circumcised men during and after circumcision, and rule out the possibilities of HIV infections in the blood. It is worth noting that even some men who got circumcised under the traditional circumcision had visited the health facilities at some point for HIV testing services.

The study further found out what was being done in accordance with the health policy concerning the clients who test positive for HIV at the hospital and clinics. And the following figure 3.8.3 shows this information.

Figure 3.8.3 Process of handling Clients with HIV Positive Results



(**Source**: *Primary Data*)

Figure 3.8.3 shows that the health workers (50%) reported that when clients test positive for HIV, their HIV test results were documented and another group (50%) reported that the clients testing positive for HIV were linked to Anti-retroviral therapy (ART) treatment. The results were similar to those of the circumcised men under the modern practice that indicated that they were aware that those who tested positive for HIV were put on ART treatment. These findings show

that there was HIV testing capacity in the hospitals and clinics coupled with documentation of HIV test results for the clinics during circumcision visits by the clients. The study findings indicated that clients who tested HIV positive were given a referral slip and referred for ART services where they would be put on ARV drugs to suppress the HIV. This was in line with and supported by the 2012 report by *Uganda AIDS Commission.* This report documented that, Uganda announced a Safe Male Circumcision (SMC) Policy in 2010.

The report further documents that, an estimate was derived assuming that Uganda would scale up antiretroviral therapy (ART) coverage according to the 90-90-90 HIV treatment goals during this period. The 90-90-90 goals, advanced by UNAIDS, are an ambitious plan to control the HIV epidemic worldwide. By 2020, they called for 90 percent of people living with HIV to be diagnosed, 90 percent of those diagnosed to be on ART, and 90 percent of those on ART to be virally suppressed.

3.8.2 Documentation related to HIV and circumcision

This section focused on the type of documentation used during and after circumcision. It was important in this study to understand how to track progress on the health policy in line with knowing the HIV status of the circumcised men after circumcision. This meant knowing their HIV status during and after circumcision. And the only way to validate this was to gather information about the circumcised men and hence documentation became key to help in establishing the extent to which a given circumcision practice prevented the spread of HIV transmission.

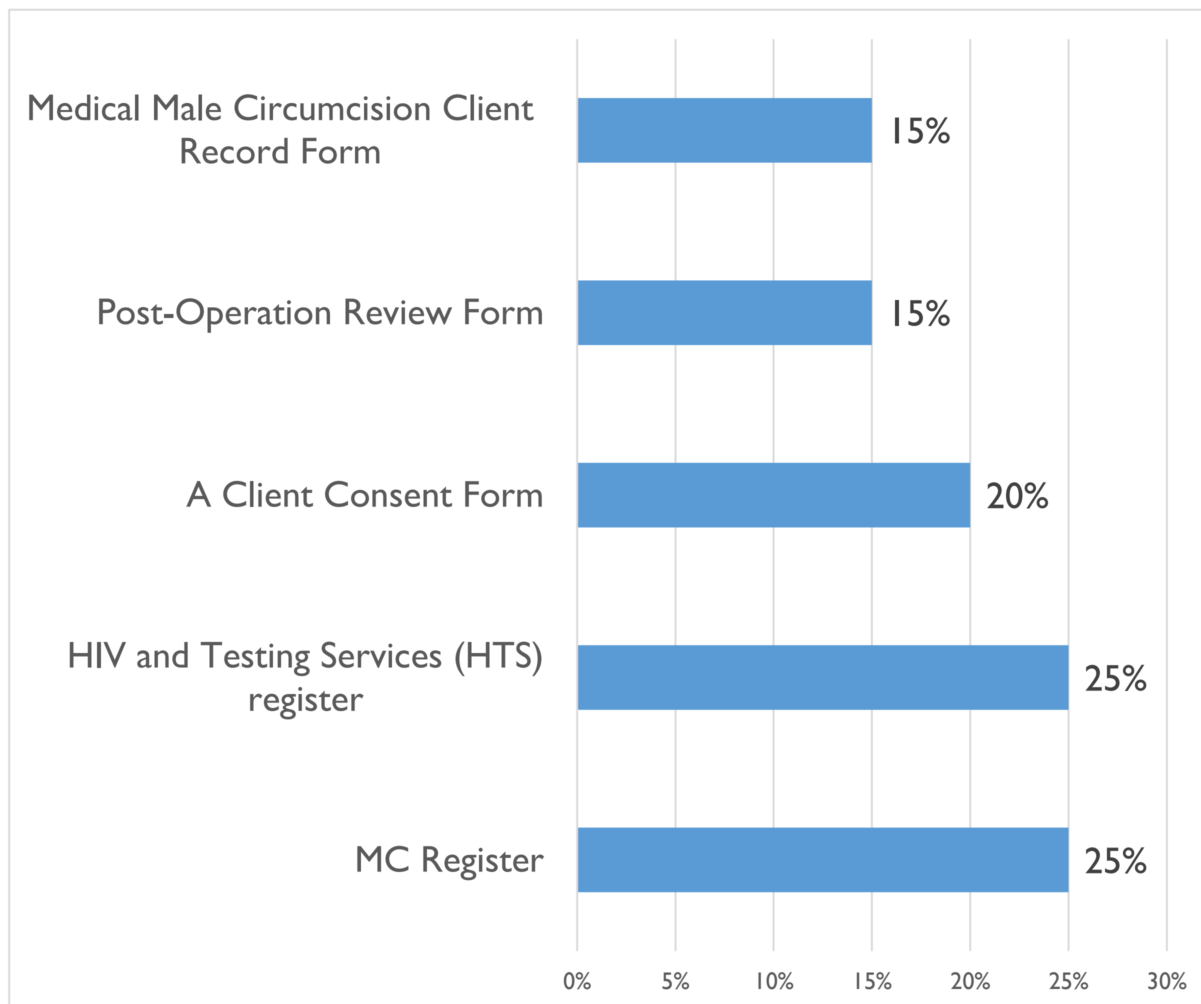
In this vein, the study explored the type of documentation that was found at the hospitals and clinics where the men visited for circumcision services. It is important to note circumcision services were the package that included HIV testing, treatment, administration of anesthesia or drugs during and after circumcision to mention a few, and hence the need for documentation. There may be a variety of scholarly definitions of the term, documentation. In this study, however, documentation was defined as the act of recording information in writing about an

event. In this case, an event in the study was referred to as be circumcision procedure or even HIV testing results for a circumcised client. This was known as a phenomenon under investigation based on either modern or traditional practice.

Documentation of any event related to circumcision regardless of the practice was important in all spheres of circumcision services that were provided at the health facilities. In terms of VMMC program performance, documentation becomes important in tracking program performance, and in this case, a modern circumcision practice and to some extent traditional practice. This assisted to determine whether or not, the health policy through the male circumcision program was achieving its objective of bringing an end to the HIV pandemic. For instance, if circumcision clients tend to have complications and/or complaints during and after circumcision, then documentation becomes key in the provision of such information for purposes of patient management at the health facility.

Therefore, to ensure an effective health delivery system that is responsive to the clients, it becomes vital to put in place mechanisms ranging from documentation and reporting of complicated cases for the higher level of care where clients can seek treatment. Hence, this section tries to establish whether or not documentation during the modern circumcision practice was being done. The documentation by type is discussed below.

Figure 3.8.4 Circumcision and HIV documentation



(***Source***: *Primary Data*)

Figure 3.8.4 shows twenty-five percent (25%) of the health workers reported that male circumcision (MC) registers were available to record details of the circumcised men at the hospitals and clinics. Another twenty-five percent (25%) of them reported that during and after circumcision, men who came for HIV testing services were documented in the HIV and Testing services (HTS) registers. Those who indicated that client consent forms (CCFs) were available at the hospitals and clinics during and after circumcision were twenty percent (20%).

Fifteen percent (15%) of the health workers mentioned that post-operation review forms were used to record details of clients after circumcision. And another fifteen percent (15%) indicated

that medical male circumcision client forms were available and used to capture information for clients at the health facilities.

Figure 3.3.4 shows the capacity of the hospital and clinics in data collection tools for circumcised men during and after circumcision. Therefore, it was established that male circumcision registers, post-operation review forms, HTS registers, medical male circumcision client record forms, and clients consent forms were available in hospitals and clinics and not under traditional practice. These types of tools had a significant bearing on the circumcision especially after men got circumcised. For example, the study reviewed the progress made by the health policy (modern circumcision program) using the HTS registers and determined the HIV status of the circumcised men during and after circumcision.

By reviewing the available documentation in HTS and MC registers, the researcher came up with the conclusion as to whether or not circumcision under modern circumcision prevented HIV transmission compared to the traditional practice. Further, though not part of the study scope especially since this form was used during circumcision as opposed to after circumcision. For instance, the study found out that, before a procedure was performed, a client was to undergo HIV and circumcision counseling, and consent for the procedure using the consent forms was to be granted. The consent forms applied to both the children and adults eligible for circumcision. And if a client was willing to be circumcised and get tested for HIV, then a consent form would be signed to authorize the male circumcision (MC) providers to carry out the HIV test and circumcision procedure. In an event where the client declined, no HIV test and circumcision procedure was carried out.

Therefore, the modern circumcision practice involved many different types of data collection tools to track the health status of the clients and some forms that involved the right to consent during and after circumcision. Though circumcision registers with names of the initiates who underwent circumcision were reported by the circumcisers but not physically seen and provided during the study and hence, this led to the conclusion that there was no documentation under traditional practice. In line with this, documentation, therefore, becomes key in the circumcision process at hospitals and clinics in Zambia. And this was also stressed as vital by the American Academy of Pediatrics Report of 1999. This report indicated that an estimated sixty-one percent

(61%) of male newborns were recorded as being circumcised on hospital discharge sheets. But the true figure could be higher than this because circumcision was not routinely documented on the hospital discharge sheet, and post-neonatal circumcisions for religious or medical reasons were not captured.

As from the preceding discussions, the study established the following type of documentation used and their information related to circumcision at the hospitals and clinics.

Figure 3.8.5 Medical Client Record Form

Medical Male Circumcision Client Record Form

Province: .... District: ....

Facility Name: ....

Tick applicable ☐ Outreach ☐ Static

(A) CLIENT INFORMATION

1. MC Number ☐

Registration

2. Registration Date: ___/___/______
3. Last Name: ....
4. First Name: ....
5. Date of Birth: ___/___/______ **6. Age (Mo./Yrs)** ☐
7. NRC/Passport: __________/___/___
8. Phone Number: ....
9. Next of Kin/Phone: ....
10. Tribe: ....
11. Religion ☐ Christian ☐ Islam ☐ Other

If Other, specify: ....

Address

12. House / Plot No: ....
13. Street: ....
14. Township: ....
15. If Rural, Village: ....
16. Chief: ....

17. Marital Status

☐ Single ☐ Divorced ☐ Married ☐ Widower ☐ N/A

18. Primary reasons for seeking circumcision services

☐ Partial HIV Prevention ☐ Religious ☐ Medical Problem
☐ Sexual Enhancement ☐ Hygiene ☐ Cultural

If Other, specify: ....

19. How did you know about MC service?

☐ Friend / Family ☐ Radio / TV
☐ Partner / Spouse ☐ Community Mobilizer
☐ PA System ☐ Community Meeting
☐ Social Media ☐ Health Facility
☐ Poster/Leaflet/Newspaper Other: ....

(B) HTS and MMC Procedure Informed Consent

(completed by Client or Guardian if client is less than 16 years)

I ....(Name of Consenter) agree to have an **HIV Test and Medical Male Circumcision** (Circle Appropriate) performed on **My self / My Son / Dependant** (Circle Appropriate) by the provider .... and the assistant(s) of his/her choice. I understand that he/she will use additional surgery, investigation or treatment during the course of the procedure if he/she believes it is necessary. I understand that Male Circumcision is a surgical procedure and with any medical or surgical procedure there are risks involved. The procedure and its possible outcomes including complications have been fully explained and discussed with me.

.... Signature or Thumbprint of Client / Parent / Guardian   __/__/____ Date   .... Signature of MC Provider / Counselor

20. HIV Status (with evidence)

☐ Positive ☐ Negative ☐ Unknown ☐ HIV Exposed Infant

21. Services offered

☐ Counseling
☐ HIV Testing
☐ Post test counselling

22. HIV Test Result (if tested)

☐ Positive
☐ Negative
☐ Indeterminate

(C) History / Physical Examination (by Provider)

1. Does client or family member have history of the following?

☐ Diabetes ☐ Hypertension
☐ Sickle cell ☐ Bleeding Nose/Mouth/Haemophilia

Other, specify: ....

2. Has client had any surgical operations in the past?

☐ Yes ☐ No

If Yes, Specify: ....

Any complications: ....

3. Is Client currently taking any medication?

☐ Yes ☐ No

If Yes, Specify: ....

4. Is Client allergic to any medications?

☐ Yes ☐ No

If Yes, Specify: ....

5. Has Client had any of the following symptoms in the last 3 months?

	Yes	No
Penile Discharge	☐	☐
Genital sore (Ulcer)	☐	☐
Swelling of the scrotum	☐	☐
Pain on urination	☐	☐
Difficulty in retracting foreskin	☐	☐
Frequent Urination	☐	☐

If Other, Specify: ....

6. Was Client treated for any STIs in the last 3 months?

☐ Yes ☐ No

7. General Examination

	Yes	No
Pallor	☐	☐
Jaundice	☐	☐
Febrile	☐	☐

8. Vital Signs:

Pulse Rate (beats/min) ☐ Temperature ☐
Weight (Kg) ☐ BP (Systolic/Diastolic) ☐/☐

9. Genital Examination:

	Normal	Abnormal
Scrotum	☐	☐
Inguinal Lymph Nodes	☐	☐
Penis	☐	☐

If penis is abnormal, Tick appropriate condition

☐ Phimosis ☐ Paraphimosis ☐ Discharge
☐ Genital warts ☐ Hypospadiasis ☐ Epispadiasis
☐ Genital Ulcer Disease

Other, please specify: ....

10. Is Client Eligible for MMC? ☐ Yes ☐ No

Reason if not eligible: ....

Treatment Plan

11. Treatment Notes: ....

Referral details (if referred)

12. Referred to: ....
13. Reasons for Referral

☐ Penile Abnormalities ☐ STI Treatment
☐ HIV Care Other: ....

***(Source**: Primary Data)*

The study found out that, the health workers were utilizing this male circumcision medical form as per the preceding figure. The form had three (3) sections with important parameters such as:

1. Client information

- This included male circumcision (MC) number, registration date, full names, contact number, next of kin, religion, address, the primary reason for seeking circumcision, and how the client came to know about MC services.

2. HIV Testing Services (HTS)

- This included a section where one needed to consent as to whether to undergo the HIV test or not before and after circumcision, HIV test results, HIV Status and Services offered.

3. History/Physical examinations

- This included general examinations done as to whether the client had other ailments like diabetes, sickle cell, hypertension, currently seeking treatment or not, if the client was allergic to any form of medications if the client was tested for HIV, STIs in the past six (6) months, Vital signs (pulse, temperature, BP, weight), Genital examinations (scrotum, check whether the penis was abnormal or not), eligibility of a client to undergo male circumcision and reason why if not eligible, treatment plan, and referral notes to a higher level of treatment.

These findings by the study indicated that modern circumcision practice, as per above figure 3.3.5, had a well-documented form ranging from client information, HTS, and Physical history and/or examination.

In the study, in the next section, a form called the Post-Operation Review Form was available and had the following sections:

1. Operation notes

- This included the MC provider's name, signature, assistant, and any complications during surgery.

2. Post–Operation Review

- Included date of review, current complaints, adverse reactions, type of adverse reactions, further treatment, and clinical notes.

The study also found out that, this kind of form was only completed by the VMMC providers, while the Client Medical MC Form was filled in by both the provider and the client.

Figure 3.8.6 Post-Operation Review Form

D Operation Notes (completed by MMC Provider)

1. Date: __/__/____
2. MC Provider: ....
3. Signature: ....
4. Assistant: ....
5. Circumcision Performed ☐ Yes ☐ No
6. Start Time: ____:____
7. End Time: ____:____
8. Skin Preparation:
☐ Povidone Iodine Other: ....
9. Local Anaesthesia:
Type:
☐ Lignocaine ☐ 1% ☐ 2%
Amount: ☐ ml
10. Type of Procedure
☐ Dorsal Slit
☐ Device: Specify..........
Other: Specify ....
11. Suture
☐ 3.0 Chromic Catgut ☐ 3.0 Vicryl
Other, Specify: ....
12. Paracetamol
Amount: ☐ mg
13. Any Complications during surgery
☐ None ☐ Yes
If Yes Tick and Complete Adverse Events Section

	Moderate	Severe
a. Pain	☐	☐
b. Excessive bleeding	☐	☐
c. Anaesthetic related event	☐	☐
d. Excessive skin removed	☐	☐
e. Damage to the penis	☐	☐
f. Other:		

E POST-OP REVIEW (completed by MC Provider)

	0 - 2 days Review		3 - 7 days Review		1 - 6 weeks Review	
MC Provider/Reviewer Name:	....		....		....	
Date of Review:	__/__/____		__/__/____		__/__/____	
Current Complaints	Fever ☐ Bleeding ☐ Swelling ☐ Pus ☐	Pain on wound ☐ Pain passing urine ☐ Gaping wound ☐ Other ☐	Fever ☐ Bleeding ☐ Swelling ☐ Pus ☐	Pain on wound ☐ Pain passing urine ☐ Gaping wound ☐ Other ☐	Fever ☐ Bleeding ☐ Swelling ☐ Pus ☐	Pain on wound ☐ Pain passing urine ☐ Gaping wound ☐ Other ☐
If Other, specify:	....		....		....	
Any Adverse events	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐
If yes, please Tick the appropriate level of severity below						
Type of AE	Moderate	Severe	Moderate	Severe	Moderate	Severe
a. Anaesthetic related event	☐	☐	■	■	■	■
b. Excessive Bleeding	☐	☐	☐	☐	■	■
c. Insufficient skin removed	☐	☐	☐	☐	☐	☐
d. Damage or injury to penis	☐	☐	☐	☐	■	■
e. Pain	☐	☐	☐	☐	■	■
f. Swelling or Hematoma	☐	☐	☐	☐	■	■
g. Infection	☐	☐	☐	☐	☐	☐
h. Excessive skin removed	☐	☐	☐	☐	☐	☐
i. Delayed wound healing	☐	☐	☐	☐	☐	☐
j. Wound dehiscence	☐	☐	☐	☐	■	■
k. Difficulty Urinating	☐	☐	☐	☐	■	■
l. Torsion of penis	☐	☐	■	■	☐	☐
m. Erectile dysfunction	■	■	■	■	☐	☐
n. Psycho-behavioral issues	■	■	■	■	☐	☐
Treatment and other Clinical Notes	....		....		....	

*(**Source**: Primary Data)*

Figure 3.8.7 Male Circumcision Register

MINISTRY OF HEALTH

MC REGISTER

Year:________________

From(Month):________________ to(Month):________________

District________________ Health Facility:________________

Register No.:________________

Ministry of Health

Male Circumcision Register
HIR. ______

Date	MC No.	Ref. No.	Name	Age Distribution													HIV Testing Services				Procedure			Providers Name	Assistant's Name	Circumcision Events						Referred		Remarks
				Months		Years											HEI	Tested for HIV (Y/N)	Recency Testing (Y/N/NA)	Referred for ART	MC Procedure	Type of Anaesthesia	Start-time			During	Post	Review Timing						
	(from card)	(If any)	Address/Phone #	Below 2 Months	2 -11	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+	(Y/N)	Test Results(P/N/ND/KP)	Recent Infection (LT,RI)	(Y/N/NA)	(DS/DV/OT)	(GA/LA)	End - time	Title	Title	(1=Mod, 2=Sev)	(1=Mod, 2=Sev)					from	to	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)	(y)	(z)	(aa)	(ab)	(ac)				(ad)	(ae)	(af)

	Below 2 Months	2 -11	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+	HIV Test Results: Pos	Neg	KP	ND	MC Procedures: D.Slit	Device	Other	AEs During: Moderate	Severe	AEs Post: Moderate	Severe	No. of Clients coming for review
Total this Page																									
Total this Month																									
DE Code	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

September 2020

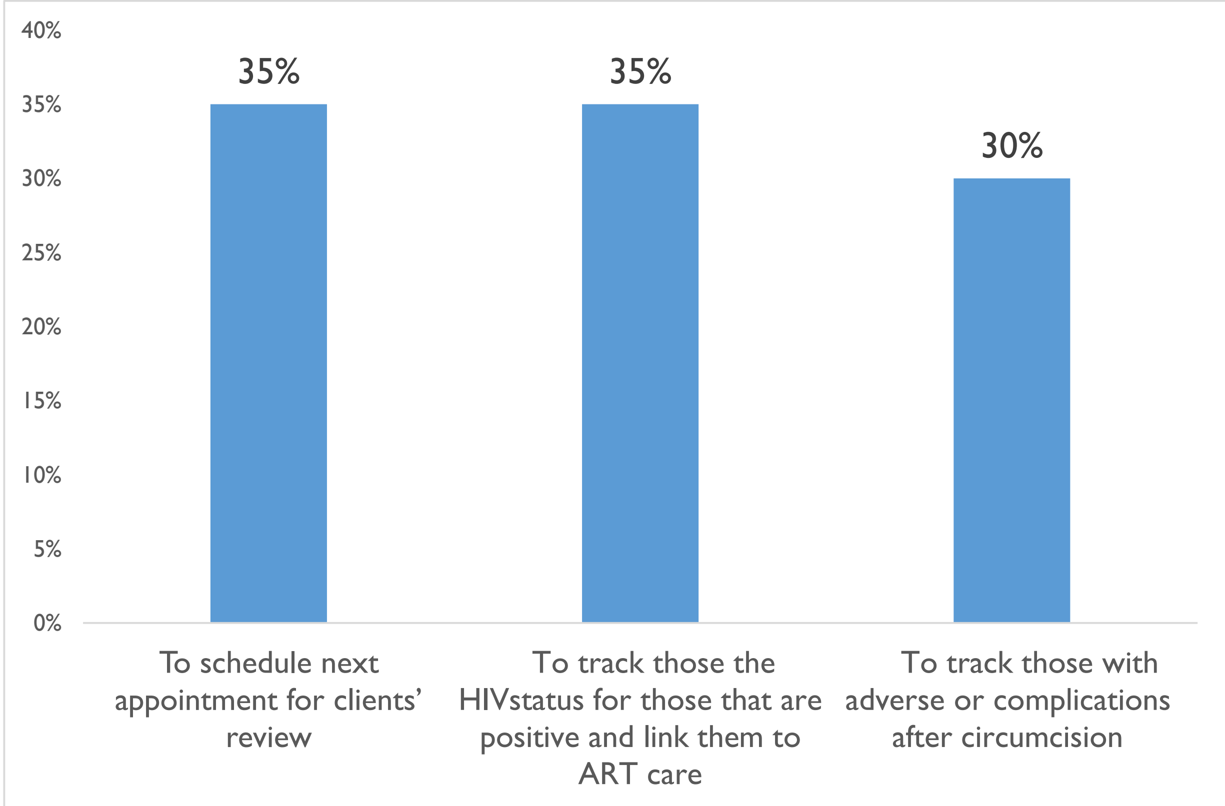
***(Source**: Primary Data)* (Version, September 2020)

As indicated in figure above, the male circumcision (MC) register was widely used in Zambia as a data collection tool in most health facilities. This register was found to be used in clinics or

hospitals either at static or outreach. It was used to aggregate information relating to male circumcision services offered at a health facility. This register was very important according to the study as it contained information about appointments, procedures done during and after circumcision, addresses, reviews, and adverse reactions, to mention, but a few.

Therefore, from the above data collection tools used in health facilities, the study revealed that forms used in health facilities conformed to the World Health Organization standards that were acceptable globally, while under the traditional practice of circumcision, these data collection tools were not available. This gap in data collections tools under traditional practice provides an opportunity for the government to invest in the procurement of tools useful to track all circumcised men after circumcision at the *Mukanda* ceremony. As preceded above, the health workers stressed the importance of documenting circumcision and HIV-related information and figure 3.3.8 depicts this information.

Figure 3.8.8 Importance of Circumcision and HIV documentation



(***Source***: *Primary Data*)

Figure 3.8.8 shows that thirty-five percent (35%) of the health workers reported that documentation was important for recording schedules for the next appointment for review of clients, while another group (35%) revealed that the documents at the hospital and clinics were used to track circumcised men with HIV positive status and linking them to ART care. And only thirty percent (30%) of them indicated that documentation was used for tracking clients with adverse complications after circumcision.

The importance of documentation cannot be overemphasized as earlier discussed, however, what came out of this study is that documentation was useful in not only knowing whether or not, a man after circumcision; had complications arising from circumcision, contracted HIV infections, and the linkage to ART care, especially for those that test positive for HIV during and after circumcision at the hospital and clinics.

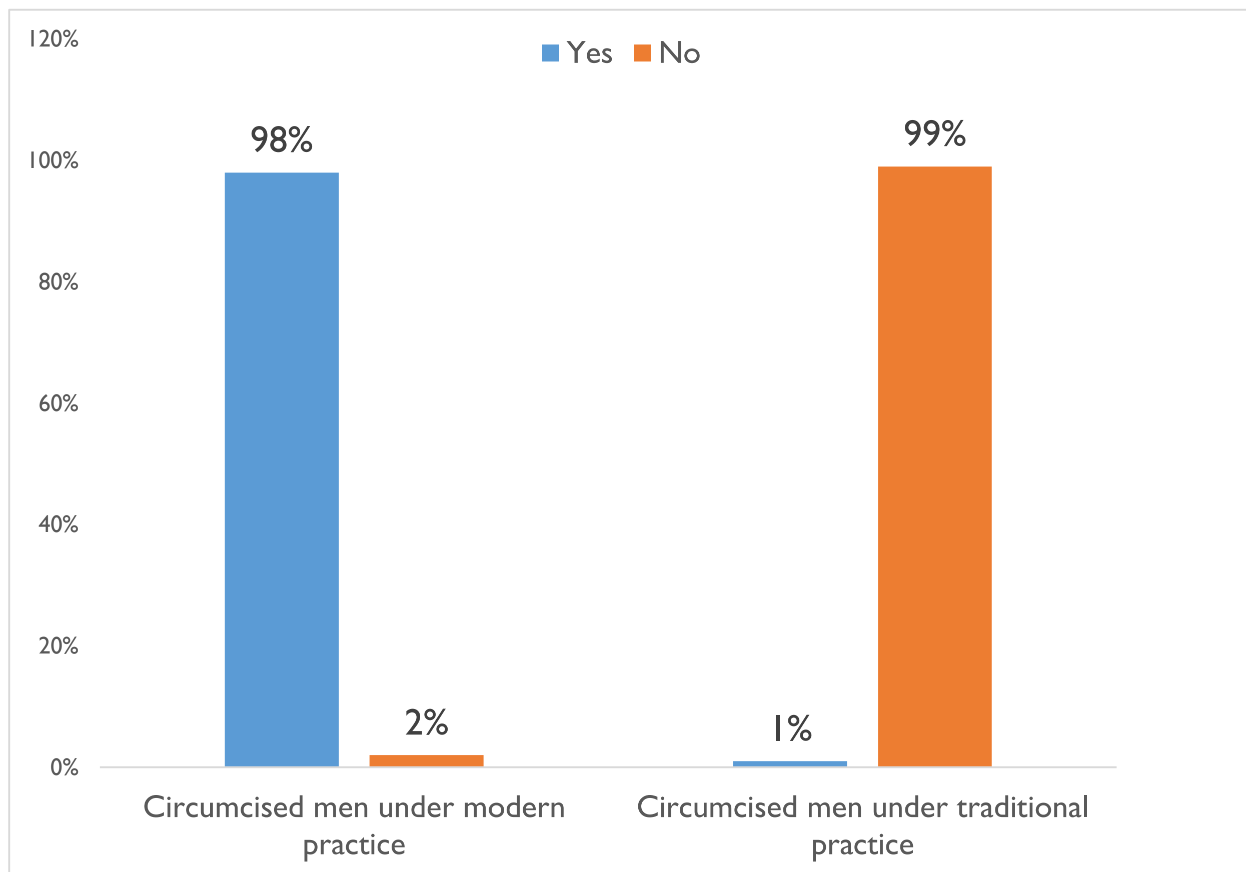
3.8.3 Efficacy of modern and traditional circumcision practices on HIV prevention

This section established the extent to which traditional and modern circumcision practices prevented the transmission of HIV in Kapiri Mposhi and Chavuma districts. As from the preceding discussions, efficacy is defined as the ability by a given circumcision practice to yield a negative HIV result, that is to say, the HIV status of the circumcised men after circumcision should be negative implying the absence of the HIV virus in the body. And to ascertain this, the study measured this efficacy in HIV prevention by circumcision type. This was done by comparing the extent or effectiveness by which modern and traditional circumcision practice prevented or not, the transmission of HIV in Chavuma and Kapiri Mposhi districts.

As from the preceding discussion, even though the health workers and traditional circumcisers reported that there were possibilities of contracting HIV infections after circumcision, contrary when asked if at all they were aware of situations when men who tested HIV negative first time and later went back to the hospital or clinic after circumcision and end up testing positive for HIV, the respondents reported that even when they had a view that someone could get HIV through various routes as earlier discussed, they were not aware of any man who got circumcised and tested positive for HIV after circumcision.

Further, the respondents indicated that they had not heard any reports associated with men who ended up getting HIV after circumcision in the communities. These results were similar to those of the community members and traditional leadership in the study. Therefore, based on these findings, the study deduces that there was no prevalence of HIV among circumcised men in Kapiri Mposhi and Chavuma districts. This meant that when men after circumcision get back to the health facilities for a retest in HIV, their test results remained negative for HIV an indication of the efficacy of the circumcision program. Based on the preceding discussion, the study explored the views of the beneficiaries of circumcision to ascertain the validity of the discussed findings on whether or not, circumcision prevented the circumcised men from acquiring HIV infections. The following section presents this information on the outcome of the circumcised men with regards to their HIV status. The circumcised men were asked as to whether or not, they had engaged in unprotected sex after circumcision, the findings show that everyone regardless of the circumcision practice they underwent had agreed of having engaged in sexual activities without protection after circumcision. In terms of going to the health facility during circumcision for the HIV test, some circumcised men indicated that they had visited the facility, and figure 3.8.9 shows the information.

Figure 3.8.9 Circumcised men's HIV test during the initial visit at the health facilities



*(**Source**: Primary Data)*

Figure 3.8.9 shows that during the first visit to the health facility by men, the highest number of circumcised men (98%) under the modern practice had received an HIV test, and the lowest (2%) knew their HIV status since they had a valid HIV test prior circumcision. And when interrogated further on what their HIV status was, the circumcised men indicated that they had negative results. The study also presents interesting findings under traditional practice in figure 3.8.9 The majority of the circumcised men (99%) reported that they were not tested for HIV at the *Mukanda* rite, and only one percent (1%) reported that they were tested at the health facility before getting circumcised under traditional practice. This meant that, only a few (1%) knew their negative HIV status before attending circumcision at the rite.

The findings clearly show that the provision of HIV test services remains a priority in Zambia. This means that HIV tests at the hospitals and clinics were not primarily for the circumcised men under modern practice but even for those (1%) circumcised under traditional circumcision practice. And this presents an opportunity for the government and partners to prioritize investment in HIV test provision not only in the modern practice but also in traditional circumcision practice.

These results also show that there is no limitation in terms of boundaries of health services (circumcision services such as HIV) accessibility according to the Zambian health policy of 1991. And lastly, the negative HIV results provided the study baseline for comparison between modern and traditional circumcision practices on the extent to which they prevented HIV transmission. In other words, the initial HIV results would be compared to those of the circumcised men during the follow-up HIV test at the hospitals and clinics.

Under the modern circumcision practice, it was a requirement that the circumcised men went back to the hospital and clinic after three (3) months for an HIV test. The HIV results in this case was based on what participants responded during the study, and validation on some few sampled participants were done using hospital and clinics information that was available in registers at Out of patient and laboratory departments. In this study, most of the respondents that made a follow up visit for an HIV test were associated with a negative HIV outcome. While. Another group circumcised men under traditional circumcision practice also indicated that they had visited the facility for a subsequent HIV test and a negative HIV result. These results show that circumcised men from both practices adhered to the WHO (2017) testing guidelines of three (3) months after the first time they had circumcision. Further, there was no clear pattern of HIV-positive results across both practices, and therefore, the study deduced that there is less chance that someone after circumcision could get infected with HIV. However, on the other hand, the study also established that, since most of the circumcised men with negative HIV test results under traditional practices translates into the effectiveness of the traditional circumcision practice in the prevention of HIV transmission. However, it was generally difficult to make conclusive inferences as to whether or not, circumcised men under traditional practice had reduced chances

of acquiring HIV since only a few came back for an HIV test at the facility and yet others did not come implying that those who did not come had unknown HIV status.

In line with these findings, Table 3.8.1 below shows the information about circumcision, HIV tests during the first and follow-up visits, and the outcome of the HIV tests during these visits. It is important to note that HIV infection status was obtained from results of HIV antibody testing documented in the medical records for each visit made by the circumcised man and the same HIV results were verified in the HIV testing and services (HTS) to validate the results and ascertain that the right person had the right HIV results useful for analysis and interpretation in the study. For the circumcised men with known or unknown HIV exposure such as those who had unprotected sexual contact, the researcher defined case visits as those for which a negative and positive HIV test result was valid and documented according to the standard testing algorithm.

Male circumcision HIV status was based on an assessment by a clinician and was systematically documented from the physical examination reported in the patient's medical record and registers. Similarly, clinicians marked a designated box on the visit record to indicate circumcised status. For this analysis, visits for which this box was marked were presumed to be from circumcised men, and visits for which it was not marked were presumed to be from uncircumcised men. This process assisted to isolate the circumcised and non-circumcised who came to the facility for an HIV test.

Characteristics of HIV status (negative test results) at the initial visit versus the HIV status during the follow-up visits of the circumcised men were compared separately. Patient visits were excluded if HIV testing was not performed during the visit, typically because the patient reported having recently been tested or refused to test. Visits were also excluded if any of the following were documented, circumcised men with known and unknown HIV status.

Table 3.8.1 First and follow-up HIV test by circumcised men at Kapiri Urban clinic

Male Circumcision (MC) Register									
S/N	**Details**	**2019**				**2020**			
		15-19 years	**20-24 years**	**25-29 years**	**30-49 years**	**15-19 years**	**20-24 years**	**25-29 years**	**30-49 years**
1	Number of men circumcised	187	178	102	89	207	243	192	56
2	Number of men tested for HIV at first visit	187	178	102	86	207	243	192	50
3	Number tested Positive for HIV at first visit	2	5	0	1	8	7	4	1
4	Number tested Negative for HIV at first visit	185	173	102	85	199	236	188	49
5	HIV testing rate (%)	100	100	100	97	100	100	100	89
6	Number referred for Antiretroviral therapy (ART)	2	5	0	1	8	7	4	1
HIV and Testing (HTS) Register									
7	Number of circumcised men who tested for HIV at follow up visit	185	173	102	85	199	236	188	49
8	Number of circumcised men who tested positive for HIV at follow up visit	0	0	0	0	0	0	0	0
9	Positive Rate after circumcision(%)	0	0	0	0	0	0	0	0
10	Number of men whose results were STI positive at follow up visit and tested HIV positive	0	0	0	0	0	0	0	0
11	Number of circumcised men referred for HIV care and treatment	0	0	0	0	0	0	0	0

(**Source:** *Kapiri Urban Registers, 2019-2020*)

Table 3.8.1 shows that out of the total one hundred and eight-seven (187) circumcised men at the clinic between the ages of 15 and 19 years, the clinic recorded a hundred percent (100%) HIV testing rate when everyone was tested during the initial visit in 2019. Even though HIV positives (2) were recorded for the same age category, only negative results (185) were a priority of this

study as a baseline for comparison with the follow-up visits. The same negative (185) clients were further tested at follow-up visits and the results show that there was no circumcised person who tested positive for HIV. Table 3.1.0 further shows that circumcised men in the age group 20 to 24 years, one hundred and seventy-eight (178) were tested during the initial visit to the clinic, and five (5) tested positive for HIV in 2019. However, during the follow-up visit, one hundred and seventy-three (173) were tested and no one tested positive for HIV.

The age groups between 25 and 29 years had one hundred and two (102) circumcised men tested for HIV during the initial visit, and no one tested positive for HIV. The same number was tested at the follow-up visit and no one tested positive for HIV. For 30 to 49 years, eighty-nine (89) circumcised men were tested, and one tested positive for HIV during the first visit. The picture however changed when eighty-five (85) circumcised men tested for HIV, out of this number, no one tested positive for HIV during the subsequent visit to the clinic. The HIV testing rate remained constant at a hundred percent (100%) with an exception of the age group 30-49 years recorded at ninety-seven percent (97%). And all the positive clients were linked to ART care.

For the year 2020, table 3.1.0 presents that the highest number of circumcised men (243) who got tested was in the age group of 20 to 24 years. Out of these (243), seven (7) tested positive for HIV during the initial visit. Further, two hundred and thirty-six (236) were tested at a follow-up visit at the clinic and no one tested positive for HIV. The age 15-19 years' category recorded two hundred and seven (207) of the circumcised men who tested for HIV and no one tested positive for HIV. Those ages between 25 and 29 years, one hundred and ninety-two (192) of the circumcised men tested for HIV during the first visit, and only four (4) men tested positive for HIV. And during the follow-up visits, one hundred and eighty-eight (188) circumcised men were tested for HIV and no one had tested positive for HIV. The lowest group (50) was between the ages of 30 and 49 years who tested during the first visit and only one (1) tested positive for HIV. However, forty-nine (49) of the circumcised men were tested at follow-up and no man tested positive for HIV. It is important to note that all those who tested positive at the first visit were also linked and put on antiretroviral therapy (ART) treatment at the clinic. There was a constant pattern of a hundred percent (100%) testing rate in 2020 with an exception of eighty-nine percent (89) in the category of 30 and 49 years.

Therefore, in both 2019 and 2020 performance, the HIV-positive rate remained at zero (0) after circumcision at the clinic. What this meant is that no man tested positive for HIV after circumcision compared to the first visit to the clinic. The HIV testing rate across the two years remained constant of course with an exception of 30 to 49 years (97%) in 2019 and eighty-nine percent (89%) same group in 2020. These findings were consistent with those of the respondents discussed in the preceding sections. Table 3.8.1 confirms that there was no prevalence of HIV infections after circumcision, this finding though derived from modern circumcision practice, this pattern of zero (0) positive rate was also similar to those circumcised men under traditional circumcision practice who visited clinics and tested negative after follow-up visit.

From preceding discussion, even though one would argue that the number of those who tested negative for HIV from traditional setting was negligible in determining whether or not, a circumcision performed under traditional practice prevented the spread of HIV infection, what was important is that, the negative HIV results among the circumcised men were significant to this study. The significance in this context was based on the Zambian health policy objective of HIV prevention whereby under the circumcision program, it is envisaged that once men get circumcised, then, there should be no or zero (0) infections. Therefore, this study based on having no man testing positive for HIV after circumcision, and as validated by the client level statistics obtained physically from Kapiri urban, the study concludes that there was no likelihood of acquiring HIV infection after circumcision from both traditional and modern practice.

