ASSESSMENT OF KNOWLEDGE, ATTITUDES, PRACTICES AND RESPONSIVENESS TO MEDICAL MALE CIRCUMCISION AMONG MALES IN ZAMBEZI REGION, NAMIBIA

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ABSTRACT

Male circumcision is one of the popular intervention methods that is fully supported by modern health practitioners to curb the spread of HIV/AIDS with estimate of 60%. About 58 % of men are estimated to have been circumcised globally. In southern Africa male circumcision is less common. Sub-Saharan Africa has the highest prevalence of HIV/AIDS, with Zambezi region of Namibia plagued with high HIV/AIDS prevalence in association with low male circumcision. The purpose of this study was to assess the knowledge, attitude, practice and responsiveness of males towards voluntary medical male circumcision in Zambezi Region.

This was a cross sectional study among men from 15 years and older in five randomly selected constituencies of Zambezi Region. Participants were selected using probability sampling method. Data was collected using structured questionnaires and was entered into Microsoft excel sheet and analyzed with Epi-info 7.2 software. Frequencies and proportions were generated and bivariate analysis were performed to determine associations.

A total number of 379 participants were involved in the study. Most participants were between the age group of 20-29 years 124 (33%). Majority of participants 292 (77%) resides in rural area, mostly in Linyanti constituency 144(38%). Most participants indicated being single 256 (68%), and a total of 365 (95%) can read and write. Majority had adequate knowledge 354(95%) and positive attitudes 330 (87%) towards VMMC. Association of circumcision status with level of knowledge (OR=0.1, CL=0.08-0.50) p-value=0.0004, type of attitude (OR= 0.1, CL= 0.07-0.29) p-value= 0.0001 and this was all significant.

This study concluded that participants had adequate knowledge and positive attitudes towards VMMC, however there are some men with lack of knowledge and negative attitudes towards the VMMC program. Therefore, the study recommends for more education and awareness campaigns on VMMC in order to facilitate behavior change among this group and enhance the performance of the VMMC program in the region.

Key words: Zambezi, Male circumcision, HIV/AIDS

TABLE OF CONTENTS **PAGE NUMBERS**

LIST OF TABLES

Name of tables **Page numbers**

LIST OF FIGURES

Figures page numbers

LIST OF ACRONYMS

AIDS	Acquired immunodeficiency syndrome
HIV	Human Immunodeficiency Syndrome
MC	Male Circumcision
MOHSS	Ministry of Health and Social Services
PMTCT	Prevention of Mother to Child Transmission
PSU	Primary Sampling Unit
RCT	Randomized Controlled Trial
UNAIDS	Joint United Nations Program on HIV and AIDS
VMMC	Voluntary Medical Male Circumcision
WHO	World Health Organisation

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DEDICATION

Every challenging work needs self-effort as well as guidance and encouragement from the people close to our hearts

My humble effort I dedicate to

My loving parents

Mr. Edmund Nairenge and Mrs. Ruth Nairenge

Who taught me to work hard despite the challenges and encouraging me to believe in myself and never give up,

My son

For your love, patience and understanding, even when being without mum was hard.

You are my inspiration

I love you all

DECLARATION

I, Rosalia Nairenge, hereby declare that this study is my own work and is a true reflection of my research, and that this work, or any part thereof has not been submitted for a degree at any other institution.

Rosalia Nairenge 16 January 2019

Name of Student **Signature Date**

CHAPTER 1

INTRODUCTION

1.1 Background of study

Male circumcision (MC) is a surgical removal of the foreskin (the retracted fold of tissues that covers the head) of the penis by a trained professional. The inner aspect of the foreskin is highly susceptible to infections (1). Medical male circumcision refers to male circumcision performed by trained health professionals with specialized sterile equipment in a sterile environment. The general purpose of medical male circumcision is to reduce the transmission of Human Immunodeficiency Syndrome (HIV). It has other benefits such as reducing risk of some sexual transmitted infections, reduce partner's risk of cervical cancer, lowers risk of penile cancer and improves penile hygiene.

The reasons for practicing male circumcision vary in different countries; such as traditional beliefs, religion or medical reasons. Moreover, there are some countries or cultures that do not practice male circumcision at all. This affects the prevalence of male circumcision in different settings. Religions such as the Islam and Judaism, recommended MC as part of their faith (2), however it is discouraged among Christians (1).

It has been estimated that about 58 % of men above the age of 15 are circumcised globally. Male circumcision is common in African countries especially in North and West Africa. Most of these countries have high Male circumcision prevalence, in Ethiopia about 99% of men are circumcised and 86 % are circumcised in Ghana. In contrast, in southern Africa

male circumcision is less common, where self-reported prevalence is around 18 % in countries like Botswana, South Africa, Zambia, Zimbabwe and Namibia (1).

Global statistics indicates that Sub-Saharan Africa is the most affected with the Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS). According to WHO, more than 70 million people have been infected with the HIV worldwide and about two third of these infections occurred in sub-Saharan Africa. About 35 million people have died of HIV/AIDS at the end of 2016 (3).

Three randomized controlled trial (RCT) in Uganda, Kenya and South Africa were conducted to establish the efficacy of male circumcision and HIV acquirement, these studies reported that circumcised men were less likely to get infected with HIV compared to uncircumcised men with reduction estimate of 60% (2). Since 2007 the World Health Organization (WHO) and the joint United Nations Programme on HIV/AIDS (UNAIDS) recommended that Voluntary Medical Male Circumcision (VMMC) should be an additional strategy to the prevention package for HIV prevention in settings with high HIV prevalence and low levels of male circumcision (4). VMMC means that males should go for medical male circumcision at their own free will and not by force.

Namibia is one of the fourteen African countries that adopted the VMMC program considering its HIV profile and low rates on male circumcision. The country is located on the southern Africa with a population of 2.6 million (5) and it is divided in to fourteen regions. Namibia borders with Zambia and Angola on the north, Botswana to the east, South Africa to the south and Atlantic Ocean to the west. Moreover, the country is ranked

among the 10 countries with the highest HIV prevalence levels in the world reports WHO (2012). An estimated 178 000 people are living with HIV in Namibia (5). Although availability of antiretroviral therapy and other HIV prevention and control measures have been put in place, more new HIV infections keep occurring.

Voluntary Medical Male Circumcision was adopted to be used in conjunction with other HIV prevention methods such as HIV testing and counselling, correct and consistence use of female and male condoms, provision of antiretroviral treatment for people living with HIV in discordant couple, Prevention of Mother to Child Transmission (PMTC), treatment for sexually transmitted infections and promotion of safer sex practices (4).

The USAID together with the Ministry of Health and Social Services (MOHSS) conducted a situation assessment on male circumcision in Namibian Regions, and reported a low prevalence of MC (21%), of which Zambezi Region was reported the lowest with less than 10% (4). Scaling up of VMMC began in 2009 in most Namibian Regions with an estimate of 80% of adult and newborn males circumcised by the year 2015 (would have averted 35 000 adult's HIV infections between 2009-2025) (2). Regional targets were set based on a Regional analysis of MC prevalence, Regional demographics and HIV prevalence (2). Scaling up of VMMC in Zambezi Region started in 2013 (it is being performed in Katima Mulilo hospital, three health centers and an outreach team). The region was given an estimate target to perform 15 477 MC (15-49 years) by the year 2016. Zambezi Region is located in the extreme north east of Namibia and has a population of 106 318 of which 51% are females and 49% are males (6). The region is divided into eight electoral constituencies and the most language spoken is Silozi.

There are studies that have explored the knowledge and acceptability of MC as an HIV prevention strategy among men. According to a study done by Nkala in Zimbabwe, reported that men have anxiety participating in MC programme due to fear to undergo HIV screening before the procedure (7). A different study conducted by Ngodji at Onandjokwe District hospital among men attending Voluntary Counselling and Testing for HIV shown that 70% of respondents had knowledge and positive attitude towards MC as an HIV prevention intervention and were willing to be circumcised to reduce the risk of contracting sexually transmitted infections(8). Male circumcision is not traditionally practiced in Zambezi Region, however assessing the knowledge, attitudes and the responsiveness of MC among men in Zambezi Region will provide useful information regarding the low uptake of VMMC.

1.2 Problem Statement

Zambezi Region was reported among the regions with the lowest rates (less than 10%) of MC in Namibia (4) despite high prevalence of HIV epidemic. Different interventions by the government and other non-governmental organizations to bring the epidemic on decrease have been put in place, however, morbidity and mortality due to HIV/AIDS keep increasing every year. According to the Namibia Health Sentinel Survey of pregnant women in 2016, the region was reported to have the highest HIV prevalence of 32.9% compared to other regions in Namibia, and this serves as a benchmark of the HIV prevalence rate in Zambezi Region (9). Despite the implementation of VMMC program as an additional strategy for HIV prevention in Zambezi region, there is still a low uptake of male circumcision even though awareness campaigns on MC as a strategy for HIV prevention is ongoing. The region only managed to circumcise 8751 men (at the end of

June 2018) out of the 15477 target representing 56 % coverage against 80% in the 3-year period (2013-2016) (4,8). This study is therefore concerned with the low uptake of VMMC Programme by men in the region which may be driven by factors related to attitudes, knowledge, practices and responsiveness which this study intend to reveal.

1.3 Objectives of the study

- To assess the knowledge, attitudes and practice of medical male circumcision among men in Zambezi region.
- To assess responsiveness of men towards medical male circumcision in Zambezi region.

1.4 Significance of the study

Male circumcision is an imperative strategy in public health as it serves some advantages such as: reduce the chances of HIV transmission and improves penile hygiene. This study ‘s focus is to assess the knowledge, attitudes, practice and responsiveness of males towards medical male circumcision in Zambezi region. Low uptake of VMMC has been recorded in the region since it was implemented. Various interventions such as awareness campaigns on VMMC have been ongoing however the region has not yet reached their assigned targets. This study intends to find out what could be the reason for the low uptake of VMMC in the region. Findings from this study will provide insight on the level of knowledge, the attitudes, practice and responsiveness of men towards VMMC. The information obtained from this study will help in identifying gaps that will aid for the improvement of VMMC program in Zambezi region.

1.5 Definition of concepts

The main concept regarding this study are defined as follows:

1.5.1 Knowledge

Knowledge is defined as facts, information and skills acquired through experience or education or awareness or understanding of a subject. Knowledge can refer to a theoretical or practical understanding of a subject. It can be implicit or explicit and it can be more or less formal or systematic(11). In this study the knowledge of males towards medical male circumcision in Zambezi region will be assessed by asking questions (using questionnaire) to test their knowledge regarding VMMC.

1.5.2 Attitudes

Attitude is defined as a settled way of thinking or feeling or having an opinion about something or someone. It also refers to a persons' behavior toward a particular subject (12). In this study the attitudes of males in Zambezi region will be assessed by asking questions using questionnaire to determine if the males have positive or negative attitudes towards VMMC.

1.5.3 Practice

Is defined as the actual application or use of idea, belief or methods as opposed to theories relating to it. It also refers to the customary, habitual or expected procedure or way of

doing something(13). This study will assess the practice of male circumcision in the region.

1.5.4 Responsiveness

This refers to the quality of reacting quickly and positively towards something(11). This study will assess the willingness and response of males towards VMMC in the region.

1.6 Conceptual Framework

The framework of this study is divided in two components: 1) The knowledge and attitudes among men in Zambezi region towards VMMC. 2) The practice and acceptability of men towards VMMC in the region.

The first objective of the study is to measure the level of knowledge whether it is adequate or inadequate based on the Likert scale, secondly the attitudes of men towards VMMC will be assessed by their responses whether its positive or negative attitudes towards VMMC. Practice and acceptability of VMMC will also be assessed based on their responses.

Figure 1.1 shows demographic variables that play a role in the knowledge and attitudes of males towards VMMC. Variables such as age, education, religion, occupation and marital status can affect the practice and Acceptability of males towards VMMC (14).

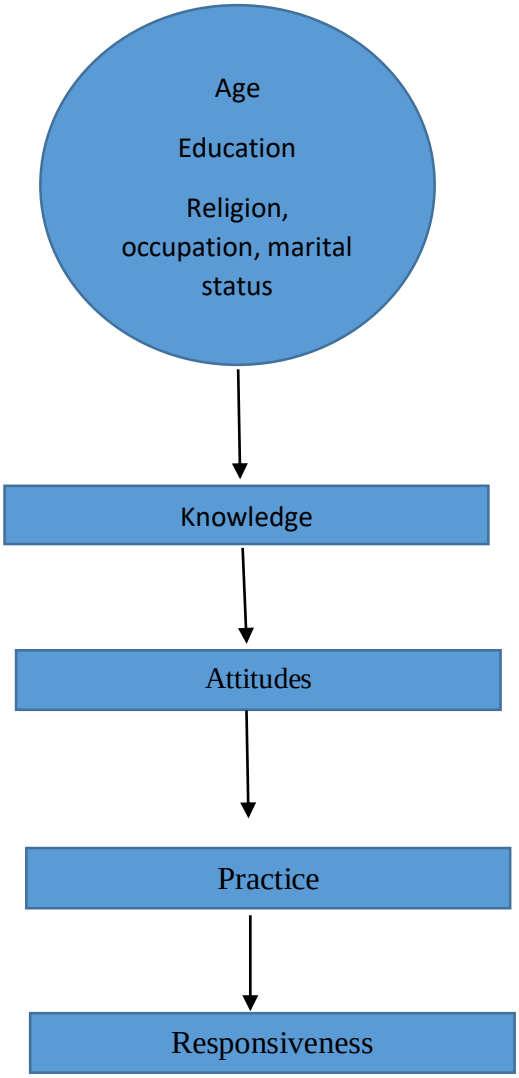

Figure 1.1 Interaction of knowledge, attitudes, practice and responsiveness towards VMMC among men in Zambezi Region. Redesigned from Chikuta (2014)

1.7 Limitations of the study

- There is a chance of information bias, respondents might give information that is/are not true. E.g. the study does not involve physical examinations to confirm those that are circumcised and those that are not.
- Some respondents may feel uncomfortable to answer the questions because culturally people don't talk about their sexuality related issues openly.

1.8 Delimitation

- The study did not elicit the views of women on VMMC
- The data collected is not representative to the overall population of males in the region, since the study was conducted in some parts of Zambezi region.

1.9 Summary

This chapter provided an introductory information on why the study was conducted, it defined medical male circumcision and the importance of it. It also talked about the background information on medical male circumcision, problem statement, purpose, significance, objectives and the conceptual framework, limitations and delimitation of the study were covered in this chapter.

CHAPTER 2

LITERATURE REVIEW

2.1 Historical importance of male circumcision

Circumcision removes some or all of the foreskin from the penis. Male circumcision (MC) is mainly performed due to cultural, religious or medical reasons. The word "circumcision'' comes from the Latin word *Circumcidadere* meaning 'to cut around' (1). Male Circumcision is one of the oldest and the most debated surgeries today, and the debate is about the role of the foreskin, with possible functions like keeping the glans moist, protecting the developing penis in utero or enhancing sexual pleasure due to the presence of receptors (1). According to Hodges he explains that these debates are mostly based on religion, health, sexual and ethical grounds (15).

Historically, male circumcision has been associated with religious practices and ethnic identity. Circumcision was practiced among ancient Semitic people, including Egyptians and Jews (1). In the Jewish religion, male infants are circumcised on the eighth day of their lives, as long as there are no medical contraindications. This is done because in the Jewish holy book, a covenant was made between God and Abraham that all males be circumcised (16). Male circumcision continues to be universally practiced among Jewish people, an estimate of 99% of Jewish men globally are circumcised (17).

Muslims are the largest religious group to practice male circumcision. They practice circumcision as part of their Abrahamic faith to confirm their relationship with God. The practice is also known as *tahera* meaning "purification". The Islamic schools of law strongly encourages circumcision as part of their tradition, and it is also essential for a man to be circumcise to lawfully make the hajj (pilgrimage) to Mecca, one of the five pillars of Islamic beliefs (1). There is no prescribed age in the Islam religion, however the prophet Muhammad recommended it to be carried out at an early age (18). With the global spread of the Islam from the 7th century AD, circumcision was widely adopted among previously non-circumcised people. In some countries, male circumcision was practiced traditionally in their cultures prior to the arrival of the Islam example in West and South-East Africa. In other regions, Islam became the determinants of male circumcision e.g. in Uganda, 99% of Muslim men are circumcised compared to 4% of non- Muslim men. In other religions such as Hindu and Buddhists, their religion do not emphasize male circumcision as a major practice. The Coptic Christians in Egypt and the Ethiopian Orthodox Christians practice two of the oldest surviving forms of Christianity and retain many of the features of early Christianity, including male circumcision (to take one instance, 97% of Orthodox men in Ethiopia are circumcised). Male circumcision is not a rite in Christianity, it is discouraged in the new testament of the Holy Bible because it counts for nothing and makes no difference either, what matters is keeping God's commandments (1).

Focus group discussions on male circumcision in sub-Saharan Africa found no clear consensus on compatibility of male circumcision with Christian beliefs (19). Some churches in South Africa oppose the practice, and they view it as pagan ritual (18). Catholic churches in particular are so adamant in leaving boys intact. Male circumcision

is forbidden on the grounds of respect for bodily integrity; i.e. the body is a temple of God. Catholic Catechism states that except when it is medically indicated, amputations, mutilation and sterilizations are performed on innocent people are against moral law (1). While some churches in Kenya require circumcision for membership. Moreover, some Christian members in Malawi and Zambia have similar beliefs that Christians should practice male circumcision since Jesus was circumcised and the bible teaches the practice(1).

Male circumcision has been practiced for non- religious reasons for many thousand years in sub-Saharan Africa and in many ethnic groups around the world. Many tribes in various countries started male circumcision as a rite of passage marking a boy's entrance to adulthood, as means of suppressing sexual pleasure, as an aid to hygiene were regular bathing was impractical (2).

There is relatively low prevalence in Namibia, and this could be related to a number of reasons such as historical, social and political factors. The original inhabitants of Namibia the Khoi-San people (Namas and San people) have not engaged male circumcision as part of their cultures. However male circumcision was an integral cultural practice among the Bantu speaking people e.g. Hereros, Ovambo and Kavango ethnic groups who migrated from central African regions and settled in Namibia (20). MC was practiced among this ethnic groups, especially among members of the royal families. Only circumcised men could become kings, this was mainly practiced in Oshindonga and Oshikwanyama speaking groups (20). The arrivals of Europeans in Namibia resulted in a decline of MC practice, because the Europeans opposed it. Secondly during wars, some cultures/ kings did not want their young men to be unavailable due to rite of passage ceremonies such as

MC. Although this historic factors led to decline of MC, the legacy of MC among certain privileged members of society endured for a long time. Also, some tribes didn't easily give in to the Europeans pressure to abandoned the rite of passage ceremonies (21). In some part of Namibia MC ended. Moreover, only tribes like Kavangos and Hereros who continue practicing MC (20).

2.2. Global Prevalence of male circumcision

According to WHO (2009) estimate approximately 30 % of men (aged 15 and above) were circumcised (18). Different assumptions were looked at such as all Muslims and Jewish men aged 15 years were circumcised (1). In non-circumcising communities; the prevalence was obtained by Demographic and Health Survey (DHS) data showing that 69% of the circumcised men were Muslim residing mainly in Asia, Middle-East and North Africa, 0.8% are Jewish and 13 % are non-Muslim and non-Jewish men residing in the United States of America (19).