3.8.4 Comparison by circumcision type on risk associated with HIV infection

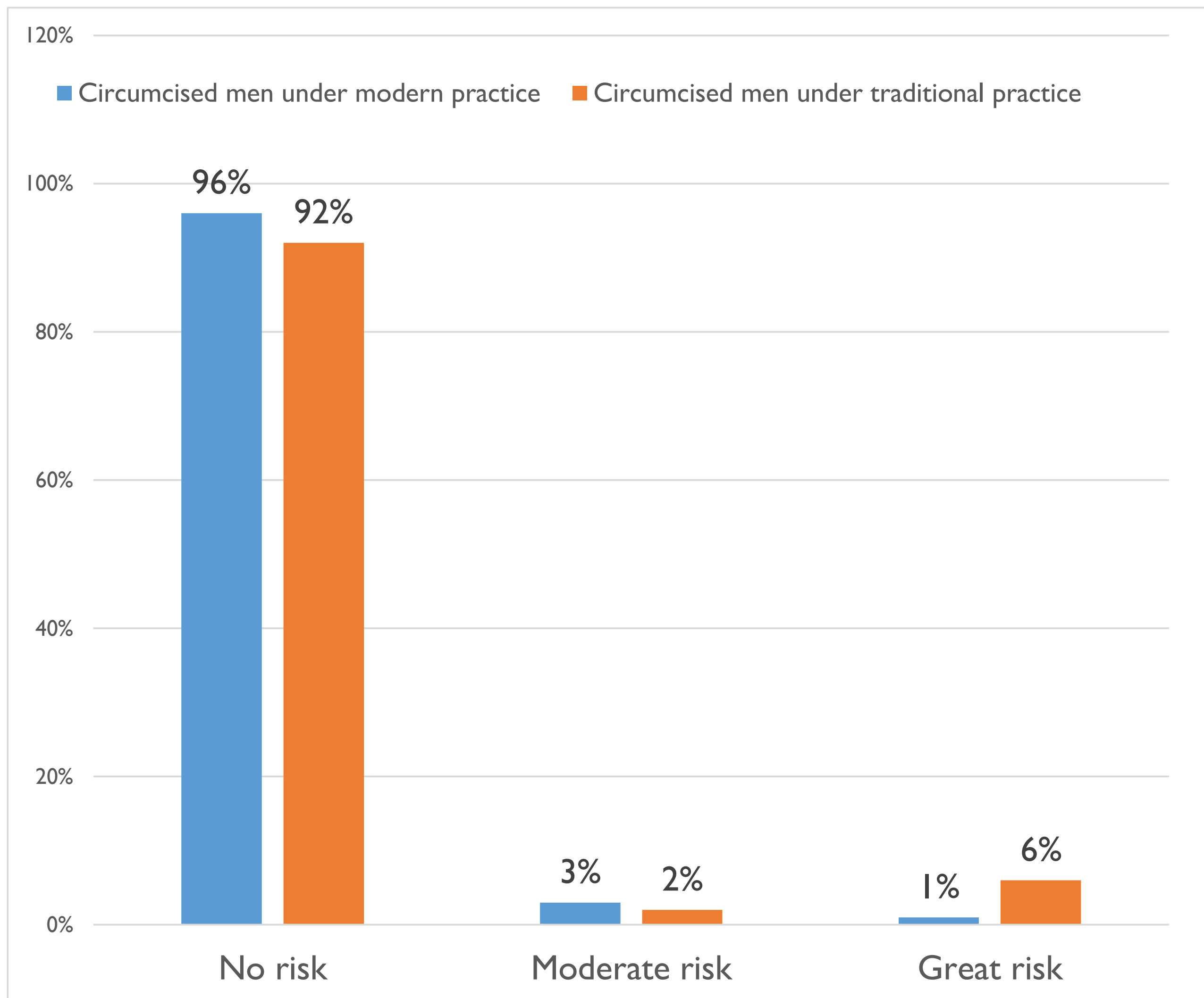
In establishing the risk associated with HIV infection after circumcision, the study relied on subjective judgments made on the severity of the risk for HIV under specified circumstances. To assess the participants' perceptions of HIV risk in the context of male circumcision, individuals

read a hypothetical scenario in form of the question. Even though the question was not direct to infer circumcision in the study, the measure was circumcision. For example, the scenario read, “do you think removing a man’s foreskin reduces the risk of him getting HIV infection especially after engaging in the unprotected sex, please rate the HIV exposure risky you are exposed to especially during indulgence in sexual activities after circumcision.” Responses in the study were made on a 3-point Likert-type scale, 1 = No risk, 2 = Moderate risk, and 3= Great risk.

Figure below depicts information on HIV risk associated with circumcision. Though the study considered this score, the researcher was aware of and took into account the bias associated with such scores. And this was true according to the self-efficacy theory. According to Weinhardt et al. (1998), Self-efficacy risk reduction associations may be influenced by ceiling effects, response bias, and measurement error associated with self-report measures of risk behavior, and a consistent finding in HIV prevention research is that self-efficacy scores tend to be negatively skewed.

Therefore, it became important in the study to note that in response to inquiries about perceived capabilities, respondents often report being highly efficacious to enact risk-reducing behaviors.

Figure 3.9.1 Circumcised men's view on the risk of HIV acquisition after circumcision



***(Source**: Primary Data)*

Figure 3.9.1 shows that the highest number of circumcised men (96%) under modern circumcision practice reported that there was no risk of HIV related infection after circumcision, followed by those (3%) who reported that the risk was moderate and the lowest (1%) were of the view that they were actually at great risk. In terms of traditional circumcision practice, most of the circumcised men (92%) reported that there was no risk related to HIV infections after they

got circumcised, and a few reported that there were at great (6%) and moderate (2%) risk of exposure after unprotected sexual activities.

By circumcision type, it is clear that both men circumcised under traditional and modern circumcision practice, the majority of them (96%-modern and 92%-traditional) were of the view that there was low or no risk at all associated with HIV infection after circumcision and a minority (6%-traditional and 1% - modern) reported of being at great risk of HIV exposure after engaging into unprotected sexual activities. Surprisingly, those (6%) respondents who reported of great risk of HIV after circumcision and doubted the protection that circumcision offered under traditional circumcision, their views were consistent with those above that showed some correlation between surgical knife (20%) and HIV infection among the initiates at *Mukanda* camps.

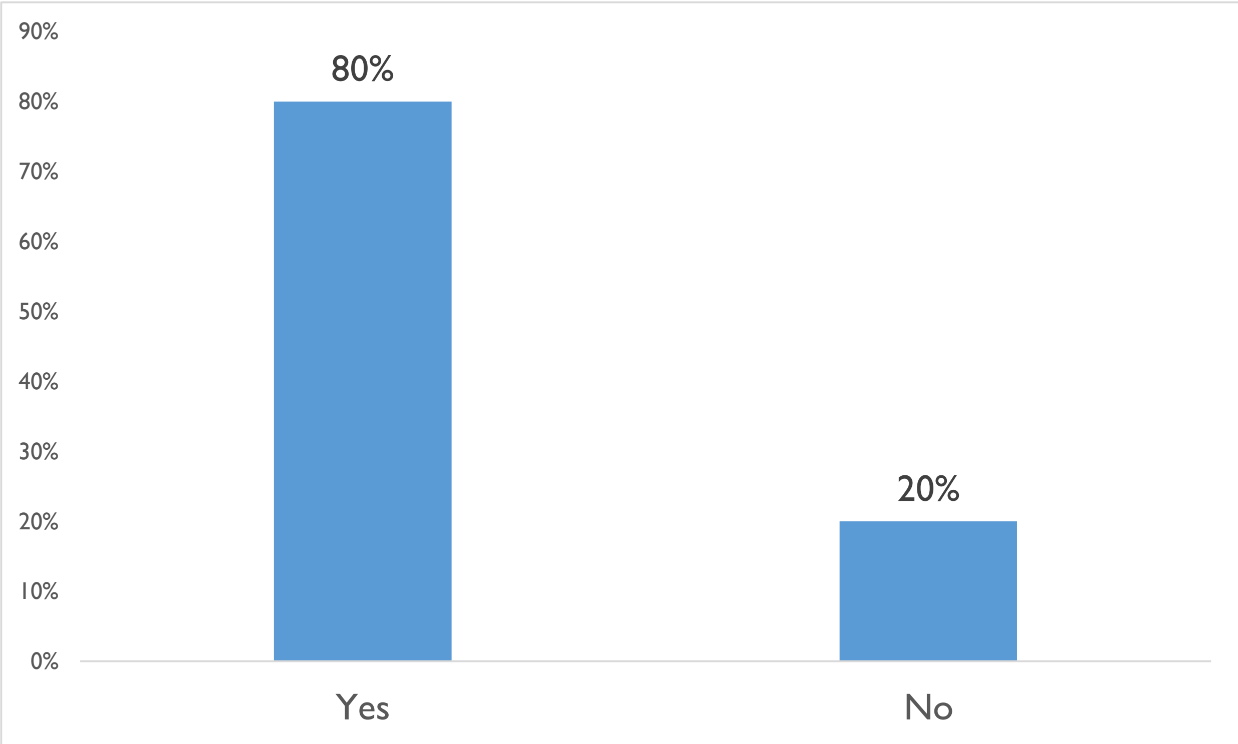
Even though the exposure to HIV among the initiates under traditional practice was high (great) compared to the modern one, the study, however, did not find any trace of the HIV pattern of infected men after a traditional circumcision. Therefore, though some views of risks (3%-modern and 2%-traditional) associated with HIV-related infections after circumcision, the study concludes that circumcision under modern and traditional practices offers greater protection against HIV infection. In this vein, the measure of HIV and circumcision on the scale ranged from moderate risk to low risk or no risk (96%-modern and 92% traditional).

And using the self-efficacy theory (SET) on the extent to which modern and traditional circumcision practices prevent the HIV transmission, this theory assisted to explain that, the larger the extent of the prevention of HIV, the more efficacious circumcision program under modern or traditional practice was in the prevention of HIV, and the less the extent, then the low or less efficacy the practice was. And based on this, the study established that indeed HIV transmission was reduced to a larger extent or the risk of HIV acquisition among the circumcised men was low in both practices. However, if the findings of the study showed less efficacious of these practices, then the opposite would have been true implying that circumcision practices were less effective in the prevention of HIV transmission, and the use of the self-efficacy theory (SET) become key to ascertain the effectiveness of both practices. Further, the researcher was of the view that any intervention (circumcision) that combines the two theories (HBM and SET)

might have better efficacy and the chapter combined the two in understanding the effectiveness of a given circumcision practice towards the prevention of HIV transmission. Therefore, since the study established that the traditional and modern circumcision practice showed some consistenct efficacy in reduction of the transmission of HIV infection among the men after circumcision, the study concludes that the chance of acquiring HIV infections among the circumcised men regardless of the circumcision practice they had to undergo was generally low or not there at all.

In line with the above discussion, figure 3.9.2 presents another overwhelming evidence on the participants under traditional circumcision practice's position on what they thought about HIV protection after circumcision.

Figure 3.9.2 Traditional circumcisers view on whether or not, circumcised men under traditional circumcision practice had reduced risk of getting HIV infection

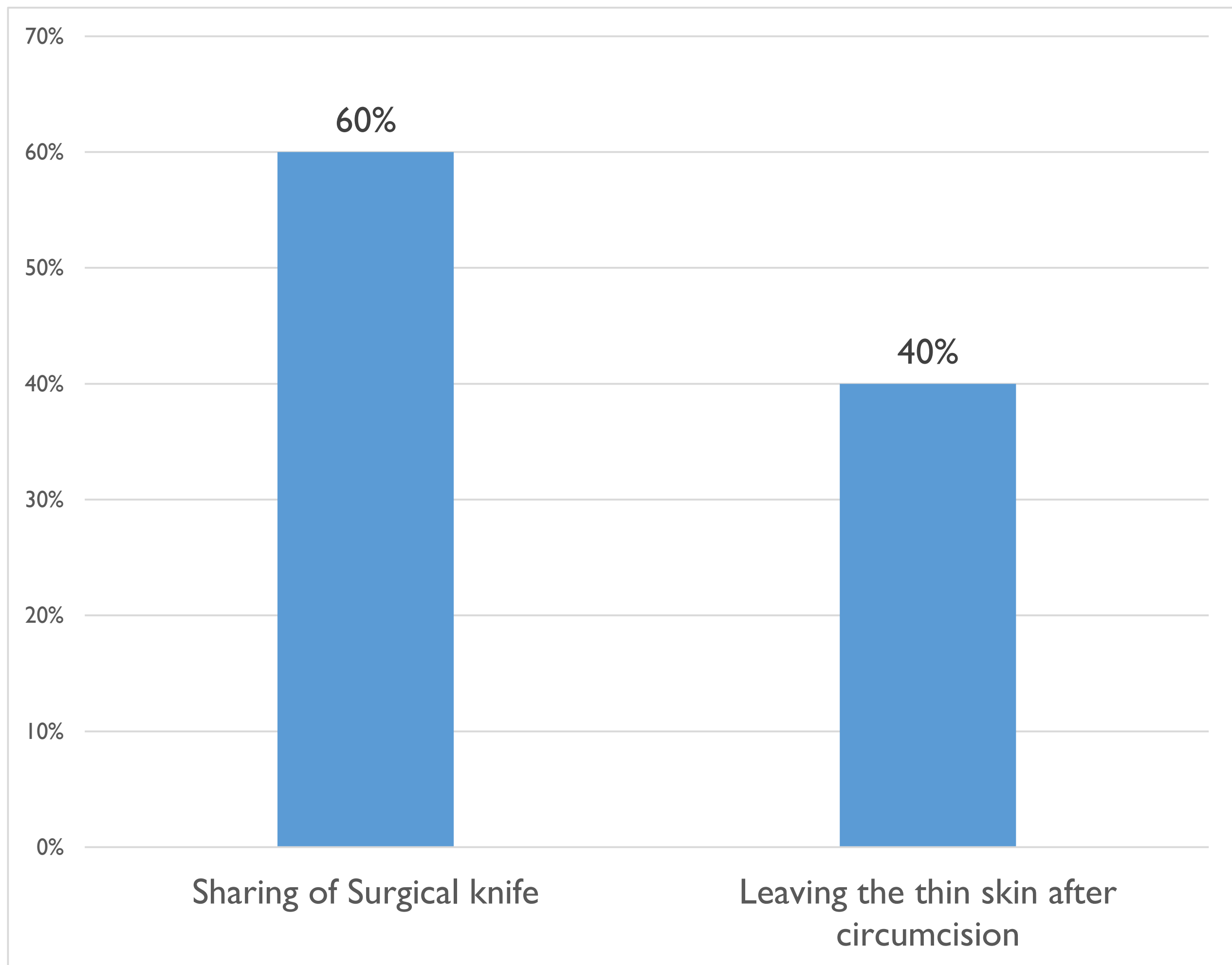


(***Source***: *Primary Data*)

Figure 3.9.2 shows that most of the traditional circumcision providers (80%) reported that circumcised men had a reduced risk of getting infected with HIV after circumcision. And only a few (20%) indicated that circumcised men were still at risk even after circumcision.

The participants (20%) who were opposed to circumcision offering protection against HIV infections were further asked as to why they thought so and figure 3.9.3 reflects their views.

Figure 3.9.3 Some traditional circumcisers' view on why they thought circumcision did not protect circumcised men against HIV



(***Source***: *Primary Data*)

Figure 3.9.3 shows that there were more traditional circumcisers (60%) who reported that circumcised men were not protected against the HIV infection due to the sharing of the surgical knife among the initiates, than those (40%) who advanced leaving of the thin skin on the foreskin

after circumcision as a contributor to circumcision men being exposed to the transmission of HIV after circumcision. These study findings are consistent with WHO (2009) which documented that concerning HIV prevention, several aspects of traditional male circumcision should be considered. First, the amount of foreskin removed during the procedure is important, since males who are partially circumcised or initiated through a simple incision in the prepuce are unlikely to benefit from the level of partial protection against HIV seen in the randomized controlled trials, even though culturally they may be considered to be circumcised.

And secondly, certain cultural practices are likely to increase the risk of HIV transmission and may reverse the potential benefits of male circumcision in respect of HIV prevention, that is to say, using one knife to circumcise several boys or encouraging sexual intercourse shortly after circumcision and before complete wound healing. In this regard, though the study did not consider the measure of the amount of the skin that was removed or remained on each of the circumcised male's foreskin, the findings on the thin skin in figure 3.4.2 were vital and similar to the WHO report of 2009. This report documented that prolonged wound healing attributable to traditional ways of cutting the foreskin or complications after traditional male circumcision has implications for HIV prevention since the vulnerability to contracting and/or transmitting HIV is potentially higher until the circumcision wounds are fully healed.

In line with figure 3.9.2 shows findings consistent with WHO (2009) on the right amount of skin removed from the foreskin (circumcision) provides potential protection for the circumcised against HIV transmission. Although most participants' position throughout the text was that circumcision provided either under modern or traditional practice had the potential to protect the circumcised men against HIV transmission, however, figure 3.9.3 injects a controversy with this view by the majority in the sense that there were still participants (20%) as in figure 3.9.2 who felt that sharing of the surgical knife (60%) and leaving the thin skin were the attributes as to why they felt circumcised men were not protected against HIV infections. Therefore, the study concluded that, a skin left in this case was associated to the acquisition of HIV in men after circumcision.

Further, from preceding discussions, not being circumcised was a route to HIV transmission, although there was no clear evidence of HIV transmission and not being circumcised. For

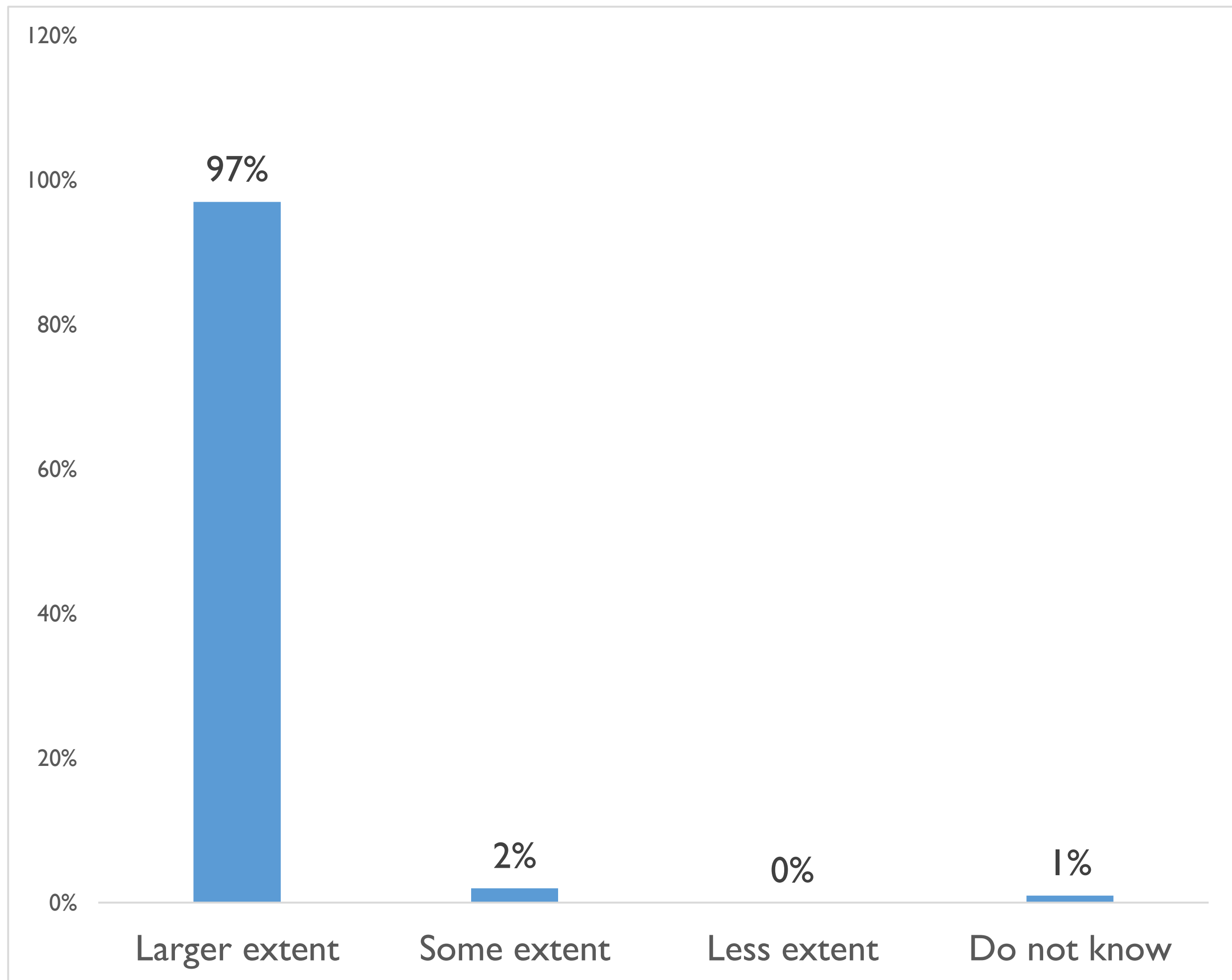
example, analyses performed on the National Malawi Demographic and Health Survey (NMDHS) from 2010 failed to demonstrate any difference in HIV infections among circumcised and uncircumcised men. This is because multiple factors may account for differences between modern circumcision and traditional male circumcision, including incomplete removal of foreskin in traditional practice and unmeasured behavioral risk factors.

However, there is no evidence that individuals living in communities targeted for voluntary male circumcision (VMMC) scale-up distinguish between types of circumcision in terms of health benefits, suggesting that HIV prevention beliefs and perceptions will not vary between modern and traditional male circumcision as seen from preceding discussions on most participants' position on HIV prevention and circumcision.

From the preceding discussions based on the context of comparison of the extent to which the two practices prevent the spread of HIV infections, though circumcision conducted under modern practice seems to be on an advantage over the traditional one though not adequately covered in terms of the efficacy in HIV prevention, however, there was clear and definitive evidence among the two practices towards the protective efforts of male circumcision (MC) based on this study findings that seemed consistent in showing that circumcision lowered the risk of HIV infections. Therefore, the study concludes that circumcision performed under both practices had the potential to protect circumcised men against HIV infections.

The following sections show the comparison of the extent to which traditional and modern circumcision practices prevent HIV transmission. The following figure 3.9.4 gives the first impression of HIV prevention.

Figure 3.9.4 Health workers position on the extent to which modern circumcision practice prevent HIV



*(**Source**: Primary Data)*

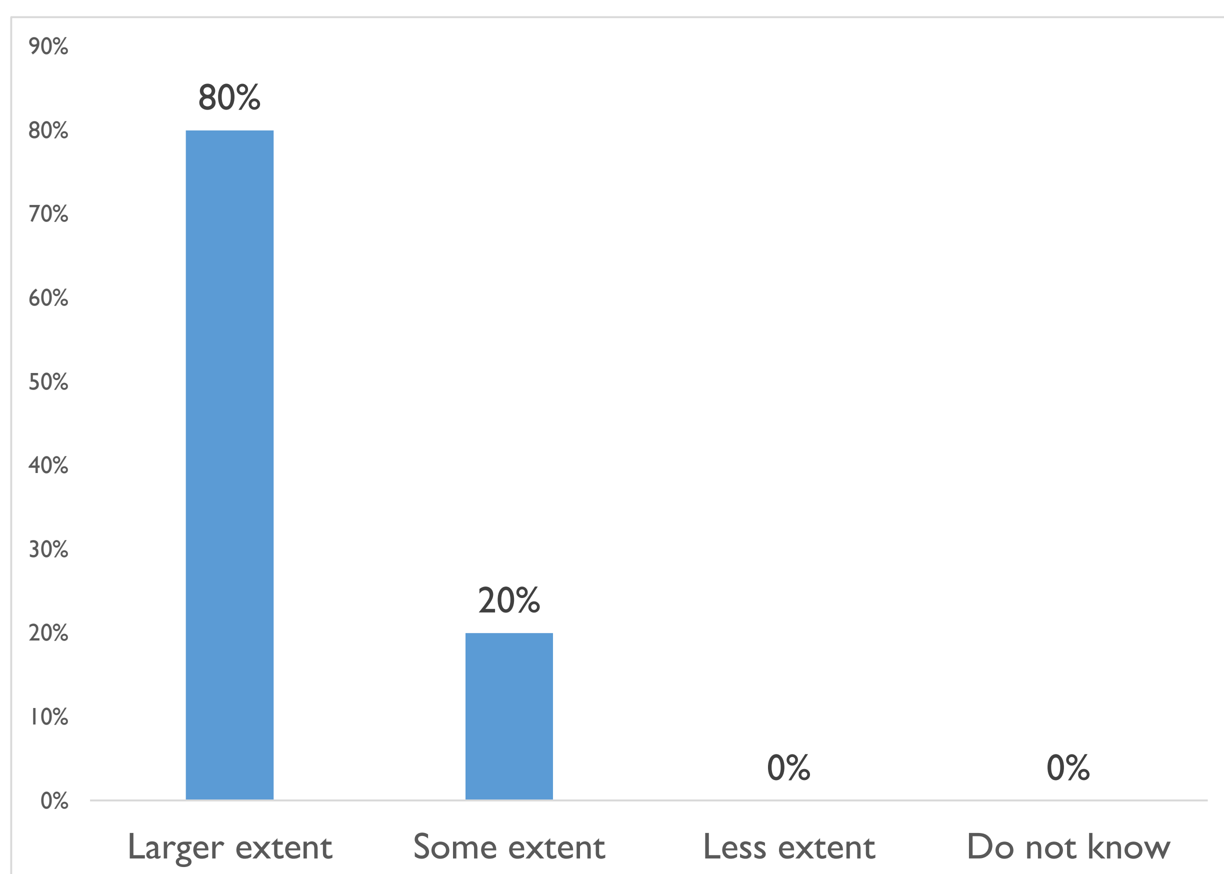
Under modern circumcision practice, figure 3.9.4 shows that the highest number of the health workers (97%) reported that to a larger extent, circumcision prevented the HIV transmission, followed by those (2%) who reported that to some extent, it provided some level of protection against the HIV infections. And the lowest (1%) reported not being sure as to whether or not, circumcision provided men protection against HIV infections.

The measure of responses to a larger and some extent in the study symbolizes the association between modern male circumcision and the high level of protection against HIV infections. This

is in support of the government of Zambia through its health policy of 1991 that advocates for an efficacious circumcision practice in the prevention of HIV transmission.

The providers of male circumcision under traditional circumcision practices were asked to provide some responses on what they thought was the extent to which circumcision performed under traditional practice prevented the HIV transmission and the figure 3.9.5 provides these responses.

Figure 3.9.5 Traditional circumcisers' view on the extent to which circumcision performed under traditional procedure reduce the spread of HIV transmission



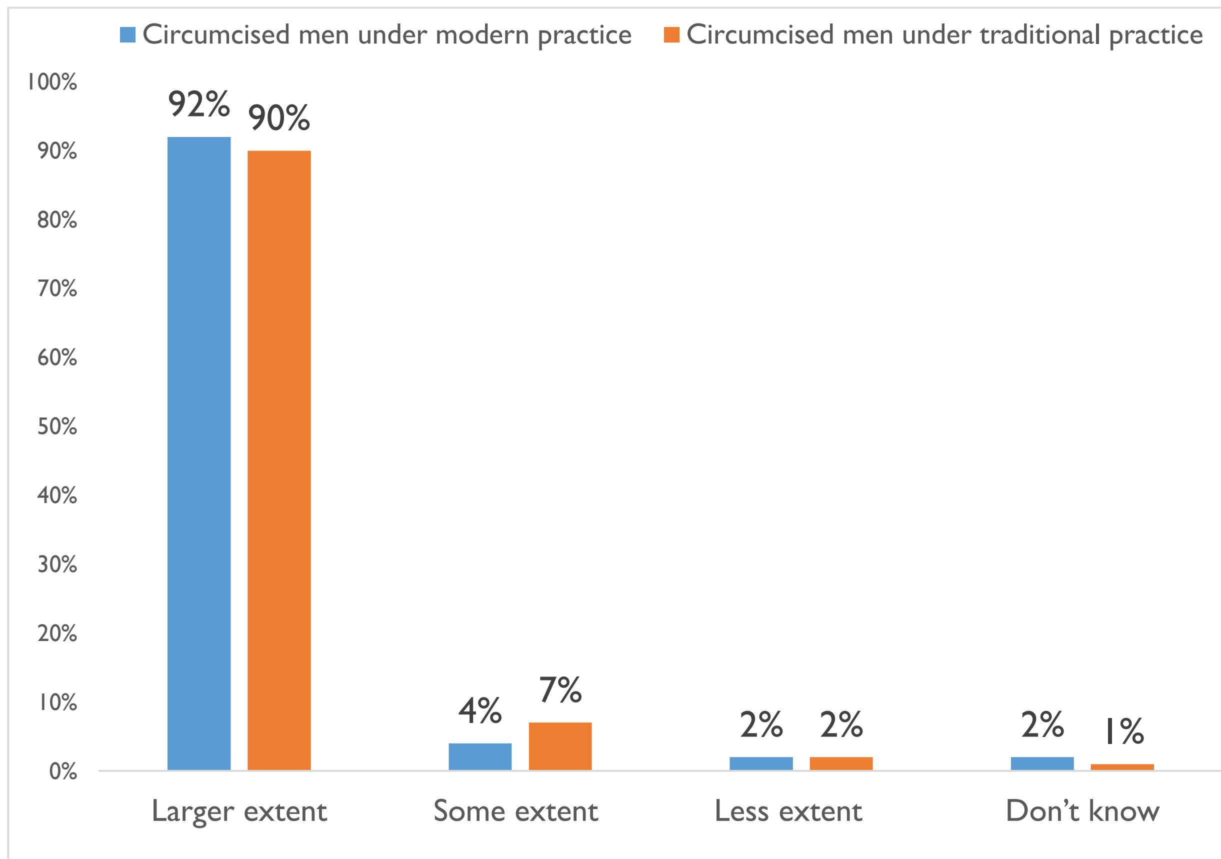
*(**Source**: Primary Data)*

Figure 3.9.5 confirms that to a larger extent, accounted for an overwhelming majority (80%) and the least (20%) reported that to some extent, a circumcision performed under traditional circumcision practice prevented the spread of HIV infections. The study findings further indicate

that none of the participants indicated that to a less extent, circumcision prevented the HIV transmission, in this case, circumcision was notable to be effective in the prevention of HIV.

These study results (80%) are similar to those of modern circumcision practice (97%) in figure 3.9.4 a clear confirmation that circumcision has the potential to reduce the HIV prevalence in men and thereby lower the chance of acquiring HIV infections. Further figure 3.9.6 shows the percentage coverage of the circumcised men's view on the extent to which traditional and modern circumcision practices prevented the spread of HIV infections.

Figure 3.9.6 Circumcised men's view on the extent to which circumcision reduces the spread of HIV transmission



*(**Source**: Primary Data)*

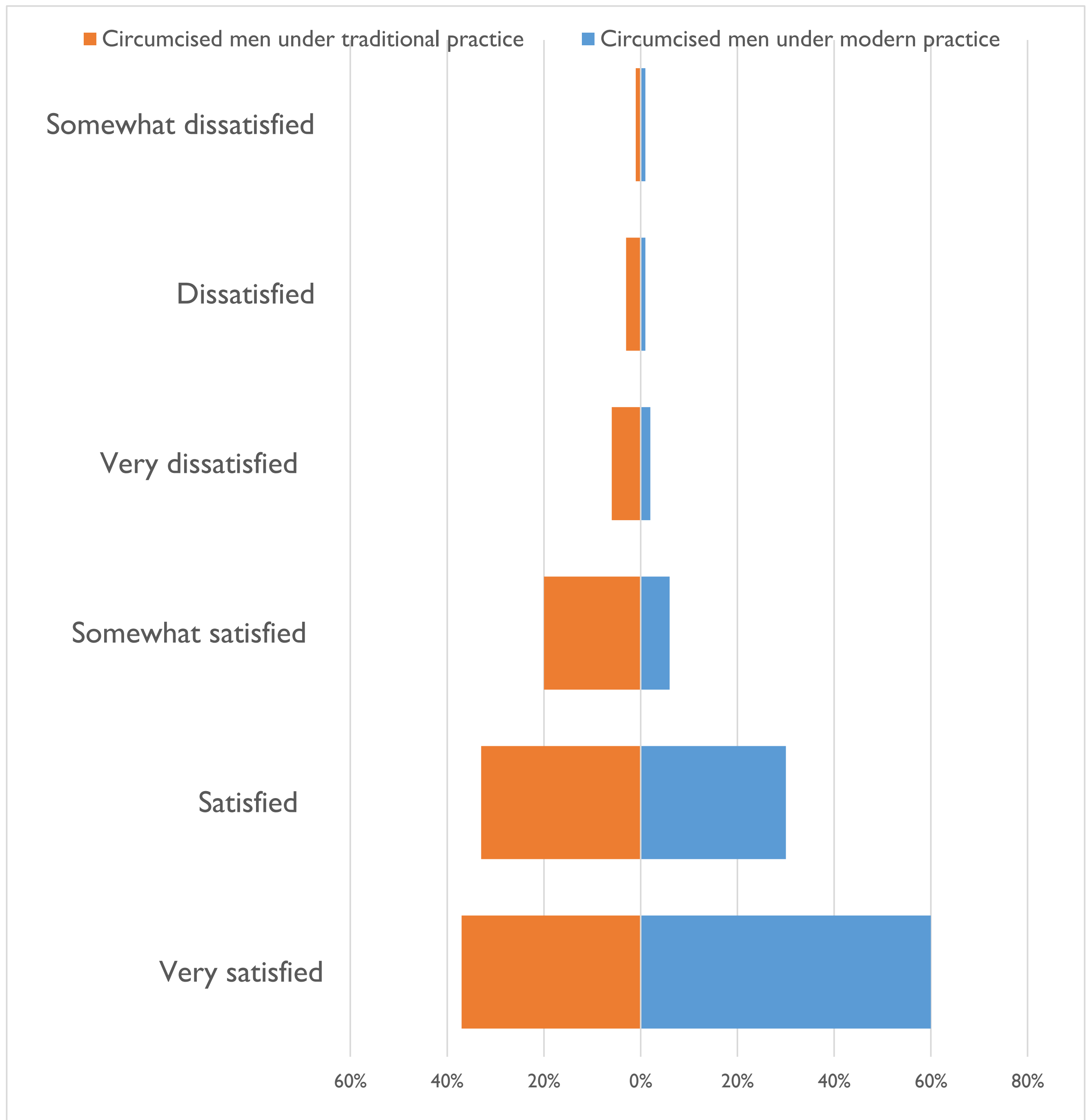
Figure 3.9.6 demonstrates that the highest number of circumcised men (92%-modern, 90%-traditional) reported that to a larger extent circumcision prevented HIV transmission, followed

by those (7%-traditional, 4%-modern) who indicated that to some extent, it prevented the HIV transmission. And the lowest accounted for less extent, two percent (2%) from each practice and a few (2%-modern, 1%-traditional) had no idea as to whether or not circumcision prevented the HIV transmission.

These results were consistent with those in Figures 3.9.5 and 3.9.6 and confirmed the overwhelming responses towards the support of circumcision as a preventive strategy against HIV infection. This is because most of the beneficiaries of circumcision (92%-modern, 90%-traditional) based on their experience strongly indicated that to a larger extent circumcision offered by both practices reduced the chances of acquiring HIV infections, and only a few had a low perception towards circumcision as a preventive strategy against HIV (2% of each practice). Therefore, the study deduced that circumcision performed under traditional and modern circumcision practices increases the protection among the men against the HIV transmission after circumcision.

A cross-tabulation among the circumcised men under modern and traditional circumcision practices in figure 3.9.7 shows the level of satisfaction related to circumcision and HIV prevention.

Figure 3.9.7 Satisfaction levels about circumcision and protection against HIV infection circumcised



*(**Source**: Primary Data)*

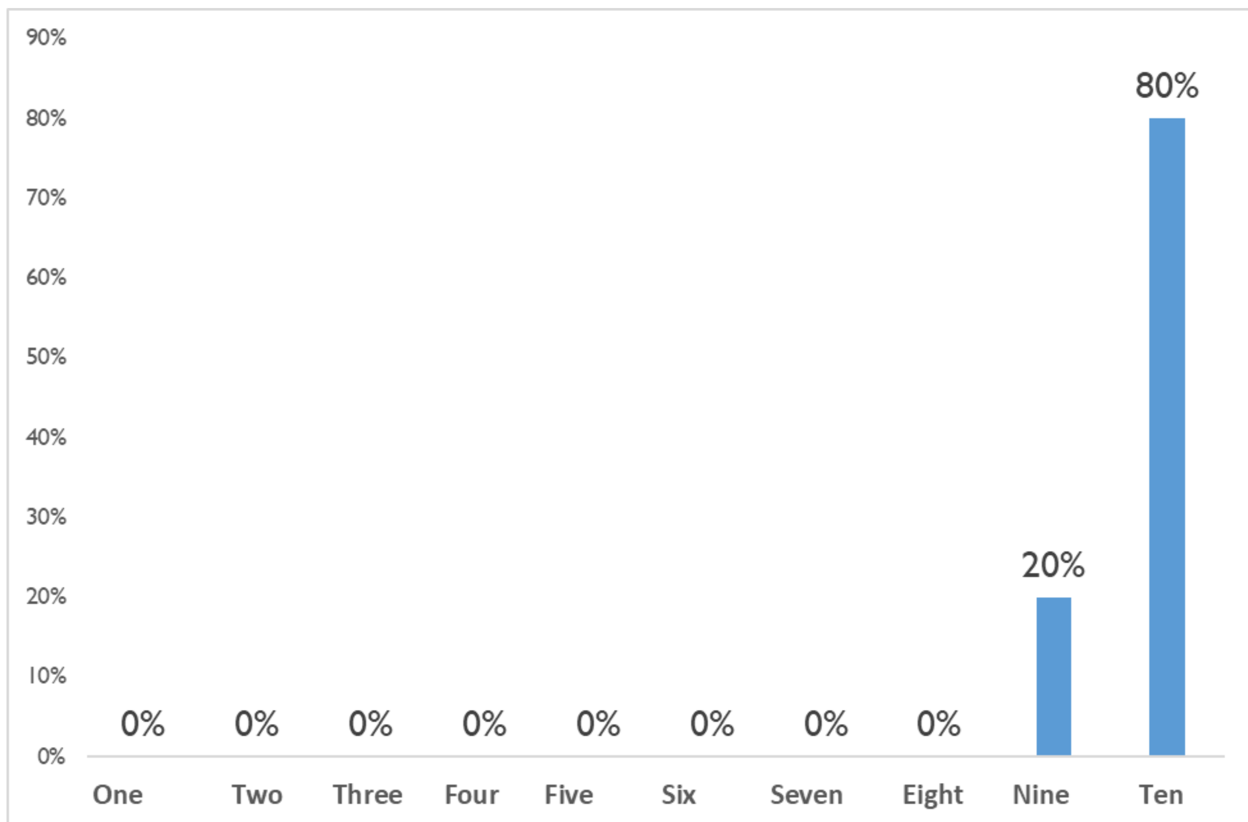
Figure 3.9.7 shows that there was a higher number of circumcised men (60%) in hospitals and clinics who reported being very satisfied that they were protected against HIV infections compared to those (37%) under traditional circumcision. Contrary to figure 3.9.6, figure 3.9.7 on traditional practice where the majority (90%) indicated that to a lesser extent, circumcision prevented the HIV transmission in circumcised men, probably this was attributed to misunderstanding of the study question. Further, more men (33%) under traditional circumcision practice were satisfied than those circumcised (30%) under modern practice with their state of being circumcised and the protection circumcision offered against acquiring HIV infection.

Also to note, twenty percent (20%) of traditionally circumcised men were somewhat satisfied with circumcision's protection against HIV infections compared to six percent (6%) of the circumcised under the modern circumcision practice. On the other hand, however, those who were dissatisfied with circumcision and the extent of protection it offered ranged from six percent (6%) to one percent (1%), this translated into more traditionally circumcised men (3%-very dissatisfied, 3%-dissatisfied, 1% somewhat dissatisfied) being dissatisfied compared to those circumcised under modern practice (2%-very dissatisfied, 1%-dissatisfied, 1% somewhat dissatisfied).

These study findings further established that one percent (1%) level of dissatisfaction might be negligible compared to large levels of satisfaction recorded from sixty percent (60%) highest and six percent (6%) lowest in figure 3.9.7. These study findings are conclusive in the sense that the majority were satisfied compared to a few (1%) participants in both practices, suggesting that circumcision regardless of the practice, probably, and to some extent provided some level of protection against HIV transmission.

To further this discussion on circumcision and HIV-related protection, figure 3.9.8 depicts the rated scores on the levels of satisfaction exhibited among the traditional circumcisers. And given a Likert-type scale of 1 to 10, the study considered this yardstick, the bigger the number on the scale denoting the given response, the higher the level of satisfaction and vice versa. The scores were given based on what the participants under traditional practice felt on whether or not, they were satisfied with circumcision as a preventive strategy against HIV transmission.

Figure 3.9.8 Traditional circumcisers' score on satisfaction levels on traditional circumcision practice and the prevention of HIV transmission



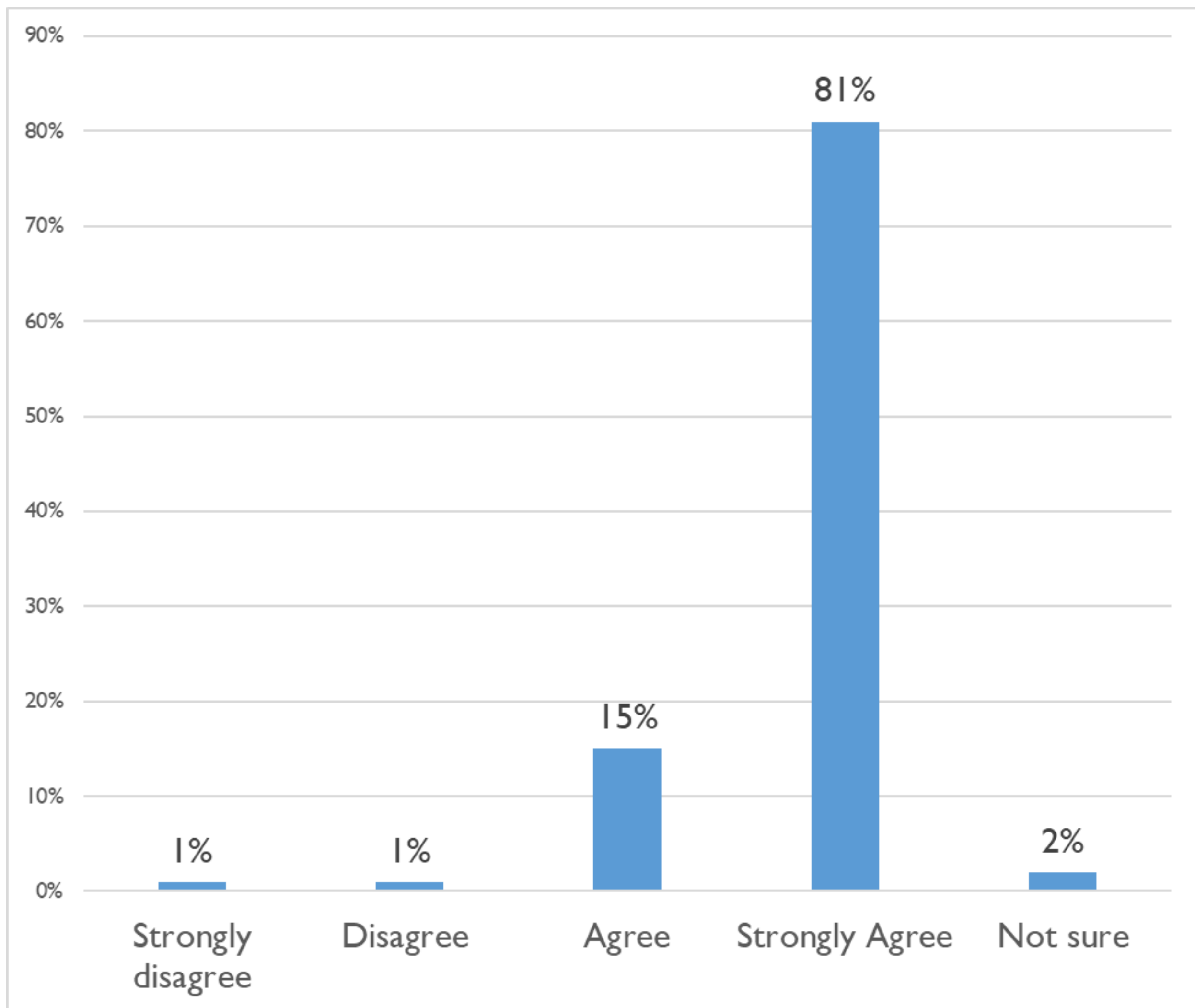
***(Source**: Primary Data)*

Figure 3.9.8 presents that on a scale of ten (10), the participants picked nine (9) and ten (10) as their levels of satisfaction. These findings denote that the levels of satisfaction among the traditional circumcisers were high, and these levels were mostly (80%) and also among those (20%) who reported that they were satisfied with circumcision and its protection against HIV infection.