Male circumcision is common in many African countries and is universal in north and west African. Some countries in Africa have more than 80% rate of circumcision e.g. Benin, Cameroon, Gabon, Ghana, Guinea, Democratic Republic of Congo, Kenya, Liberia, Nigeria and Sierra Leon. On the other hand, there are also countries with less than 20% circumcision prevalence such as Botswana, Malawi, Mozambique, Swaziland, Zambia and Namibia (7). They also found out that prevalence in the East and Central Africa varied from almost 15% in Burundi and Rwanda to 70 % in Tanzania, 84% in

Kenya and 93 % in Ethiopia (1) . Namibia is not a traditional circumcising country, moreover few tribal groups in the country such as the Hereros and Kavangos practice circumcision in their cultures (20). In 2008, the Ministry of Health and Social Services conducted a situation assessment of male circumcision in Namibia regions, Kavango region topped the list with 31% followed by Khomas region with 27% and the least was Zambezi region 6% and Ohangwena region 1% (4).

2.3 Relationship of male circumcision and HIV

Various epidemiological studies have shown that circumcised men have a lower risk of several reproductive tract infections than uncircumcised men (2). There are several likely biological mechanisms for this. The temperature of the area under the foreskin is warm and moist which makes it easy for some pathogens to persist and replicate especially if penile hygiene is poor (1).

The first medical doctor to advocate for the adoption of male circumcision was an English physician Jonathan Hutchinson in 1855. He published a study in which he compared the rate of contraction of venereal disease among the gentile and the Jewish populations of London and his study appeared to demonstrate that circumcised men were significantly less vulnerable to such diseases (7). Innumerable studies have been conducted stating the benefits of medical male circumcision (22), as in 1865 Nathaniel Heckford published his study that Male circumcision cures epilepsy. Lewis A. Sayre declared in 1870 that male circumcision prevents spinal paralysis, 1954 Ernest L. Wynder published his paper

supporting Ravich's theory that male circumcision prevents cervical cancer in women; 1988 Aaron J. Fink asserts that circumcision prevents neonatal group B streptococcal diseases (22). In 2002, Bruce, Bailey, and others reported that the adult foreskin mucosa has a greater susceptibility to infection with HIV than cervical mucosa. Between 2002-2006 three randomized controlled trials experiments in sub-Saharan Africa were carried out and proved to reduce HIV transmission in heterosexual men (17). Although male circumcision has been practiced in the past for various reasons it is nowadays considered as a preventive medical intervention against heterosexual HIV infection (2).

Biological evidence shows that, the inner part of the foreskin is exposed to the inner surface on glans of penis and the shaft of the penis, this crests a moist, protecting environment for microbial flora. The inner preface mucosa has little or no keratinized outer foreskin therefore the inner surface of the prepuce is highly susceptible to HIV infection (14).

Since the beginning of HIV/AIDS epidemic in the 1980s, researchers have been exploring for ways to treat and prevent the spread of HIV infection. One of this way was exploring the correlation between male circumcision and lowered risk of HIV transmission. The first paper published by Fink in 1988 suggested a protection effect of male circumcision against HIV infection (23). Since then over 40 observational epidemiology studies have reported significant associations between male circumcision and HIV infections (24).

However, AIDS researchers De Vincenzi and Merens examined 23 of the studies in 1994, and concluded that these studies suffered from a lack of attention given to potential confounding factors to extent that data was unreliable. They further added that stronger evidence was needed before a program of male circumcision could be instituted as a public

health intervention (25). Later in 1999, Robert Van Howe reviewed data from 35 articles and conducted statistical analysis with the conclusion that a circumcised man is at greater risk of acquiring and transmitting HIV than a non-circumcised man (26). Both of these researchers argued that it is incorrect to assert that circumcision prevents HIV infections.

The Rakai project in Uganda was conducted among discordant couples (one partner is HIV positive and the other partner is HIV negative) on heterosexual transmission or reception of HIV. It was reported that viral load was the most determining factor and not the circumcision status (14). Gray and Kiwanuka, further reported that studies of HIV infection and circumcision status are confounded by religion and cultural practices and that when these are poorly controlled, circumcision status is not a significant factor in preventing HIV transmission or reception among discordant couples (14).

In 2002, three randomized controlled trial to assess the efficacy of male circumcision for preventing HIV acquisition in men began in Africa. The randomized controlled trial of men from general population were conducted in South Africa (N= 3274), Uganda (N=4996) and Kenya (N=2784) from 2002 and 2006. In all the trials, two groups were formed; the control group constituted of uncircumcised men and the intervention group made up of the circumcised men. All three trials were stopped early because of significant findings at interim analyses. The studies demonstrated that male circumcision has anything between a 50 % to 75 % protective effect against HIV infection in men (27). Since 2007, WHO together with United Nations Joint Programme on HIV/AIDS (UNAIDS) recommended that all countries with low rate of male circumcision and high prevalence of HIV infections should implement Voluntary Medical Male Circumcisions(VMMC) as an additional strategy for HIV prevention to maximize the

public health benefits (2). Fourteen African countries, (Namibia was part) responded to the recommendations considering their male circumcision rate and the HIV prevalence. Following this recommendation, the Minister of Health and social Services of Namibia briefed the cabinet on the WHO and UNAIDS recommendations and detailed the rationale behind them and the country preparedness for scaling up a national programme to promote male circumcision among Namibia men. With the cabinet's approval the MOHSS launched a process in mid-2007 to develop and ultimately implement a national MC strategy and programme (4).

2.4 Knowledge, attitudes, practice of VMMC

A study conducted in South Africa in 2014on understanding the knowledge and attitudes of males towards male circumcision reported that males had adequate knowledge regarding circumcision. They were aware that MC would reduce their risk of acquiring sexually transmitted infection(28). In Zambia, Deborah Jones stated in her study she conducted in 2015 that males were having adequate knowledge about MC and its benefits, this attributed to increased acceptability and positive response to undergo VMMC(29). A study done by T. Ngodji at Onandjokwe District hospital in 2010 among men attending Voluntary Counselling and Testing for HIV revealed that 70% of respondents had knowledge and positive attitude towards MC as an HIV prevention intervention and were willing to be circumcised to reduce the risk of contracting sexually transmitted infections. In Kavango East Region a study by Ntombizodwa in 2017 among males who attended

Rundu hospital had adequate knowledge on MC, however they had fears of the surgery and also long periods of wound recovery. Moreover, their attitudes were positive towards the practice because they believed that medical male circumcision was more safe and sterile compared to traditionally performed circumcision (30).

2.5. Barriers to voluntary medical male circumcision in Sub-Saharan Africa

Implementation of voluntary medical male circumcision (VMMC) remains disappointingly low in some Sub-Saharan African countries. Sub-Saharan Africa has the highest HIV prevalence in the world. About fourteen Sub-Saharan African countries adopted the VMMC program following the WHO recommendation to include VMMC in to their HIV prevention packages, targets were set by each country to circumcise a certain number of males by 2016. Scaling up of VMMC services began for adult and adolescents, however there were some challenges which included that participants are expected to know their HIV status first before the procedure (31).

Botswana experienced low uptake of VMMC, according to a study conducted by Goshme identified barriers raised by males that they were afraid of surgical complications and longtime of wound healing (32). These same barriers were identified in Kenya. Moreover, Kenyans also raised concerns of travelling long distance to access the health facility to get circumcised. They also added that the long waiting period for wound healing affected their business, many were losing income during the time of waiting to heal (33).

In Lesotho males were highly motivated to seek VMMC services and this contributed to a high number of males getting tested for HIV and circumcised (24). According to a study by Sknoit, men in Lesotho were more concerned with their health and they sought VMMC to protect themselves against HIV and other sexual transmitted infections as well as improving penile hygiene (24). However, some were not comfortable that they have to test for HIV and that they have to be attended to by women health staffs. Malawi, just like many other Sub-Sahara African countries has a high prevalence of HIV and a low rate of male circumcision. Majority of them were not taking up VMMC services due to pain and the cost involved (34). Rwanda is a non-circumcising country. VMMC was all new to the people. Rwanda experienced many challenges in rolling up VMMC programme such as lack of infrastructure, lack of resources and logistics. They had to address all this and mobilize both men and women to communicate the benefits of the procedure and they successfully scaled up the VMMC services (35).

Like in many other African countries, South African men were afraid to seek VMMC services due to pain, in addition to abstinence from sex during the six weeks healing period, transport cost, time off work and unsupportive cultural norms (36). Other countries like Tanzania, Swaziland had the similar concern. They were afraid that their partners might commit adultery during the six weeks wound healing period (22). VMMC scaling up became a success in countries like Zambia and Uganda because they engaged traditional circumcision communities during their campaigns, involving religious and tribal leaders as well as health care providers. This helped motivate men to seek VMMC services. Women partners were great influences as they motivated and supported their partners to get circumcised (36).

Surveys in some African countries among young and older men revealed that many men will willingly undergo circumcision if it could be performed safely and at a reasonable cost. The men reported that their interest in circumcision was related to hygiene, infection control and some believed that condom use is easier for men who are circumcised (16). Traditional healers in some parts of African communities encouraged circumcision to prevent sexually transmitted infections, however others believe that circumcision arose as a mark of defilement and this result in some cultures not accepting the male circumcision practice(7)

A qualitative research study by Ngodji in 2010 assessed the attitudes towards male circumcision in Namibia indicated negative attitudes and perceptions in non-circumcising areas such as Ohangwena Region. Older men felt they were too old for circumcision and they did not see any need to participate while some uncircumcised men in non-circumcision tribes were not willing to be circumcised because they thought they were "okay" the way they were. Some perceived circumcision as an old and outdated practice, while some perceived the removal of the foreskin to be a health risk as the foreskin acts as a protective shield to the penis against numerous sexual transmitted infections (8).