As evidenced by figure 3.9.8, it is a clear indication of similarities across the sections already discussed on the underpinnings in which the study established the extent to which circumcision performed under modern and traditional circumcision practice plays a pivotal role in the prevention of HIV transmission.

Figure 3.9.9 shows the participants' views on the assessment of whether or not, the Zambian health policy (1991) on HIV prevention through the voluntary medical male circumcision (VMMC) program was being achieved.

Figure 3.9.9 Health workers position on the Zambian Health policy and HIV prevention as to whether it was achieving its objectives



***(Source**: Primary Data)*

Figure 3.9.9 shows that most of the health workers (81%) strongly agreed that the health policy objectives on HIV prevention were being achieved as evidenced by table 3.1.0 by reduced or

non-transmission of HIV after circumcision. Further, fifteen percent (15%) of the health workers agreed with the assertion that the health policy through the male circumcision (VMMC) program was on the right pathway towards achieving its HIV prevention objectives in Zambia. In other words, the effective (SET) interventions in the prevention of HIV were producing reduced transmission of HIV (outcome) according to the self-efficacy (SET) and health belief model (HBM) theories. Lastly, two percent (2%) were not sure as to whether or not, some achievements of HIV prevention were attributed to the health policy. And only a few (1%) disagreed with the achievement made so far by the health policy on HIV prevention.

Despite the extent to which modern circumcision practice has prevented HIV transmission as evidenced in the preceded discussions, a few (1%) of some participants felt that there were still gaps in the policy that needed addressing concerning circumcision and HIV prevention. However, since there were more participants (81%) compared to a few (1%) with the view that circumcision performed in the hospital and clinical settings were effective in the prevention of HIV, the study, therefore, concludes that the health policy objective of HIV prevention and interventions embedded in the male circumcision (VMMC) operational plan of 2016 was being achieved.

3.9.1 Conclusion

In the study, even though there were clear patterns of male medical circumcision practice in lowering or preventing HIV transmission compared to the traditional one, similarities across both practices were evidenced in the findings. Therefore, since similarities were more than dissimilarities in the extent to which traditional and modern circumcision practices prevented HIV infections, the study concludes that, circumcision performed either under modern or traditional circumcision, to a larger extent, reduces and prevents the prevalence of HIV transmission.

The study further concludes that, the main routes to the transmission of HIV were usage of unsterilized surgical instruments, engaging into unprotected sexual activities and blood mix up methods such as blood transfusion of HIV infected blood.

The study concluded that there is a chance of acquiring HIV infections through blood transfusion without necessarily engaging into sexual activities. And to avoid transfusing of HIV infected blood into a healthy person, the study concludes that screening of blood for HIV by medical personnel before transfusing becomes cardinal using the Rapid Diagnostic Test (RDT) and Polymerase Chain Reaction (PCR).

The study concludes that, the main measures available at hospitals and clinics for protecting men against HIV infections were; sterilization of surgical instruments, the wearing of gloves by providers, screening of blood before transfusion, hygiene observation, cleaning of work surfaces, and disposal of dirty in the refuse bags after conducting circumcision procedures.

The achievement under modern circumcision as evidenced in Table 3.1.0 is the true reflection of no or zero (0) infection as propagated as a goal of the VMMC of ensuring that there are no HIV infections or re-infections and hence the effective implementation of the male circumcision (VMMC) program in all the hospitals and clinics across the country. This is also an indication that the Zambian health policy through the VMMC was being achieved and continues to be implemented through the circumcision program.

The study concludes that there were the trends of acceptability of introducing male medical circumcision services in traditionally circumcising communities of Chavuma.

The Study concludes that accessibility to *Mukanda* Camps was restricted to only the initiates, traditional circumcisers, community elders and traditional leadership, whereas under modern circumcision practice, everyone had access to hospitals and clinics.

The study concludes that, under traditional circumcision practice, there was a high level of secrecy associated with the ritual of male circumcision at *Mukanda* camps, and disclosure of information related to experiences about circumcision was prohibited. Further, accessibility to such sacred places by outsiders (medical personnel, uncircumcised) was a taboo, and this was not

the case with modern practice, access to health services (circumcision) was free and people could access the hospitals and clinics at any given time.

The study concludes that there is a possibility in the future of linking medical male circumcision to traditional initiation practices in Zambia. This is because in some cases, traditionally circumcising communities and medical personnel make referral arrangements for circumcision and treatment of the initiates at health facilities. And this happens when there is an assurance by the medical personnel that the initiates once at the hospital will not come into contact with the female providers coupled with a condition of subsequent immediate return of the circumcised boys to the initiation ceremonies.

The study concludes that, fears of weakening traditional circumcision existed especially among traditionally circumcising communities of encouraging their men in some case, to get circumcised under medical setting. Therefore, the study position is that, due to threats of dominance of one practice over another and consequently, a weaker circumcision practice ending up into oblivion, the cultural link of circumcision under traditional practice should not necessarily be weakened, and if weakened, then circumcision would either be performed under medical setting or not at all in Zambia. The study takes into account that traditional circumcision practice will continue to be practiced among the ethnic groups and probably till such a time in the future when something emerges that could be considered better with desirable results of circumcisions than traditionally circumcising men, then the practice might cease to exist among certain tribes.

The study concludes that traditionalists continue to conduct circumcision under traditional settings because this practice has been passed on from one generation to another, and it is part of the ancestral ritual embedded in the traditions. And circumcision was not only seen as HIV preventive strategy, but also for upholding the culture, values, norms and beliefs shrined in their ancestral land of continuity in practicing circumcision at initiation ceremonies and was a way of ensuring that the new generation of young males do not lose track of traditions.

Under the theories selection, the results of this study concluded that out of all the theories and models, only two (2), Self-Efficacy (SET) and Health belief model theory-HBM) were used in HIV prevention.

The study concludes that future policies on circumcision should ensure that interventions are improved towards behavioral change and this has a positive bearing on HIV prevention and that theories and models be used in all stages of circumcision educational programs (HBM) including designing, implementation, and evaluation on the efficacy (SET) of the program toward HIV prevention.

The study concludes that since HIV has no cure, prevention is the best way to control its spread, and this presents the opportunity for the government and partners through a multisectoral approach to make additional funding investments in the HIV prevention program in Zambia. Further, investment in interventions that improve the HIV testing numbers as opposed to only a few under traditional practice cannot be overemphasized, and this, in turn, will assist policy makers ascertaining the number of HIV infected groups and make sound decisions towards their treatment (procurement of ARV drugs) and also decisions on intensified interventions on HIV prevention.

CHAPTER FOUR: A COMPARISON BETWEEN MODERN AND TRADITIONAL CIRCUMCISION PRACTICES IN THE PREVENTION OF SEXUALLY TRANSMITTED INFECTIONS TRANSMISSION IN KAPIRI MPOSHI AND CHAVUMA DISTRICTS

4.1 Introduction

According to the National health policy (1991), Zambia, through the implementation of the VMMC program advocates for an end to sexually transmitted infections (STIs) as a primary goal. To attain this goal, the circumcision program becomes a key. Therefore, it is from this background that this chapter presents information on the comparison of the extent to which modern and traditional circumcision practices prevent STIs transmission in Kapiri Mposhi and Chavuma districts. This chapter will focus on whether or not, traditional and modern circumcision practices prevent the Sexually transmitted infections (STIs) transmission in Chavuma and Kapiri Mposhi districts.

4.2 Awareness of the VMMC program

Even though the assessment of whether or not, the VMMC was known by the potential circumcised men affected with sexually transmitted infections (STIs), the study focus on VMMC awareness was skewed towards the health workers only. This was important to understand in the first place the background as to whether the program was known among the providers of male circumcision under medical setting before establishing whether VMMC was efficacious in the prevention of STI transmission. In this regard, the health workers were asked if they were aware of the VMMC program derived from the Zambia's health policy on the prevention of STIs. In this study, the health workers that they were aware of the existence of the VMMC program derived from the health policy on STI prevention. Further, they reported that the policy clearly provided guidance on the process of ensuring that the spread of STI was halted among the people in Zambia and this was done by the implementation of the VMMC program. The knowledge and

awareness levels exhibited among the health care workers was an indication that the right efforts in the hospitals and clinics existed towards curbing the STI infections. Therefore, it was deduced that the Zambian health policy is key in the implementation of the male circumcision program in Zambia.

The health workers were asked if they were aware of the VMMC program derived from Zambia's health policy on the prevention of sexually transmitted infections (STIs). In this study, the health workers available at the hospital and clinics during the study seemed to be aware and knowledgeable about the existence of the health policy (1991) on STI prevention. Further, they reported that the policy was clear and provided guidance on the process of ensuring that the spread of STIs was halted among the people in Zambia. The knowledge and awareness levels exhibited among the health care workers were an indication that the right efforts in the hospitals and clinics existed towards reducing the sexually transmitted infections among the people.

Therefore, it was deduced that the Zambian health policy is key in the implementation of the male circumcision program and this program was enacted to reduce the spread of STIs in the context of the study. Further, the study established that the health workers were also familiar with the main objective of the Zambian health policy and reported that the objective was to bring to a halt the spread of STIs in Zambia. Further, the respondents indicated that they were aware of the availability of the documents that clearly show the strategies put in place of ensuring that the policy objective was being met. The study findings clearly show that it was possible to ascertain whether or not, the VMMC program was ending the spread of sexually transmitted infections (STIs) based on knowledge exhibited by the health workers.

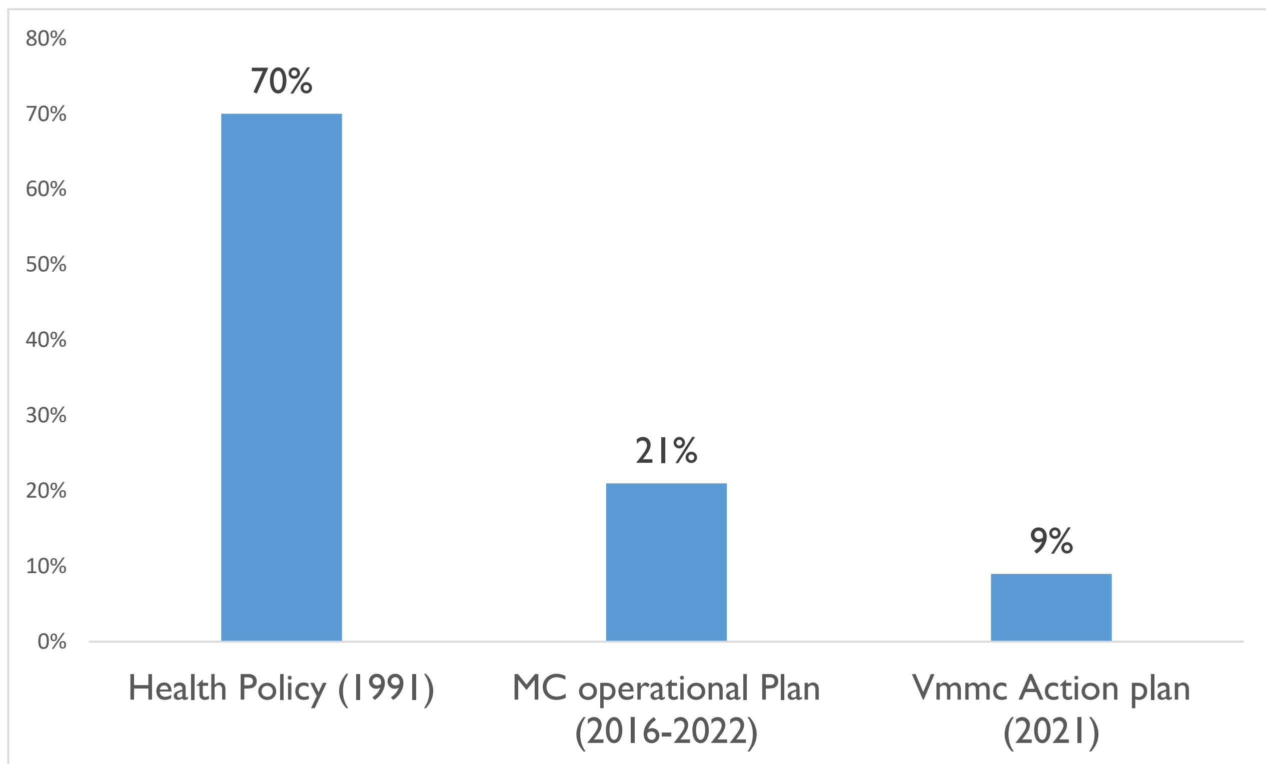
4.3 Knowledge levels on STIs prevention and documentation

This section shows the responses of the health workers on their knowledge levels of documentation related to the prevention of STIs.

This section will discuss and measure the extent to which modern and traditional circumcision practices prevent the transmission of STIs. Further, it presents information on availability of services and documentation. Note that these might not be comparable characteristics between modern and traditional practice, but were prerequisites for the outcome variable (STIs) that was

comparable between the two practices. For instance, one needed to verify the documents on the circumcised men who got tested for STIs (testing services) at the health facility and the two (testing service and documentation) assisted to compare the information generated on whether or not, circumcised men who came to test for STIs after circumcision had a track record of being circumcised under traditional or modern, and hence the outcome was determined on whether an undergone practice by circumcised men had a negative STIs outcome an indication of efficacy in the prevention of STIs transmission by that practice.

Figure 4.3.1 Health workers' knowledge on STIs prevention and Circumcision



***(Source**: Primary Data)*

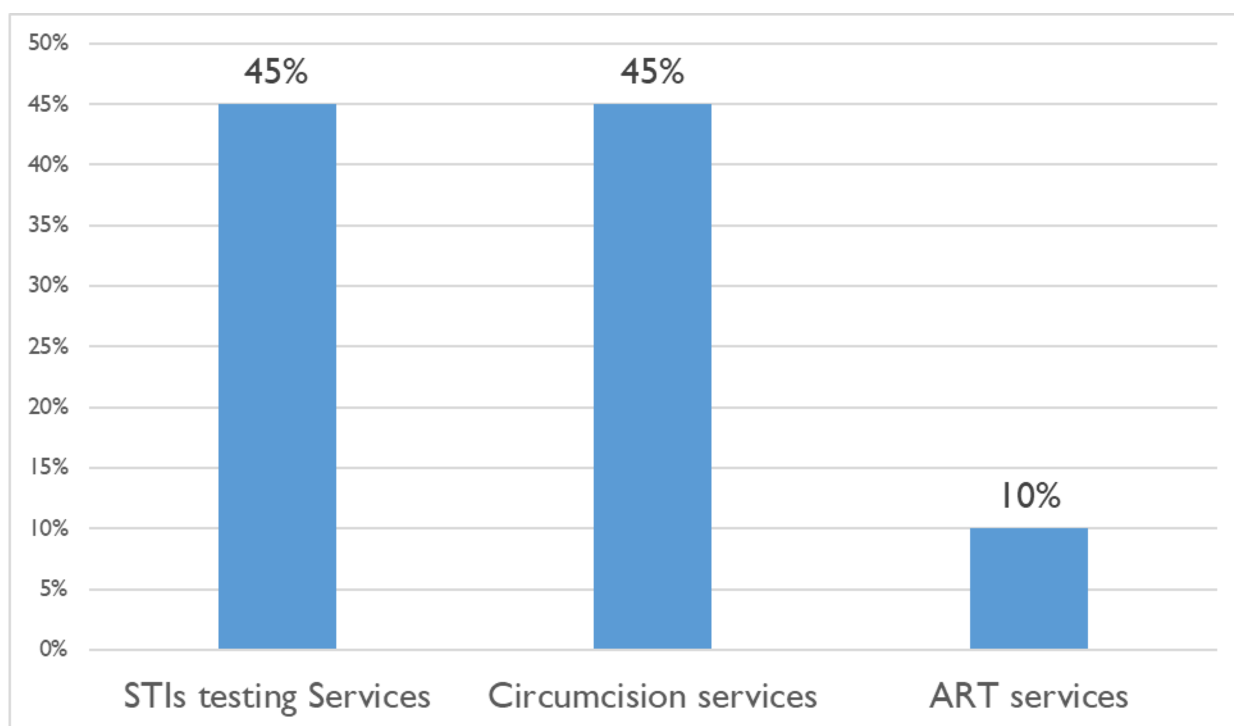
Figure 4.3.1 shows that the health policy was the most known document by the health workers, (70%) consistent with the findings in chapter three (3), followed by the male circumcision (MC) operational plan of 2016 to 2022 (21%), and only nine percent (9%) of the health workers knew voluntary male medical circumcision action plan (VMMC) for 2021. Generally, the main documents related to strategies for STI prevention were known by the health workers in the

hospitals and clinics. The findings further revealed that these were the key documents that were used to review if at all, or not, the health policy was achieving its objective of halting the transmission of STIs among the people.

4.4 Implementation of the VMMC program

This section presents information on what was being done in implementing the objectives of the health policy through the VMMC on the prevention of sexually transmitted infections (STIs) in hospitals and clinics. In this study, the approach was to find out what services related to STI prevention were being provided in the health facilities and the following were the services.

Figure 4.4.1 Measures of STIs prevention and VMMC implementation



(***Source***: *Primary Data*)

Figure 4.4.1 shows that the common service at the hospitals and clinics that was reported by the health workers to be implemented and related to the sexually transmitted infections (STIs) prevention was circumcision (45%) and STIs testing. However, the provision of ART services at the hospitals and clinics was the least (10%).

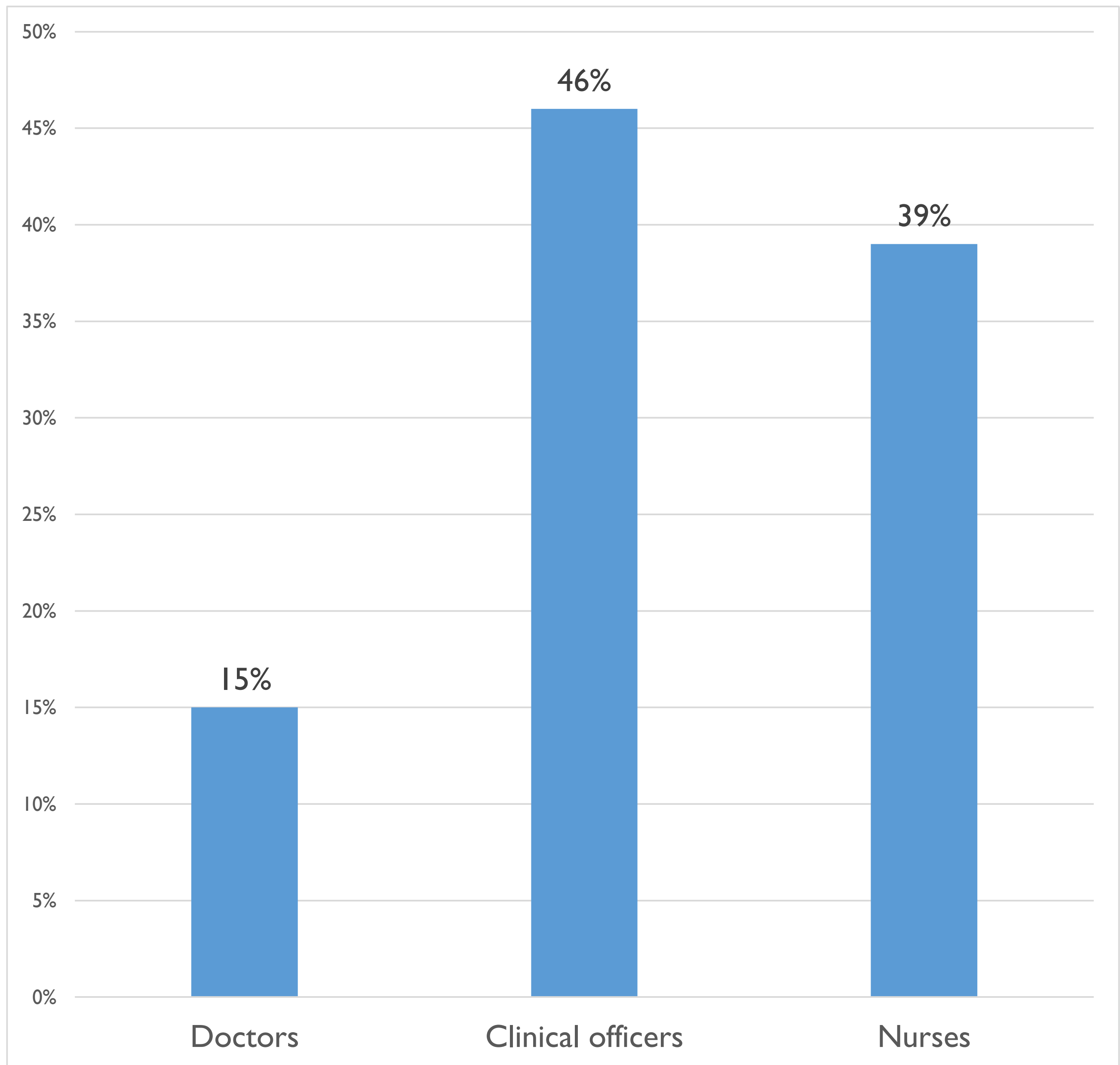
These findings show that the implementation of the health policy was mainly being provided under the circumcision, STIs testing, and ART services in the hospitals and clinics. These services were important in determining the progress made towards the health policy on the prevention of STIs. For example, after circumcision (circumcision services), men needed to visit the hospital or clinics to check and know their STIs status (STIs testing services) and in situations where one tested positive for STIs and eventually develops HIV, then, in this case, such patients were put on treatment (ART services). Further, clients testing positive for sexually transmitted infections (STIs) were referred to an STI clinic for STIs treatment, and suffice to note that, clients who tested positive for STIs at the first visit were not immediately circumcised but given medicine and told to come back for STIs screening and once tested negative for STIs at follow up visit, then then they could get circumcised. The study revealed that these were the key services in monitoring progress after circumcision, especially where STI prevention was concerned.

4.5 Providers of STIs screening services

This section revealed the main providers of STI screening services at health facilities among the health workers. The study focused only on the health workers and did not extend to establish the main providers of screening services among the traditional circumcisers. It is also worth noting that even though there were many other health workers available at the hospitals and clinics during the study, the focus was placed on the main providers of voluntary male medical circumcision (VMMC) and whether or not they were involved in the STIs screening of men.

The following were the main providers of the STI screening services:

Figure 4.5.1 Main providers of STIs Screening for men



(Source**: Primary Data)

According to figure 4.5.1, the highest number of the main providers of STI screening at the hospitals and clinics were the clinical officers (46%), followed by the nurses (39%) and the lowest were the doctors (15%).

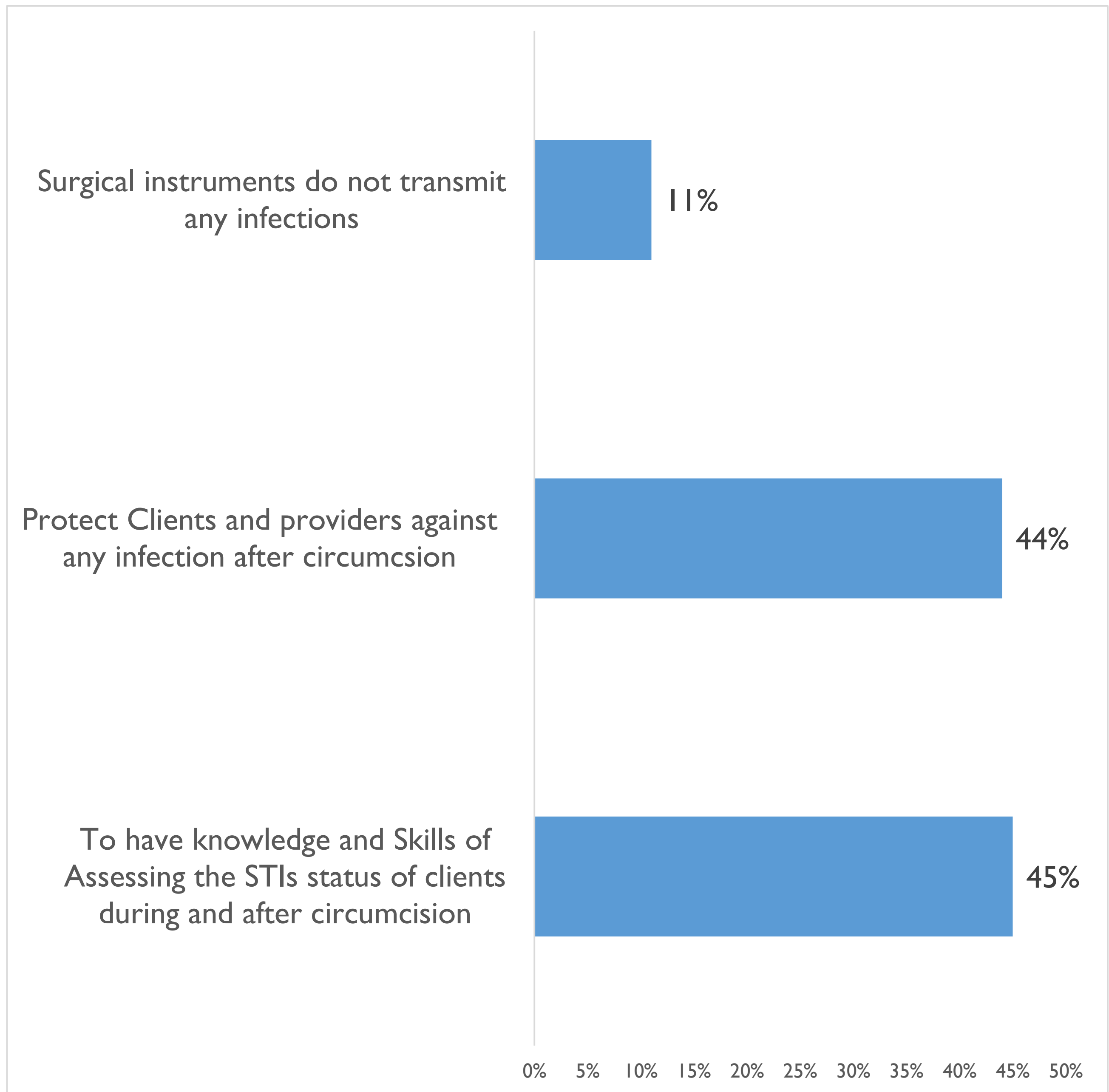
Generally, the availability of doctors was only common at hospital levels and few at the clinical level. Though this category of doctors had a small share (15%) among the eligible providers of STIs screening, it is important to note that, every doctor available at the health facilities was eligible and well qualified to conduct the STIs screening for men.

Further in terms of capacity building of professional staff to be eligible to conduct STI screening services, the study established that similarly, just like in the case of male circumcision provider's training and certification in the preceding chapter, the main providers of STIs screening were also trained. The training was not only a classroom kind of training but also part of the curriculum for having attended medical school.

The study further established that classroom training in this context was training in STIs screening as part of the whole package of male circumcision. This meant that an STI screener was conversant on when to recommend a man for circumcision or not, without this training, most men could have not known their STI status and if they were infected in the long run, they could eventually die due to the sexually transmitted diseases. On the contrary, STI screening was not available under traditional practice and hence the reason for not having the trained traditional circumcision in this area of specialization.

Figure 4.5.2 gives information on why the staff who were screening for STIs needed to have been certified before providing this service to men at the health facility.

Figure 4.5.2 Importance of STIs Certification of profession according health workers



(***Source***: *Primary Data*)

Figure 4.5.2 shows that most health workers (45%) reported that staff needed to be certified to acquire knowledge and skills of STIs identification and management in terms of treatment, followed by the health workers (44%) who indicated that certification was meant for protection of clients against STIs infection after circumcision. And only a few (11%) reported that when you have the knowledge and certification, you may be in a position of knowing that surgical instruments used during testing may not necessarily be the en route to the transmission of STIs at hospitals and clinics.

The study, therefore, established that the main reasons for certification in the provision of STIs services at the health facilities was client protection against infections after circumcision (having skills of preparing men to guard themselves against STIs) and also for knowledge and skills acquisition (being able to identify an STI and diagnose the symptoms coupled with treatment). Therefore, certification for the providers of circumcision in terms of STI screening was key in the protection of clients after circumcision.

4.6 STIs transmission and circumcision

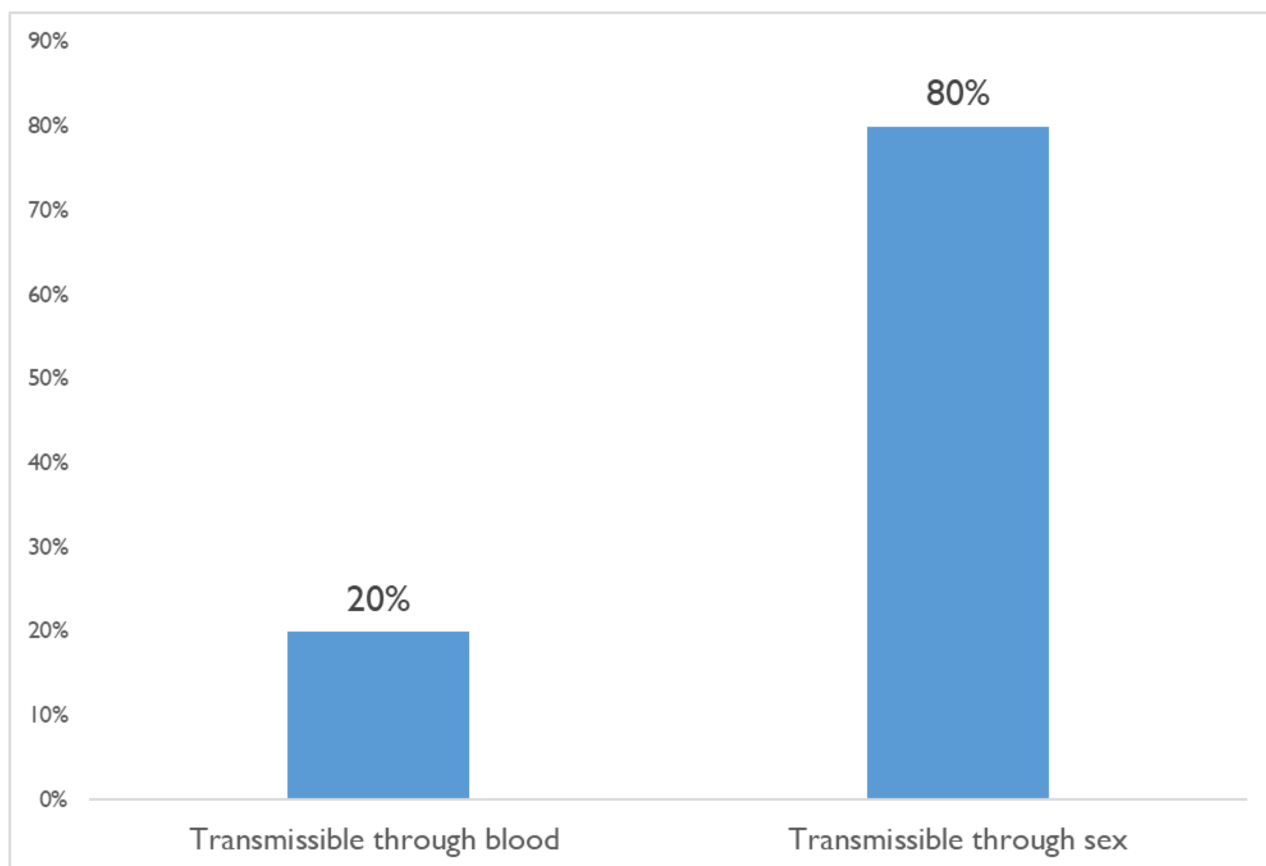
This section presents information on sexually transmitted infections (STIs), and whether or not, a given circumcision practice was effective in the prevention of STI transmission in Chavuma and Kapiri Mposhi districts. The study established that the health workers reported that STI was an infection and that it was possible to acquire this infection by men through sexual intercourse. Though in this study, sexually transmitted infections (STIs) and sexually transmitted diseases (STDs) were interchangeably used, these two were different and oftentimes confused. Just in support of the health workers' view that STIs were infections, the report by WHO (2016) documented that, infection is when bacteria, viruses, or parasites attack the body, and while an infection may result in zero symptoms, a disease mainly come with clear signs.

Therefore, the infection (STI) in this context comes before a disease (STD). This means a sexually transmitted disease (STD) will always start as a sexually transmitted infection (STI), but not all STIs turn into STDs. For example, according to the health line (2022), STD starts with an asymptomatic STI, you might first experience; pain or discomfort during sexual activity or urination, sores, bumps, or rashes on or around the penis, anus, buttocks, thighs, or mouth,

painful or swollen testicles and unusual discharge or bleeding from the penis. But other symptoms can be quite different and depend on the STD. They can include; fever, recurring pain, fatigue, memory loss, changes to vision or hearing, nausea, and weight loss. In this study, this distinction was important because HIV already in chapter three (3) is also referred to be an infection or virus, but the focus of this chapter was primarily on some old sexually transmitted infections other than HIV in the transmission after circumcision.

In line with this, under traditional circumcision practice, the participants were asked what they knew about sexually transmitted infections. And the following figure 4.1.4 depicts their responses.

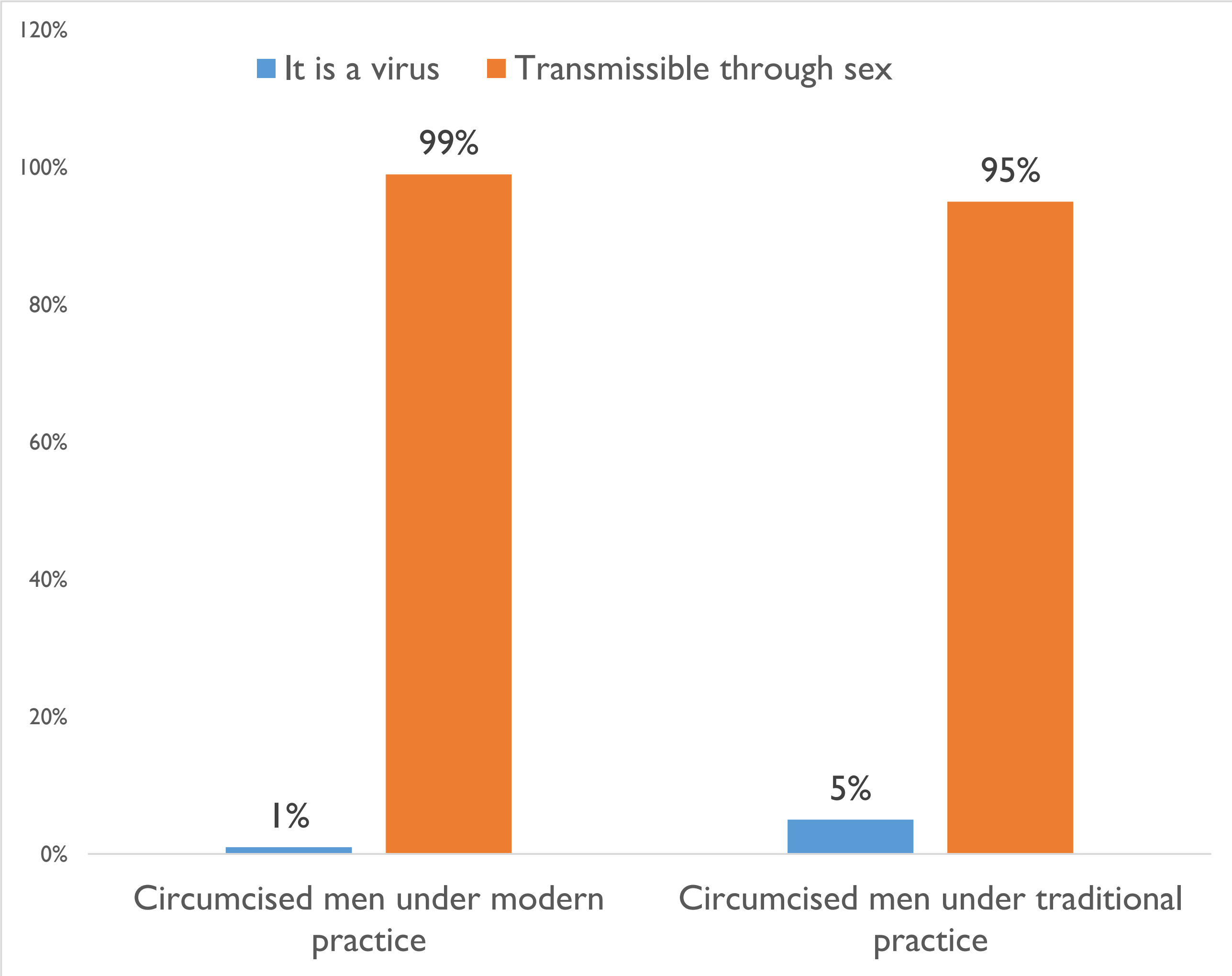
Figure 4.6.1 Traditional Circumcisers' knowledge on sexually transmitted infections (STIs)



(***Source***: *Primary Data*)

Figure 4.6.1 shows that most of the traditional circumcisers (80%) reported that sexually transmitted infections (STIs) were acquired through sex, and only twenty percent (20%) indicated that it was an infection that was transmissible through blood. These results were consistent with those of the health workers that it was an infection transmissible through sexual activities. In terms of the circumcised men's knowledge of STIs, figure 4.6.2 depicts the knowledge of sexually transmitted infections (STIs) among the circumcised men.

Figure 4.6.2 Circumcised men's knowledge on sexually transmitted infections



(***Source***: *Primary Data*)

Figure 4.6.2 shows that under modern circumcision practice, the highest number of the circumcised men (99%) reported that STIs were infections transmissible through sex, and only a few (1%) indicated that it was a virus. On the other hand, under traditional circumcision, the highest number of circumcised men (95%) reported that STIs were transmissible through sex, and the lowest (5%) reported that it was transmissible as virus.

The knowledge of sexually transmitted infections (STIs) among the circumcised men from both practices shows that the majority of the participants (99% - modern, 95% - traditional) had an idea about STIs being infections that were transmitted through sexual activities, and only a few (5% - traditional, 1% - modern) reported that it was acquired as a virus. The study, therefore, established that an STI is an infection and is sometimes defined as a virus other than HIV that is carried through sexual activities.

In this vein, the study concluded that sexually transmitted infections (STIs) can be gotten through sexual activities. However, HIV can also be gotten not only through sex, but also through blood mix methods as discussed in the preceding chapter. And the only probable chance of acquiring STIs through blood as in figure 4.6.2 is through having contaminated blood with fluids that could be transmitted through sex, and this is a rare circumcision; instead sexual activities are the main source of STIs as opposed to blood transfusion. In this case, though rare, the study established that possibilities of acquiring sexually transmitted infections through blood without necessarily engaging into sexual intercourses may exist in situations of blood transfusion, which means, transfusion of infected blood into a healthy person. This justifies why the health workers screen blood using Rapid Diagnostic Test (RDT). RDT is a basic equipment used by health workers in hospitals and clinics to detect antibodies that the body has formed against the STIs. And the study established that in Zambia, health care providers mainly use RDTs to screen for syphilis, hepatitis B and C. Unfortunately, the use of Polymerase Chain Reaction (PCR), an advanced equipment which detects genetic material (DNA) like in the case of HIV was not available for STIs in most health facilities. Therefore, in this case, possibilities of missing sexually transmitted infections without the use of PCR to detect infections might be high during blood transfusion.