In addition to the noted factors that hinder male's participation in circumcision programme, several studies observed that males fear seeking VMMC due to fear of being screened for HIV before carrying out the procedure and the stigma that comes after the person is tested HIV positive (7). In non-circumcising communities, men are branded as perpetrators of HIV infection and this leads to stigmatization resulting in males avoiding circumcision (7). In some communities, male circumcision is widely understood as a

surgical procedure with inherent risks, cases of a client bleeding to death are common and this negatively affects the participations in VMMC programme (24).

2.6 Summary

Several studies have been conducted on male circumcision, this chapter covered the literature regarding male circumcision from the historical importance, global prevalence, its relationship with HIV, knowledge, attitudes, practice and responsiveness towards VMMC as well as barriers to voluntary medical male circumcision in Sub-Saharan Africa. It also covers on how male circumcision was discovered to provide medical related benefit and the knowledge, attitudes and practice of the societies.

CHAPTER 3

METHODOLOGY

3.1 Research design

The researcher conducted a cross-sectional study using quantitative methodology. The focus was on assessing the knowledge, attitudes, practices and acceptability of males in Zambezi region towards medical male circumcision by using structured questionnaire.

3.2 Study Population

A study population is defined as a group of people or subjects with identified specifications to whom the researcher wishes to apply or relate their study (37). The study population in this research was males from the age of 15 years and above, both circumcised and non-circumcised who are residing in Zambezi Region. At 15 years many adolescent boys become sexually active and they are at risk of contracting HIV infections(1), that is why it was appropriate to include this age group in the study.

Inclusion criteria: all males from 15 years of age and above, residing in Zambezi Region.

Exclusion criteria: all males under the ages of 15 years and those that will not give consent to participate in the study.

3.3 Sampling

Sampling is the process of selecting a number of subjects from the population to represent or to determine characteristics of the entire populations (37).

3.3.1 Sampling method

The researcher used probability sampling by means of multi-stage sampling. Probability sampling is a selection of elements or people from a population in which each of these elements has a known chance of being selected (37). There are various types of probability sampling, in this study the researcher used a multi stage sampling method. A multi stage sampling method is a type of probability sampling which uses a combination of other probability methods (Random Sampling, Systematic Random Sampling, Stratified Random Sampling, Cluster Sampling, Multi-Stage Sampling) (37).

Sampling stages involved:

Stage 1: Constituencies

There are eight (8) electoral constituencies in Zambezi region. The researcher used simple random sampling method in this stage to select five (5) constituencies to be included in the study. The researcher wrote down the names of all constituencies on eight pieces of papers and fold them and put in a bowl. Then five pieces of those papers were selected randomly from the bowl.

Stage 2: Primary sampling unit (PSU)

There are three hundred and thirty-seven (337) primary sampling units (clusters) in all the eight constituencies of Zambezi Region. The number of primary sampling units where obtained from the map that was provide by the Namibia statistics Agency. The researcher used cluster sampling methods to select the number of primary sampling units from the

five chosen constituencies. Simple random sampling methods were used to select thirty (30) primary sampling unit.

Stage 3 Households

Households from the chosen primary sampling units were selected randomly to participate in the study. The researcher walked from house to house (from the selected primary sampling units) to identify participants that were eligible for the study, if in a certain house there was no male eligible, the researcher walked to the next house. Fourteen (14) participants were selected from each primary sampling unit to be included in the study on to meet required sample size.

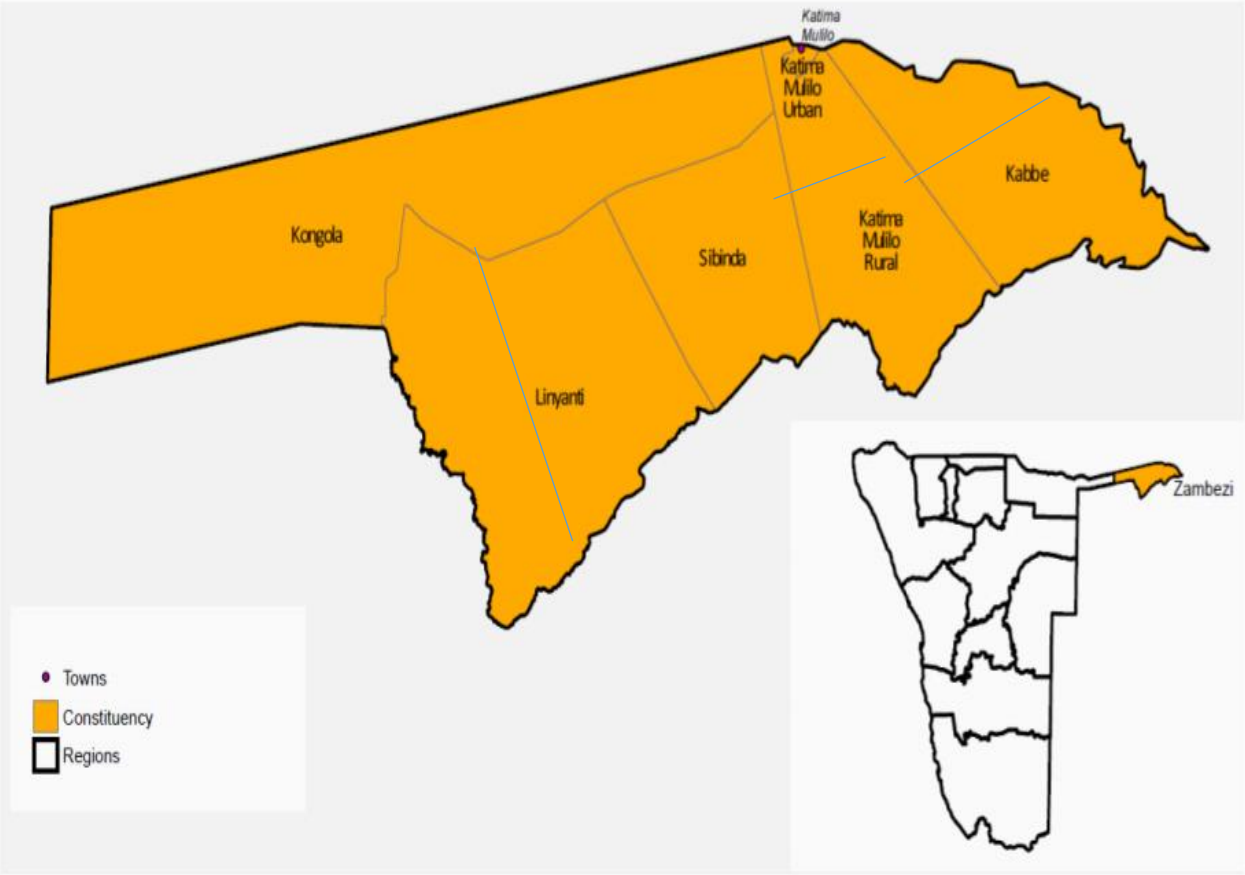

Fig. 3.1 Shows the map of Zambezi Region (study area), indicating the constituencies

3.3.2 Sample size criteria

The 2011 Namibia census projections population of males 15 years and above in Zambezi Region at 24984. Sample size was calculated using statistical calculator (for sample size) of Epi info 7 software in addition to assistance from the Namibian Statistics Agency.

Parameters used included:

A) Expected frequency

This refers to the number of occasions on which an event may be presumed to occur on average in a given number of trials. In this study the expected frequency is 50%,

B) Accepted margin of error

The margin of error is a statistic expressing the amount of random sampling error in a survey's result (38). In this study the accepted margin of error is 5% of 95 % confident interval.

C) Confidence interval

Confidence interval is a type of interval estimate of a population parameter; it is used to describe the amount of uncertainty associated with a sampling method(39). In this study the confidence interval is 95%

D) Design effect is 1

The design effect is a correction factor that is used to adjust required sample size for cluster sampling. The required sample size is estimated assuming a random

sample, and then multiplied by the design effect. This accounts for the loss of information inherent in the clustered design. The design effect is a simple function of the average number of subjects sampled per cluster. In this study the design effect is 1 (one).

E) ***Number of primary sampling units are 30 and cluster size 14***

F) ***total sample size of 379***

Due to time and cost implications the sample size was reduced. The study did not cover the whole Zambezi region, that is why not all constituencies and Primary sampling units (PSU) were involved in the study. Only few selected PSU from the selected constituencies were include to reach the sample size.

3.4 Research Instruments

Structured questionnaire was developed and used for data collection. The questioner was also translated into the local language commonly spoken in the region which is Silozi language. The questionnaire was divided in to four components:

Section A socio-demographic data (age, physical address, educational level, marital status, occupation)

Section B covered questions that assessed Knowledge on VMMC

Section C covered questions that assessed attitudes towards VMMC

Section D covered questions that capture information on practice and responsiveness on VMMC, circumcision status and HIV status.

3.4.1 Validity of data collection instruments

Validity refers to the ability of an instrument to measure what it is supposed to measure and to approximate the truthfulness of the results(40). Validation involves collecting and analyzing data to assess the accuracy of an instrument. in this study, validity was ensured by cross-checking, scrutinizing whether the information entered on the questionnaires were clear, correct, relevant to ensure accuracy and completeness of data collected.

3.4.2 Reliability of the data collection instrument

Reliability is a measure of the constancy or regularity of test scores, the ability of the research findings to be repeatable and still produce the similar results(40). In this study, reliability of questionnaires was ensured by designing structured questions that measured the knowledge, attitude, practice and responsiveness of VMMC. Participants were briefed about the study and the research assistant supervised them as they answered the questionnaires to minimize errors and ensure data accuracy.

3.5 Pre-testing of data collection instruments

A pre-test of the data collection tools was done among 15 participants who met the inclusion criteria. This practice helped to gauge the responses of the participants to the research procedures and also to evaluate the relevance, sensitivity and acceptability of the questions in relation to meet the objectives of the study. The participants in the pilot study were not included in the main study. The questionnaire was edited according to the outcome of the pilot study.

3.6 Data Collection Procedure

The research started in 18 December 2018 to 14 January 2019. The study included males from Zambezi region aged from 15 years and above from the five randomly selected constituencies (Katima urban, Katima rural, Kabbe south, Linyanti and Sibinda). Prior to data collection, two research assistants were identified from Zambezi region and trained by the lead researcher on the concept, procedures and the data collection tools of the study. Data were collected using structured questionnaires by the research assistants. During the data collection procedure, the research assistants walked from house to house looking for participants in the selected constituencies. participants were selected randomly and were given questionnaires to answer, as for those who could not read and write they were assisted by the research assistants to read to them the questions and write down their answers. The information collected were summarized and entered on electronic summary sheet.

3.6 Data Analysis

Data were entered in Microsoft excel for coding and cleaning. Analysis were done using Microsoft excel and Epi-info 7 software. Sociodemographic information was analyzed using frequencies and proportions. Level of knowledge were determined using scores. Each question on knowledge in this section was assigned a score of "1'' for a ''true'' or 0 for a ''false''. A series of seven questions were asked on knowledge and overall score were calculated for each participant. If overall scores are four or more that shows adequate knowledge if scores are three or less that indicated inadequate knowledge. Attitudes towards VMMC were assessed using scores of 1 for ''agree'', 0 for ''don't agree''. A series of five questions were asked to participants. Overall scores were calculated for

every participant, if overall scores are three or more that indicated positive attitude and if two or less it indicated negative attitudes. Responses on questions on Practice and responsiveness were assessed by calculating frequencies and proportions. Statistical significance was determined at $P < 0.05$ significance (95% confidence interval) was set for all statistical procedure.

3.7 Research Ethics

Prior commencement of study, approval was obtained from relevant authorities; the University of Namibia and Ministry of Health and Social Services.

I. Respect for participants and their human rights

Each Participant was provided with a consent form and the researcher explained the purpose and procedure of the study before the participant agreed to sign the consent form. For the participants below the ages of 18 who agreed to participate in the study, parents or guardians were requested to provide consent by signing on the consent form on their behalf. Participation in the study was voluntarily and participants were informed to withdraw from the study if they felt uncomfortable answering the questions.

II. Non- Maleficence

Participants' confidentiality will be insured by practicing anonymity; no names were written on the questionnaires. The questionnaires had serial numbers and there was no link between the respondents to the questionnaires. The data collection tools were kept safe and participant information will not be disclosed. no clinical or medical examinations were performed to the participants.

III. Justice

All males from ages 15 years and above residing in Zambezi region regardless of race, cultural beliefs, social status or educational background had equal opportunity to participate in the study.

IV. Beneficence

The study provided understanding regarding the knowledge, attitudes and practices towards medical male circumcision as an HIV prevention strategy among males in Zambezi region, and identify gaps and area for improvement of the VMMC program in the region.

3.8 Summary

The chapter addressed the methodology and design used to enroll the study participants and to collect data. It also explained ethical principles that ensured that the participants were not harmed in anyway.

CHAPTER 4

RESULTS OF THE STUDY

This chapter focuses on the presentation of findings and interpretations of results obtained from the study. Three hundred and seventy-nine (379) participants were given questionnaires to answer and the results were analyzed and presented in order as they appear in the questionnaire as follows: Sociodemographic characteristics of participants (age, residencies, constituencies, marital status, literacy level, educational level and employment/occupational status), Level of knowledge (adequate or inadequate), attitudes type (positive or negative), practices and responsiveness. The last part of the results presents the bivariate analysis of variables that contains values greater than 5. The level of significance was determined at a probability level (P-value) less than 0.05 at a 95% confidence interval.

4.1 Sociodemographic characteristics of the study participants

The results about sociodemographic characteristics of the respondents are presented in table 4.1 on the next page. A total of N=379 male participants, age range15 to 60 years (mean =17, SD=16).

Table 4.1 Sociodemographic characteristics of males towards medical male circumcision

Characteristics	**Frequencies (N= 379)**	**Percentages (%)**
Age groups (years)		
15-19	103	22

20-29	124	33
30-39	82	22
Above 40	70	18
Marital status		
Single	256	67.5
Married	102	26.9
Widower	4	1
Divorced	12	3.1
Cohabiting	5	1.3
Residency		
Rural	292	77
Urban	87	22.9
Constituency		
Katima Urban	79	20.8
Katima Rural	67	17.6
Kabbe South	35	9.2
Linyanti	144	37.9

Sibinda	54	14.2
Literacy level		
Can read & write	362	95.5
Cannot read & write	17	4.5
Educational level		
Primary	39	10
Secondary	230	60.6
College	44	11.6
University	49	12.9
No formal Education	17	4.5
Employment Status		
Employed	143	38
Unemployed	236	62

A total of 124 (33%) participants were aged group 20-29 while 70 (18%) were aged above 40 years old. Most participants indicated being single 256 (67.5%) and the least were cohabiting 5 (1.3%) and widower (1%). Majority of participants 292 (77%) lived in rural area and mostly in Linyanti constituency 144 (37.9%). A total of 365 (95.5%) indicated

they can read and write most of the participants had acquired at least a secondary education 230 (60.6 %) while 17 (4.5%) had no formal education. Most participants responded to be unemployed 236 (62%) and 143 (38%) were employed.

4.2Knowledge on medical male circumcision amongst males in Zambezi Region

The table below summarizes the response of males to knowledge specific questions on medical male circumcision.

Table 4.2 Distribution of male's response on medical male circumcision knowledge, Zambezi Region

Questions	**Frequency**	**Percentage (%)**
1. Have you ever heard of voluntary medical male circumcision?		
Yes	366	96.5
No	13	3.4
2. Males who are circumcised have a less chance of getting infected with HIV?		
True	342	90.2
False	37	9.7

3. Male circumcision reduces the risk of contracting other sexual transmitted infection?		
True	319	84.2
False	60	15.8
4. A circumcised man can still contract HIV if he has unprotected sex with an infected person?		
True	306	80.7
False	73	19.3
5. There are risks associated with medical male circumcision?		
True	235	62
False	144	37.9
6. Voluntarily medical man circumcision is offered free at state health ?		
True	345	91
False	34	8.9
7. More education is required on voluntarily medical male circumcision?		
True	294	75.5
False	51	13.5

Data is presented in frequencies (N=379) and percentages (%)

Participants who ever heard of VMMC were 366 (96.5%) and a total of 342 (90.2%) knew that circumcised males have less chance of getting infected with HIV.

Most respondents 319 (84.2%) indicated that they knew that MC reduces the risk of contracting other STI.

A total of 306 (81%) knew that a circumcised man can still contract HIV if they have unprotected sex with an infected person. Moreover 235 (62%) thought that there are risks associated with VMMC.

Majority of participants 345 (91.5%) knew that VMMC is offered free of charge at state health facility, however 294 (76%) of participants thought that more education on VMMC should be given to communities.

Level of knowledge among males on medical male circumcision is graded as indicated in chapter 3 (Methodology), below is the results.

Table 4.3 knowledge level about medical male circumcision, Zambezi Region

Knowledge level	**Frequencies (N)**	**Percentages (%)**
Adequate	354	93
Inadequate	25	6.6
Total	379	100

A total of 354 (93%) of males interviewed had adequate knowledge

4.3 Attitudes on medical male circumcision amongst males in Zambezi Region

A total of 379 males were assessed on their attitudes towards medical male circumcision. The scores were coded and summarized in to positive and negative attitudes in tables below.

Table 4.4 Attitudes of males on medical male circumcision, Zambezi Region

Statement	**Agree** **N (%)**	**Don't agree** **N (%)**
Medical male circumcision is an important health program	361 (95)	18 (5)
Is it important for all males to be circumcised to reduce the risk of HIV transmission?	318 (84)	61 (16)
Penile hygiene is more improved when a man is circumcised.	292 (77)	87 (23)
Would you recommend your male relatives/friend to get circumcised	333 (88)	46 (12)
Male circumcision does not affect sexual pleasures.	236 (62)	143 (38)

Data presented in frequencies (N=379) and percentages (%)

Table 4.5 type of attitudes of males towards medical male circumcision, Zambezi region

Attitude type	**Frequencies (N)**	**Percentages (%)**
Positive	330	87
Negative	49	13
Total	379	100

Majority of participants 330 (87%) displayed a positive attitude towards medical male circumcision.

4.4 Medical male circumcision practices and responsiveness

Responses of participants on medical male circumcision practices are analyzed below in to frequencies and descriptively.

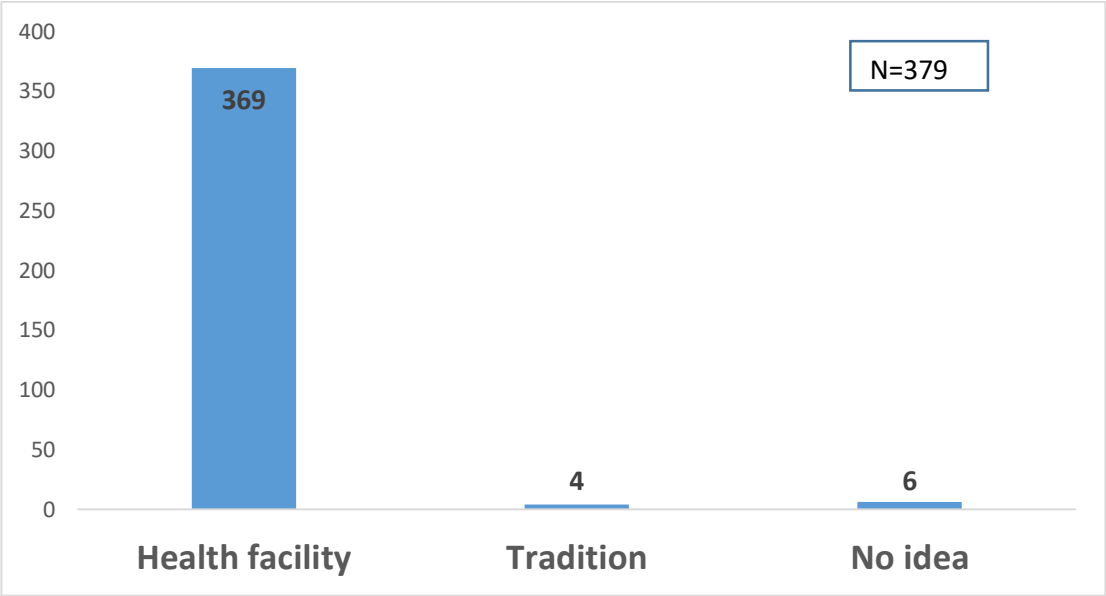

Figure 4.1: Response by the participants on where male circumcision is practiced in the region,

A total of 360 (97%) responded that male circumcision is practiced at health facilities in Zambezi Region.