Further, even though circumcised men knew how STIs are transmitted, this may not necessarily be enough in the prevention of STIs. For example, it is possible that among the circumcised men, low self-efficacy may exist which could be associated with a high proportion of sexual risk behavior. This is because people learn how sexual infections are transmitted or learn how to talk to their sexual partners about using a condom to avoid unprotected sex, but they are still involved in high-risk sexual behaviors because behaviors are not directly and solely influenced by knowledge and skills.

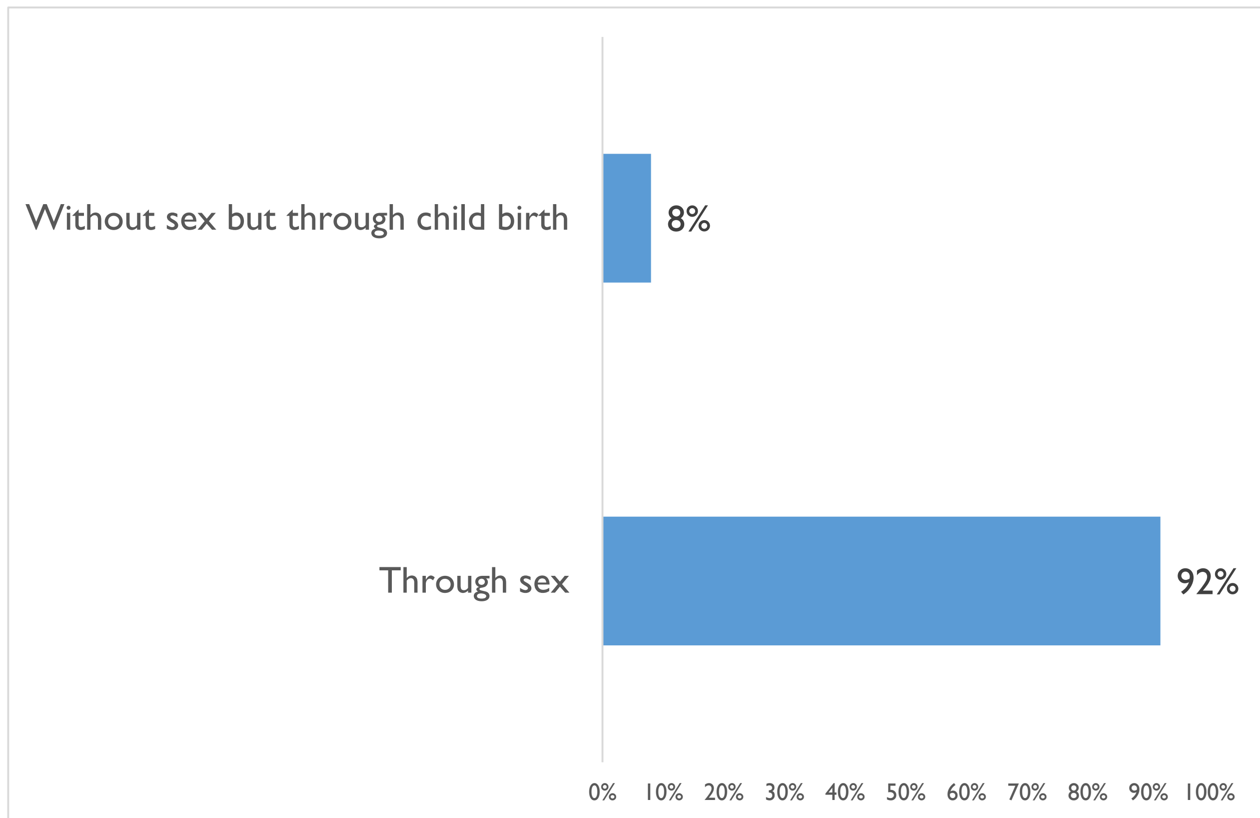
However, behavior is changed in a cognitive process, and this process is formed by integrating awareness, expected outcome, determining emotions, social influence, and past experiences to judge one's abilities in difficult situations. In this regard, attitude also plays a role in safe sex and is associated with self-efficacy. However, having a negative attitude toward condom use does not mean that one person does not use condoms at all, and vice versa. The expected outcome of condom use is another variable that is not a predictor of condom use, as positive or negative expectations can be put together at one time; on the other hand, a condom is used to prevent sexually transmitted infections, but it is expected to reduce sexual erotic pleasure. Therefore, outcome expectation is a reason for doing or avoiding a behavior. Therefore, the study established that behavior change is key in the prevention of sexually transmitted infections.

4.7 En-route to the sexually transmitted infections (STIs) transmission

This section discusses the potential routes to sexually transmitted infections after circumcision. During the study, the respondents when asked whether or not it was possible for a person to contract an STI after circumcision, the study established that potentially, there were possibilities that a circumcised person could still contract an infection (STI) after circumcision.

The study further explored the routes in which infections could be transmitted after circumcision and the following were the findings:

Figure 4.7.1 Routes to the transmission of STIs according to health workers

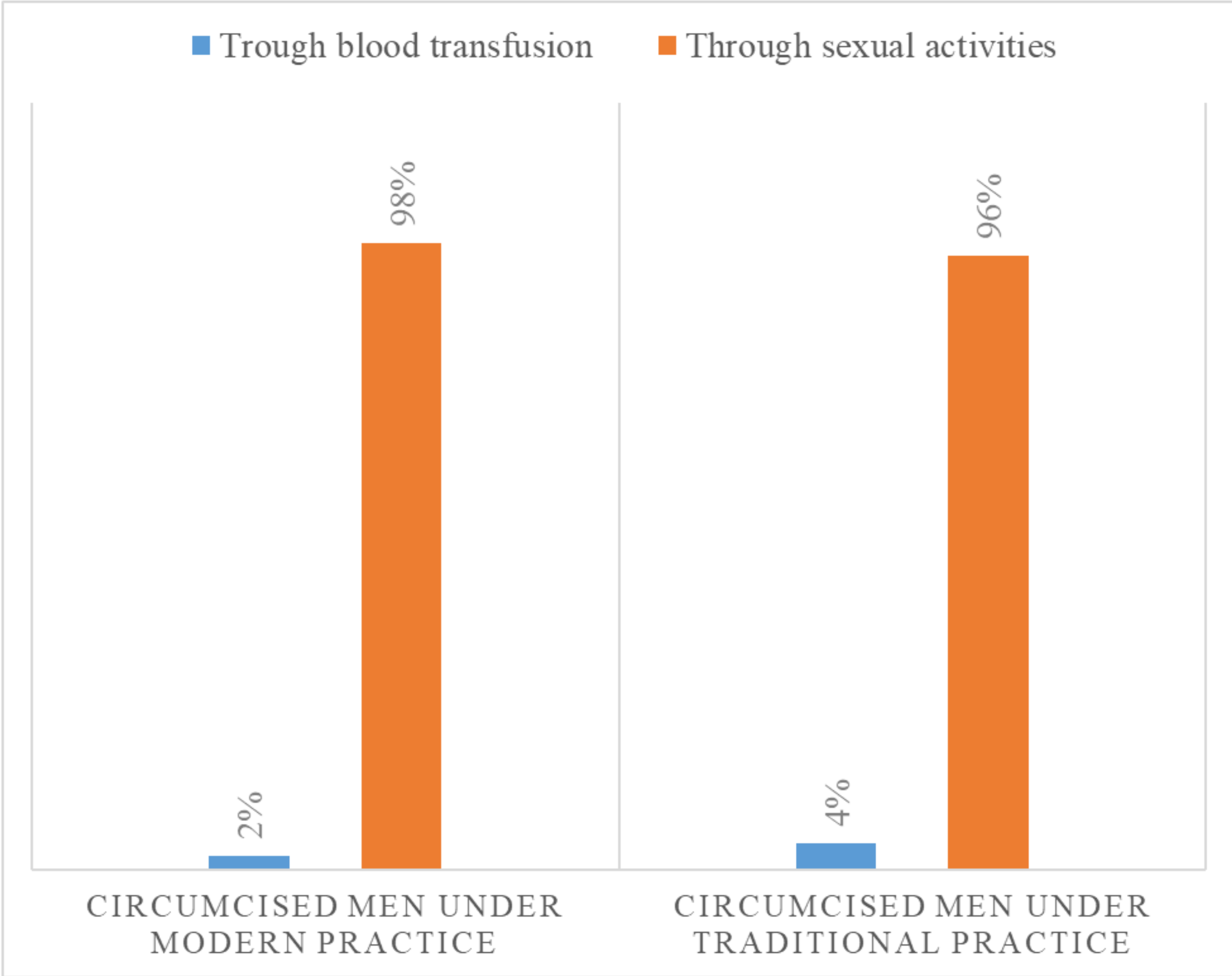


*(**Source**: Primary Data)*

Figure 4.7.1 indicated that sexual activities as the main route of STIs transmission received overwhelming support from the majority of health workers (92%), and a minority (8%) reported that a person does not necessarily engage in sexual activities to get an STI; instead it can at times be acquired through childbirth. Further, as earlier alluded, some health workers specified that though rarely, blood transfusion could be another possibility of STIs acquisition without necessarily engaging into sexual activities. Therefore, the study concludes that the main route to the transmission of STIs was through sexual activities (92%), and at times, newborns could be infected with STIs, especially if their births were associated with the STIs infected parents, and also through contaminated blood resulting from blood transfusion. In this case, there is no clear pattern of sexual activities among newborns but that of infected parents.

Figure 4.7.2 presents information on the circumcised men on the routes to the transmission of sexually transmitted infections (STIs).

Figure 4.7.2 Circumcised men's view on routes to STIs transmission



*(**Source**: Primary Data)*

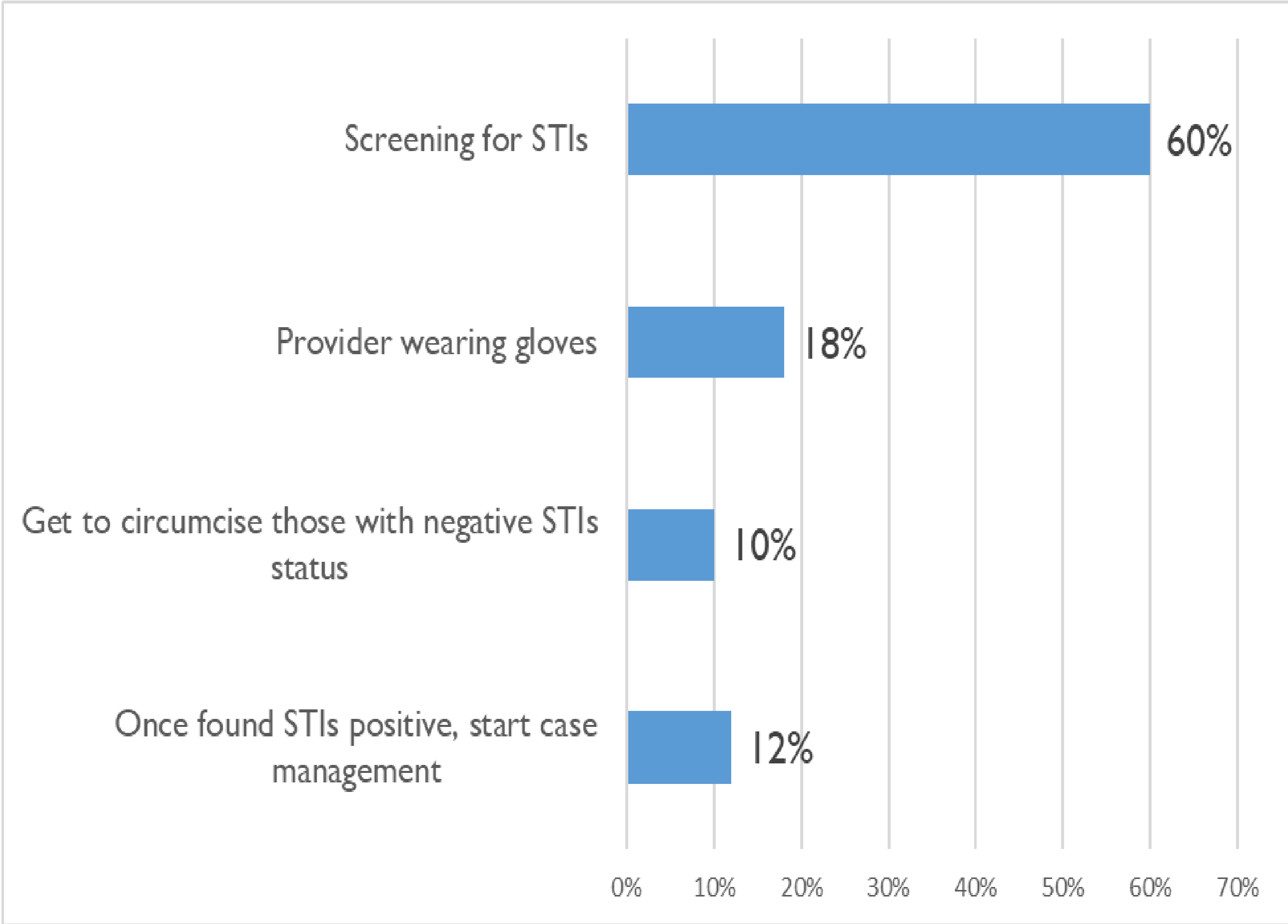
Figure 4.7.2 shows that sexual activities, as the main route to the transmission of STIs, accounted for an overwhelming majority (98%) of the circumcised men under modern circumcision practice and only a few (2%) reported that the route to the transmission of STIs was through blood transfusion. On the other hand, under traditional practice, the majority (96%) reported that sexual activities were the main routes to the transmission of STIs, and only a few (4%) reported

that blood transfusion was the route to transmission of STIs. These results were related to the preceding discussion and inclusive of the traditional circumcisers whose views on the routes to the transmission of STIs were similar to these, though not comprehensively discussed.

4.8.1 Measures put in place in health facilities to protect men against the transmission of STIs

This section presents information on what was being done in hospitals and clinics to protect men against the transmission of STIs and figure 4.8.1 depicts this information.

Figure 4.8.1 Measures for STIs prevention and circumcision according to health workers

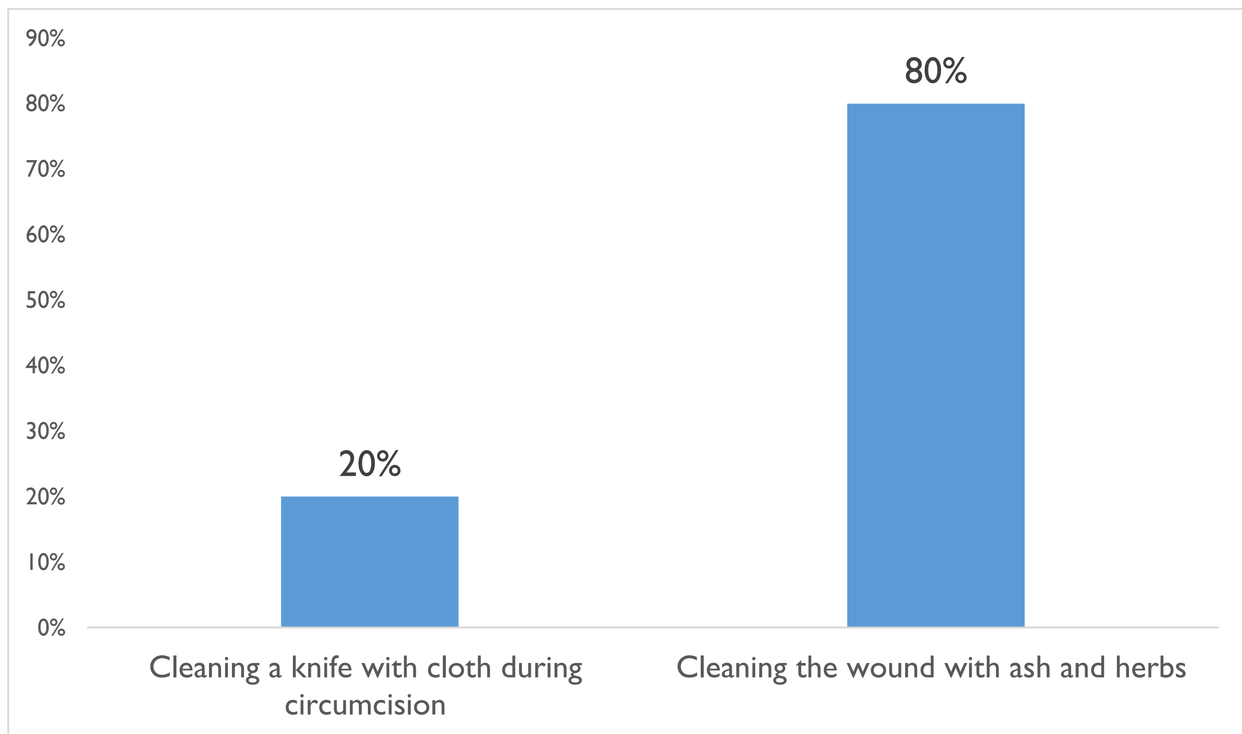


(***Source***: *Primary Data*)

Figure 4.8.1 shows that most health workers (60%) reported that the screening for STIs during and after the circumcision was the main measure at the hospitals and clinics. In this vein, the health workers at the hospitals and clinic screened blood using RDT. Screening of blood before conducting transfusion was important to rule out of any possibilities of blood contamination with sexually transmitted infections, and hence, the study established that screening of blood was an important measure against STIs transmission, and a prerequisite to the blood transfusion. Further, another category of the health workers (18%) who reported that the male circumcision provider wore gloves during circumcision, screening and testing of men for STIs. This was followed by health workers (12%) who reported that once a man was found positive for STIs at the initial visit to the health facility, then the person will be put on STIs treatment. And a few (10%) reported that circumcision was only conducted among those men who tested negative for STIs and those testing positive for STIs could not undergo circumcision till they recovered from STIs.

Therefore, the study concludes that the main measures put in place at hospitals and clinics to protect men during and after circumcision against the transmission of STIs were; the screening of men for STIs (60%), the wearing of gloves by providers (18%), the commencement of STIs treatment for all STIs positive cases (12%) and conducting circumcision only on those (10%) with negative STIs results. In line with the above discussion, figure 4.8.2 depicts information on STIs protective measures put in place by the traditional circumcisers at the *Mukanda* camps.

Figure 4.8.2 Measures put in place by traditional Circumcisers to protect men against the transmission of STIs



***(Source**: Primary Data)*

Figure 4.8.2 shows that most of the participants (80%) indicated that the main measure put in place at the camps to protect men against the transmission of sexually transmitted infections (STIs) was the cleaning of the wound with ash and the administration of herbs. And only a few (20%) indicated that the cleaning of a knife with a cloth before using it on the next initiate at the *Mukanda* camp was the measure in place.

Based on these findings, the study deduces that the main measure for the protection of the men against the transmission of STIs after the circumcision was the cleaning of the wound with ash and administration of herbs, and also the cleaning of a knife with a cloth during circumcision. Even though the measure of cleaning the knife in preparation for use on the next initiate was given as the strategy for protection against the transmission of STIs, the study's position was that this measure was better placed under HIV prevention as opposed to other sexually transmitted infections (STIs). This is because, the study established that there was no clear pattern of STI

prevention from the cleaning of the knife with a cloth during circumcision, though not significant, probably, this measure would have suitably applied to newborns from parents infected with STIs and undergoing circumcision. And on the use of ash to clean the wound and stoppage of bleeding on the foreskin and the administration of the wound with traditional herbs after circumcision, this too was not associated with the prevention of STIs and was misplaced by the traditional circumcisers. It is against this inconsistence in findings compared to the preceding discussions that the study ruled out that the wound cleaning with ash coupled with herbs administration (80%), and knife cleaning with a cloth (20%) were measures without direct impact on the prevention of STIs transmission among the circumcised men.

4.8.2 Efficacy of modern and traditional circumcision practices on STI prevention

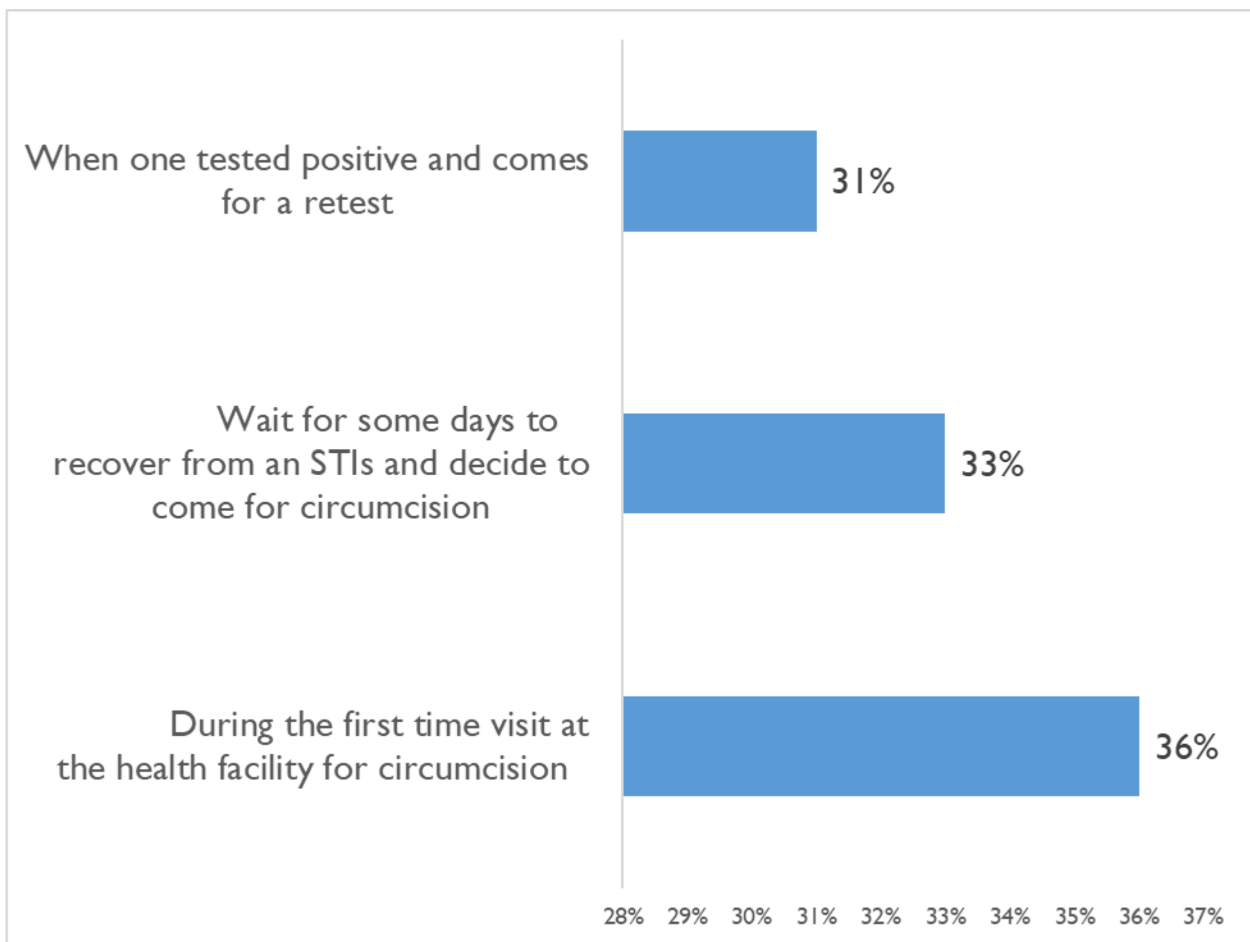
This section established the extent to which traditional and modern circumcision practices prevented the transmission of STI in Kapiri Mposhi and Chavuma districts. As from the preceding discussions, efficacy is defined as the ability by a given circumcision practice to yield a negative HIV result, that is to say, the STI status of the circumcised men after circumcision should be negative implying the absence of the STI infection in the body. And to ascertain this, the study measured this efficacy in STI prevention by circumcision type. This was done by comparing the extent or effectiveness by which modern and traditional circumcision practice prevented or not, the transmission of STI in Chavuma and Kapiri Mposhi districts.

Further, this section compared the extent to which modern and traditional circumcision practices prevent the transmission of STIs. The study demonstrated the process that assisted in knowing whether or not, modern and traditional circumcision prevented the spread of sexually transmitted infections. In this vein, the study considered only key aspects before concluding on this matter, and these were the STIs' status of men during and after circumcision. And the study put into consideration that, understanding the views of the participants in isolation was not a good way of accounting for the comparison of the extent to which traditional and modern circumcision practices prevented or not, the transmission of sexually transmitted infection, and hence, the

factor of validating the results through the actual count and review of the medical patient information obtained from medical records and registers at the hospitals and clinics.

Figure 4.8.3 below depicts the health workers' information on the timing of STI testing by circumcised men during a visit to the hospital and clinics.

Figure 4.8.3 Health workers' view on the timing of STIs testing for Clients at health facilities



*(**Source**: Primary Data)*

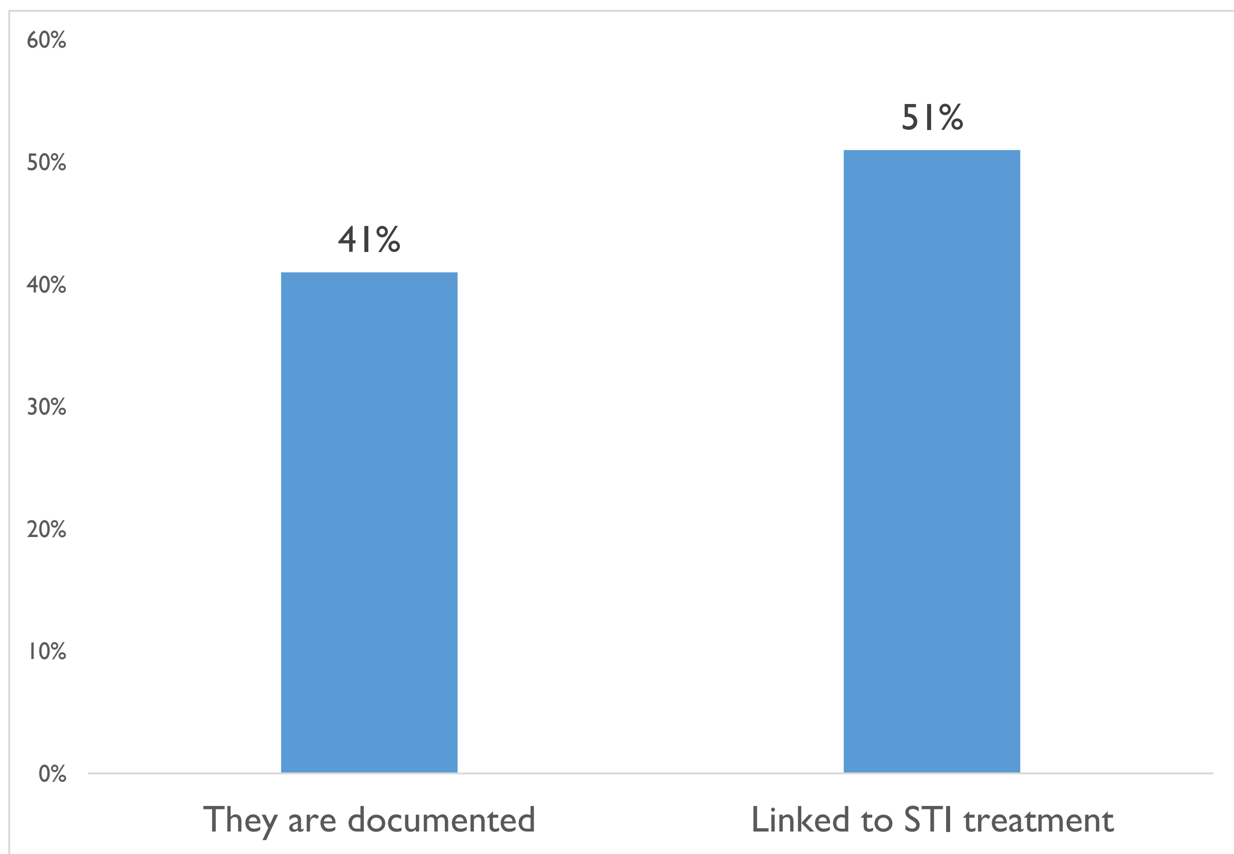
Figure 4.8.3 shows that the STIs testing service was being provided at the hospitals and clinics. In the study, most health workers (36%) reported that STI testing was offered to men during their first visit to the hospitals and clinics for circumcision. While some of the health workers (33%) indicated that the STI test was offered to men after a recovery period from STIs and later visit back the health facility for circumcision. And others (31%) reported that STIs test was done when a person tested positive for STIs during the initial test and came back for an STI repeat test at the hospital or clinic.

Generally, there was availability of STI testing capacity in the hospitals and clinics. Therefore, testing for sexually transmitted infections (STIs) was being done during the following times; when men came the first time for circumcision, after a person who tested positive for STIs recovered and decided to get back to the hospital or clinic, and when a person come back for an STI retest at the health facility. These testing services at initial, after the recovery period, and for a retest for men were only available at health facilities and not under traditional circumcision practice. Further, at health facilities, if a man tested positive for an STI and demanded that the test be done again immediately because the person could not accept the outcome of the test, then once this test was done, it was called a repeat test. And at times, it was also applicable mainly in HIV or STIs arising from the fact that some people may just decide to refuse the test results, and sometimes the invalid results were due to faulty or defective testing kits.

Further, in this study, some timing as to when an STI test is conducted seemed similar but in actual sense differed, for example, there may be a man's choice of coming back or not, for an STI test after recovering from an STI (33%), compared to being advised by the medical staff to come back for a retest (31%) after a specified period and mainly two weeks. However, what was established in the study was that screening of STIs and testing services were available at the hospitals and clinics, and only those men who tested negative for STIs regardless of the timing of the visit to the clinic or hospital got circumcised without this negative test for STIs, there was the need to take treatment and wait for the recovery period to elapse and then get back to the facility for circumcision.

The health workers were further asked as to how they treated the clients who tested positive for STIs and figure 4.8.4 depicts this information.

Figure 4.8.4 Process of handling clients who test positive for STIs at health facilities

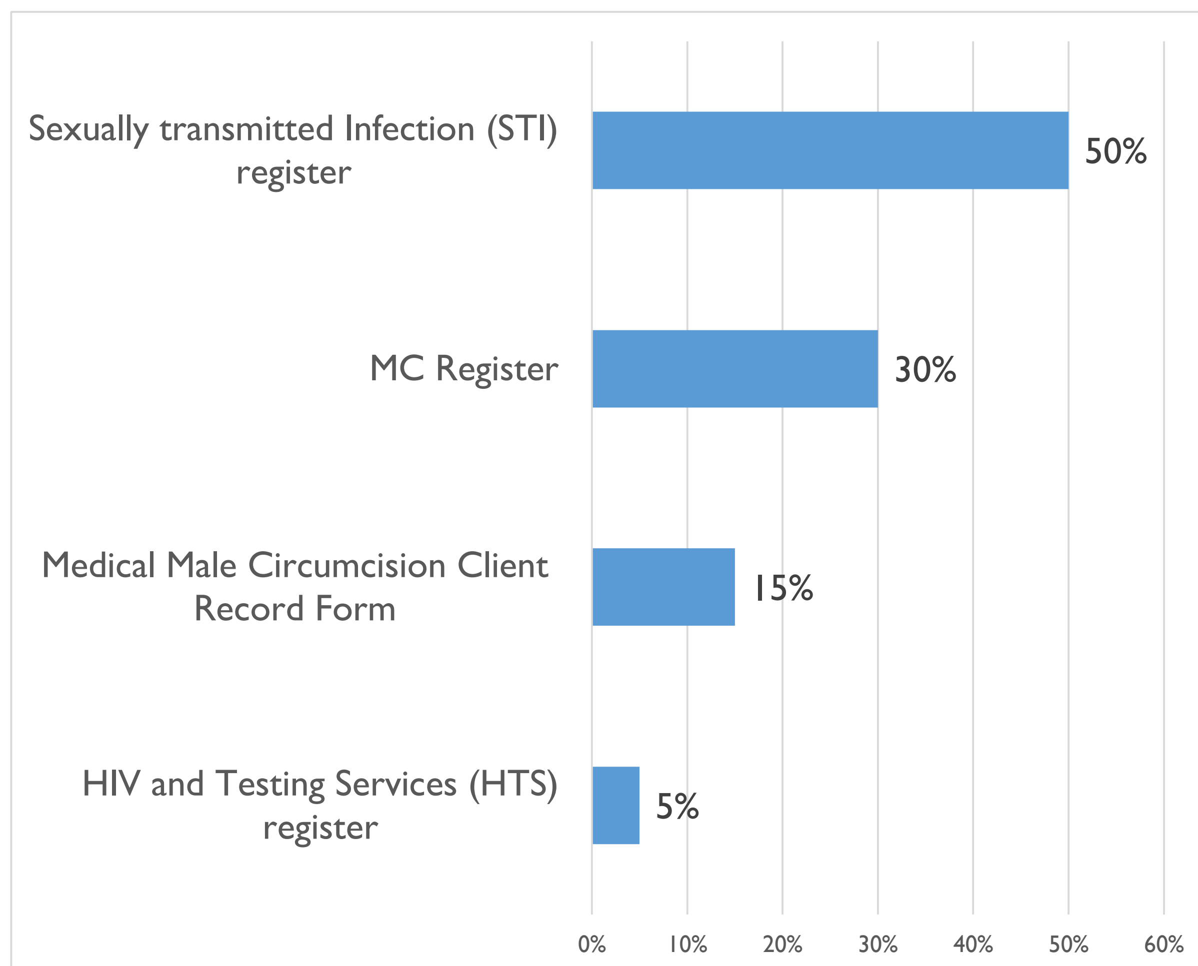


(***Source***: *Primary Data*)

Figure 4.8.4 shows that the highest number of the health workers (51%) reported that when clients test positive for sexually transmitted infections (STIs), linkage to STIs treatment was done, and others (41%) reported that once the client tests positive for an STI, documentation of the client's test results was done. While eighty (8%) percent had no idea of the process that was used to handle clients whenever they test positive for STIs at hospitals and clinics. The process of documentation and linking STIs positive clients to treatment at the STIs clinics was important as part of the averting of men who test STIs positive from relapsing into HIV since there were possibilities of turning into HIV among the STIs positive clients as established by the study. And this prevention was also in line with Uganda's report (2012) on the UNAIDS goal of 90-90-90 HIV pandemic strategy, and STIs prevention was part of this, which if successfully implemented,

then no man testing positive for STIs will later be diagnosed with an HIV infection. In line with the preceding discussion particularly on STI documentation during and after circumcision, figure 4.8.5 presents this information.

Figure 4.8.5 STIs documentation and circumcision



***(Source**: Primary Data)*

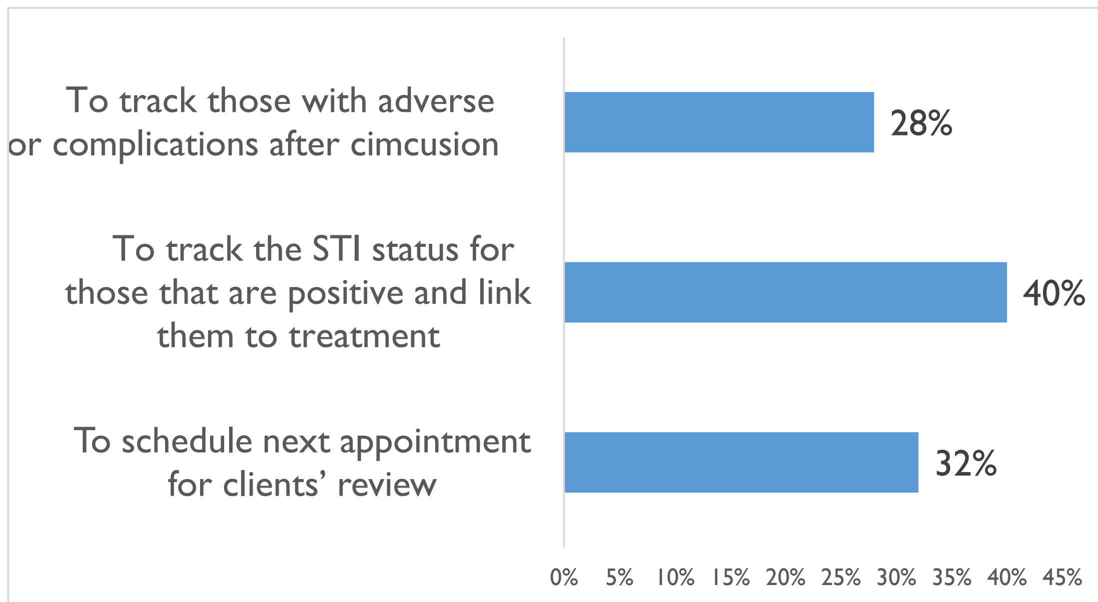
In figure 4.8.5 the highest number of health workers (50%) indicated they were recording information on STIs in the sexually transmitted infection (STI) registers, followed by those (30%) who reported that they used male circumcision (MC) registers. Further, some health workers (15%) reported that the medical male circumcision client record form was used to record the information on STIs and the lowest (5%) indicated that clients were not only being tested for

STIs but testing was also done on HIV for the same clients and hence the utilization of the HIV and testing services (HTS) register for the recording of HIV status of the clients.

The study, therefore, established that the hospitals and clinics had the capacity to collect information related to STIs and HIV using the available data collection tools such as the sexually transmitted infection (STI) registers, male circumcision (MC) registers, medical male circumcision client record forms and the HIV and testing services (HTS) registers.

And such documentation was not available under traditional circumcision practice and this presents an opportunity for traditional circumcisers to engage with health workers and lobby for documentation to use at the *Mukanda* camps.

Figure 4.8.6 Importance of documentation on sexually transmitted infection (STI)



***(Source**: Primary Data)*

Figure 4.8.6 shows that most of the health workers (40%) reported that documentation was important for recording information used to track progress made on those men with STIs positive

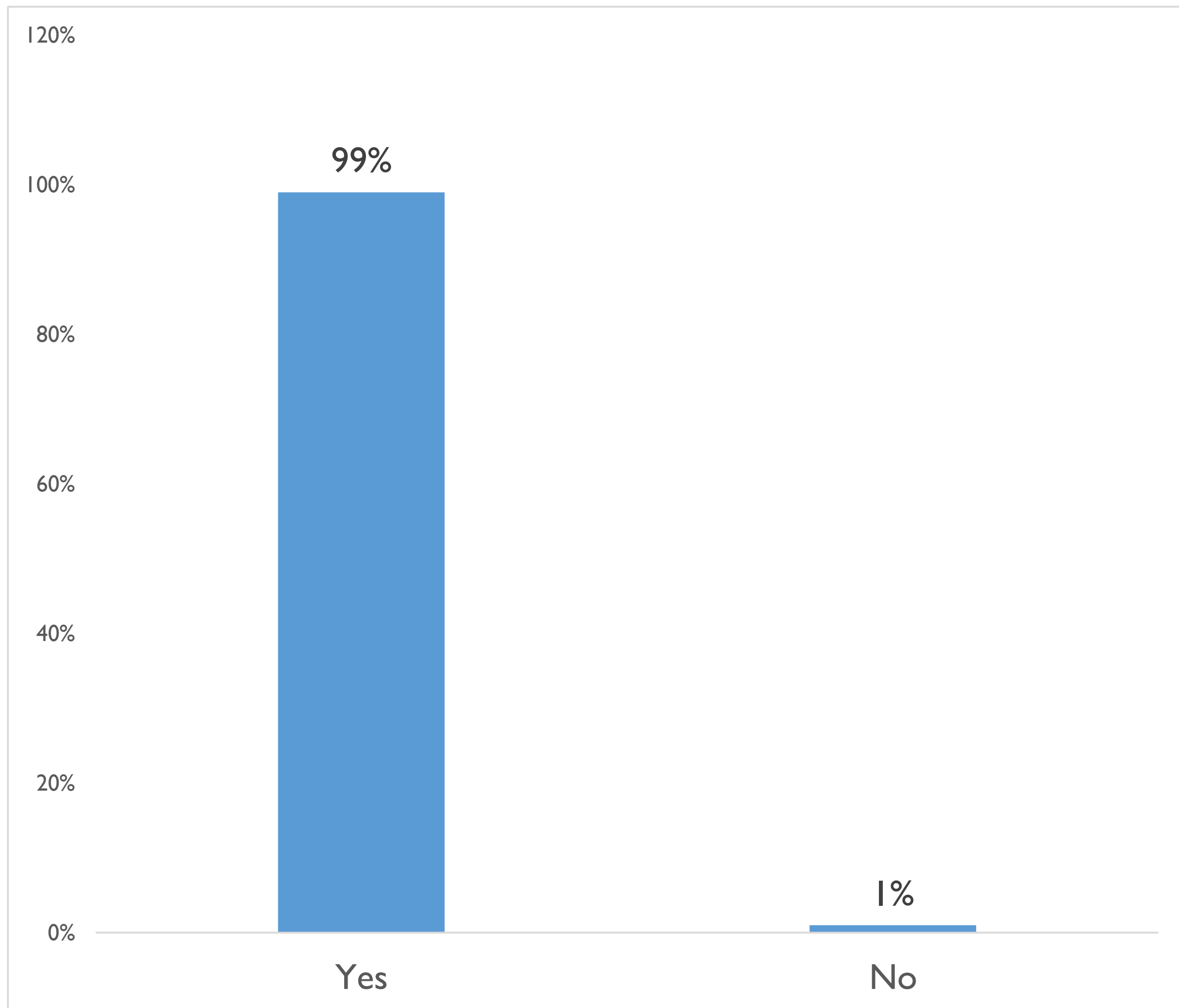
status and linking them to STIs treatment at STIs men's clinics. While some of the health workers (32%) reported that documentation was key in recording information on schedules for the next appointment for clients' review at the hospital and clinics. And others (28%) indicated that documentation was used to record information for tracking clients with complications or adverse reactions arising after circumcision.