Majority of the respondents 318 (84%) knew health facilities near their residence where medical male circumcision is performed however 61 (16%) had no idea where it is performed.

Below is representation of response on circumcision status of participants.

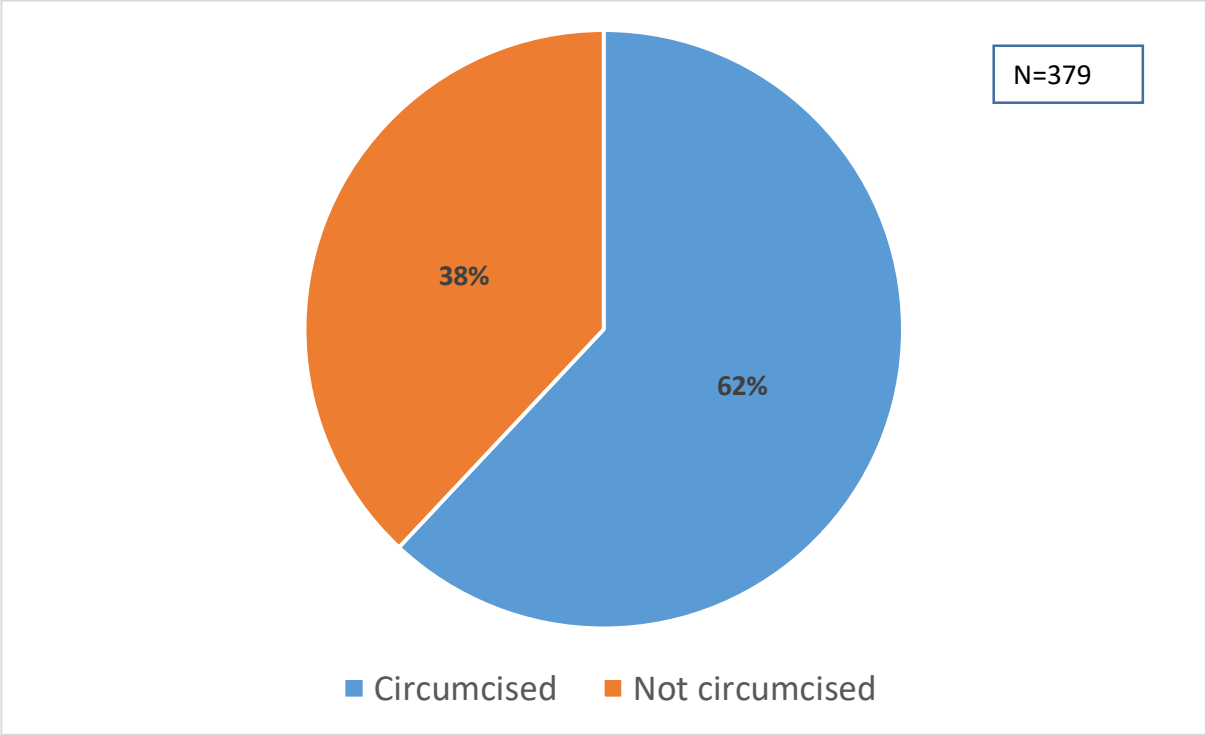

Figure 4.2 Pie chart showing response on circumcision status by participants, Zambezi Region

A total of 234(62%) responded that they were circumcised while 145(38%) of participants were not circumcised.

From the 234 (62%) participants who responded that they are circumcised, about 117(50%) of them indicated that they were circumcised between ages of 5 to 18 years, while 109 (47%) undergone circumcision between ages 19 and above, about 7(3%) were not sure at what age they were circumcised.

Moreover, they were further asked where was circumcision performed, a total of 219 (94%) responded that is was performed at health facility, 12(5%) they were circumcised at the traditional and 3(1%) did not know at which place was it performed.

The 145(38%) participants who responded that they were not circumcised, they provided some reasons, below is a pie chart summarizing their responses.

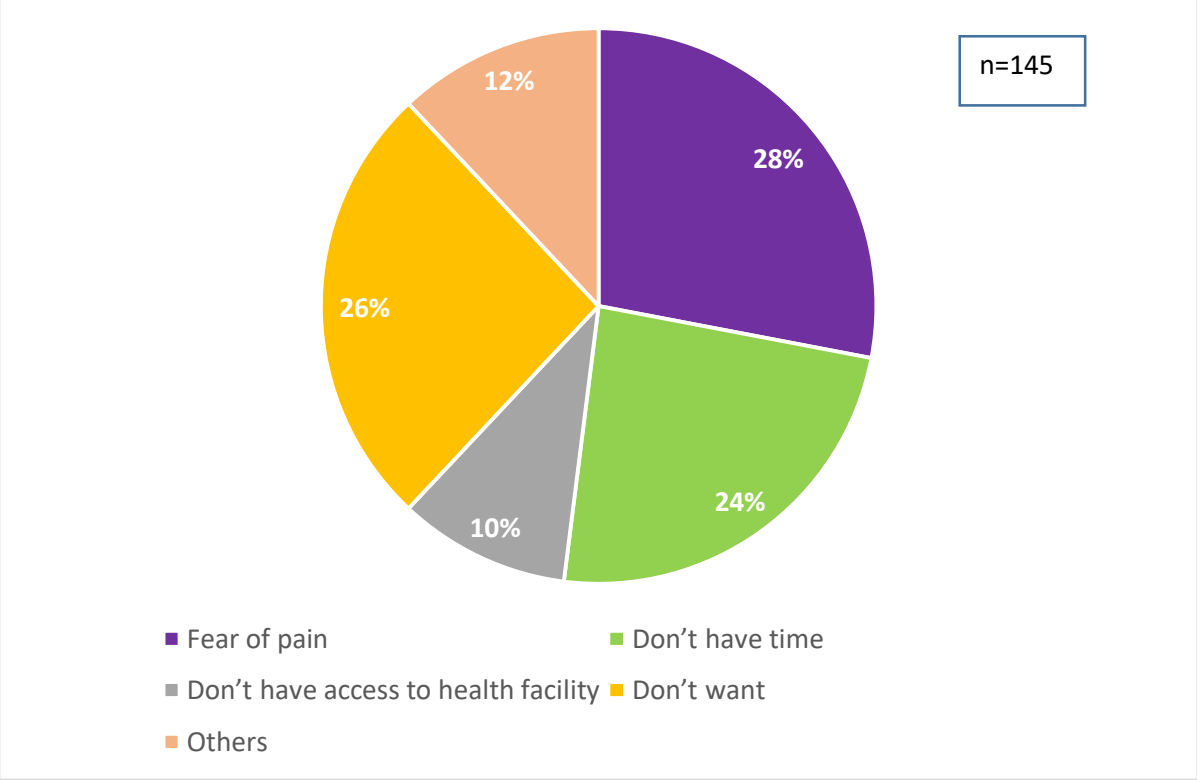

Figure 4.3 Pie chart showing response on the reasons for not getting circumcised

Majority of the participants did not get circumcised because they were afraid of pain 41(28%) and others responded that they don't want 37(26%) few respondents said they don't have access 15(10%) to health facilities were medical male circumcision is performed. Some participants provided other reasons which are not indicated in the graph such as: they don't want female health workers to attend to them, healing process after the procedure takes long and that interferes with their businesses.

Representation of response from participants on place where would they recommend their male relatives or friends to be circumcised.

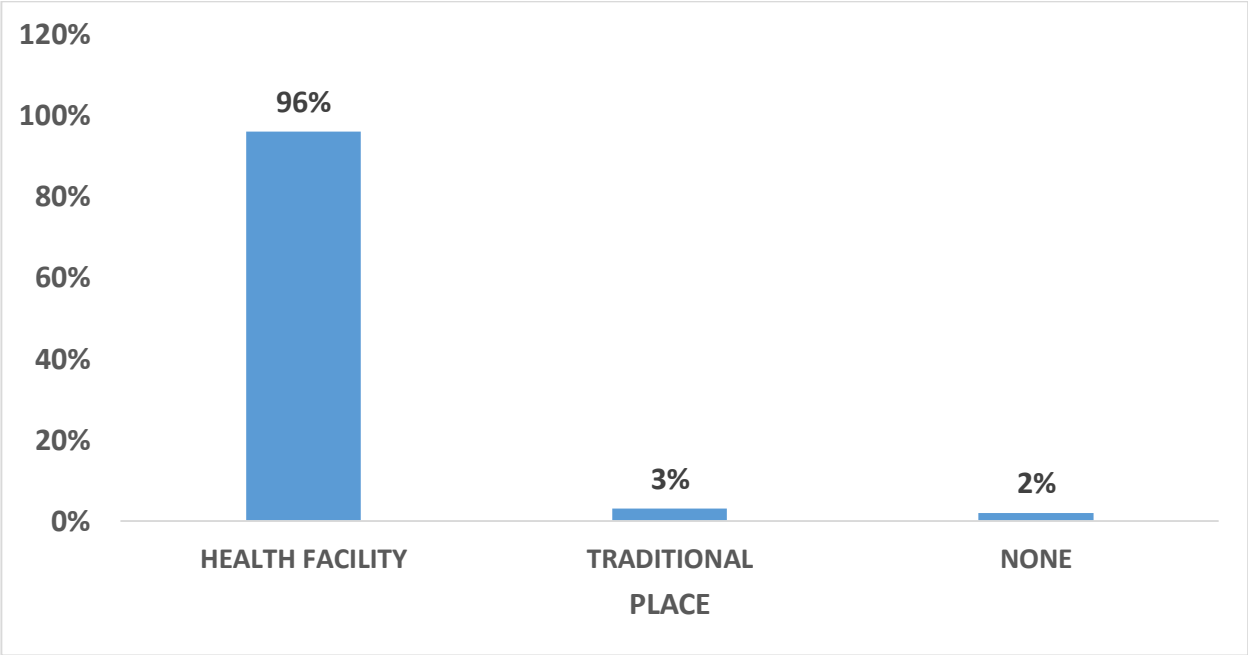

Figure 4.4 Bar chart showing response on where would the participant recommend their male relatives/friends to be circumcised, Zambezi Region

Majority 364 (96%) responded that they would recommend their male relatives or friends to be circumcised at a health facility, while others responded that they would not 5(2%).

All the 379 participants were asked if they knew about HIV/AIDS. Below is the representation of their responses.

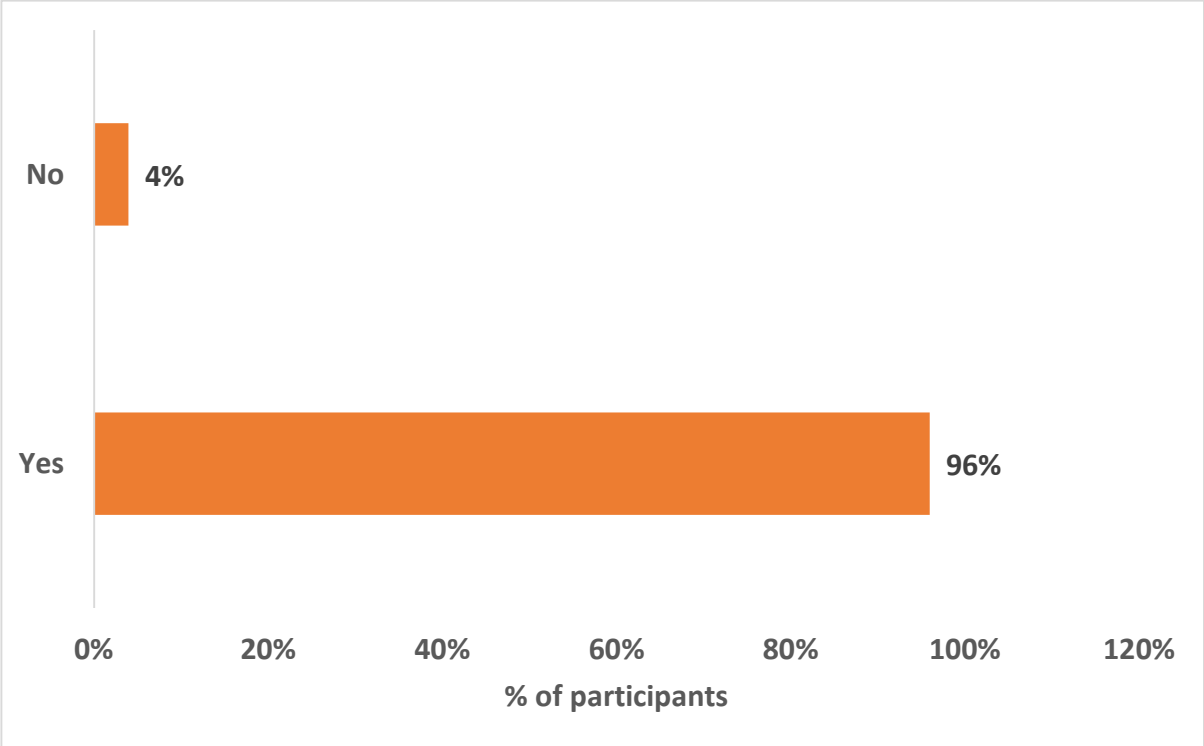

Figure 4.5 Bar chart showing participant knowledge about HIV, Zambezi Region

A total of 364 (96%) responded that they know information about HIV while 14(4%) responded that they do not know anything about HIV.

All participants were further asked if they have ever been tested for HIV before at any health facilities or centers providing HIV tests, 315(83%) responded that they were tested however 64(18%) said they have never been tested for HIV.

From the 64 (17%) who responded that they were never tested for HIV, 41(64%) said they would want to be tested for HIV, and they were given information about HIV and Where they can go for the HIV test. Moreover, 23 (36%) responded that they still don't want to be tested for HIV, information on the importance of a person knowing their HIV status were explained to them.

The participants who responded that they were previously tested for HIV at one of the facilities/ center providing HIV tests, they were further asked about their results, their response is presented below.

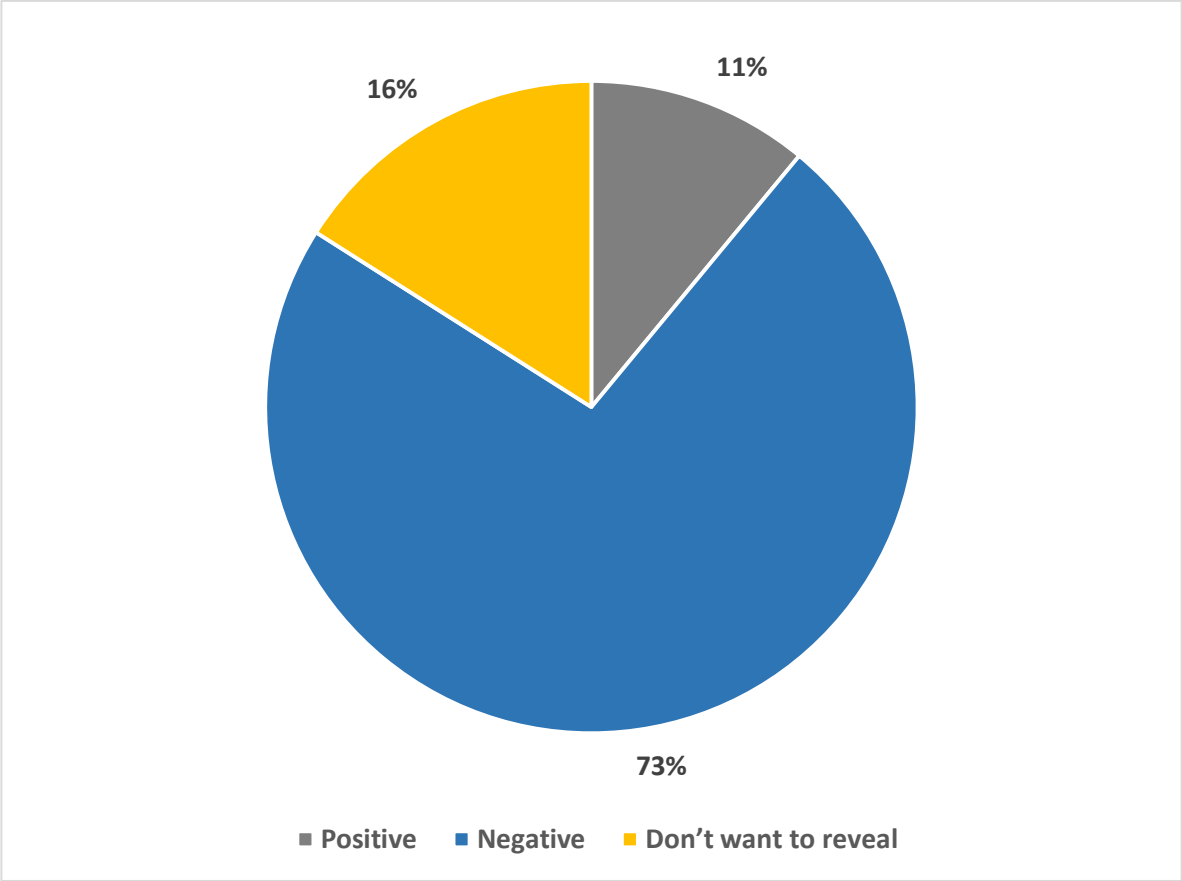

Figure 4.6 Pie chart showing response on previous HIV test results, Zambezi Region

Most of the participants 231(73%) responded that their previous HIV test results were negative, 50 (16%) did not want to reveal their HIV results and 33(11%) responded that their previous test results were Positive.

From the 33 (11%) who had a positive result were further asked if they are on any antiretroviral therapy, 30 (90%) have started already, however 3(9%) have not yet started with antiretroviral therapy. None of them raised any challenge concerning their treatment.

4.5 Associations of sociodemographic characteristics and levels of knowledge, attitudes among respondents

The associations are summarized below. Data are presented as adequate knowledge (AK), inadequate knowledge (IK), positive attitudes (PA) and negative attitudes (NA) in frequencies (N) and percentages (%). An asterisk (*) indicates a reference category. Odds ratio (OR) are indicated at 95% confidence interval (CI 95%) and probability values (P-value), significance was determined at less than 0.05. Variables with cells less than five counts were not included.

4.6.2 Association of sociodemographic characteristics and level of knowledge among respondents

Table 4.6 Association of sociodemographic characteristics and level of knowledge among respondents

Characteristics	IK N(%)	AK N(%)	OR	95% CI	P-value
Age groups					
15-19 years	9 (2)	94 (25)	*		
20-29 years	7 (2)	117 (30)	1.6	0.56-4.68	0.43
30-39 years	6 (2)	78 (21)	1.2	0.42-3.9	0.79
40 yrs above	9 (2)	59 (16)	0.6	0.22-1.72	0.45
Residency					
Rural	24 (6)	268 (71)	*		
Urban	6 (2)	81 (21)	1.2	0.49-33	0.82
Literacy level					
Can read & write	20 (5)	341 (90)	*		
Cannot read & write	6(2)	12 (3)	0.12	0.04-0.37	0.0006

Marital status					
Single	15 (4)	241 (64)	*		
Married	9 (2)	93 (25)	0.64	0.27-1.58	0.35
Others (cohabiting/divorced)	8 (2)	13 (3)	0.10	0.04-0.3	0.0001

* indicates a reference category

Age groups 20-29 years demonstrated to have adequate knowledge (30%)compared to other age groups, however there was no statistical significance (p-value= 0.43) in the association between age groups and the level of knowledge.