The study, therefore, established that documentation of all events surrounding STIs and the circumcision program was key to monitoring and evaluating progress made on the health policy objective of STIs prevention. Tracking of progress made in the prevention of sexually transmitted infection could prove futile without the availability of STI information provided at the health facilities during and after circumcision.

And documentation using clients' medical patient forms, STIs, MC, and HTS registers was the only way to validate whether or not, the circumcised men had a reduced chance of acquiring sexually transmitted infections based on the outcome of the STIs tests conducted by the professional health staff at the hospitals and clinics. However, despite the availability of these STI data collection tools in hospitals and clinics, the study established that such were not available under the traditional circumcision practice.

This section established the extent to which traditional and modern circumcision practices prevented the transmission of STIs in Kapiri Mposhi and Chavuma districts. The health workers during the study were asked to indicate if at all or not, they had situations when men who tested negative for STIs during the first time at the facility and after circumcision went back to the health facility and end up testing positive for STIs, the figure 4.8.7 presents this information on the next page.

Figure 4.8.7 Health workers' views on clients testing positive for STIs after circumcision

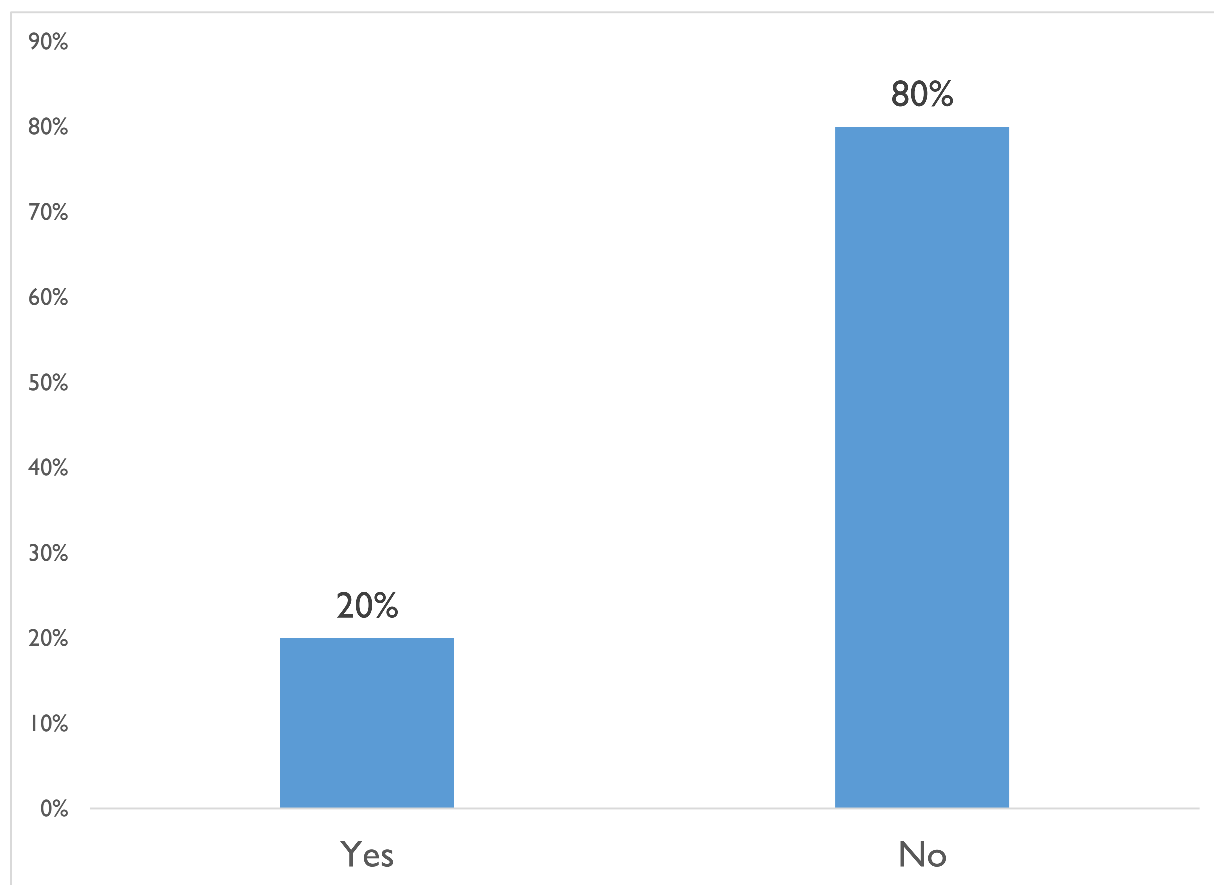


(***Source***: *Primary Data*)

As depicted in figure 4.8.7, an overwhelming response of having had a situation of the men after circumcision testing positive for sexually transmitted infections (STIs) was accounted for by the highest number of the health workers (99%) and the lowest (1%) reported that they had never encountered such a situation of men who got circumcised and ended up with sexually transmitted infections.

Even though a few of the health workers (1%) reported not encountering a situation of men who got circumcised and ended up with sexually transmitted infections, the study established that indeed there were possibilities or chance that the men after circumcision could still contract the sexually transmitted infections.

Figure 4.8.8 Traditional Circumcisers' view on circumcision and STIs prevention



(***Source***: *Primary Data*)

Contrary to figure 4.8.7, particularly under modern practice where the majority of the health workers (99%) had encountered situations where men after circumcision got infected with STIs, figure 4.8.8 shows that only twenty percent (20%) of the traditional circumcisers reported a

similar situation of men getting infected with STIs after circumcision. And most of the traditional circumcisers (80%) had not heard about any rumors or came across a situation in which men after circumcision got infected with sexually transmitted infections (STI). Further, the traditional circumcisers who had come across men who got infected with STIs after circumcision were asked to indicate what they thought was the reason for circumcised men getting infected with STIs. Leaving the thin skin after circumcision and engaging in unprotected sexual activities were the main reasons for STIs transmission advanced by the circumcisers.

The findings on the majority (80%) of the traditional circumcisers in figure 4.8.8, probably, the circumcisers had no chance of STIs feedback from the circumcised men and though this assertion of not coming across the record of a person who got infected after circumcision in a given population explained some level of effectiveness of circumcision against STIs. Although the measure in the study was on the extent to which traditional circumcision protected men against STI transmission, the only way to find out was to interrogate those (20%) who had come across situations of men infected with STIs after circumcision. And based on this premise, the study ruled out the views of those (80%) because not coming across the infected men with STIs after circumcision could not provide the basis in terms of the numbers of men who presumably got infected with STIs and hence making the interpretation unsubstantiated.

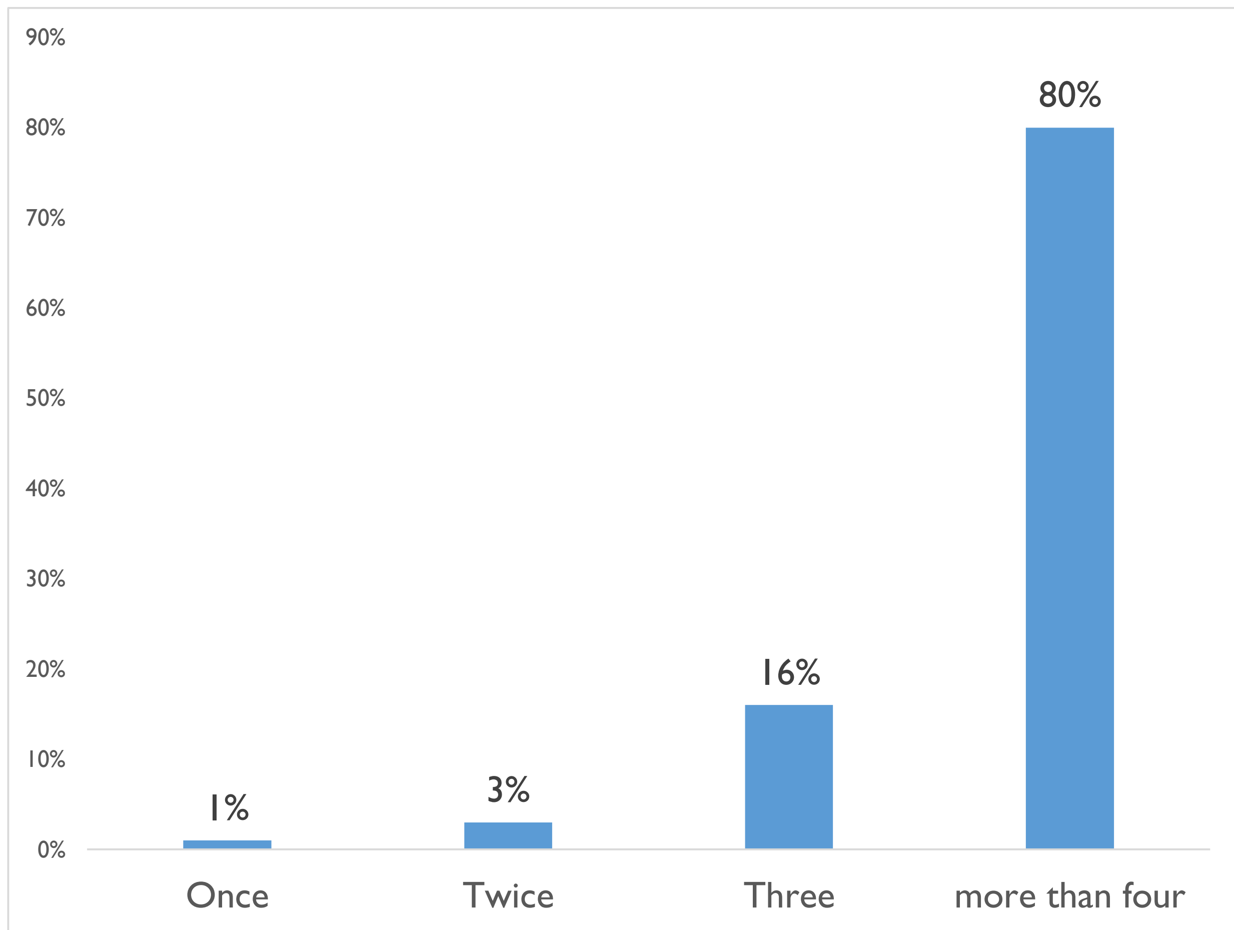
Further, the results of this study of leaving a thin skin on the penis and engagement in sexual activities indicate possibilities of routes to STI acquisition. In the same vein, the study established that these findings were also consistent with those in chapter three (3). Although chapter three dealt with HIV-related issues, the findings were similar to this context. Based on these results though with contradictions among the participants, the study established that this was a clear indication of the likelihood of increased risk of sexually transmitted infections after circumcision. Further, possibilities may exist whereby a circumcised person diagnosed with an STI might also have an HIV especially in situations when the person after contracting an STI does not seek medical treatment for prevention STIs and HIV.

Therefore, some measures under traditional circumcision practice increase to some extent, the vulnerability of men to sexually transmitted infections among the circumcised men. Further, the measures or health-related interventions put in place in this discussion and, explaining the

change as a result of these interventions and the outcome was the true reflection of the utilization of the health belief model theory (HBM). The study concludes that to a larger extent, a circumcision performed in a traditional setting was less efficacious for the prevention of sexually transmitted infections.

The health workers who knew several men who got infected with STIs after circumcision were further asked to indicate the frequency of revisits for STIs infected men after circumcision at hospitals and clinics and figure 4.8.9 depicts this information.

Figure 4.8.9 Frequency of revisits to health facilities by men who contract STIs after circumcision



(***Source**: Primary Data*)

Figure 4.8.9 shows that more than four times of the revisits were made at the health facility by STIs infected men after circumcision and this accounted for the highest frequency of times reported by the majority of the health workers (80%), followed by three times of revisits by men who got infected with sexually transmitted infections after circumcision reported by the health workers (16%). Further, three percent (3%) of the health workers reported that two times revisits were made by those who got infected with STIs after circumcision and only one visit made after the initial one by the infected circumcised men was the lowest (1%).

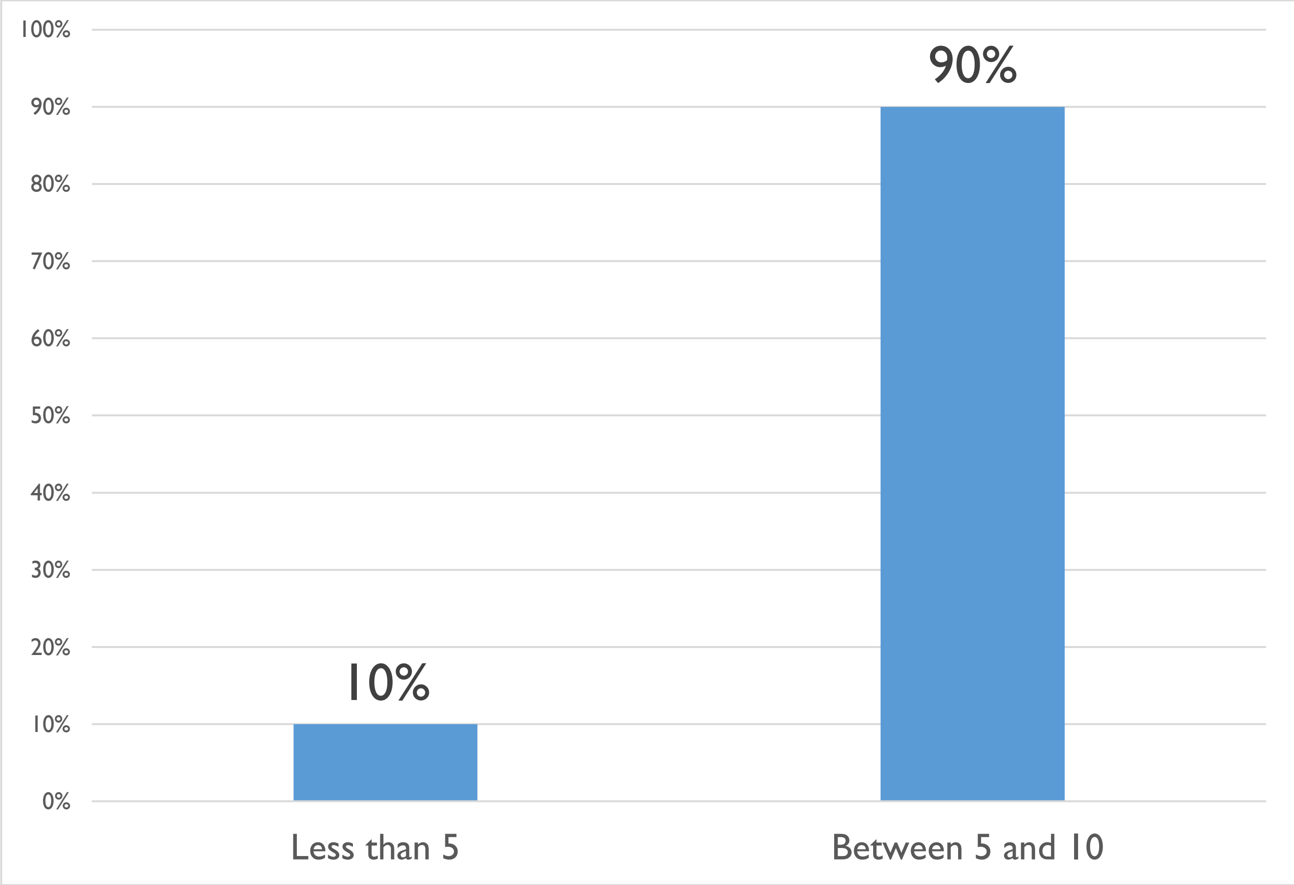
In this study, the revisit implied that a person during the initial test had negative STIs results and got circumcised, however, during the subsequent visits or revisits to the hospital and clinics, the person tested positive for STIs after circumcision, and the count was the frequency of having an STI test results at the health facility. And the higher the number of revisits and testing positive for STIs, the higher the severity of the STIs prevalence.

Therefore, the Zambian health policy of 1991 on the prevention of sexually transmitted infections (STIs) clearly outlines the efforts of ensuring that STIs are brought to a halt, and in attaining this objective, the circumcision program was developed and aimed at ensuring that there is zero (0) or no infections related to STIs after circumcision.

Generally, the study findings were the opposite of a true reflection of the fundamentals of the circumcision program, and therefore, based on the high occurrences of STIs prevalence (more than four (4) times) after circumcision, the study concludes circumcision performed under medical setting was associated was not effective in the prevention of sexually transmitted infections transmission.

The traditional circumcisers who knew several men who got infected with STIs after circumcision were further asked to indicate the number of men they heard were infected with STIs and clinics and figure 4.9.1 depict this information.

Figure 4.9.1 Traditional circumcisers' view on the number of men who tested positive for STIs after circumcision

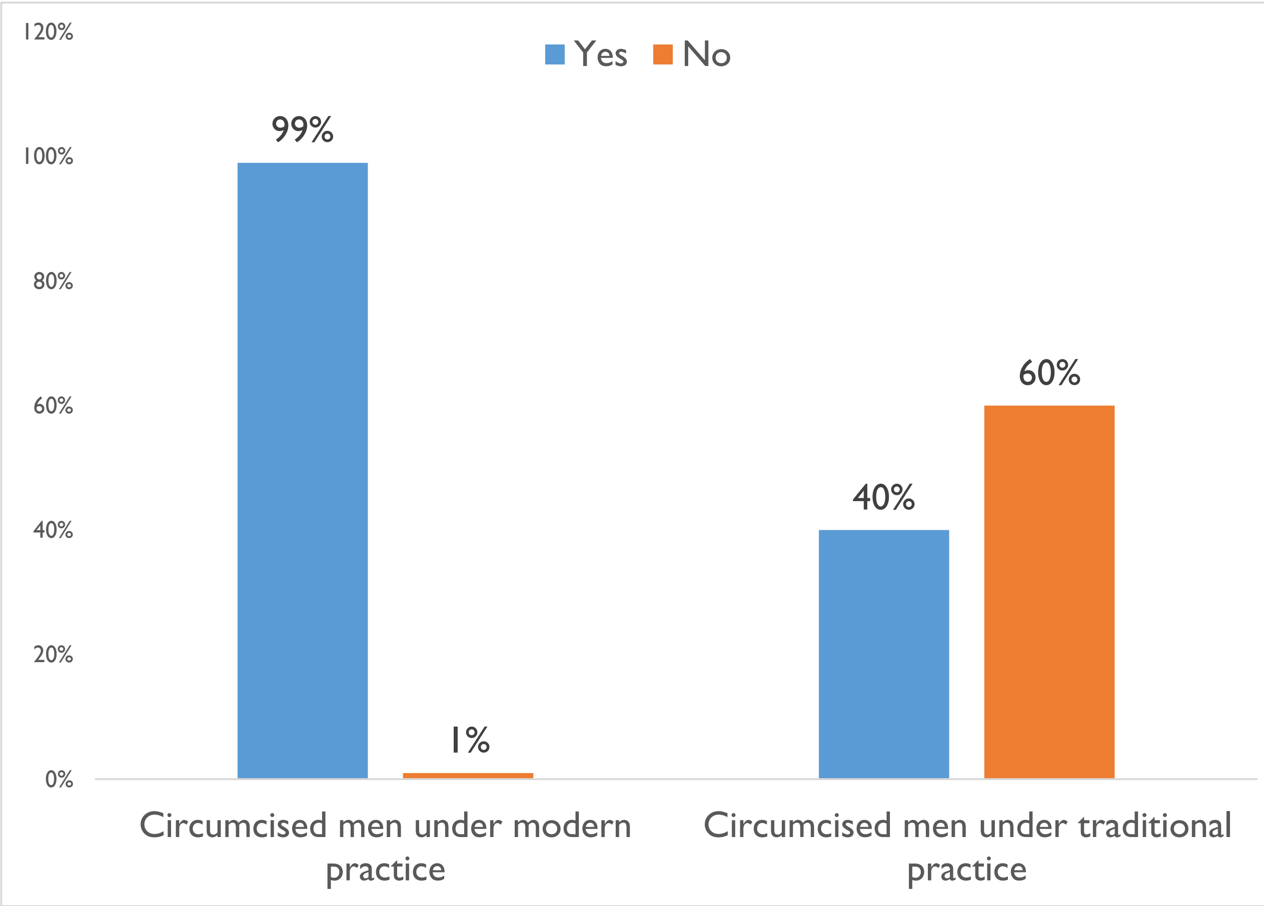


*(**Source**: Primary Data)*

Figure 4.9.1 shows that there were more traditional circumcisers (90%) who reported that the number of infected men with sexually transmitted infections (STIs) after the circumcision was between five (5) and ten (10) and only a few (10%) reported that infected men with STIs after circumcision they knew were less than five (5).

The study established that these results had a similar pattern to that of figure 4.8.9 in which the number of revisits to the hospital and clinics (modern) was consistent with the number of STIs infected men that the traditional circumcisers were aware of, and because of this similarity in patterns of sexually transmitted infections among the men after circumcision, the study concluded that there was a prevalence of STIs after undergoing traditional circumcision. During the study, the beneficiaries of circumcision were approached to indicate if they had tested for sexually transmitted infections (STIs) during their first visit to the health facilities, and figure 4.9.2 provides this information.

Figure 4.9.2 Circumcised men's STIs testing at 1st visit to the health facility



(***Source***: *Primary Data*)

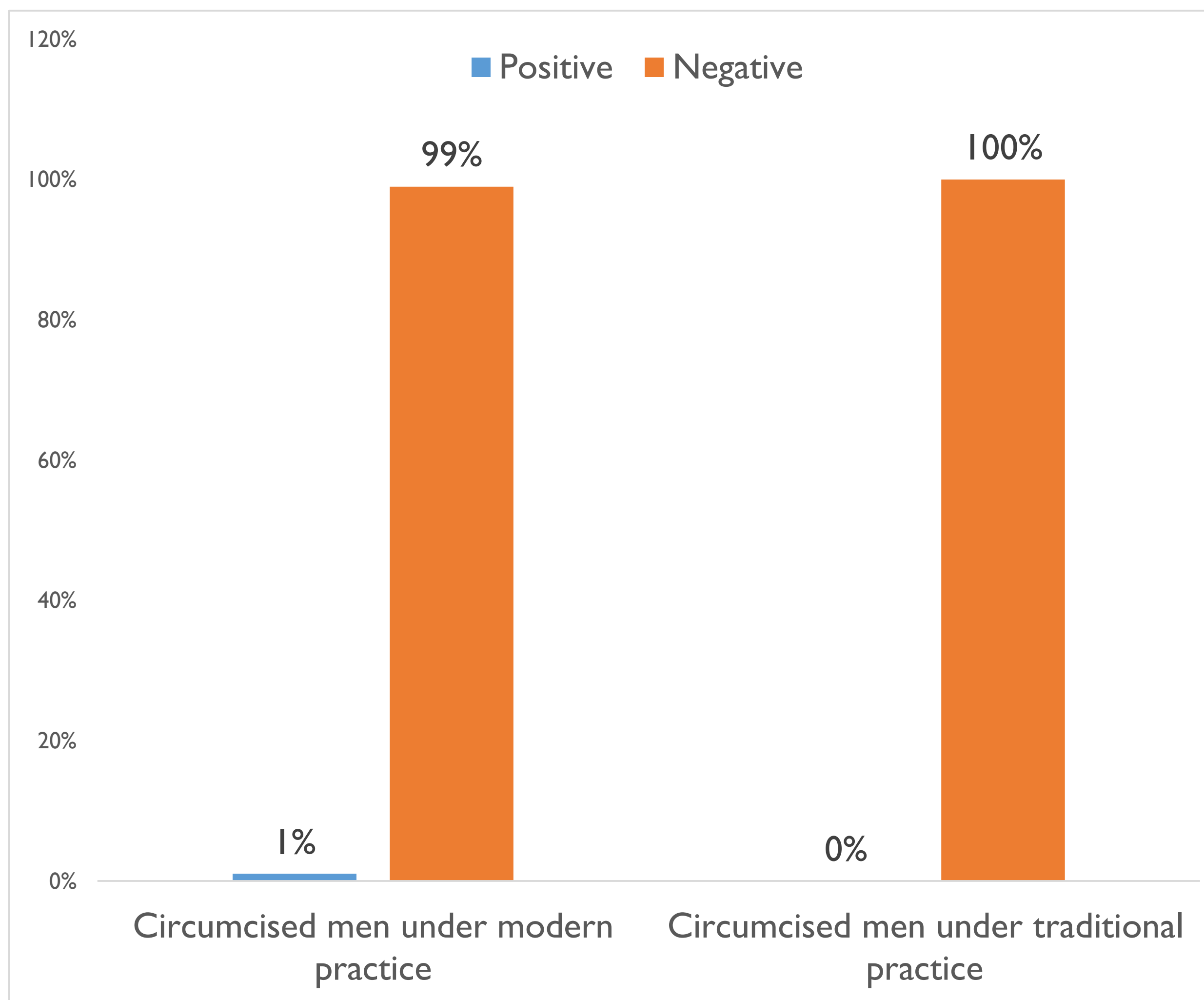
Figure 4.9.2 shows that under modern practice, the highest number of men (99%) reported that they had tested for sexually transmitted infections (STIs) during their first visit to the hospitals and clinics, and the lowest (1%) reported not having received an STI test during their initial visit to the health facilities. While under the traditional circumcision practice, the highest number of traditionally circumcised men (60%) did not receive an STI test and the lowest (40%) reported having been tested for STIs during the visit to the clinic.

The study further interrogated why the few (1%) of the men under modern circumcision practice did not get tested for STIs during their first visit and the participants reported that there were stock outs of STIs testing reagents and were told to wait for a few days for them to be available. However, the test was done afterward and hence the men proceeded in getting circumcised. The study also established that the traditionally circumcised men (40%) who got tested for STIs at hospitals and clinics reported that they had been tested at the clinics before getting to circumcision procedures at *Mukanda* camps.

The study deduces that there was an STI testing capacity among the health facilities as evidenced by the numbers of men who tested for STIs (99%-modern, 40%- traditional) during their initial visit to the health facilities. Further, the Ministry of Health aspires to attain the universal coverage (100%) availability of STI testing reagents in all the health facilities. However, this study, reported the non-availability of STIs testing reagents as reported by some circumcised men (1%). This presents an opportunity for the government and partners to make a financial investment in the procurement of STIs testing kits for all the health facilities across the country, and this, in turn, will benefit traditionally circumcised men with the desire to get tested for STIs at the hospital and clinics like the five forty percent (40%) in figure 4.2.8.

Those who tested for sexually transmitted infections (STIs) were asked to indicate their test results and figure 4.9.3 depicts this information.

Figure 4.9.3 Circumcised men's STIs test results at initial visit to the health facilities



(Source**: Primary Data**)

Figure 4.9.3 shows that at the initial test under modern circumcision practice, the highest number of men (99%) tested negative for sexually transmitted infections (STIs), and only a few (1%) tested positive for STIs at the health facilities during their first visit. On the other hand, all the traditionally circumcised men (40%) who had tested for STIs during the first visit to the clinic had negative results.

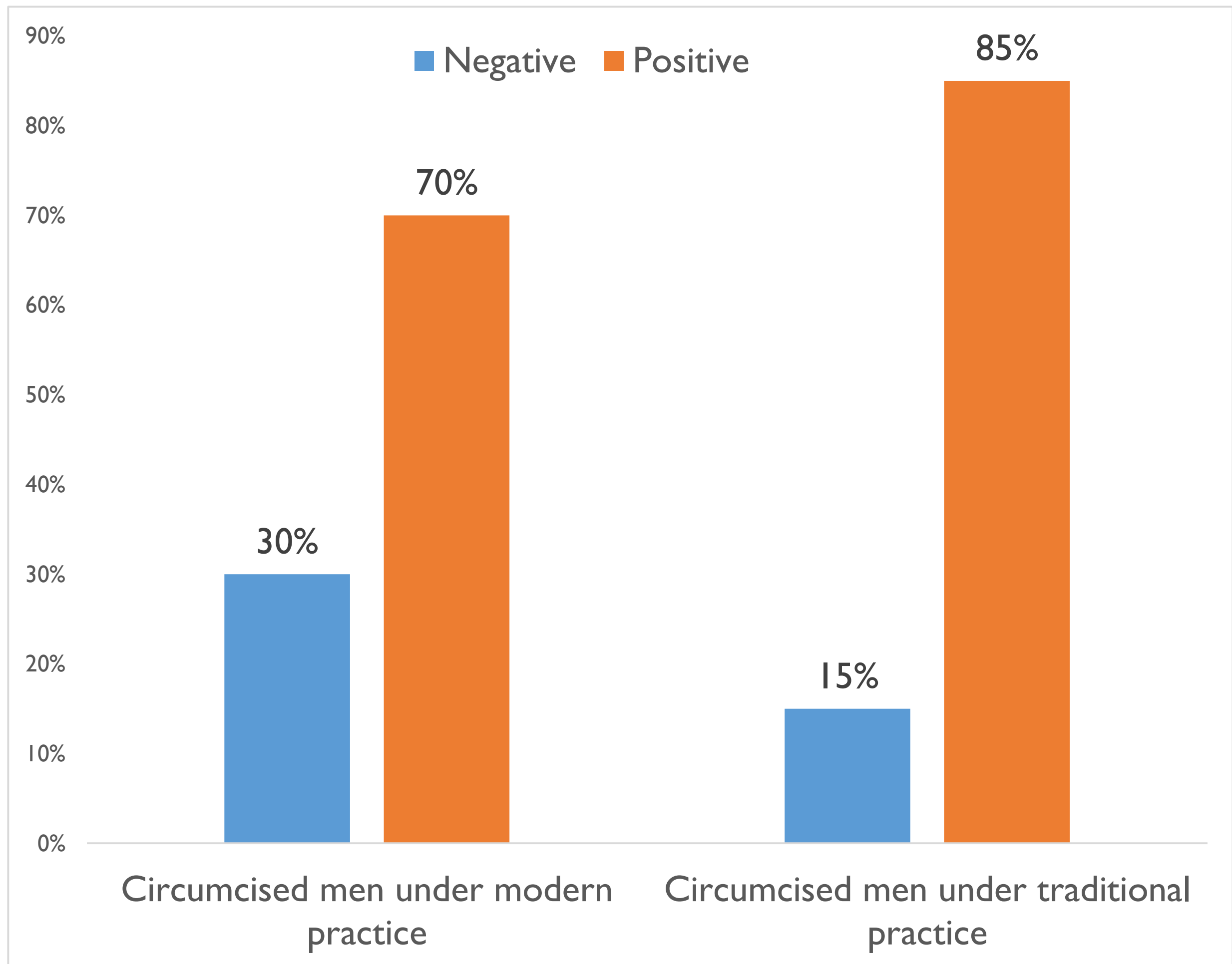
Therefore, the study established that during the initial visits by the circumcised men to the hospital and clinics, the tests are done for STIs generally show that most of the STIs results were negative and only one percent (1%) of the circumcised men had positive results for sexually transmitted infections. The study concluded that the testing for STIs by the circumcised men at the health facilities during their first visit was characterized by high negative results for STIs and only a few had a positive result translating into a low prevalence of STIs.

Those who tested positive for STIs during their initial visit were further asked whether or not, they were circumcised, and the study established that no circumcision was done on them at the hospitals and clinics until they recovered from sexually transmitted infections. They further indicated that STIs treatment in form of drugs was given to them and guided that once they felt better, they could get back to the health facilities for an STI retest, and once found negative for STIs, then circumcision would be conducted on them. While under, traditional circumcision practice, the administration of herbal medicine on STIs infected men, coupled with putting ash on an infected wound and stoppage of blood from oozing out on the foreskin during circumcision, was common as earlier discussed.

The circumcised men from modern and traditional circumcision practices were asked as to whether or not after circumcision they had engaged in a sexual act (intercourse) without protection, the study established that everyone after circumcision had engaged in sexual activities without protection at one point. After establishing that they had engaged in unprotected sexual intercourse, they were further asked to indicate if at all they had a situation when they felt pain on the penis, sores, bumps, rashes, swollen testicles, and/or discomfort during sexual activity or urination. And if any of these symptoms or signs of sexually transmitted infections (STIs) were experienced, were they willing to get back to the hospital and clinic to have a checkup and get tested for sexually transmitted infections (STIs). The study established that the affected circumcised men who had experienced some of the listed STI signs were willing to get back to the health facility for another STI test and further checkup.

The circumcised men who went back to the hospitals and clinics were further asked to indicate the outcome of the STI tests and figure 4.9.4 outlines the STI results.

Figure 4.9.4 Circumcised men's STIs test results during subsequent visit at the health facility



(***Source***: *Primary Data*)

Figure 4.9.4 shows that under the modern circumcision practice, the highest number of the circumcised men (70%) who went back to the hospital and clinic after some days had experienced symptoms of STIs and had positive STIs test results during the follow-up visit, and the lowest (30%) had negative results after undergoing sexually transmitted infections (STIs) tests during the subsequent visit at the health facility. Under traditional circumcision practice, the study followed a cohort of traditionally circumcised men (40% in figure 4.9.2) who initially tested negative for STIs at the clinic. Further figure 4.9.4 shows that under the traditional practice, most men (85%) reported that they had visited some clinic after circumcision for checkups, especially when they experienced signs of STIs, and their STIs test results during

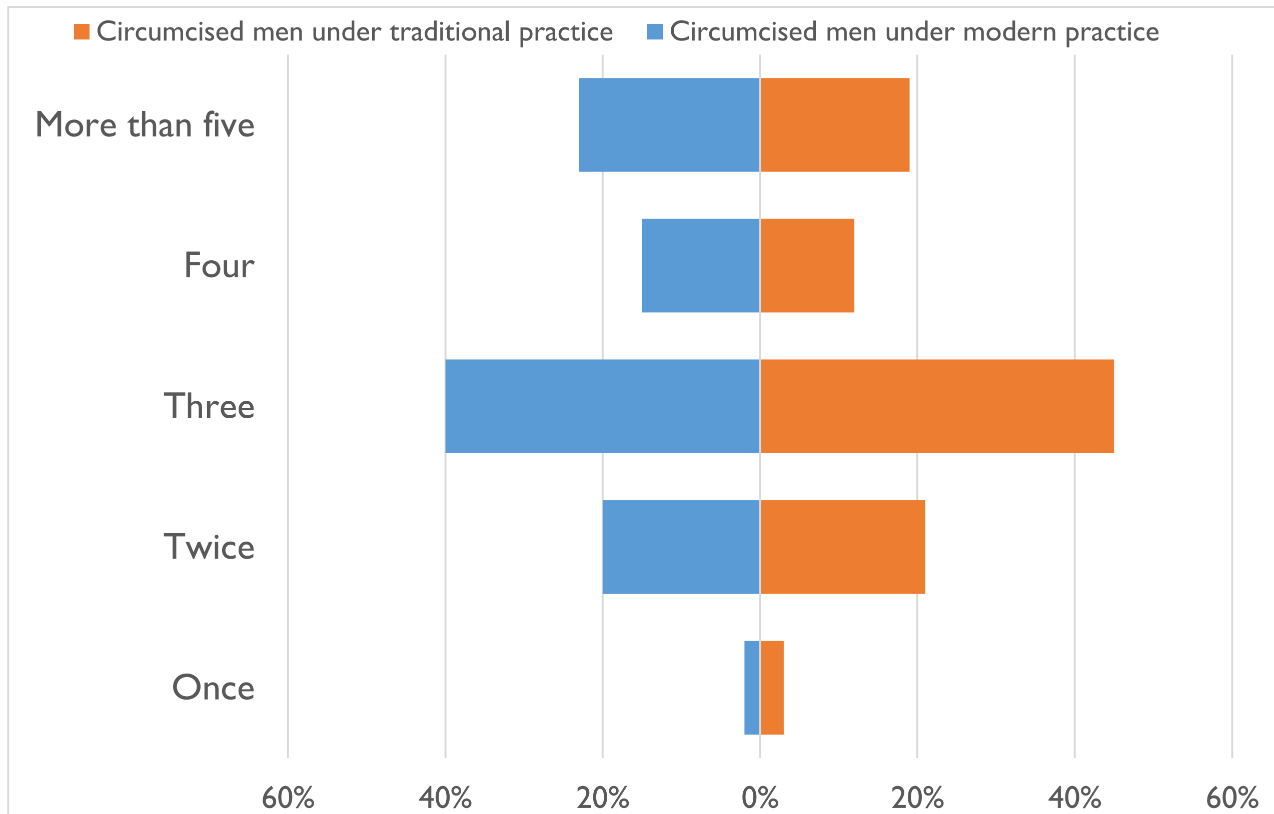
follow up visits to the clinic were positive. On the other hand, fifteen percent (15%) of the traditionally circumcised men had negative results for STIs during a follow visit at the clinic.

The study established that the health workers followed the guidelines of STI tests by ensuring that all the men, whether circumcised or not, receiving their first STI tests should come back for another test after a certain period. The timing, of course, differed from that of HIV which required one to come back after three (3) months whereas, under STIs, the period was shorter to only a few weeks, mainly a maximum of two (2) to allow a recovery process on the infected men. And these timings in retests for STIs were also in line with the WHO (2017) testing guidelines for STIs. Therefore, since high numbers of positive cases among the circumcised men were recorded across the practices (85% - traditional, 70% - modern), the study established that circumcised men (85%) under traditional circumcision usually are left with a thin skin on the penis vis-à-vis a thick one providing a layer of protection against STIs under modern practice. And as a result of this, susceptibility to sexually transmitted infections after circumcision is likely to be high among traditionally circumcised than to their counterparts (70%) under modern circumcision.

The study concludes that the chance of STI transmission under traditional circumcision practice was higher than that of modern practice. However, since patterns of sexually transmitted infections were common across both practices, the study concludes that circumcised men, regardless of the practice they had to undergo, may acquire sexually transmitted infections after circumcision. As indicated in the preceding discussion, the amount of skin left on the penis after circumcision made circumcised men susceptible to the sexually transmitted infections under traditional practice and this aspect was not adequately covered under modern practice. In other words, the prevalence of STIs was still common among the circumcised as evidenced by the STIs positive results in figure 4.9.4 and this gives the government and cooperating partners an opportunity to prioritize funding for preventive measures of STIs such as condom distribution across the country. In this line, the messages of condom use even after circumcision should be encouraged and disseminated since circumcision alone may not necessarily provide full protection against STIs, as established by this study. On the other hand, the thirty percent (30%) under modern and fifteen percent (15%) under traditional circumcision practice are a true

reflection of the partial protection that circumcised men have after circumcision, regardless of the practice. In line with testing positive for sexually transmitted infections (STIs) among the circumcised men, figure 4.9.5 depicts the information on the frequency of acquiring STIs reported by circumcised men who had a follow-up visit at the health facility.

Figure 4.9.5 Circumcised men's frequency of testing positive for STIs after circumcision



(***Source***: *Primary Data*)

Figure 4.9.5 shows that under traditional circumcision practice, the highest number of the circumcised men (45%) reported to have sexually transmitted infections three (3) times after circumcision, followed by those (21%) who had STIs, twice after circumcision. Further, more than five times contracting STIs accounted for nineteen percent (19%) of the traditionally circumcised men. While those who reported that they had tested four (4) positive for STIs were twelve percent (12%) and the lowest (3%) reported that at least they only had sexually transmitted infections once. Figure 4.9.5 further documents that the highest number of

circumcised men (40%) reported that they tested three (3) times positive for STIs, followed by those (23%) who had STIs more than five times. Men who had STIs twice were twenty percent (20%) after circumcision. Fifteen percent (15%) reported that they had STIs four (4) times after circumcision and the lowest (2%) reported that at least they had experienced sexually transmitted infections once in their lifetime after circumcision.

The study established that the sexually transmitted infections positive rate was highest among the traditionally circumcised men (45%) compared to those circumcised under modern practice (40%). And the men circumcised in hospitals and clinics recorded the lowest (2%) prevalence of STIs compared to those traditionally circumcised ones (3%). The sexually transmitted infections positive results were consistent with those in figure 4.9.4 where traditionally circumcised men (85%) were topping the circumcised men (70%) under modern practice. Based on more times of men acquiring STIs after circumcision under traditional than those under modern practice, the study established that there is a high likelihood of acquiring STIs after circumcision under traditional circumcision practice compared to undergoing circumcision under the modern practices, characterized by reduced chances of acquiring STIs. However, the Zambian health policy on STIs prevention advocates that there should be no man acquiring STIs after circumcision, and based on this objective, the circumcision performed under traditional and modern practice failed this objective, therefore, the study concludes that circumcision does not fully protect men against STIs acquisition after circumcision, one of the main reason attributed to this was the amount left on the penis that did not provide a sufficient layer of protection on circumcised men against STI transmission.

In line with these findings, Table 4.8.1 on the next page shows the information about circumcision, STIs tests during the first and follow-up visits at the clinic, and the outcome of the STIs tests during these visits. It is important to note that the STIs status of the circumcised men was obtained from results of STIs antibody testing documented in the medical records for each visit made by the circumcised man and the same STIs results were verified in the male circumcision (MC) register to validate the results and ascertain that the right person had the right STI results and this was useful in analysis and interpretation of the study findings. For the circumcised men with known STI exposure such as those who had unprotected sexual contact,

the researcher defined case visits as those for which a negative and positive STI test result was valid and documented according to the standard STI testing algorithm. Further, the sexually transmitted infections (STIs) status of the circumcised men was based on the assessment made by a clinician and was systematically documented from the physical examination reported in the patient's medical records and registers. In the study, the characteristics of the circumcised men's STIs status (negative test results) at the initial visit versus, the STIs status during the follow-up visits of the circumcised men was compared separately. Patient visits were excluded if STI testing was not performed during the visits, typically because the patient reported having recently been tested or refused to test. However, in situations of having valid negative STI results within two weeks after the visit to the clinic, this was the only exception of considering for inclusion of the circumcised men with valid negative results in the study.

Table 4.8.1 Circumcised men's first and follow-up STI test at Kapiri Urban clinic

Male Circumcision (MC) Register									
S/N	**Details**	**2019**				**2020**			
		15-19 years	**20-24 years**	**25-29 years**	**30-49 years**	**15-19 years**	**20-24 years**	**25-29 years**	**30-49 years**
1	Number of men circumcised	187	178	102	89	207	243	192	56
Sexually Transmitted Register (STI) Register									
2	Number of circumcised men screened and tested for STIs	187	178	102	89	207	243	192	56
3	Number of men tested negative for STIs at first visit	187	178	102	89	207	243	192	56
4	Number of circumcised men who tested positive for STIs at follow up visit	0	3	0	0	4	0	2	1
5	Number of men tested negative for STIs at follow-up visit	187	175	102	89	203	243	190	56
6	Number of men testing positive for STIs referred for STIs syndromic management and treatment	0	3	0	0	4	0	2	1

7	The STI positivity rate (%)	0	1.7	0	0	1.9	0	1	1.8
HIV and Testing (HTS) Register									
8	Number of men whose results were STI positive at follow up visit and tested HIV positive	0	0	0	0	0	0	0	0

(Source**: Kapiri urban, 2019-2020)

Table 4.8.1 shows that, under the year 2019, out of the total one hundred and eight-seven (187) circumcised men at the clinic between the ages of 15 and 19 years, everyone was tested for STIs during the initial visit and their STI results were negative both at initial and follow up visits at the clinic. In this same age category, the positivity rate for STIs was at zero (0) and none of the circumcised men in this category developed into HIV at the follow-up visit, and these HIV results related to other STIs were common in both years. The circumcised men in the age group 20 to 24 years, one hundred and seventy-eight (178) were tested during the initial visit to the clinic, and three (3) tested positive for sexually transmitted infections during the follow-up visit, out of the total tested (178), one hundred and seventy-five (175) had a negative test result for STIs. In terms of STIs positivity rate for the age category 20 to 24 years, one point seven percent (1.7%) was recorded. The age groups between 25 and 29 years had one hundred and two (102) circumcised men tested for STIs during the initial and follow-up visits and no one tested positive for STIs which translated into zero (0) STIs positive rate within this age category. For 30 to 49 years, eighty-nine (89) circumcised men were tested for STIs and all of them had negative STIs results with a zero (0) STIs positivity rate recorded.

For the year 2020, table 4.1.0 presents that the highest number of circumcised men (243) who got tested for STIs was in the age group of 20 to 24 years. Out of these (243), no one tested positive for STIs during the first and follow-up visits at the clinic and this translated into no prevalence of STIs among the circumcised men. Age 15-19 years' category followed and recorded two hundred and seven (207) of the circumcised men who tested for STIs and four (4) tested positive for STIs during the subsequent visit to the clinic, and this translated into one point nine percent (1.9%) STIs positivity rate. Those in the age group of 25 to 29 years, one hundred

and ninety-two (192) of the circumcised men who tested for STIs, two (2) recorded positive results for STIs during the follow-up visits to the facility which translated into one percent (1%) STIs positivity rate among the circumcised men. And during the follow-up visits, fifty-six (56) circumcised men were tested for STIs and only one tested positive for STIs. This lowest group (56) was between the ages of 30 and 49 years and recorded a one-point eight percent (1.8%) STIs positivity rate. As reported in 2019, the pattern continued in 2020 of not having any circumcised men with STIs eventually developing into HIV. And all the circumcised men who tested positive for STIs were referred to an STI clinic and linked to syndromic management and treatment of STIs.

Generally, both 2019 and 2020 recorded STIs prevalence among the circumcised men, though 2020 recorded the highest STIs positive rates (1.9%) compared to 2019 (1.7%). Further, the ages 15 to 19 years in 2020 recorded the highest (1.9%) STIs positive rate, followed by the age group between 30 and 40 years in the same year, while in 2019, the age group between 20 to 24 years recorded one point seven percent (1.7%) and the lowest (1%) age category was 25 to 29 years in 2020. The STI positivity rate remained constant at zero (0) in most age bands for 2019 (15-19, 25-29, and 30-49 years) and 2020 (20-24 years). The study established that more circumcised men were testing positive for STIs in 2020 at the clinic than those (1.7%) testing positive for STIs in 2019.

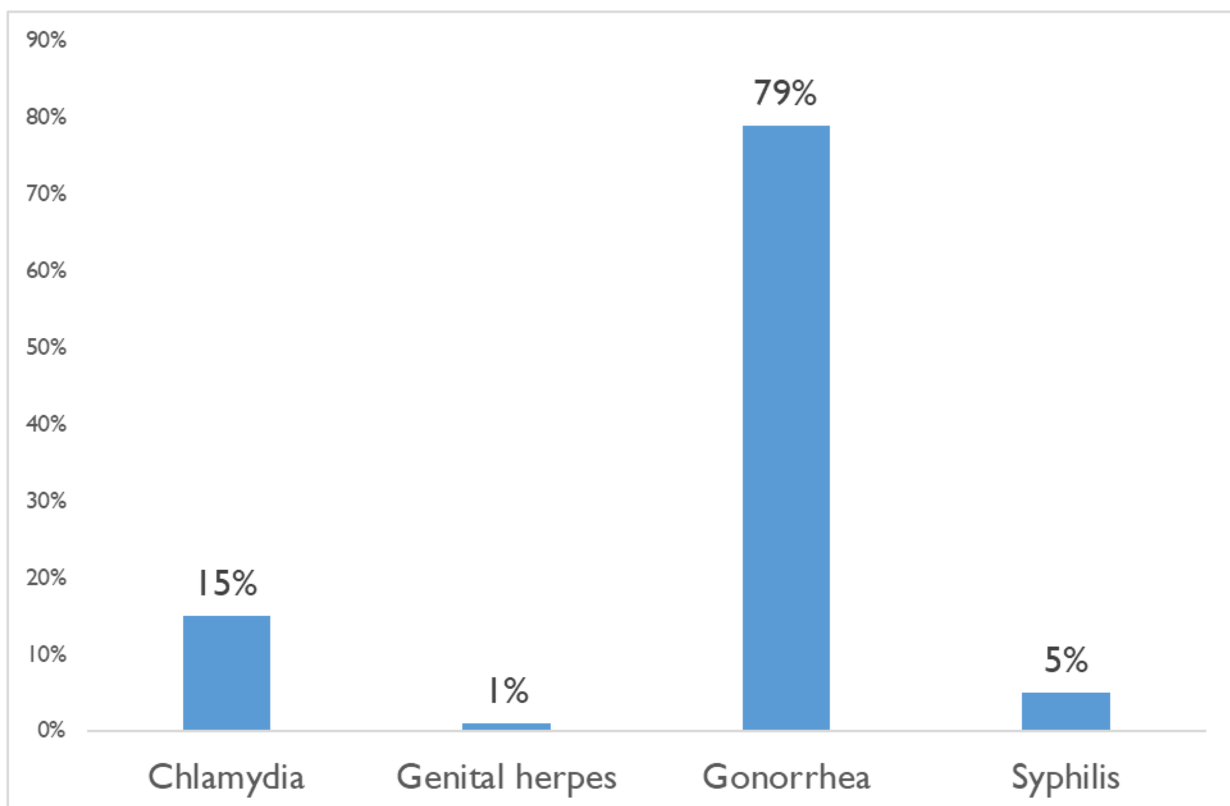
These findings in table 4.8.1 were consistent with those in, figure 4.9.4 and figure 4.4.1. Further, similar to table 4.8.1, figure 4.3.0 depicts information on the circumcised men (70%) under modern practice with an STI positive results, while figure 4.4.1 presented the availability of STIs treatment services for all those men who tested positive for STIs which was also the case in table 4.8.1. The health policy position in Zambia is to have no sexually transmitted infections among the citizenry, and therefore, no man should acquire STIs among circumcision is the primary goal of the voluntary medical male circumcision (VMMC) program in all the health facilities across the country.

However, the study concludes that even though there is a standard of zero infections of STIs measured to protect men against acquiring sexually transmitted infections, the infections rate was still high (1.9%) among the circumcised men when it is supposed to be at zero (0) as per national

standard according to the STIs guidelines of 2017 under the World Health Organizations (WHO). On the other hand, the study concludes that there was capacity in the health facilities in terms of STIs testing, linking of STIs positive men to care (treatment), and those clients with STIs that eventually progressed into HIV infections are also treated. The study, therefore, concludes that there was a high chance of acquiring STIs infection after circumcision from both traditional and modern practices.

The respondents were asked to indicate the type of sexually transmitted infections that were common at the health facilities and figure 4.9.6 depicts this information.

Figure 4.9.6 Type of STIs common for men who got back to health facilities



***(Source**: Primary Data)*

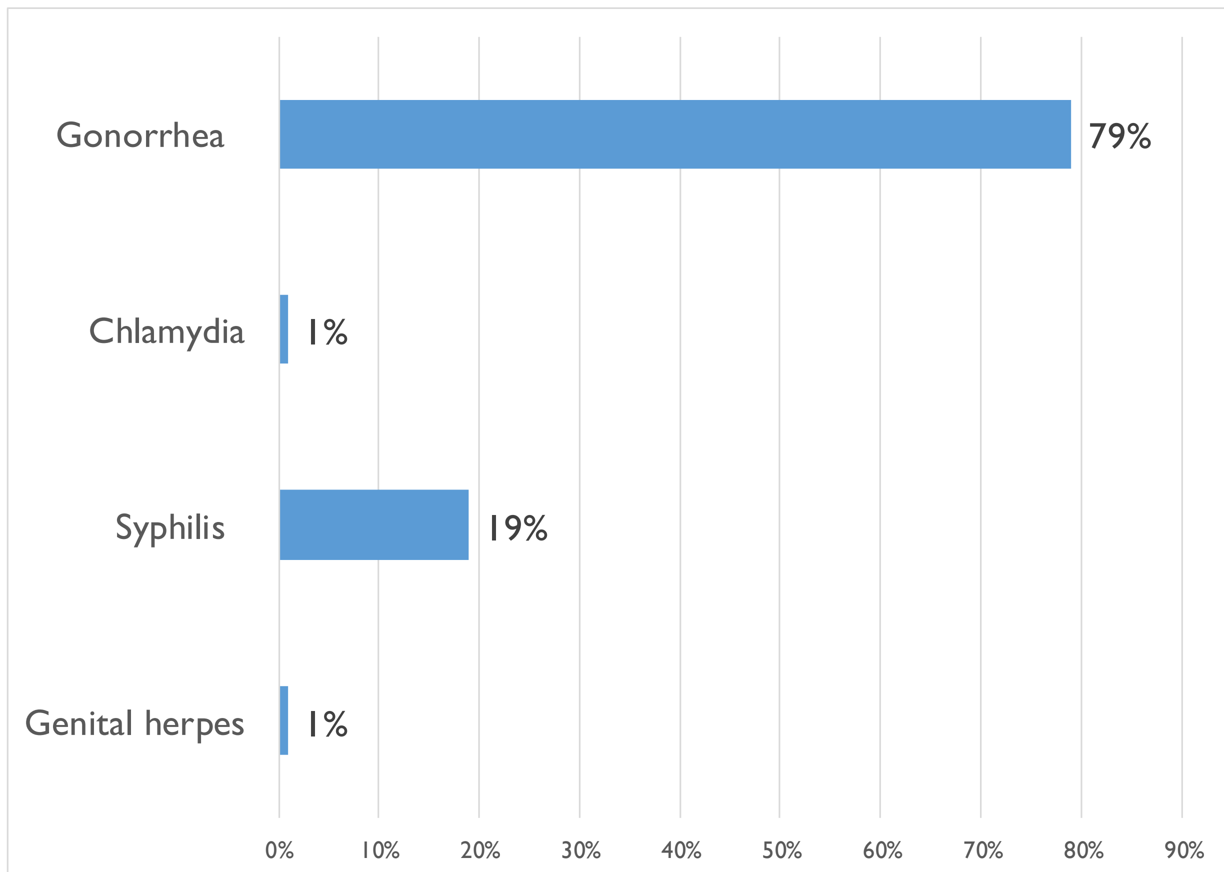
Figure 4.9.6 shows that the highest number of the health workers (79%) reported that gonorrhea was the commonest type of sexually infected infection who got back and tested positive for STIs at the health facilities, this was followed by those (15%) who reported that chlamydia was a

common type of STIs. Syphilis was also reported by the health workers (5%) to be a common type of STI among the circumcised men. And only a few (1%) reported that the common type of STI among the men during follow-up visits was genital herpes.

The study established that the most common STIs among the men who got back to the health facilities and tested positive for STIs during the follow-up visits were gonorrhea and chlamydia, a few common ones were syphilis and genital herpes. The study concludes that most of the STIs identified as common among circumcised men were not impacted by the benefits of protection associated with circumcision.

The traditional circumcisers were asked to indicate the type of sexually transmitted infections they heard among the circumcised men and figure 4.9.7 depicts this information.

Figure 4.9.7 Common type of STIs according to the traditional Circumcisers

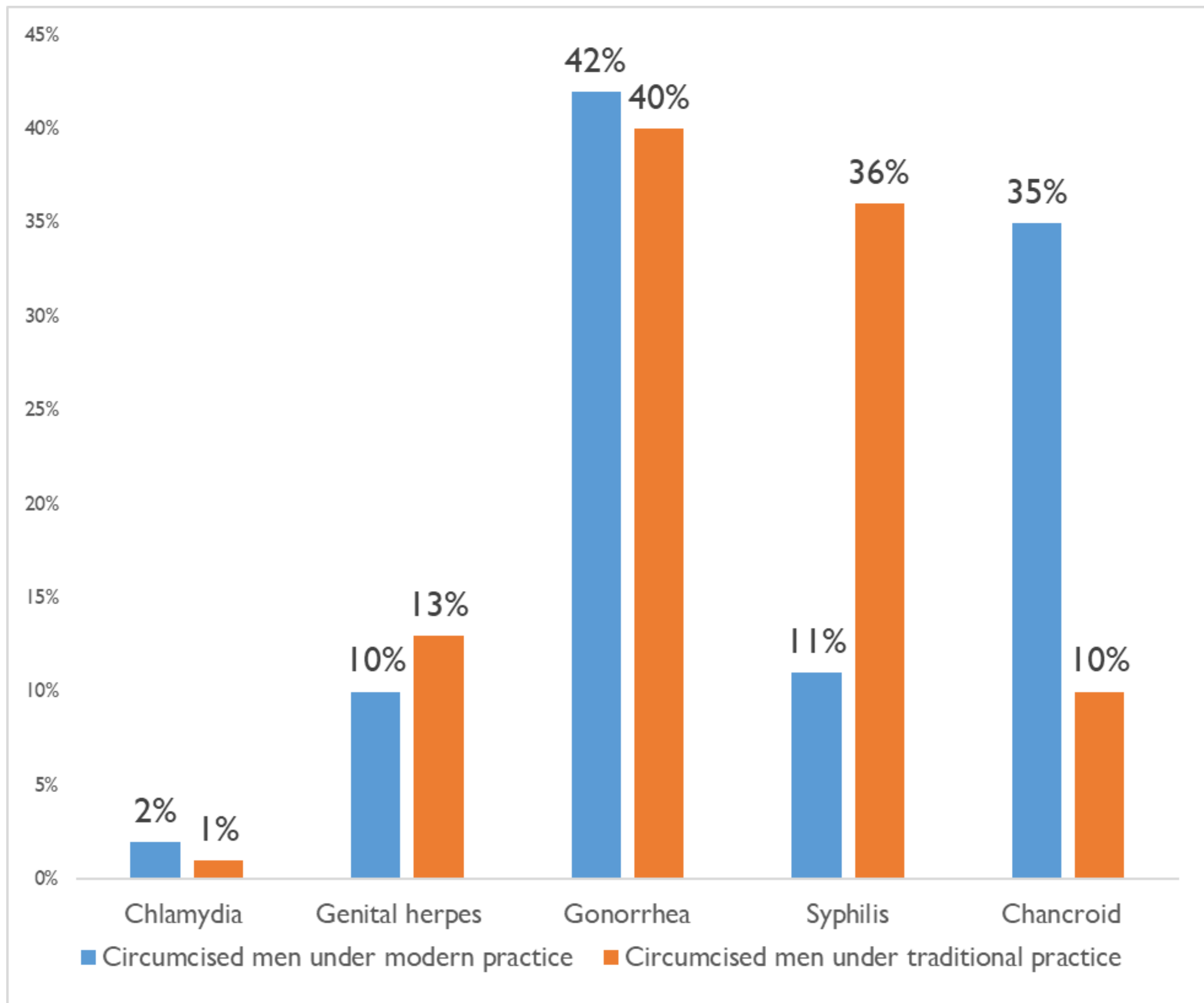


(***Source***: *Primary Data*)

Figure 4.9.7 shows that gonorrhea was the leading common sexually transmitted infection as reported by most traditional circumcisers (79%) and syphilis followed (19%). Genital herpes was also accounted to be a common STI by one percent (1%) and chlamydia (1%) as reported by the traditional circumcisers.

The study established that the most common STIs among the circumcised men as reported by the traditional circumcisers, were gonorrhea and syphilis, a few common ones were chlamydia and genital herpes. This also explains how low efficacious is circumcision in the prevention of STIs among circumcised men. The circumcised men were asked to indicate the type of sexually transmitted infections they were aware of among those who contracted STIs and figure 4.3.4 depicts this information.

Figure 4.9.8 Common type of STIs according to the circumcised men



(***Source***: *Primary Data*)

Figure 4.9.8 shows that under modern circumcision practice, the most common sexually transmitted infections (STIs) as reported by the circumcised men was Gonorrhea (42%), and the second reported type of STIs common was chancroid (35%). Syphilis was reported by some circumcised men (11%) as another common STI, while genital herpes accounted for only ten percent (10%) of the circumcised men. And the least reported STIs were chlamydia (2%). On the other hand, under traditional practice, the leading STI common as reported by most circumcised men (40%) was gonorrhea and this was followed by syphilis (36%). Another reported common

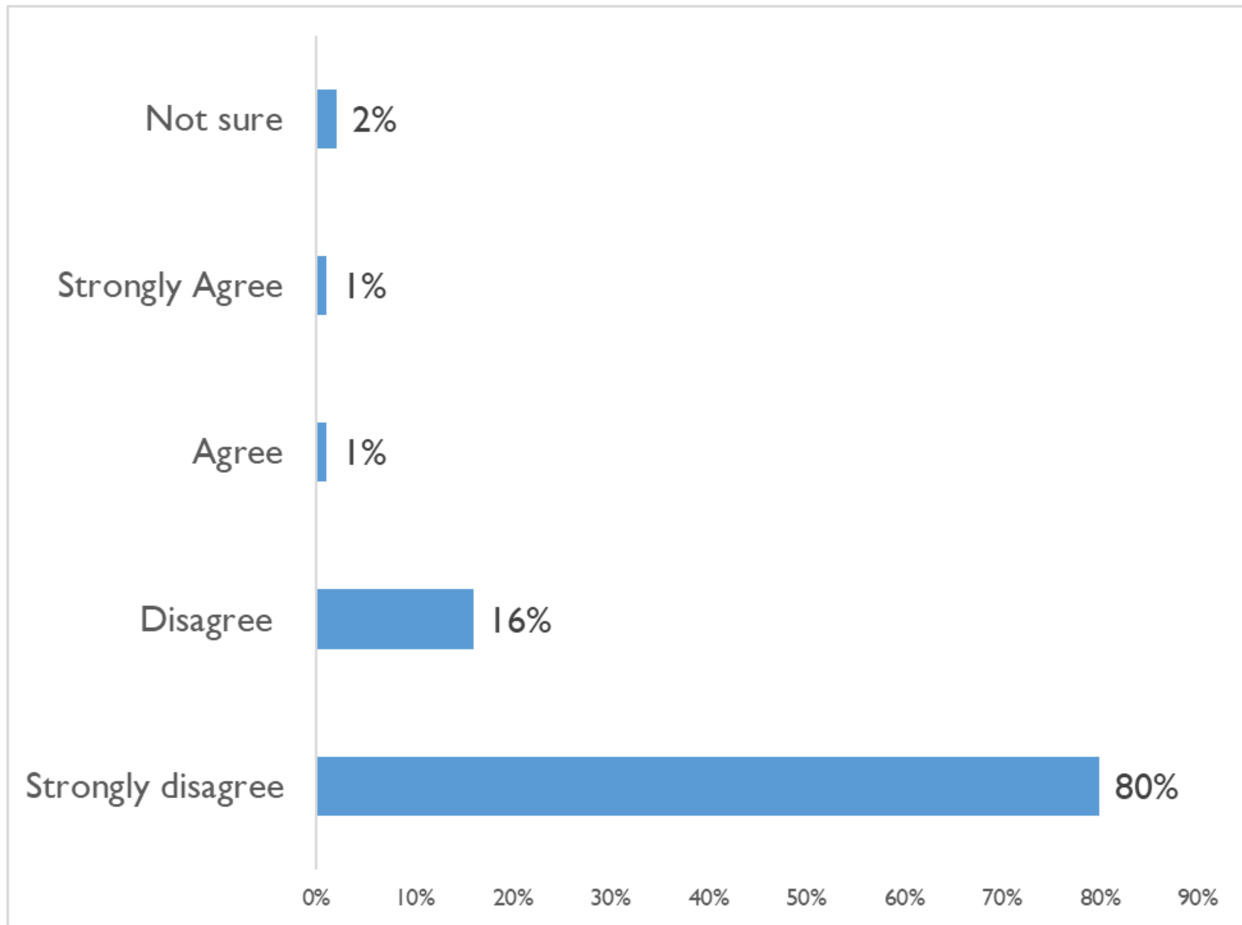
type of STI was Genital herpes (13%). Further, chancroid accounted for ten percent (10%) and the least reported STI by the circumcised men (1%) was Chlamydia.

The study established that generally, under traditional and modern circumcision practices, the most common STIs reported were gonorrhea, chancroid, syphilis, and the least were chlamydia and genital herpes.

Even though the report by WHO in 2007 reported that neonatal circumcision was associated with reduced STIs among the neonates in the United States of America, probably these findings needed comparison with that of adult populations. However, this study has brought out new findings in adult populations, indicating that most circumcised men substantially had increased STIs risk and the study findings were strongly supported by Robert and Van (2013). According to Robert S. and Van Howe (2013), most specific sexually transmitted infections (STIs) were not impacted significantly by circumcision status. These include chlamydia, gonorrhea, herpes simplex virus type 2 (HSV), and genital human papillomavirus (HPV) infections (HPV). Syphilis showed mixed results with prevalence studies suggesting intact men were at great risk and incidence studies suggesting the opposite in circumcised men. Robert and Van's report of 2013 further indicated, “It is also clear that any positive impact of circumcision on STIs is not seen in general populations. Consequently, the prevention of STIs cannot be rationally interpreted as a benefit of circumcision, and a policy of circumcision for the general population to prevent STIs is not supported by the evidence currently available in the medical literature”.

The findings in figures 4.9.6 to 4.9.7 were consistent in terms of the common type of sexually transmitted infections (STIs). There were no statistically significant differences noted in circumcision and the prevention of common sexually transmitted infections (STIs). This leads to conclude that the incidence and prevalence of STIs were not affected by circumcision. Therefore, circumcision was associated with noticeably increased STI risk among circumcised men with known STIs (gonorrhea, chancroid and syphilis). The following sections show the comparison of the extent to which traditional and modern circumcision practices prevent STI transmission. The following figure 4.9.9 gives the first impression made by the health workers on whether or not they agreed that circumcision under modern circumcision practice had lower chances of getting STIs.

Figure 4.9.9 Health workers' position on whether circumcised men had reduced chances of contracting STIs after circumcision

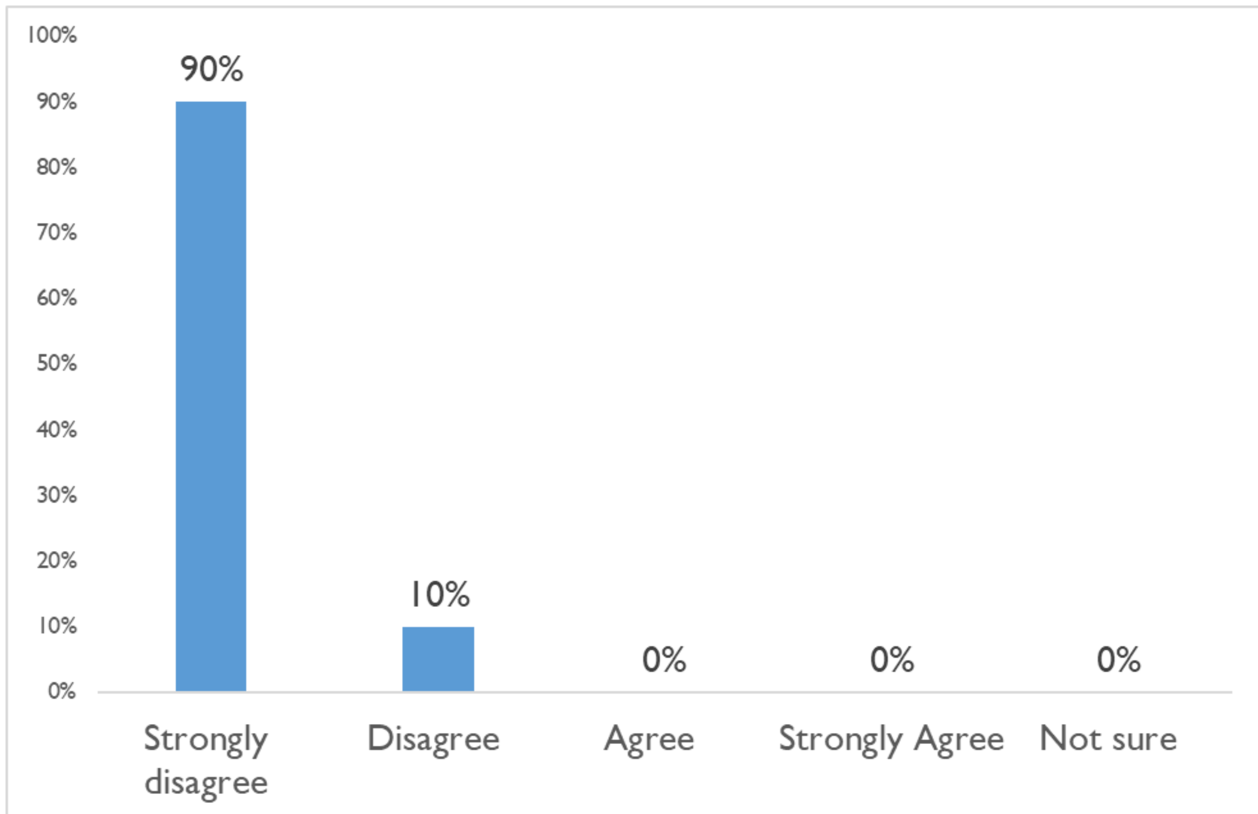


(***Source***: *Primary Data*)

Figure 4.9.9 shows that most of the health workers (80%) strongly disagreed that circumcision performed under modern practices reduced the spread of sexually transmitted infections (STIs) among the circumcised men. Further, sixteen percent (16%) of the health workers disagreed that circumcision reduced the transmission of STIs among the circumcised men. The health workers who were not sure of whether or not, circumcision reduced the transmission of STIs were two percent (2%). And only a few, agreed (1%) and others (1%) strongly agreed that circumcision reduced the transmission of STIs. The one percent (1%) of the health workers who agreed that circumcision reduced the chances of circumcised men from acquiring sexually transmitted infections was negligible and insignificance compared to those (80%) who strongly disagreed. Therefore, the study concluded that circumcised men have a high chance of acquiring sexually

transmitted infections. Further, figure 4.9.9.1 depicts the information on the position of the traditional circumcisers on whether or not circumcised men had reduced chances of acquiring sexually transmitted infections.

Figure 4.9.9.1 Traditional Circumcisers' view on circumcised men and reduced chances of acquiring STIs

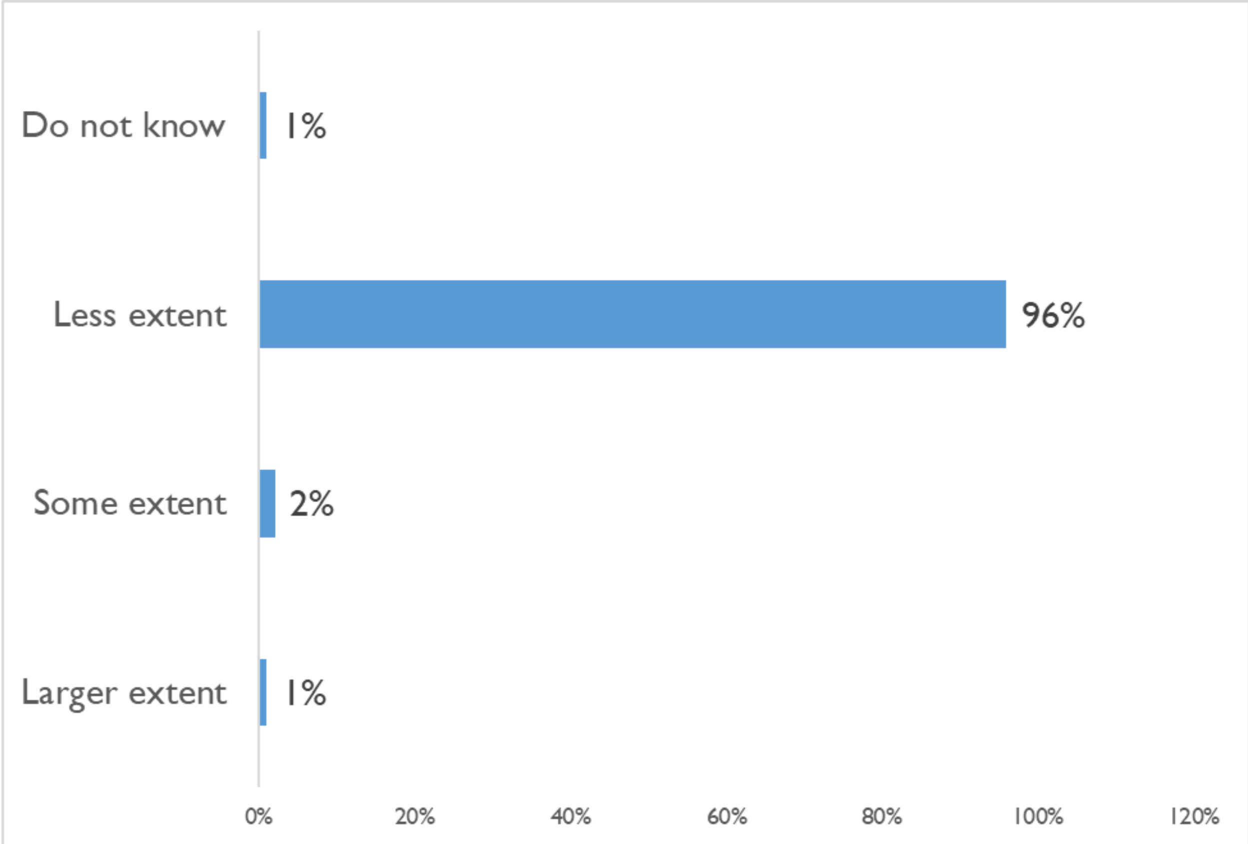


(***Source***: *Primary Data*)

Figure 4.9.9.1 shows that most of the traditional circumcisers (90%) strongly disagreed that circumcision performed under traditional practice reduced the spread of sexually transmitted infections (STIs) among the circumcised men. Further, ten percent (10%) of the traditional circumcisers disagreed that circumcision reduced the transmission of STIs among the circumcised men. And no one agreed that circumcision performed under traditional practice reduced the chances of acquiring sexually transmitted infections. These results were consistent

with those of health workers and therefore, the study concluded that circumcised men have a high chance of acquiring sexually transmitted infections after circumcision. Further, figure 4.3.7 depicts the information on the position of the health workers on the extent to which circumcision prevents sexually transmitted infections.

Figure 4.9.9.2 Health workers' position on the extent to which circumcision performed under medical procedure reduces the spread of STIs transmission



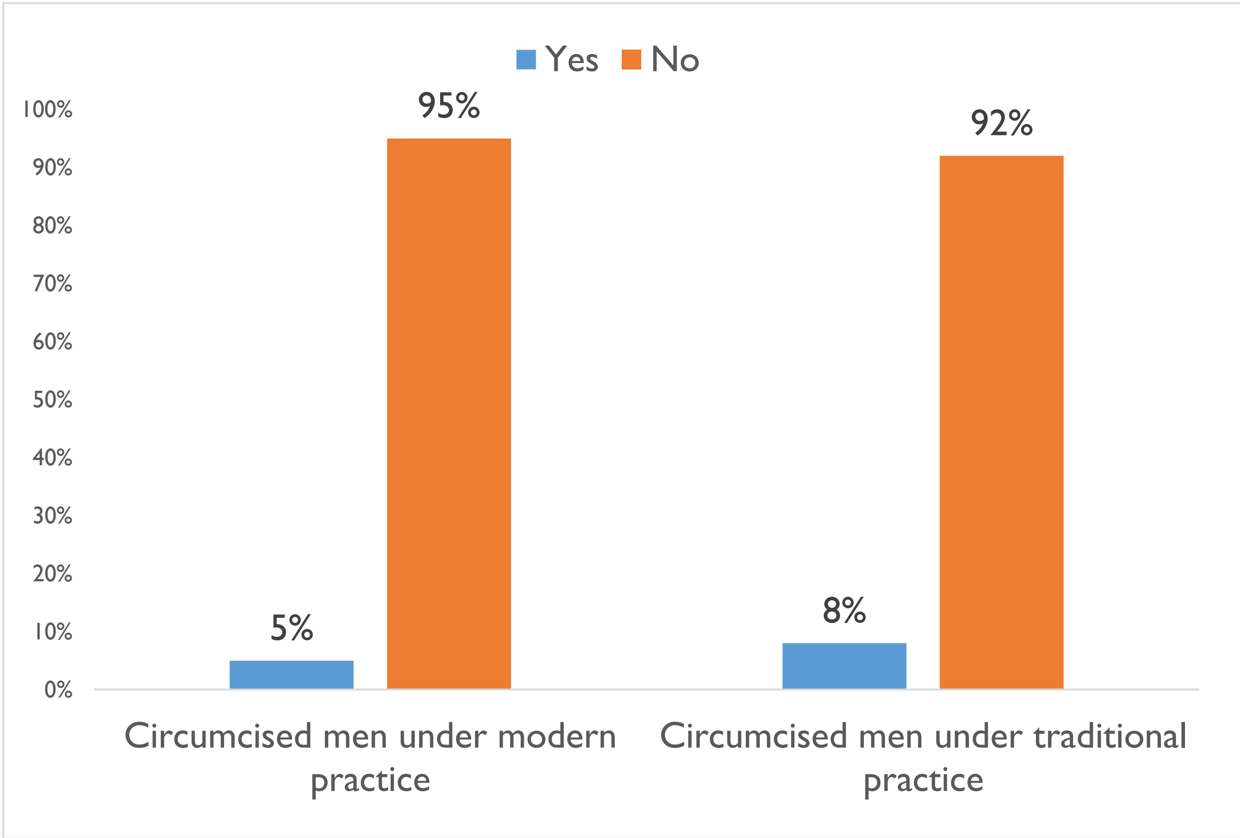
***(Source**: Primary Data)*

Under modern circumcision practice, figure 4.9.9.2 shows that the highest number of the health workers (96%) reported that to a less extent, circumcision prevented the transmission of the sexually transmitted infection, followed by those (2%) who reported that to some extent, it provided some level of protection against the sexually transmitted infections. And the lowest (1%) reported not being sure as to whether or not, circumcision provided men protection against sexually transmitted infections. Though contrary to most of these findings, only a few (1%) reported that to a larger extent, a circumcision performed under modern practice reduces the

chances of acquiring sexually transmitted infections. The study concludes that there may be still high possibilities of the likelihood of acquiring sexually transmitted infections even after circumcision among circumcised men under modern circumcision practice.

Figure 4.9.9.3 depicts the information on whether or not, circumcised men had reduced chances of acquiring sexually transmitted infections (STIs).

Figure 4.9.9.3 Circumcised men's view on chances of acquiring STIs after circumcision



***(Source**: Primary Data)*

Figure 4.9.9.1 shows that under modern circumcision practice, the highest number of the circumcised men (95%) reported they felt that they still had a chance of acquiring sexually transmitted infections and the lowest (5%) reported that they had reduced chances of acquiring sexually transmitted infections. A similar picture was reported under traditional practice, most of

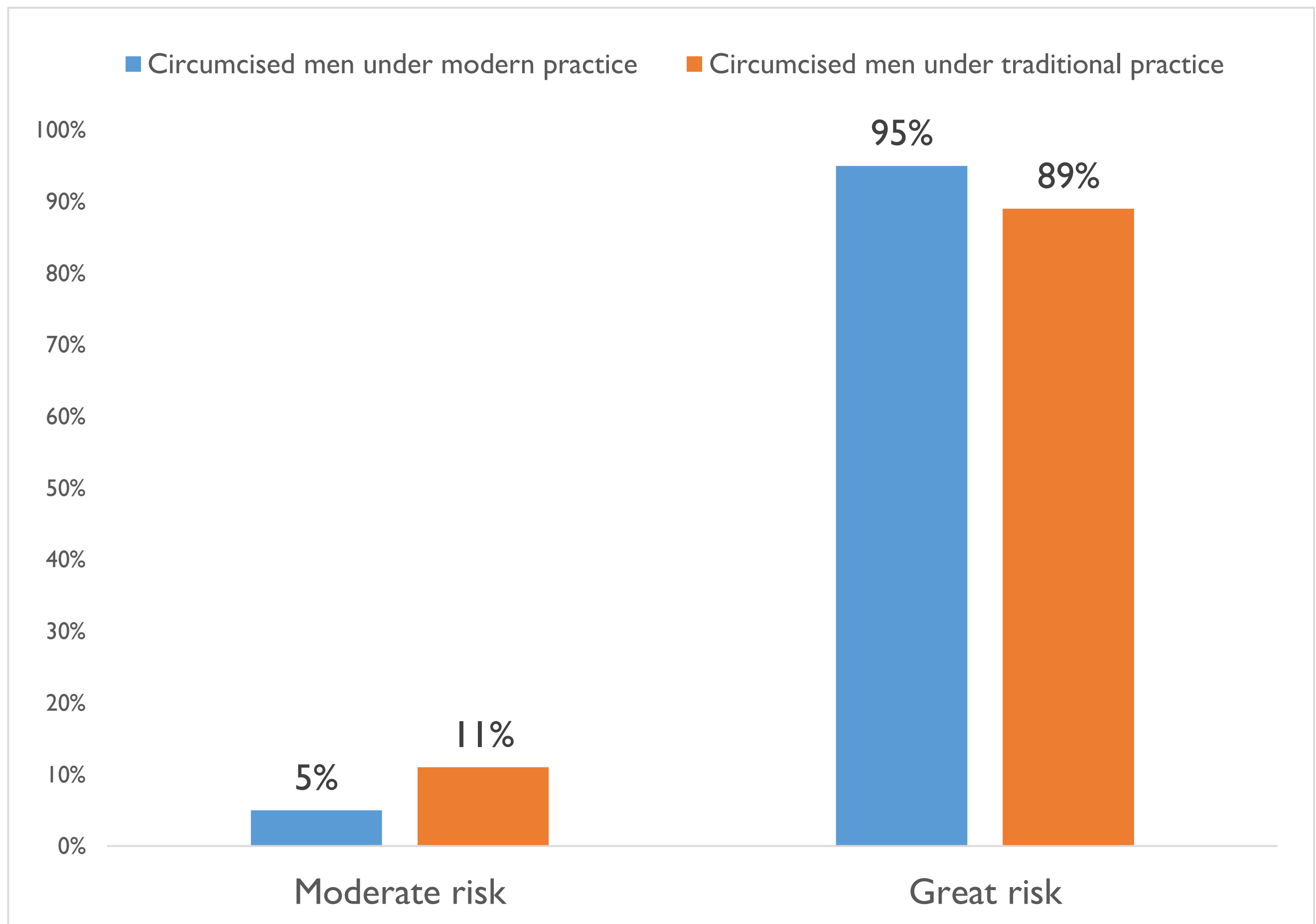
the circumcised men (92%) reported not having the protection against the transmission of STIs and only a few (8%) reported that they had reduced chances of acquiring STIs after circumcision.

The study concluded that circumcised men could still contract the STI transmission after circumcision as evidenced by figure 4.9.9.3. In establishing the risk associated with sexually transmitted infections after circumcision, the study relied on subjective judgments made on the risk of STIs by the circumcised men in figure 4.9.9.3 who indicated that they felt that they were not protected against the transmission of STIs.

To assess the participants' perceptions of STI risk in the context of male circumcision, circumcised men in the discussion were asked to rate their responses on a 3-point Likert-type scale, 1 = No risk, 2 = Moderate risk, and 3= Great risk.

Figure 4.9.9.4 depicts information on STI risk associated with circumcision. Though the study considered this score, the researcher was aware of the bias, and therefore, took into account the bias associated with such scores.

Figure 4.9.9.4 Rating the risk of STIs among those who disagreed that circumcision protected them against STIs



(***Source***: *Primary Data*)

Figure 4.9.9.4 shows that the highest number of circumcised men (95%) under modern circumcision practice reported that there was a great risk of sexually transmitted infections after circumcision, and only a few (5%) reported that the risk was moderate. In terms of traditional circumcision practice, most of the circumcised men (89%) reported that there was a great risk of sexually transmitted infections after circumcision, and only eleven percent (11%) reported that there was a moderate risk of sexually transmitted infections after circumcision.

Generally, by circumcision type, the majority of the circumcised men indicated that there was a greater risk of acquiring sexually transmitted infections after circumcision and only a few indicated the moderate risk associated with STIs after circumcision. These findings show that

circumcision conducted under traditional and modern practice may not necessarily protect men against sexually transmitted infections after circumcision. And using the self-efficacy theory (SET) on the extent to which modern and traditional circumcision practices prevent the STIs transmission, this theory assisted to explain that, the larger the extent of the prevention of STIs, the more efficacious circumcision program under modern or traditional practice was in the prevention of STIs, and the less the extent, then the low or less efficacious the practice (s) was. And based on this, the study established that sexually transmitted infection risk was high in both practices, and hence, less efficacious was notable among the circumcision practices.

Generally, based on the preceding discussion therefore, the position of the researcher is that, the physical layer that is left on the skin of the penis among the circumcised men coupled with unprotected sexual intercourses increases the vulnerability of men to sexually transmitted infections, and these were the main causes of why men even after circumcision still contracted STIs. These study findings are consistent with WHO (2009) which documented that concerning HIV prevention, several aspects of traditional male circumcision should be considered. First, the amount of foreskin removed during the procedure is important, since males who are partially circumcised or initiated through a simple incision in the prepuce are unlikely to benefit from the level of partial protection against HIV seen in the randomized controlled trials, even though culturally they may be considered to be circumcised.

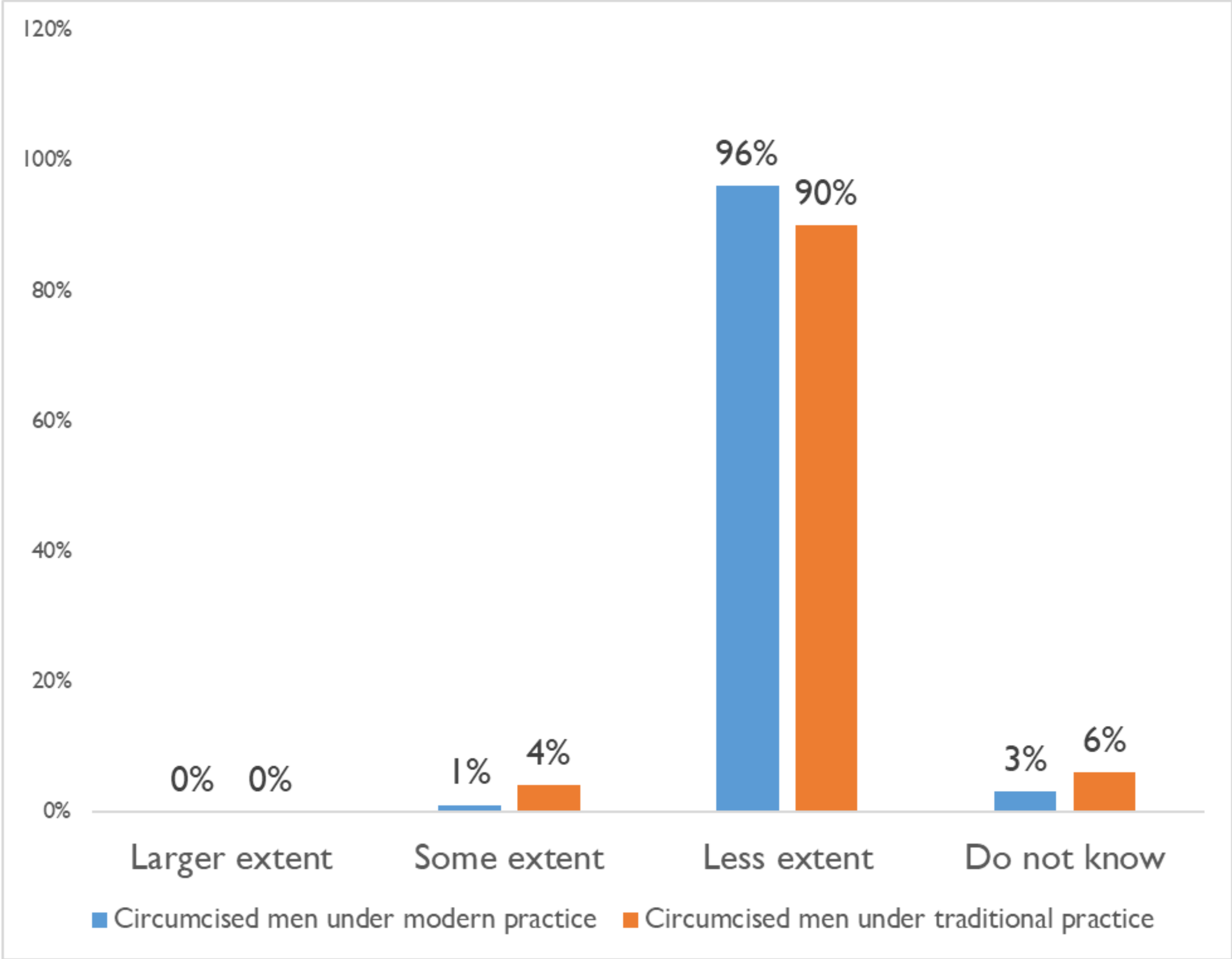
On the other hand, potentially, possibilities of contracting sexually transmitted infections may be there during transfusion of infected blood into a healthy person, however, there was no clear pattern to ascertain this likelihood of STI acquisition because the measure (RDT) used by health workers to detect STIs in the blood before transfusion reduces the chance of circumcised men from contracting STIs through blood. And in this regard, the use of the self-efficacy theory (SET) becomes key to ascertaining the effectiveness of both practices.

Further, the researcher was of the view that any intervention (circumcision) that combines the two theories (HBM and SET) might have a better comparison in the efficacy of STIs prevention among the practices and this was the reason why there was a mix of the two theories in this chapter. Therefore, the study established that the traditional and modern circumcision practices showed low efficacy in reduction of the transmission of sexually transmitted infections among

the men after circumcision. Therefore, the study concludes that circumcision under traditional and modern circumcision practices was associated with substantially increased STI risk among circumcised men, suggesting that the findings of this study demonstrate the increased STI risk after circumcision which could likely be generalized in the context of Zambia.

Further figure 4.9.9.5 shows the percentage coverage of the circumcised men's view on the extent to which traditional and modern circumcision practices prevented the spread of sexually transmitted infections.

Figure 4.9.9.5 Circumcised men's view of the extent to which circumcision reduces the risk of STIs transmission



(***Source***: *Primary Data*)

In figure 4.9.9.5, under modern circumcision practice, the highest number of circumcised men (96%) reported that to a less extent, circumcision prevented the STIs transmission, and only a few (1%) reported that to some extent circumcision prevented the STIs transmission. while the three percent (3%) were not sure as to whether or not, circumcision prevented the transmission of STIs. On the other hand, under traditional circumcision practice, the highest number of circumcised men (90%) indicated that to a less extent, circumcision prevented the STIs transmission, and only four percent (4%) had indicated that to some extent, circumcision did prevent STIs transmission, and those who had no idea as to whether or not, circumcision prevented the HIV transmission were six percent (6%).

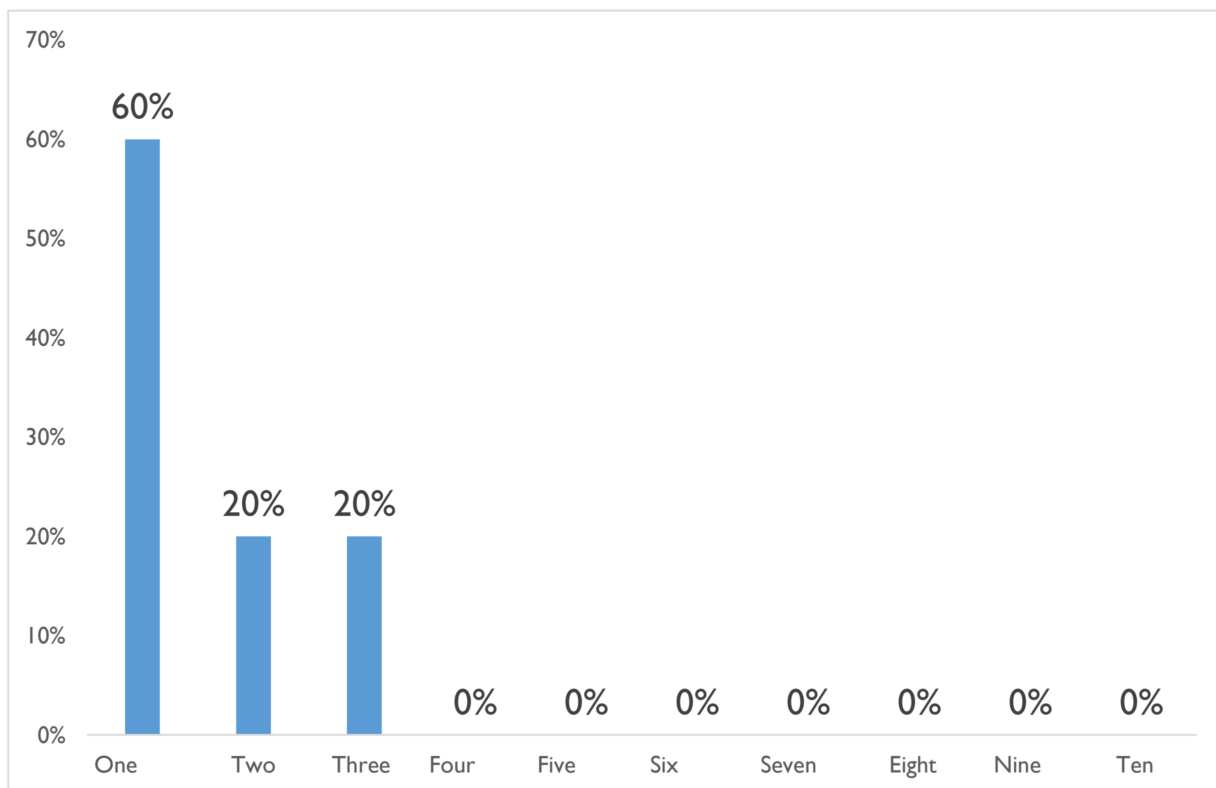
These results were consistent with the preceding discussion and are a confirmation of less efficacy of circumcision in the prevention of sexually transmitted infections. This is further evidenced by most men who got circumcised, and after engaging into sexual activities, the exposure to sexually transmitted infections was high, and consequently, contracted STIs. Therefore, because of this outcome, most men in the study felt that they were less protected against STIs. This association of circumcision being less likely in the prevention of STIs was very strong in the study and based on these findings, the study concludes that circumcision performed under traditional and modern practice to a larger extent does not protect men against sexually transmitted infections after circumcision. This presents an opportunity for the government and partners to invest more in behavioral change interventions rather than circumcision across the country so as prevent the transmission of sexually infected infections.

A cross-tabulation among the circumcised men under modern and traditional circumcision practices and in support of figure 4.9.9.6 shows that most of the circumcised men reported that they strongly disagreed that circumcision protected men against the transmission of STIs. Based on these findings, the study deduced that circumcised men under traditional and modern circumcision practices had a high possibility of acquiring sexually transmitted infections even after circumcision.

The traditional circumcisers were asked whether or not, they were satisfied with their circumcision towards the prevention of sexually transmitted infections and on a Likert-type scale of 1 to 10, the traditional circumcisers were asked to score their responses. On this scale, the

study considered this measure, the lower the response number, the lower the satisfaction level, and the higher the dissatisfaction among the circumcisers. And on the other hand, the higher the number of responses on the scale, the higher the levels of satisfaction and the lower the dissatisfaction levels. The scores were given based on the subjective judgment that the participants felt on whether or not, they were satisfied with circumcision practice as a preventive strategy against the STIs transmission. Important to note that, based on these reported scores on the scale, the researcher was aware of and took into account the bias associated with such scores.

Figure 4.9.9.6 Satisfaction levels on circumcision and STIs prevention according to the traditional circumcision practice



(***Source***: *Primary Data*)

Figure 4.9.9.6 presents that on a scale of ten (10), the participants picked one (1), two (2), and three (3) as their levels of satisfaction. Most of the traditional circumcisers (60%) picked a score of one (1), while twenty percent (20%) picked two (2) and another twenty percent (20%) selected

a score of three (3). These findings denote that the levels of satisfaction among the traditional circumcisers were low as evidenced by the highest majority (60%) picking the lowest score of one (1). The study established that traditionally circumcised men have increased chances of acquiring sexually transmitted infections (STIs) as evidenced by the low levels of satisfaction among the traditional circumcisers. Therefore, the study concludes that circumcision under traditional practice did not offer protection against sexual infections.

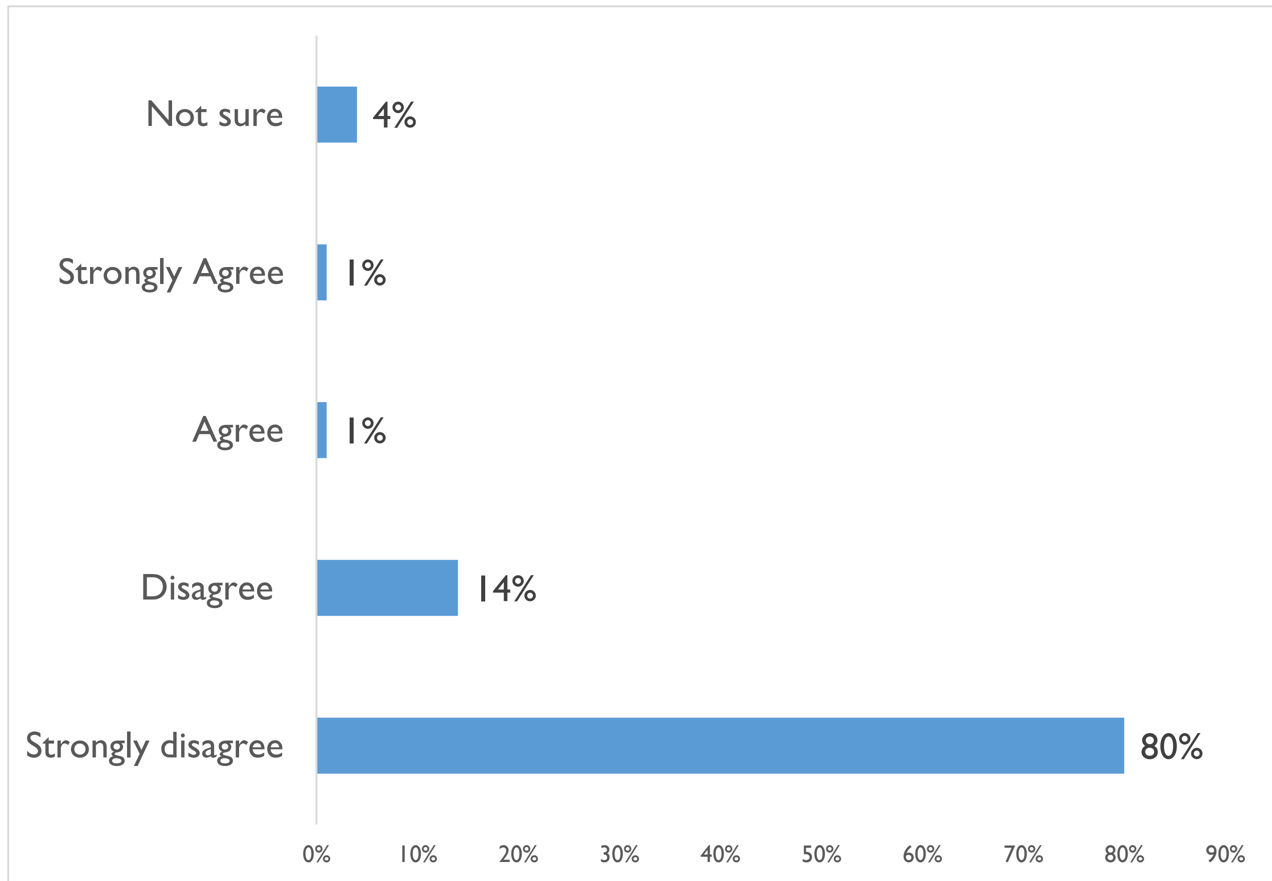
Even though the results show that there was dissatisfaction on circumcision as a preventive strategy of other STIs apart from HIV among the traditional practitioners, and on the contrary, traditionally circumcising communities may prefer *Mukanda* camps to health facilities. However, some communities may not support these camps, as in the case of Livingstone, Southern province. According to the Times of Zambia Newspaper (TZN) dated 16th June 2022 on the "*High Number of Boys forced to join Mukanda ceremony without Parental consent"*, the Livingstone Child Protection Committee (LCPC) had expressed concern over the high number of boys in the district forced without parental consent to join a traditional ceremony called the *Mukanda*, a traditional ceremony practiced by the Luvale people of North-western province.

The committee further revealed that, in the past, several complaints were received from affected parents with children withdrawn from society and confined into the *Mukanda* for a period of six months. And efforts to engage the authorities of the two *Mukanda* camps dotted in Livingstone over the need to withdraw non-Luvale boys failed to yield any positive results. And according to those behind the practice, it was an abomination and against Luvale etiquettes to withdraw any male that enters the *Mukanda* before the initiation day. The police in Livingstone also confirmed that they had received numerous complaints from parents of missing boys and only to discover that they had been initiated into the *Mukanda*. In this vein, the police disclosed that, following the complaints, they had in the past one week managed to withdraw a total of seven (7) boys from the *Mukanda* camp. Therefore, the committee resolved to urgently call for a meeting with the authorities of the two *Mukanda* camps in Livingstone and find ways of resolving issues surrounding the recruitment of boys into traditional ceremony. It is important to state that understanding the tribes conducting circumcision in communities is important to avoid such misunderstanding in the case of Livingstone. For example, according to tradition as found out by

the study, among the tribes or ethnic groups circumcising men, anyone who trespass the *Mukanda Camps* and not circumcised, will actually be apprehended forcefully and get circumcised. Hence, need for communities to understand what exists in each of the circumcising community.

Lastly, the health workers were asked to state their position on whether or not, the Zambian health policy on STIs prevention through the voluntary male medical circumcision (VMMC) program was being met, and figure 4.9.9.7 shows depicts this information.

Figure 4.9.9.7 Health workers' position on the Zambian health policy and STIs prevention



(***Source***: *Primary Data*)

Figure 4.9.9.7 shows that most of the health workers (80%) strongly disagreed that the health policy was achieving its objective on sexually transmitted infections (STIs). Those who just disagreed that the health policy was achieving its objective of STI prevention were fourteen percent (14%). Among the health workers, four percent (4%) were not sure as to whether or not, the STIs prevention objective of the policy was being met, and only a few (1%) agreed that it was achieving its objective of STIs prevention.

However, a few (1%) of the health workers supported circumcision to be associated with reduced STIs and hence the reason why they thought the health policy on STIs prevention was achieving its objectives. However, this one percent (1%) was statistically insignificant to this study, and therefore, the study concluded that despite the voluntary male medical circumcision (VMMC) being implemented in the health facilities without Zambia, sexually transmitted infections are still on the increase as evidenced from the preceding discussions in this chapter.

Therefore, the study concludes that the Zambian health policy's objective of preventing sexually transmitted infections was not being achieved. This is because in both practices, there was no clear circumcision pattern of protection against sexually transmitted infections and instead there have been increased risks of STIs after circumcision.

4.9.1 Conclusion

In this study, traditional circumcision practice was a proxy for modern practice. Further, traditional practice was used as a control variable to provide checks and find ways of improving better modern circumcision practice, whereas, modern circumcision was meant not to destroy traditions embedded in circumcision practices at *Mukanda* camps, but to provide ways of improving the preventive measures against the spread of sexually transmitted infections among the men after circumcision. In this study, it was revealed that most findings were consistent on STIs, and showed that circumcision was less efficacious in the prevention of sexually transmitted infections among the two practices. Since there was no clear positive impact of circumcision on the risk of individual sexually transmitted infections, consequently, the prevention of sexually

transmitted infections cannot rationally be interpreted as a benefit of circumcision, and any policy of circumcision for the circumcised male population to prevent sexually transmitted infections is not supported by the evidence in the research, and since the overall risk of any sexually transmitted infection is high among the circumcised men, the study concludes that circumcision performed under traditional and modern circumcision practice to a larger extent does not protect men against the acquisition of sexually transmitted infections.

The study established that there were common sexually transmitted infections (STIs) reported to have been infecting men after circumcision. The study concludes that circumcision was associated with significantly increased STIs risk among circumcised men with known sexually transmitted infections (STIs) such as gonorrhea, chancroid, and syphilis. These known STIs were on a higher side in terms of risk of infecting circumcised men compared to genital herpes and chlamydia that were on the lower side.

The study concludes that traditionalists continue to conduct circumcision under traditional settings because this practice has been passed on from one generation to another, and it is part of the ancestral ritual embedded in the traditions. And circumcision was not only seen as STIs preventive strategy, but also for upholding the culture, values, norms and beliefs shrined in their ancestral land of continuity in practicing circumcision at initiation ceremonies and was a way of ensuring that the new generation of young males do not lose track of traditions.

The study concluded that, though rarely, there is still a chance of acquiring sexually transmitted infections through blood transfusion without necessarily engaging into sexual activities. And to avoid transfusing of sexually transmitted infected blood into a healthy person, the study concludes that screening of blood for other STIs by medical personnel before transfusing becomes cardinal using the Rapid Diagnostic Test (RDT), and preferably, though expensive, Polymerase Chain Reaction (PCR) which is rarely used in Zambia for STI is highly recommendable.

Under the theories selection, the results of this study concluded that out of all the theories and models, only two (2), Self-Efficacy (SET) and Health belief model theory-HBM) were used in sexually transmitted infections (STIs) prevention.

The study further suggests that future policies on circumcision should ensure that interventions are tailored towards behavioral change and eradication of common and high-risk sexually transmitted infections (STIs) among circumcised men and that theories and models be used in all stages of circumcision educational programs (HBM), including designing, implementation, and evaluation on the efficacy (SET) of the program toward STIs prevention.

CHAPTER FIVE: CONCLUSIONS

5.1 Conclusions

Introduction

This section summarizes the study. In this study, the overall objective was to compare the extent to which traditional and modern circumcision practices prevent the HIV and other STIs transmission in Chavuma and Kapiri Mposhi districts. The specific objectives were: to compare the extent to which traditional and modern circumcision practices prevent HIV transmission, and to compare the extent to which traditional and modern circumcision practices prevent other STIs apart from HIV against transmission. The location of the study was Chavuma district, a district known for traditional circumcision, and Kapiri Mposhi, a district with a prevalence of modern male circumcision. The study respondents were categorized into three (3) groups. Group one (1) included health workers, district health directors, VMMC program co-ordinator, incharges, doctors, clinical officers, nurses, and these were under modern practice. Similarly, group two (2) was involving men circumcised at health facilities under modern procedures and within the ages of 15-49 years. And group three (3) was under traditional circumcision practice that included the headmen, elderly members from ethnic groups who were the custodians of *Mukanda* tradition, traditional circumcisers, and the circumcised men aged 15 to 49 years.

5.2 Conclusions on Demographic Characteristics

1. The study concluded that, by location type, most of the circumcised men under modern circumcision practice were residents in urban areas and only a few resided in rural areas. And contrary to this, under traditional circumcision practice, most circumcised men stayed in rural areas and only a few were in urban areas. In terms of residence, the study concludes that the probability of accessibility to male circumcision (MC) services was high residing in urban areas, with most health facilities clustered and available compared to a few sparsely distributed health facilities in rural areas, making it difficult for some men to access circumcision services, of course not discounting the high prevalence of traditional circumcision practice in the rural setup.

2. The study concluded that, Kapiri Mposhi having the major intersection of Tanzania - Zambia Railways (TAZARA), great North truck Road and cosmopolitan, inhabited by many people from different parts of the country presents and increased opportunity for circumcision under medical settings envisaged to prevent the spread of HIV and other STIs within the district. Whereas, Chavuma district on the other hand, continues to offer a mix of circumcision, that is to say, traditionally circumcising communities within urbanized areas tend to refer their initiates for circumcision at health facilities under medical setting, while those in rural setup continue to uphold circumcising of men under traditional setting.

3. The study concluded that traditionalists continue to conduct circumcision under traditional settings because this practice has been passed on from one generation to another, and it is part of the ancestral ritual embedded in the traditions. And circumcision was not only seen as HIV and other STIs preventive strategy, but also for upholding the culture, values, norms and beliefs shrined in their ancestral land of continuity in practicing circumcision at initiation ceremonies and was a way of ensuring that the new generation of young males do not lose track of traditions. While, under modern practice, the study concluded that circumcision continues to be conducted for health reasons such as protection of circumcised men against the transmission of HIV and STIs.

5.3 Conclusions on efficacy of traditional and modern circumcision practices on HIV prevention

1. The study concluded that the implementation of the voluntary male medical circumcision (VMMC) program, HIV and testing services, and Anti-retroviral therapy (ART) services in the hospitals and clinics were key services in monitoring progress towards the health policy on HIV prevention. For example, after circumcision (circumcision services), men needed to visit the hospital or clinics to check and know their HIV status (HIV testing services) and in situations where one tested positive for HIV, they would be put on

treatment (ART services). On the other hand, the study concluded that these services were not available under the traditional practice and hence not comparable services but important to the study as from preceding discussion.

2. The study concluded that the main providers of male circumcision under modern circumcision practices were the clinical officers, nurses, and doctors, whereas, the traditional circumcisers were the main players of circumcision under traditional practice. However, on average, the doctors under modern practice were inadequate in the provision of circumcision services, translating into a 1 to 2 doctors to circumcised men ratio at the hospital level.

3. The study further concluded that the main providers under modern circumcision practice were professional staff who underwent a professional circumcision training program for at least 10 days, whereas traditional providers had no professional training but experienced-based skills in the provision of circumcision.

4. The study concluded that circumcision services under modern circumcision practice were being provided routinely in hospitals and clinics as opposed to traditional practice, where circumcision was offered only during some relatively fixed periods at *Mukanda camps,* sometimes referred to as *Mukanda Ritual,* which is a transformation rite in which boys are initiated into adulthood coupled with a celebration to mark an end of the ritual process among ethnic groups.

5. The study concluded that male circumcision providers' certification was important to protect both the clients and circumcisers from HIV infections transmission during and after circumcision and in this regard, certification enhanced knowledge levels, ensuring that the surgical instruments were sterile so as not to transmit a virus to another person during circumcision, and also adhering to infection prevention control (IPC) guidelines to avoid HIV infections or re-infections during and after circumcision.

6. The study concluded that HIV was a virus that can be transmitted through sex and blood, and WHO (2007) described HIV as a virus and parasite known to be transmitted through sexual contact and blood.

7. The study concluded that there is a chance of acquiring HIV infections through blood transfusion without necessarily engaging into sexual activities. And to avoid transfusing of HIV infected blood into a healthy person, the study concludes that screening of blood for HIV by medical personnel before transfusing becomes cardinal using the Rapid Diagnostic Test (RDT) and Polymerase Chain Reaction (PCR).

8. The study concluded that there were possibilities of HIV transmission after circumcision and the main routes to the HIV transmission included; blood mix-up procedures (during and after circumcision), engaging in unprotected sexual intercourses, using unsterilized instruments (one surgical knife under traditional) during circumcision, and the state of being uncircumcised.

9. In terms of preventive measures against the transmission of HIV , the study concluded that the common measures under modern practice included, the sterilization of surgical instruments, screening of blood before transfusion, wearing of gloves by providers (during circumcision, HIV testing, and after circumcision when they come back for HIV test), hygiene observation, cleaning of work surfaces, and disposing of dirt in the refuse bags after circumcision procedure were the common measures at hospitals and clinics put in place to protect clients against contracting HIV during and after circumcision.

10. As opposed to the modern circumcision practice of sterilization of surgical instruments before circumcision, the study concluded that traditional circumcision practice used cleaning a knife with a cloth before re-using it on the next initiate, a measure more likely to increase the chance of HIV transmission than under modern practice.

11. The study concluded that under modern circumcision practice, there is adherence to measures of infection prevention and control (IPC) in the health facilities during and after circumcision compared to traditional circumcision practice where such measures (IPC) were not judiciously followed, exposing circumcised men to high risk of contracting HIV infections.

12. The study concluded that treatment under medical conditions was given during and after circumcision, whereas, under traditional practice, the provision of traditional medicine in

form of herbs was being done based on past knowledge and experiences. Further, the study concluded that, following the VMMC program, all the clients testing positive for HIV during and after circumcision were linked to antiretroviral therapy (ART) treatment under modern practice and not under traditional practice.

13. The study concluded that there is a possibility in future of linking medical male circumcision to traditional initiation practices in Zambia. This is because in some cases, traditionally circumcising communities and medical personnel make referral arrangements for circumcision and treatment of the initiates at health facilities. And this happens when there is an assurance by the medical personnel that the initiates once at the hospital will not come into contact with the female providers coupled with a condition of subsequent immediate return of the circumcised boys to the initiation ceremonies.

14. The study concluded that fears of weakening traditional circumcision existed especially among traditionally circumcising communities of encouraging their men in some case, to get circumcised under medical setting. Therefore, the study position is that, due to threats of dominance of one practice over another and consequently, a weaker circumcision practice ending up into oblivion, the cultural link of circumcision under traditional practice should not necessarily be weakened, and if weakened, then circumcision would either be performed under medical setting or not at all in Zambia.

15. The study concluded that documentation of HIV test results during and after the circumcision was available in the hospitals and clinics coupled with the HIV testing guidelines of after three (3) months after the initial test, and under traditional circumcision practice, such was not available.

16. By documentation type, the study concluded that the data collection tools under the modern practice included, male circumcision registers, post-operation review forms, HTS registers, medical male circumcision client record forms, and clients consent forms were not available under traditional practice. The study further concluded that the data collection tools played a pivotal role in tracking progress made by the health policy in HIV prevention after circumcision (VMMC program), and in this instance, monitoring

progress made by the health policy (MC program) using male circumcision registers, and the HTS registers which determined the effectiveness of the modern circumcision practice after circumcision compared to traditional practice.

17. The negative HIV test results associated with circumcised men who had engaged in unprotected sexual activities and the negative HIV results coupled with zero (0) positivity rate during the initial visit and the follow-up visits were consistent in both circumcision practices. The study concluded that the probability of acquiring HIV infection after circumcision under traditional and modern circumcision practice was nonexistent.

18. The study concluded that, based on self-efficacy theory (SET) and health belief model theory (HBM), the interventions put in place of reducing the spread of HIV infections was effective among the circumcised men under traditional and modern circumcision practices.

19. In terms of levels of efficacy, although both practices were effective to a larger extent and potentially reduced the risk of HIV transmission (negative HIV results), their levels of efficacy differed, and since the evidence showed that there was no statistically significant finding that was associated with less effectiveness of the modern practice compared to traditional practice where some had a negative HIV test result and others had unknown HIV status which posit difficulties to make conclusive inferences on the unknown HIV status of most of the circumcised men under tradition practice. However, based on this identified gap and on some evidence from the preceded discussions such as unsafe circumcision procedures associated with traditional circumcision which probably increased the HIV risk among the initiates (sharing and re-use of the knife), the study concluded that circumcision performed under modern practice was more efficacious in the prevention of HIV transmission than the circumcision done under the traditional setting.

20. The study concluded that modern male circumcision was associated with a high level of protection against HIV infections among the circumcised men as evident in the revealed patients' medical files and this marked a great achievement in the prevention of HIV by

the VMMC program in Zambia with the goal of an efficacious circumcision practice in the prevention of HIV transmission. Similarly, the study concluded that on the other hand, traditional circumcision practice to some extent too like the case of modern practice indeed is effective in the HIV prevention.

21. As evidenced by the consistent negative results of the beneficiaries of circumcision (men) during the initial and subsequent HIV tests at the hospitals and clinics, the study concluded that circumcision, to a larger extent, is a preventive strategy against HIV infections regardless the circumcision practice one undergoes.

22. Based on the high levels of satisfaction with circumcision and its benefits associated with HIV protection among the study participants, especially the beneficiaries of the circumcision program (circumcised men), the study concluded that circumcision reduced the chances of HIV infections acquisition after circumcision under traditional and modern circumcision practices.

23. Lastly, the study concluded that the Zambian health policy on HIV prevention was achieving its objectives through the implementation of the voluntary male medical circumcision (VMMC) program which showed clear patterns of efficacy in lowering the chance of acquiring HIV infections after circumcision.

5.4 Conclusions on efficacy of traditional and modern circumcision practices on sexually transmitted infections (STIs) prevention

1. The study concluded that the implementation of the health policy was being realized through the voluntary male medical circumcision (VMMC) program, sexually transmitted infections (STIs) testing services, and Anti-retroviral therapy (ART) services in the hospitals and clinics. And these were key services in monitoring progress made towards the health policy on STI prevention. For example, after circumcision (circumcision services), men needed to visit the hospital or clinics to check and know their STIs and

HIV status and in situations where one tested positive for STIs, they would be put on treatment and if a client infected with an STI eventually develop into HIV, then the client is put on Ant-retro therapy (ART service) to suppress the virus and prolong the life of the infected person.

2. The study concluded that the main providers of sexually transmitted infections (STIs) screening services under modern circumcision practices were not only qualified professional staff but also trained and certified in the provision of STIs services at the health facilities, and these were the clinical officers, nurses, and doctors. And such professional training and certification of staff to provide STI services under the traditional circumcision practice were not available.

3. The study concluded that, whereas HIV is a virus, an STI is an infection that is passed on from one person to another through sexual activities and to some extent, transmitted through the fluid of contaminated blood with STIs during unprotected sexual intercourse.

4. The study concluded that, though rarely, there is still a chance of acquiring sexually transmitted infections through blood transfusion without necessarily engaging into sexual activities. And to avoid transfusing of sexually transmitted infected blood into a healthy person, the study concludes that screening of blood for other STIs by medical personnel before transfusing becomes cardinal using the Rapid Diagnostic Test (RDT), and preferably, though expensive, Polymerase Chain Reaction (PCR) which is rarely used in Zambia for STI is highly recommendable.

5. The study concluded that there were possibilities of STI transmission after circumcision and the main routes to the STI transmission include sexual activities and childbirth.

6. The study further concluded that even though most often sexually transmitted infections (STIs) and sexually transmitted diseases (STDs) are interchangeably used, the two are different, implying that, the infection (STI) in this context comes before a disease (STD). This means, that a sexually transmitted disease (STD) always starts as a sexually transmitted infection (STI), but not all STIs turn into STDs.

7. The study concluded that, under modern practice, the main preventive measures against the transmission of sexually transmitted infections (STIs) were; the screening of men for STIs, the wearing of gloves by providers, screening of blood, the commencement of STIs treatment for all STIs positive cases and conducting circumcision only on those with negative STIs results.

8. The study concluded that, under the traditional circumcision practice, the main measures for the protection of the men against the transmission of STIs after circumcision were; the cleaning of a knife with a cloth during circumcision, the cleaning of the wound with ash, and administration of herbs, whereas under medical setting sterilization of surgical instruments and treatment of any complications arising from circumcision were done.

9. The study concluded that under modern circumcision practice when clients visit the health facility and get tested for STIs and once they test positive for sexually transmitted infections (STIs), linkage to STIs treatment takes place, and documentation of the clients' test positive results for STIs was done, and this was not available under traditional practice.

10. The study concluded that the hospitals and clinics had the capacity to collect information related to STIs and HIV using the available data collection tools such as the sexually transmitted infection (STI) registers, male circumcision (MC) registers, medical male circumcision client record forms and the HIV and testing services (HTS) registers. And such documentation was not available under traditional circumcision.

11. The study concluded that, under modern circumcision practice, documentation of STIs information was important mainly for recording information used to track progress made on those men with STIs positive status and linking them to STIs treatment at STIs men's clinics, recording information on schedules for the next appointment for clients' review at the hospital and clinics and record information for tracking of clients with complications or adverse reactions arising after circumcision.

12. The study concluded that documentation of all events surrounding STIs and the circumcision program was key to tracking, monitoring, and evaluating progress made on the VMMC program on STIs prevention.

13. The positive STIs test results associated with circumcised men who had engaged in unprotected sexual activities during the initial visit and the follow-up visits were consistent in both circumcision practice and based on the high frequencies of visits to health facilities characterized by STIs positive results, the study concluded that the chance of acquiring STIs infection after circumcision under traditional and modern circumcision practice is high.

14. Based on self-efficacy theory (SET) and health belief model theory (HBM) applicability in understanding the efficacy of the interventions put in place of reducing the spread of STIs infections, the study concluded that the risk of STIs acquisition among the circumcised men was high under traditional and modern circumcision practices.

15. Under traditional circumcision practice, the study concluded that the main reasons why men got infected with STIs were leaving the thin skin after circumcision and engaging in unprotected sexual activities.

16. The study concluded that some measures under traditional circumcision practice increased the vulnerability of men to the risk of sexually transmitted infections acquisition among the circumcised men and this made circumcision less efficacious in the prevention of sexually transmitted infections.

17. As evidenced by the consistently positive results and high STI positivity rate among the circumcised men during the initial and subsequent STI tests at the hospitals and clinics, the study concluded that circumcision was not an effective preventive strategy against sexually transmitted infections, regardless of the circumcision practice one undergoes.

18. In terms of STIs checkups at health facilities by some men who had experienced signs of STIs after engagement in unprotected sexual encounters with their partners, the study concluded that there was an increased willingness of getting back and accessibility to

STIs testing services at health facilities by men after circumcision under modern practice compared to a few from traditionally circumcising communities.

19. In terms of the level of effectiveness among the two circumcision practices, the study concluded that the efficacy levels differed, traditional circumcision practice was associated with high positive STI cases than those under modern practice.

20. The study concluded that, under modern circumcision practice, there was a low chance of sexually transmitted infections (STIs) infected men developing into HIV. However, all the STIs positive clients were linked to syndromic management of and treatment of STIs and this was not available under traditional practice.

21. The study concluded that the highest prevalence of sexually transmitted infections (STIs) among the circumcised men was between the ages of 15 and 19 years, and the lowest infected age group with STIs was 25 to 29 years under both practices.

22. The study concluded that the incidence and prevalence of STIs were not impacted by circumcision. Therefore, the study concludes that, since circumcision was associated with markedly increased STI risk among circumcised men with known common STIs (gonorrhea, chancroid, chlamydia, and syphilis), the prevention of STIs cannot be rationally linked to the benefits of circumcision and therefore, circumcision does not protect men fully against the transmission of STIs.

23. In the study, there were consistent patterns of less protection against the transmission of STIs associated with circumcision from both practices, the study concluded that circumcised men had a greater risk of acquiring sexually transmitted infections after circumcision regardless of the circumcision practice that one undergoes.

24. In terms of the extent to which circumcision protected men against STIs, the study concluded that circumcision performed under traditional and modern practice to a larger extent did not protect men against sexually transmitted infections and hence, circumcised men under both practices had a high possibility of acquiring sexually transmitted infections even after circumcision.

25. Based on the high levels of dissatisfaction among the people on circumcision associated with increased risks of STIs among the circumcised men, the study concluded that circumcision did not offer protection against STI transmission under traditional and modern circumcision practices.

26. Lastly, the study concluded that the implementation of the voluntary male medical circumcision (VMMC) program has shown clear patterns of less efficacy in lowering the chance of acquiring sexually transmitted infections in men after circumcision.

5.2 General Conclusion

As seen in the preceding conclusions, the researcher, based on the empirical findings, concludes that it is clear that, the research question highlighting the comparison of the extent to which traditional and modern circumcision practices prevent the HIV transmission in the study was addressed and the study concluded that circumcision performed under traditional and modern practice to a larger extent protects men after circumcision against the transmission of HIV. However, in relation to the research question that underlined a comparison of the extent to which traditional and modern circumcision practices prevent sexually transmitted infections (STIs), the study concluded that there was no impact of circumcision on STIs prevention, instead consistent patterns of risks of STIs among circumcised men across were common in both practices as evidenced in STI positive results among circumcised men.

Therefore, even though most reviewed literature indicated that circumcised men have a reduced chance of acquiring STIs and HIV, the researcher concludes that, in fact, circumcision does not protect the circumcised clients from contracting sexually transmitted infections (STIs), and that, there is still a chance for getting infected with STIs among the circumcised men. On the other hand, the research concludes that circumcision is highly efficacious in the prevention of HIV transmission.

In summary, male circumcision has proven to be an effective intervention in the reduction of the scourge of HIV infection, but less effective in the prevention of other STIs apart from HIV. To

achieve the set targets of the voluntary male medical circumcision (VMMC) program rolled out across Zambia, there is a need for a multisectoral approach in the integration of medical circumcision practice with traditional one, strengthening of existing circumcision services for surgical circumcision, increasing the health facilities providing male circumcision services. Further, through Public-Private Partnership (PPP), a need to broaden the provision of male circumcision services at outreach sites especially in communities that are hard to reach without medical infrastructures like rural areas and ensure that adequate availability of trained health workers particularly the male service providers.

Lastly, the researcher concludes that there was great progress made by the Zambian health policy of 1991 on HIV prevention through the male circumcision (VMMC) program in the sense that the study has shown clear patterns of lowered chances of HIV transmission in men after circumcision as evidenced from their HIV negative status during the initial test during circumcision and subsequent HIV negative status after circumcision. However, the objective to halt other sexually transmitted infections (STIs) was not being met, and a call is for the Zambian government, through its circumcision program, to recast its preventive strategies on sexually transmitted infections while scaling up HIV related programs to attain HIV epidemic control in the country.

5.3 Bibliography

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APPENDICES

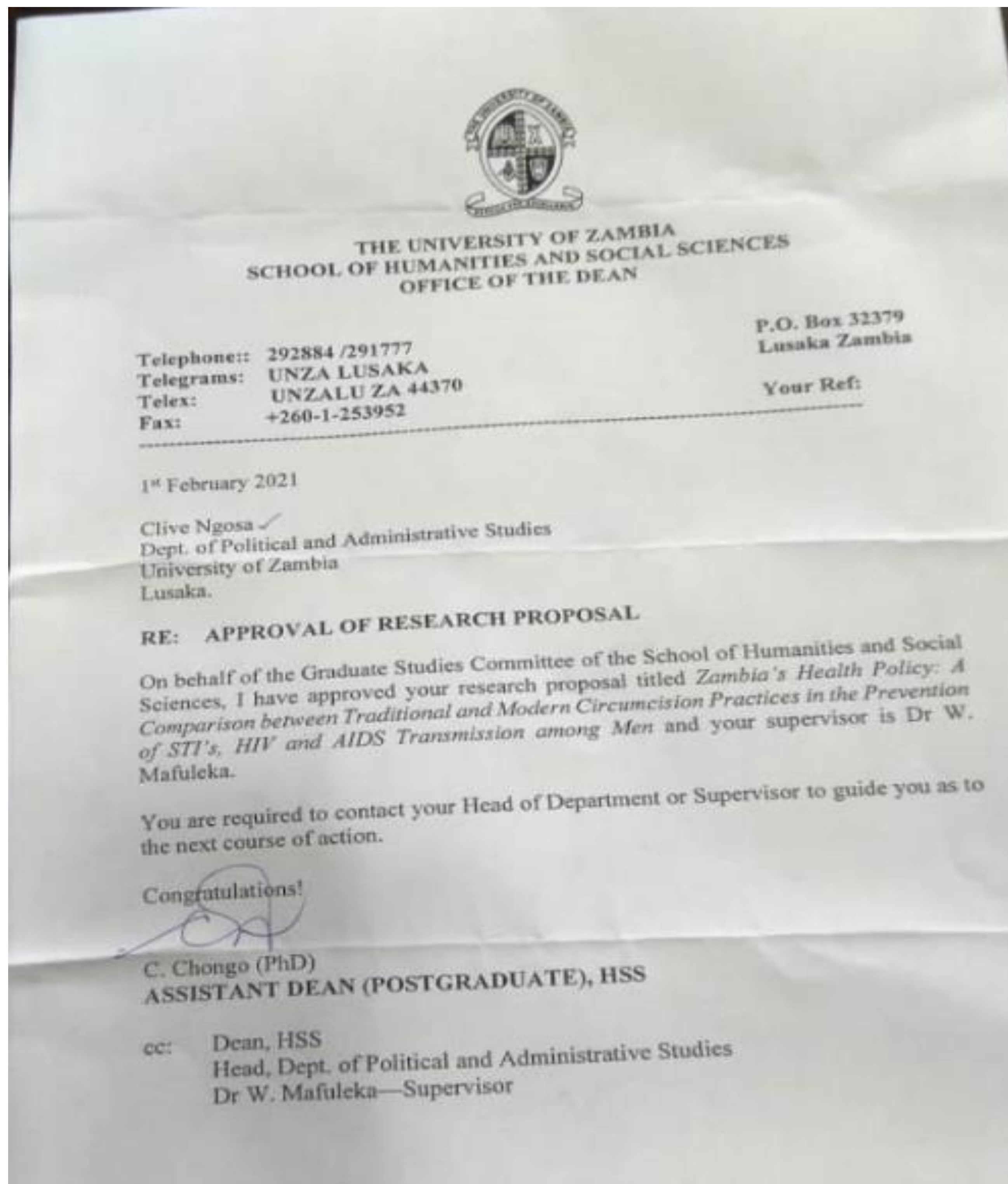
Appendix A: Project Schedule

Item Number	*Description*	*Time frame*	*Responsible Person*	*Remarks /Comment*
1	Proposal Writing	2017	Researcher	Done
2	Data Collection Tools formulation	2018	Researcher	Done
3	Review of Proposal	2018	Researcher	Done
4	Submission of Research proposal to the Department and School for Approval	2019	Researcher	Done
5	Incorporation of noted comments into proposal by the Research Supervisor and/or Coordinator	2020	Researcher	Done
6	Final submission of proposal for Ethical Clearance for Approval	2021	Researcher	Done
7	Orientation of Research Assistants on familiarization of Data collection tools	2021	Researcher	Done
8	Pretest of data collection tools	2021	Researcher/Research Assistants	Done
9	Field work (Data collection)	2022	Researcher/Research Assistants	Done
10	Review of Collected data	2022	Researcher/Research Assistants	Done
11	Data Analysis/Interpretation	2022	Researcher	Done
12	Report Writing/consultation from supervisor	2022	Researcher	Done
13	Submission of Report to the Supervisor	2022	Researcher	Done
14	Final Report Submission	2022	Researcher	Done
15	Report Review by the Academic Research Team	2022	Research Coordinator/Supervisor/ School Dean	Done

Appendix B: Budget

S/N	Item Description	Unit Price	Quantity	Total Cost
1	Stationery	50	50	2500
2	Reams of paper	50	10	500
3	Printing Cartilage	1	700	700
4	Pens/Pencils	5	100	500
5	Binding the Report	300	4	1200
6	Photocopying Tools	100	5	500
7	***Sub totals***	***506***	***869***	***5900***
8	Fuel	16.45	100	1645
9	Refreshers/Allowances for Research Assistants	1000	5	5000
10	**Grand Total**			**12545**

Appendix C: Approval of Study



THE UNIVERSITY OF ZAMBIA
SCHOOL OF HUMANITIES AND SOCIAL SCIENCES
OFFICE OF THE DEAN

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P.O. Box 32379
Lusaka Zambia

Your Ref:

1st February 2021

Clive Ngosa
Dept. of Political and Administrative Studies
University of Zambia
Lusaka.

RE: APPROVAL OF RESEARCH PROPOSAL

On behalf of the Graduate Studies Committee of the School of Humanities and Social Sciences, I have approved your research proposal titled *Zambia's Health Policy: A Comparison between Traditional and Modern Circumcision Practices in the Prevention of STI's, HIV and AIDS Transmission among Men* and your supervisor is Dr W. Mafuleka.

You are required to contact your Head of Department or Supervisor to guide you as to the next course of action.

Congratulations!

C. Chongo (PhD)
ASSISTANT DEAN (POSTGRADUATE), HSS

cc: Dean, HSS
Head, Dept. of Political and Administrative Studies
Dr W. Mafuleka—Supervisor

Appendix D: Information Sheet Document and Consent Form (ICF)

***Principle investigator*:** Gosa Clive

***Co-Investigators*:** Kelvin Kapembwa and Mwenda Lufwendo

***Study title*:** A Comparison Between Traditional and Modern Circumcision Practices in the Prevention of HIV and HIV Transmission .

Introduction: Male circumcision has been provided by either under traditional or modern circumcision practices in Zambia. The study will purposefully select men aged between 15 and 49 who sought circumcision services at health facilities and/or Mukanda Camps. The study is seeking information on the extent to which Traditional and Modern Circumcision Practices prevent the transmission of HIV and STIs .

Purpose of the research study: This study is part of the Doctorate's program for my training in Public Administration at the University of Zambia. The main purpose of this study will be to explore Zambia's Health Policy on the prevention of HIV and STIs by comparing the extent to which Traditional and Modern Circumcision Practices prevent the transmission of HIV and STIs .

- To understand and compare the extent to which traditional and modern circumcision practices prevent HIV transmission .
- To compare the extent to which traditional and modern circumcision practices prevent other STIs apart from HIV against transmission .

Why you are being asked to participate: Men aged between 15 and 49 who sought for male circumcision services at either health facilities or Mukanda Camps are eligible to participate. And health workers, elderly men in the community and traditional leadership knowledgeable on circumcision practices are eligible to participate in this study. You are selected for this study because you meet the minimum requirements for participation in this study. Your recommendations and contributions will be considered in the process.

Procedures: The participation in the study will be prior to understanding the purpose, being allowed to answer questions in the language that you understand, and the timing convenient to you. If you feel uncomfortable with any questions, you are at liberty to remain quiet or withdraw. All interviews and discussions will be documented for study reference.

Risks/discomfort*:* The topic at hand in the study may be sensitive in nature because it involves private parts and HIV/STIs status of the human with regard to circumcision, some questions might make you psychologically uncomfortable. So there will be potential risks of feeling psychologically uncomfortable. As a participant if you feel you are not comfortable, you can remain quiet and only contribute when you feel comfortable.

Benefits: There are no direct benefits to you as an individual on participation towards the topic at hand. The information gathered will add value to the available information on the Zambian health policy on the HIV and STIs prevention by comparing the extent to which traditional and modern circumcision practices prevent the transmission of HIV and STIs .

Payment: There will be no cash payments involved in this study for participants. Instead participants will be reimbursed for the time spent in the discussions and interviews.

Confidentiality: The information collected from you will be confidentially managed unless permitted by law. It will not be given out to anyone else without authorization from the relevant authority. The information is mainly for use within the research process and the relevant ministries.

Duration of the interviews and discussions: Depending on the progression of the sessions, you are expected to spend at least an hour (30 to 40 minutes) in any interview.

What happens if I do not want to participate in the study? You are free to decide whether you want to take part or not in the study. This will not affect you in any way.

If you have any concerns regarding this study, you can contact the following**:**

Official Address

Dr. W. Mafuleka
The University of Zambia
School of Humanities and Social Sciences
Department of Political and Administrative Studies
Box 32379,
Lusaka, Zambia.
Mobile No: +260 965 567 119

CONSENT FORM

Study Title: A Comparison Between Traditional and Modern Circumcision Practices in the Prevention of HIV and STIs Transmission .

Principle investigator: Gosa Clive
Research assistants: Kelvin Kapembwa and Mwenda Lufwendo

The purpose of this study has been explained to me and I understand the purpose, the benefits, risks and confidentiality of the study. I further understand that, even if I agree to take part in this study, I can withdraw at any time without having to give an explanation. I also understand that taking part in this study is purely voluntary.

I...
(Names)

Agree to take part in this study designed to explore A Comparison Between Traditional and Modern Circumcision Practices in the Prevention of HIV and STIs Transmission .

Print Name of Participant__________________

Signature of Participant ___________________

Date ___________________________

Day/month/year

If illiterate

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of witness____________ **Thumb print of participant**

Signature of witness _____________

Date ________________________

Day/month/year

For more information, you may contact the principal investigator:

Home Address

Gosa Clive

Mbila Road, House #8,

Libala,

Lusaka.

Mobile No: +260977533266/ +26096553266.

Work Place: Lusaka Provincial Health Office,

Box 32573,

Lusaka.

Email: cliveg2001@yahoo.com

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.

Print Name of Researcher/person taking the consent________________________

Signature of Researcher /person taking the consent__________________________

Date ___________________________

Day/month/year

CONTACTS FOR QUESTIONS:

1. **Principal Investigator (Must be a local person and a Zambian).**

Names: Gosa Clive

Phone: +260977533266/ +26096553266.

E mail: cliveg2001@yahoo.com

Physical address:
Gosa Clive
Mbila Road, House #8,
Libala,
Lusaka.

Appendix E: Questionnaire for Health Workers

Serial No………………………

Study title:

A Comparison Between Traditional and Modern Circumcision Practices in the Prevention of HIV and STIs Transmission .

I am a student pursuing my Doctorate Degree at the University of Zambia, Great East Road Campus. You have been selected as a respondent in this research. The main purpose of this study is to explore Zambia's Health Policy on the prevention of HIV and STIs by comparing the extent to which traditional and modern circumcision practices prevent the transmission of HIV and STIs . Please be rest assured that the information which you will provide will be treated as confidential and for academic purposes.

Please Tick in the box. [√]

And fill in the blanks where necessary.

Date of Interview________________________________

Section A: Background Information

Question No.	Question description	Response categories	Official Use Only
01	What is your sex?	Male 1 ☐ Female 2 ☐	☐
02	What is your highest School level completed?	Never been to school 1 ☐ Primary 2 ☐ Junior secondary 3 ☐ Secondary 4 ☐ Tertiary 5 ☐	☐
03	What is your employment status?	Full time employed 1 ☐ Part time 2 ☐ On contract 3 ☐ Self-employed 4 ☐ Not employed 5 ☐ Others (specify)…………………	☐
04	What position do you hold?	Facility Incharge 1 ☐ Nurse 2 ☐ Doctor 3 ☐ Director of Health 4 ☐ VMMC Coordinator 5 ☐ Clinical Officer 6 ☐ Others (specific)………………..	☐
Section B: The extent to which modern circumcision prevent HIV Transmission			
05	Are you aware of the VMMC program on the prevention of HIV?	Yes 1 ☐ No 2 ☐	☐
06	Which objectives of the Zambian health policy on	To halt the spreading of HIV 1 ☐ To halt the spreading of STIs 2 ☐	☐

	the prevention of HIV are you aware of?	I don't know.............. 3	
07	Do you have any documents that clearly show strategies put in place to ensure that the policy objectives are met?	Yes 1 No 2	
08	If Yes to question 7, name the documents?	Male circumcision operational plan of 2016-2022 Zambia Health policy of 1991 2 VMMC action plan of 2021 3	
09	What are you doing at your facility to ensure that the health policy on HIV prevention is being implemented?	Circumcision Services 1 HIV testing Services 2 ART services 3 Others (specify)…………………………	
10	Who are the main providers of male circumcision at your hospital/clinic?	Doctor 1 Clinical officer 2 Nurses 3 General workers 4 Others (specify)………………..	
11	Is there a special (professional) training programme for one to undergo to be certified as an MC provider?	Yes 1 No 2	
12	If yes to question 11, why is that certification important?	To protect the staff against HIV transmission since they deal with blood during MC procedure 1 To protect the client when using surgical	

		instruments against HIV transmission during MC procedure 2 Others (Specify)……………….	
13	Do you think it is possible for the person contract HIV after circumcision?	Yes 1 No 2 Don't Know 3	
14	If yes to the above question, what are the potential routes to the transmission of HIV among circumcised men.	Using unsterilized instruments 1 Procedures involving blood mix-up 2 Engaging in unprotected sexual intercourses 3 Not being circumcised 4 Others (specify)…………………………..	
15	What are you doing to ensure that men are protected against the transmission of HIV during and after circumcision?	Provider wearing gloves 1 Do they re-use swabs/bandages 2 Is working surface clean 3 Do you observe hygiene 4 Do you dispose dirty in the refuse bag after conducting the procedure 5 Sterilizing instruments before circumcision 6 Screening of blood before transfusion 7	
16	From the HIV testing service being provided at your facility, when do you test the clients for HIV?	When they come for circumcision for the first time 1 Wait for more than 3 months after circumcision according to the health policy 2	

		When one tested positive and comes for repeat HIV retest 3 3 Others (specify)………………….4	
17	What happens when one's HIV test results are positive	They are documented 1 Linked to ART Care therapy 2	
18	So what documents do you use when recording information on circumcision and HIV status?	A Client Consent Form 1 Medical Male Circumcision Client Record Form 2 Post-Operation Review Form 3 MC Register 4 HIV and Testing Services (HTS) register 5 Others (Specify)……………….…6	
19	And why is documentation important?	To schedule next appointment for clients' review 1 To track those with adverse or complications after ci[illegible]h 2 To track those the HIVstatus for those that are positive and link them to ART care 3 Others (Specify)……………..…4	
20	Do you have situations when men who tested HIV negative first time they	Yes 1 No 2	

	came at the facility and after circumcision comes back and end up testing positive for HIV		
21	In your opinion, do you agree that men who are circumcised under modern circumcision practice (VMMC) have lower chances of getting HIV.	Strongly disagree 1 ☐ Disagree 2 ☐ Agree 3 ☐ Strongly Agree 4 ☐ Not sure 5 ☐	☐
22	Based on your experience and knowledge, to what extent does circumcision performed under medical procedure reduce the spread of HIV transmission ?	Larger extent 1 ☐ Some extent 2 ☐ Less extent 3 ☐ Don't know……………… 4 ☐	☐
23	Do you agree that the Zambian health policy on HIV prevention through circumcision interventions is being met by the above measures and results of HIV status of men after circumcision.	Strongly disagree 1 ☐ Disagree 2 ☐ Agree 3 ☐ Strongly Agree 4 ☐ Not sure 5 ☐	☐
Section C: ***The extent to which modern circumcision prevent other STIs apart from HIV against transmission***			
24	Are you aware of the VMMC program on the prevention of other STIs	Yes 1 ☐ No 2 ☐	☐

	apart from HIV?		
25	Which objectives of the Zambian health policy on the prevention of STIs are you aware of?	To halt the spreading of HIV 1 ☐ To halt the spreading of STIs 2 ☐ I don't know.............. 3 ☐	☐
26	Do you have any documents that clearly show strategies put in place to ensure that the policy objectives are met?	Yes 1 ☐ No 2 ☐	☐
27	If Yes to the question above, name the documents?	Male circumcision operational plan of 2016-2022 ☐ Zambia Health policy of 1991 2 ☐ VMMC action plan of 2021 3 ☐	☐
28	What are you doing to stop STIs and ensure that the health policy on STIs prevention is being implemented?	Circumcision Services 1 ☐ STIs testing Services 2 ☐ ART services 3 ☐ Others (specify)…………………………	☐
29	Who qualifiers to conduct STIs screening for men and circumcision at your hospital/clinic?	Doctor 1 ☐ Clinical officer 2 ☐ Nurses 3 ☐ General workers 4 ☐ Others (specify)………………...	☐
30	Is there a special (professional) training Programme for one to undergo to be certified as an MC provider?	Yes 1 ☐ No 2 ☐	☐
31	If yes to question 30, why	To have knowledge and Skills of Assessing	☐

	is that certification important?	the STIs status of clients during and after circumcision 1 To protect the client when using surgical instruments against STIs transmission during MC procedure 2 ☐ Others (Specify)……………….	☐
32	Do you think it is possible for the person contract STIs after circumcision?	Yes 1 ☐ No 2 ☐ Don't Know 3 ☐	☐
33	If yes to the above question, what are the potential routes to the transmission of STIs among circumcised men.	Using unsterilized instruments 1 ☐ Procedures involving blood mix-up 2 ☐ Through sex 3 ☐ Without sex through child birth 4 ☐ Others (specify)…………………………..	☐
34	What are you doing to ensure that men are protected against the transmission of STIs during and after circumcision?	Provider wearing gloves 1 ☐ Do they re-use swabs/bandages 2 ☐ Screening for STIs 3 ☐ Once found STIs positive, start case management 4 ☐ Get to circumcise those with negative STIs status 5 ☐ Sterilizing instruments before circumcision Others (specify)…………………6 ☐	☐
35	From the STIs testing service being provided at your facility, when do you test the clients for STI?	When they come for circumcision for the first time 1 ☐ Wait for more few days and decide to come for circumcision 2 ☐	☐

		When one tested positive and comes for repeat retest 3 3 Others (specify)………………….4	
36	What happens when one's STI test results are positive	They are documented 1 Linked to STIs treatment 2	
37	So what documents do you use when recording information on circumcision and STI status?	A Client Consent Form 1 Medical Male Circumcision Client Record Form 2 Post-Operation Review Form 3 MC Register 4 HIV and Testing Services (HTS) register 5 Sexually transmitted Infection (STI) register 6 Others (Specify)……………….	
38	And why is documentation important?	To schedule next appointment for clients' review 1 To track those with adverse or complications after cimcusion 2 To track those the STI status for those that are positive and linked to STI case management 3 Others (Specify)…………….	
39	Do you have situations when men who tested STI	Yes 1 No 2	

	negative first time they came at the facility and after circumcision comes back and end up testing positive for STI		
40	If yes to above Question , how frequency are circumcised men get back to your facility after contracting STIs	Once 1 ☐ Twice 2 ☐ Three 3 ☐ More than four 4 ☐	☐
41	Name the type of STIs common among the circumcised men who get back to your facility	Chlamydia 1 ☐ Genital herpes 2 ☐ Gonorrhea 3 ☐ Syphilis 4 ☐ Trichomoniasis 5 ☐ Chancroid 6 ☐	☐
42	In your opinion, do you agree that men who are circumcised under modern circumcision practice (VMMC) have lower chances of getting STIs.	Strongly disagree 1 ☐ Disagree 2 ☐ Agree 3 ☐ Strongly Agree 4 ☐ Not sure 5 ☐	☐
43	Based on your experience and knowledge, to what extent does circumcision performed under medical procedure reduce the spread of STIs transmission ?	Larger extent 1 ☐ Some extent 2 ☐ Less extent 3 ☐ Don't know……………… 4 ☐	☐
44	Do you agree that the	Strongly disagree 1 ☐	

	Zambian health policy on STIs prevention through circumcision interventions is being met by the above measures and results of STIs status of men after circumcision.	Disagree 2 Agree 3 Strongly Agree 4 Not sure 5	
45	Do you have any other comments?	………………………………1 ………………………………2 ……………………………....3	

End of Interview!!!!!!

Thank You for your Cooperation

Appendix F: Questionnaire for Traditional Circumciser

Serial No………………………

Study title:

A Comparison Between Traditional and Modern Circumcision Practices in the Prevention of HIV and STIs Transmission.

I am a student pursuing my Doctorate Degree at the University of Zambia, Great East Road Campus. You have been selected as a respondent in this research. The main purpose of this study is to explore Zambia's Health Policy on the prevention of HIV and STIs by comparing the extent to which traditional and modern circumcision practices prevent the transmission of HIV and STIs .

Please be rest assured that the information which you will provide will be treated as confidential and for academic purposes.

Please Tick in the box. [√]

And fill in the blanks where necessary.

Date of Interview________________________________

Section A: Background Information

Question No.	Question description	Response categories	Official Use Only
01	What is your highest School level completed?	Never been to school 1 Primary 2 Junior secondary 3 Secondary 4 Tertiary 5	
02	What is your employment status?	Full time employed 1 Part time 2 On contract 3 Self-employed 4 Not employed 5 Others (specify)………………………..	
Section B: ***The extent to which traditional circumcision practice prevent HIV Transmission***			
03	Do you have a traditional ceremony that offers male circumcision?	Yes 1 No 2	
04	How often do you provide circumcision services at the ceremony? And specify other details during and after circumcisions on initiates………..	Routine 1 Fixed dates 2 Others (specify)………………….. …………………………………… …………………………………..	
05	If yes to Question 3, how many cases do you perform during circumcision	Less than Ten (10) 1 Between 10 and 30 2 More than 30 3 Don't know.................................	

	ceremonies?		
06	How many knives do you use when performing on more than one initiate?	One (1) 1 ☐ More than one 2 ☐	☐
07	Do you sterilize your surgical knife before using it on the next person or boy during the initiation rite?	Yes 1 ☐ No 2 ☐	☐
08	What do you know about HIV?	It is a virus 1 ☐ Transmissible through sex 2 ☐ Transmissible through blood 3 ☐ Others (specify)…………………...	☐
09	What are routes to the transmission of HIV?	Using unsterilized knives 1 ☐ Procedures involving blood mix-up 2 ☐ Sharing of Surgical knife 4 ☐ Through sexual activities 5 ☐ Others (specify)……………………	☐
10	In your opinion, do you think removing a man's foreskin under traditional circumcision practice reduces the risk of him getting HIV infection.	Yes 1 ☐ No 2 ☐	☐
11	If No to question 9, give reasons for your answer	Sharing of Surgical knife 1 ☐ Leaving the thin skin after circumcision 2 ☐	☐

		Others (specify)……………………	
12	Have you ever heard that someone who was circumcised under traditional practice got infected with HIV after circumcision?	Yes 1 No 2	
13	If yes to the above, give reasons	Engaged into sexual activities without protection 1 Through blood mix 2	
14	If you come across circumcised men who got infected with HIV, specify the numbers?	None 1 Less than 5 2 Between 5 and 10 3 More than 10 4	
15	To what extent does circumcision performed under traditional procedure reduce the spread of HIV transmission ?	Larger extent 1 Some extent 2 Less extent 3 Don't know……… 4	
16	Given a scale of 1 to 10, what score will you give on whether you are satisfied with traditional circumcision prevention against transmission of HIV .	One 1 Two 2 Three 3 Four 4 Five 5 Six 6 Seven 7	

	(The bigger the number on the scale, the higher the level of satisfaction)	Eight 8 Nine 9 ☐ Ten 10 ☐	
17	What measures have you put in place to ensure that those getting circumcised are protected against HIV infection or stopping HIV	Cleaning with a knife with cloth during circumcision 1 ☐ Cleaning the wound with ash and herbes 2 ☐ Others (specify)…………………………	☐
Section C: ***The extent to which modern circumcision prevent other STIs apart from HIV against transmission***			
18	What do you know about STIs?	It is a virus 1 ☐ Transmissible through sex 2 ☐ Transmissible through blood 3 ☐ Others (specify)…………………...	☐
18	What are routes to the transmission of STIs?	Using unsterilized knives 1 ☐ Procedures involving blood mix-up 2 ☐ Sharing of Surgical knife 4 ☐ Through sexual activities 5 ☐ Others (specify)……………………	☐
20	In your opinion, do you think removing a man's foreskin under traditional circumcision practice reduces the risk of him getting STIs	Yes 1 ☐ No 2 ☐	☐

	infection.		
21	If No to question 9, give reasons for your answer	Sexual activities 1 ☐ Leaving the thin skin after circumcision 2 ☐ Others (specify)……………………	☐
22	Have you ever heard that someone who was circumcised under traditional practice got infected with STI after circumcision?	Yes 1 ☐ No 2 ☐	☐
23	If yes to Question 11, how many circumcised men did you hear contracted STIs	One 1 ☐ Less than 5 2 ☐ Between 5 and 10 3 ☐ More than ten 4 ☐	☐
24	Name the type of STIs common among the circumcised men who you heard contracted STIs	Chlamydia 1 ☐ Genital herpes 2 ☐ Gonorrhea 3 ☐ Syphilis 4 ☐ Trichomoniasis 5 ☐ Chancroid 6 ☐	☐
25	In your opinion, do you agree that men who are circumcised under traditional circumcision practice have lower chances of getting STIs.	Strongly disagree 1 ☐ Disagree 2 ☐ Agree 3 ☐ Strongly Agree 4 ☐ Not sure 5 ☐	☐
26	Given a scale of 1 to	One 1 ☐	

	10, what score will you give on whether you are satisfied with traditional circumcision prevention against transmission of STIs . (The bigger the number on the scale, the higher the level of satisfaction)	Two 2 Three 3 ☐ Four 4 ☐ Five 5 ☐ Six 6 ☐ Seven 7 ☐ Eight 8 ☐ Nine 9 ☐ Ten 10 ☐	
27	What measures have you put in place to ensure that those getting circumcised are protected against STIs infection or Stopping STIs	Cleaning a knife with cloth during circumcision 1 ☐ Cleaning the wound with ash and herbes 2 ☐ Others (specify)…………………………	☐

End of Interview!!!!!!

Thank You for your Cooperation

Appendix G: Circumcised Men Questionnaire

Serial No………………………

Study title:

A Comparison Between Traditional and Modern Circumcision Practices in the Prevention of HIV and STIs Transmission .

I am a student pursuing my Doctorate Degree at the University of Zambia, Great East Road Campus. You have been selected as a respondent in this research. The main purpose of this study is to explore Zambia's Health Policy on the prevention of HIV and STIs by comparing the extent to which traditional and modern circumcision practices prevent the transmission of HIV and STIs .

Please be rest assured that the information which you will provide will be treated as confidential and for academic purposes.

Please Tick in the box. [√]

And fill in the blanks where necessary.

Date of Interview______________________________

Section A: ***Demographic Information for the Circumcised Clients***

Question No.	Question description	Response categories	Official Use Only
01	What is your age?	Specify …………………………….	
02	What is your highest School level completed?	Never been to school 1 ☐ Primary 2 ☐ Junior secondary 3 ☐ Secondary 4 ☐ Tertiary 5 ☐	☐
03	What is your employment status?	Full time employed 1 ☐ Part time 2 ☐ On contract 3 ☐ Self-employed 4 ☐ Not employed 5 ☐ Others (specify)…………………	☐
04	What is your area of residence?	Urban 1 ☐ Rural 2 ☐	☐
Section B: The extent to which circumcision prevent HIV Transmission			
05	What kind of circumcision practice did you undergo?	Traditional Circumcision 1 ☐ Modern Circumcision 2 ☐	☐
06	Where did the circumcision take place?	Hospital 1 ☐ Traditional setting 2 ☐ NGO Male Circumcision Clinic 3 ☐ Don't know 4 ☐	☐
07	How satisfied were you with the circumcision you underwent?	Very satisfied 1 ☐ Satisfied 2 ☐ Somewhat satisfied 3 ☐ Very dissatisfied 4 ☐	☐

		Dissatisfied 5 ☐ Somewhat dissatisfied 6 ☐	
08	What do you know about HIV?	It is a virus 1 ☐ Transmissible through sex 2 ☐ Transmissible through blood 3 ☐ Others (specify)…………………..	☐
09	What are the routes to the transmission of HIV?	Using unsterilized knives 1 ☐ Procedures involving blood mix-up 2 ☐ Sharing of Surgical knife 4 ☐ Through sexual activities 5 ☐ Others (specify)……………………	☐
10	When you went to get circumcised, did you test for HIV? (If not applicable skip to question 12)	Yes 1 ☐ No 2 ☐	☐
11	If Yes to question 10, what were your HIV test results?	Negative 1 ☐ Positive 2 ☐	☐
12	If you tested positive for HIV, what happened at the facility or rite?	Linked to ART Care 1 ☐ Given drugs for STI Treatment 2 ☐ Giving herbal and ash 3 ☐	☐
13	After getting circumcised, have you engaged into sexual act without protection?	Yes 1 ☐ No 2 ☐	☐
14	If yes to question 12, were you willing to go back to the facility after 3 months	Yes 1 ☐ No 2 ☐	☐

	for another HIV test?		
15	If you went back for the follow up HIV test, what were your HIV results?	Negative 1 Positive 2	
16	Do you think you removing the skin on your foreskin reduces chances of acquiring HIV after circumcision ?	Yes 1 No 2	
17	If Yes to question 16, on a scale of 1 to 3, how would you rate levels of risk of acquiring HIV after you got circumcised and ?	1 (No risk) 1 2 (Moderate risk) 2 3 (Great risk) 3	
18	In your opinion, to what extent does the circumcision practice you underwent reduce the spread of HIV transmission?	Larger extent 1 Some extent 2 Less extent 3 Don't know………………………………....	
Section C: The extent to which modern circumcision prevent other STIs apart from HIV against transmission			
19	What do you know about STIs?	It is a virus 1 Transmissible through sex 2 Transmissible through blood transfusion 3 Others (specify)……………………...	
20	What are the routes to the transmission of STIs do you know?	Using unsterilized knives 1 Procedures involving blood mix-up 2 Sharing of Surgical knife 4	

		Through sexual activities 5 ☐ Others (specify)……………………	
21	When you went to get circumcised, did you test for STI?	Yes 1 ☐ No 2 ☐	☐
22	If yes to question 21, what were your STI test results?	Negative 1 ☐ Positive 2 ☐	☐
23	If you tested positive for STIs, did they circumcise you?	Yes 1 ☐ No 2 ☐	☐
24	If you tested positive for STI, what happened at the facility or rite?	Was told to get back when I recovered from STIs 1 ☐ Given drugs for STI Treatment 2 ☐ Giving herbal and ash 3 ☐	☐
25	After circumcision, have you ever engaged into sexual act without protection?	Yes 1 ☐ No 2 ☐	☐
26	If yes to question 23, were you willing to go back to the facility for a checkup when you felt pain, sores, bumps, rashes, on your penis, discomfort during sexual activities or urination and got tested another STI test?	Yes 1 ☐ No 2 ☐	☐
27	If you went back to the facility or rite for the follow up STI test, what were your STI results?	Negative 1 ☐ Positive 2 ☐	☐

28	How many times have you tested positive for STIs after circumcision?	Once 1 Twice 2 Three 3 Four 4 More than five 5	
29	Name the type of STIs common among the circumcised men who you heard contracted STIs	Chlamydia 1 Genital herpes 2 Gonorrhea 3 Syphilis 4 Trichomoniasis 5 Chancroid 6	
30	Do you think you now have reduced chances of acquiring STIs after circumcision ?	Yes 1 No 2	
31	If No to question 30, on a scale of 1 to 3, how would you rate levels of risk of acquiring STI after you got circumcised?	1 (no risk) 1 2 (moderate risk) 2 3 (great risk) 3	
32	In your opinion, to what extent does the circumcision practice you underwent reduce the spread of STI transmission?	Larger extent 1 Some extent 2 Less extent 3 Don't know……………………	
33	In your opinion, do you agree that men who are circumcised have lower chances of getting STIs.	Strongly disagree 1 Disagree 2 Agree 3 Strongly Agree 4 Not sure 5	

34	Do you have any other comments?	……………………………………1 ……………………………………2 …………………………………...3	
End of Interview!!!!!! ***Thank You for your Cooperation***			

Appendix H: Interview Guide for Key Informants

Serial No………………………

Study title:

A Comparison Between Traditional and Modern Circumcision Practices in the Prevention of HIV and STIs Transmission .

I am a student pursuing my Doctorate Degree at the University of Zambia, Great East Road Campus. You have been selected as a respondent in this research. The main purpose of this study is to explore Zambia's Health Policy on the prevention of HIV and STIs by comparing the extent to which traditional and modern circumcision practices prevent the transmission of HIV and STIs .

Date of Interview______________________________

Date of Interview……………………………………

Name of Institution…………………………………….

Job/Title of the Interviewee…………………………...

Discussion Questions

What is male circumcision?..

……………………………………………………………………………………………...

……………………………………………………………………………………………..

What type of male circumcision practice do you provide to clients at your institutions/rite?..

………………………………………………………………………………………..……..

…………………………………………………………………………………………………

Are you pleased with the circumcision services performed at your nearest health facility or your Mukanda rite?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

…………………………………………………………………………………………………

What do you know about HIV and STI? ……………………………………………………….…

………………………………………………………………………………………………..

……………………………………………………………………………………………….

Are you aware of the Zambian health policy on the prevention of HIV and STIs, and if so what do you know about Government program of circumcision?.......………………………………..

……………………………………………………………………………………………..

…………………………………………………………………………………………….

What part of health policy do you know on the HIV and STIs prevention? What part of the health policy has achieved its objective in the prevention of HIV and STIs transmission do you know at your institutions or rite……………………………………………………………………….

……………………………………………………………………………………………..

……………………………………………………………………………………………..

What are you doing to ensure that men who get circumcised are protected against the transmission of STIs and HIV virus?..

………………………..…………………………………………….………………………………

………………………………………………………………………………………………

It is said that both medical and traditional has the potential to reduce the transmission of STIs and HIV , can you tell me what you think about this? …………..................................

………………………………………………………………………………………………
………………………………………………………………………………………………

Are you aware of any community were male circumcision reduced the chance of getting STIs and HIV infection? If you are aware of any, what type of circumcision is being conducted in that community?...
………………………………………………………………………………………………
………………………………………………………………………………………………

If you look back, do you know some men who got circumcised and contracted STIs and HIV? If so, explain to me how the type of circumcision they underwent, and whether they got STIs and HIV through blood mix or sexual activities?...

……………………………………………………………………………………………………

……………………………………………………………………………………………………

What are the common STIs diagnosed among the circumcised men especially those who had been frightened or hurt during sexual interaction…………………………………………………?

…………………………………………………………………………………………………..

……………………………………………………………………………………………………

If your opinion, what are the routes to the transmission of STIs and HIV ? ………………………………..…………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

In your opinion, do you think circumcised men are fully protected against the transmission of STIs and HIV? Explain ……………….………...

……………………………………………………………………………………………………

……………………………………………………………………………………………………

In your opinion, to what extent does modern and traditional circumcision practice prevent the prevention of STIs and HIV transmission, explain……..…………………………….

………………………………………………………………………………………………….

………………………………………………………………………………………………….

Do you have any other comments on the type of male circumcision practice of your choice with regard to the prevention of STIs and HIV? …………………………………………….………..

……………………………………………………………………………………………………

……………………………………………………………………………………………………

End of Interview!!!!!!

I would like to thank you for your valuable contributions and time.

Appendix I: Checklist for the Study

Serial No………………………

Study title:

A Comparison Between Traditional and Modern Circumcision Practices in the Prevention of HIV and STIs Transmission .

I am a student pursuing my Doctorate Degree at the University of Zambia, Great East Road Campus. You have been selected as a respondent in this research. The main purpose of this study is to explore Zambia's Health Policy on the prevention of HIV and STIs by comparing the extent to which traditional and modern circumcision practices prevent the transmission of HIV and STIs.

Date of Data Collection_______________________________

Checklist

S/N	Details	2019				2020			
		15-19 years	20-24 years	25-29 years	30-49 years	15-19 years	20-24 years	25-29 years	30-49 years
Male Circumcision (MC) Register									
1	Number of men circumcised								
2	Number of men tested for HIV at first visit								
3	Number tested Positive for HIV at first visit								
4	Number tested Negative for HIV at first visit								
5	Number referred for Antiretroviral therapy (ART)								
Sexually Transmitted Register (STI) Register									
6	Number of circumcised men screened and tested for STIs								
7	Number of men tested negative for STIs at first visit								
8	Number of circumcised men who tested positive for STIs at follow up visit								
9	Number of men tested negative for STIs at follow-up visit								
10	Number of men testing positive for STIs referred for STIs syndromic management and treatment								
HIV and Testing (HTS) Register									
11	Number of circumcised men who tested negative for HIV at follow up visit								
12	Number of circumcised men who tested positive for HIV at follow up visit								
13	Number of men whose results were STI positive at follow up visit and tested HIV positive								
14	Number of circumcised men referred for HIV care and treatment								

Guide for the Checklist

- Record the count of all occurrences in the provided boxes according to the age bands of the circumcised men.

- The period is 2019 and 2020, a two-year period prior the study.

- Focus in the study is on clients who had a negative result for HIV and STIs at the circumcision stage and after circumcision, the clients should at least test either positive or negative for HIV and STIs. This way will assist to establish the self-efficacy of the given circumcision practice in the prevention of HIV and STIs transmission . And the data collected will assist in validating the findings in the study.

- The Male Circumcision (MC) Register – will be used to measure the number of the men who underwent circumcision and had a negative HIV result at their initial stage of circumcision. And HIV positive status at Initial stage has little significance in the study though will also be accounted as part of the study for easy analysis at initial stage.

- Sexually Transmitted Register (STI) Register – will be used to measure the number of the men who underwent circumcision and had a negative STI result at the initial stage of circumcision. And whether or not, these men who had an initial negative status tested either positive or negative for STIs at follow up visits after circumcision. Of course out of those who test positive for STIs, the measure should be everyone testing positive for STIs should be referred for syndromic management and treatment of STIs.

- HIV and Testing (HTS) Register- This is to be used to account for the numbers of circumcised men who came back after some time to the facility and tested positive for HIV after circumcision. Further to assess whether or not, those testing positive for HIV and linked to continuity of care, that is to say, antiretroviral therapy (ARVs). And also used to account for those from Sexually Transmitted Infections (STI) setting point of

entry who tested positive for STIs after circumcision during follow up visits and eventually developed into HIV.