Majority of participants were from the rural area and they showed to have adequate knowledge (71) compared to the ones in the urban area, no statistical significance (p-value =0.82) in the association between area of residency and level of knowledge.

Majority of participants can read and write and they showed to have adequate knowledge (90%), the odds of those who cannot read and write is OR=0.12, there was statistical significance in the association between level of literacy and level of knowledge.

Participants who were single had adequate knowledge (64), the odds of married participants of having adequate knowledge were OR=0.64, this was had no statistical significance, moreover the odds in others (cohabiting/divorced) were OR=0.10 and this was statistical significant.

4.6.2 Association of sociodemographic characteristics and level of attitudes among respondents

Table 4.7 Association of sociodemographic characteristics and level of attitudes among respondents

Characteristics	**NA N(%)**	**PA N(%)**	**OR**	**95% CI**	**P-value**
Age groups					
15-19 years	7 (2)	96 (25)	*		
20-29 years	16 (4)	108 (29)	0.49	0.18-1.2	0.18
30-39 years	10 (3)	72 (19)	0.52	0.18-1.46	0.3
40 yrs above	16 (4)	54 (14)	0.23	0.09-0.6	0.002
Residency					
Rural	47 (12)	245 (65)	*		
Urban	8 (2.1)	79 (21)	1.89	0.88-4.4	0.12
Literacy level					
Can read & write	44(12)	317 (83)	*		

Cannot read & write	8(2)	10 (3)	0.19	0.07-0.58	0.003
Marital status					
Single	25 (7)	231 (60)	*		
Married	19 (5)	83 (22)	0.47	0.25-0.92	0.03
Others (cohabiting/divorced)	9 (2.3)	12 (3.2)	0.14	0.05-0.39	0.0001

* indicates a reference category

Age groups 20-29 years demonstrated positive attitudes (29%) compared to other age groups, however there was no statistical significance (p-value =0.18) in the association between age groups and the type of knowledge.

Participants from rural area had positive attitudes (65%), there was no statistical significance (p-value=0.12)

Participants who can read and write showed to have positive attitudes (83%), and this was statistically significance to the association between literacy level and the type of knowledge.

Participants who were single demonstrated positive attitudes (60%), the odd of married participants to have positive attitude were OR=0.47, and this was statistical significant in the association between marital status and the level of attitude with the P-value of 0.03.

4.6 Association of circumcision status and level of knowledge, attitudes among respondents

The associations are summarized below. Data are presented as inadequate knowledge (IK), adequate knowledge (AK), negative attitudes (NA) and positive attitudes (PA) and in frequencies (N) and percentages (%). An asterisk (*) indicates a reference category. Odds ratio (OR) are indicated at 95% confidence interval (CI 95%) and probability values (P-value), significance was determined at less than 0.05.

Table 4.8. Association of circumcision status and level of knowledge

Circumcision status	**IK N(%)**	**AK N(%)**	**OR**	**95%CI**	**P-VALUE**
Circumcised	7 (2)	227 (60)	*		
Not circumcised	18 (5)	126 (33)	0.2	0.08-0.50	0.0004

* indicates a reference category

Majority of circumcised (60%) males had adequate knowledge compared to not circumcised (33%) males with adequate knowledge

The odds of circumcised males among participants with inadequate knowledge is 0.2 times the odds of circumcised males with adequate knowledge.

The results were statistical significant (p-value= 0.0004).

Table 4.9 Association of circumcision status and level of attitude

Circumcision status	**NA N(%)**	**PA N(%)**	**OR**	**95%CI**	**P-VALUE**
Circumcised	11 (3)	223 (59)	*		
Not circumcised	37(10)	108 (28)	0.1	0.07 - 0.29	0.0001

* indicates a reference category

Majority of circumcised participants (59%) showed positive attitudes, compared to non-circumcised participants

The odds of circumcised males among participants with negative attitudes is 0.1 times the odds of circumcised males with positive attitudes.

The results were statistical significant (p-value= 0.0001).

4.7 Association of circumcision status and HIV status

Below is a cross tabulation between circumcision status and known HIV status among participants. Data are presented in frequencies (N) and percentages (%). An asterisk (*) indicates a reference category. Odds ratio (OR) are indicated at 95% confidence interval (CI 95%) and probability values (P-value), significance was determined at less than 0.05.

Table 4.10 Association of circumcision status and HIV status

HIV STATUS	**Circumcised N (%)**	**Not circumcised N(%)**	**OR**	**95% CI**	**P-value**
HIV positive	15 (4)	18 (5)	*		
HIV negative	158 (42)	74 (20)	2.6	1.2-5.4	0.02
Didn't want to reveal	32 (8)	18 (5)	2.1	0.8-5.2	0.12
Never tested	28 (7)	36 (9)	0.9	0.3-2.2	1.0

* indicates a reference category

Majority of participants who were circumcised tested HIV negative previously 158 (42%), those who were not circumcised who tested HIV negative previously were 74(20%)

A total of 28(7) responded that they were never tested for HIV and 36 (9) participants not circumcised responded that they were never tested for HIV before.

Association between HIV status and circumcision status of HIV positive and HIV negative (OR=2.6), those who didn't want to reveal their status (OR=2.1), those that were never tested before (OR= 0.9)

Summary

This chapter presented the study findings as tables, figures and pie charts. Participants showed that they adequate knowledge and positive attitudes towards voluntary medical male circumcision

CHAPTER 5

DISCUSSIONS OF STUDY RESULTS

5.1 Introduction

In this chapter, the researcher interprets and discusses the findings of the study in the previous chapter and relate them to other study conducted in other study settings. The researcher's views are also included in the discussions. The results are discussed in the order they are presented in chapter 4.

5.2 Socio-demographic factors

5.2.1 Age

The age of respondents started from 15 years and above. Most participants in this study were between the ages of 20-29 years old. A similar study conducted to assess the knowledge, attitude and practice (KAP) in a Motobo district of Zimbabwe, majority of participants were between the age groups 20-30 years(7). Another similar study conducted in Geita, Tanzania assessing the KAP of males on male circumcision, majority of respondents were between the ages of 20-29 years(41).

This study found out that the largest age group (20-29) had adequate knowledge compared to other age groups, and they also showed positive attitudes towards VMMC. This concur with a study conducted in Zambia by Deborah Jones in 2015, it proved that, respondents from the ages of 20 to 30 years had adequate and positive attitudes towards medical male circumcision. This also suggested that, the above mentioned age were mostly in school

(secondary and tertiary) this gave them more opportunities and exposure to information on VMMC (29).

5.2.2 Marital status

Majority of participants in the study were single and the second highest group were married, the least group were widowers. According to the Namibian 2011 Housing Census survey, 59 % of the people eligible to get married are not married (42). A study conducted in Windhoek found out that majority of participants in the study were single and the least group were cohabiting (19). The high number of single participants could be attributed to the fact that most participants were leaners/students who are probably busy concentrating on their studies and not marriage.

In addition, the association of marital status and level knowledge and type of attitudes showed that; participants who were single had adequate knowledge and positive attitude towards VMMC compared to other categories, this could be attributed to the fact that they are young and literate. A study conducted in Uganda reported that the majority of married participants believed that male circumcision reduced sexual performance and they refused to get circumcised (43). Contrary to this study, some married men are influenced by their wives not to get circumcised because they (Wives) don't support the practice(1,41), this also affects the uptake of VMMC. Moreover, this is not the case with the single man, as they do not necessary consult a partner to decide whether to get circumcised or not.

5.2.3 Residency and constituency

Results from this study found out that majority of the participants were residing in the rural area and in the urban were less than half. Majority of participants were residing in Linyanti constituency. This could be attributed to the fact that during the time of the study, most participants in urban (town) area did not agree to be interviewed with reasons of being busy and not having time for the interview. Some parts in rural areas there were high number of participants who agreed to the interview, some were occupied with their activities. However, in Linyanti constituencies everyone who was approached agreed to participate in the interview. This helped meet up the study sample size (own view).

According to this study results, participants from the rural areas demonstrated adequate knowledge and positive attitudes towards VMMC. This could be attributed to mass campaigns conducted in the region were most areas/villages were mobilized on the benefits of VMMC by the regional, national health team together with other stakeholders.

5.2.4 Literacy and educational level

Majority of the participants (95.5 %) can read and write and a higher number have at least obtained secondary education, only few participants (4%) responded not to have had any formal education of which some cannot even read and write. According to the population and housing census, many people in Zambezi Region who are above 15 years can read and write and have at least attended school (6). This could be attributed to the fact that education system in Namibia has changed from paid Primary and secondary education therefore its less challenging for one to drop out of school due to fees unless other reasons.

Moreover, tertiary education is not free in Namibia this could be the reason why majority ended up in secondary and only few reached college/university level. A similar KAP study conducted in Onandjokwe hospital, showed that majority of the participants had at least reached to a secondary level in school and could read and write (8).

This study found out that high number of those who could read and write had adequate knowledge and positive attitudes towards VMMC compared to those who could not read and write. As for those who had at least reached secondary level academically demonstrated to have adequate knowledge and positive attitudes towards VMMC. This group of participants are exposed to more information on VMMC, they read through newspapers, journals / books, posters or other information materials for their own understanding rather than waiting to hear it from somebody (own view).

5.2.5 Employment and occupation

This study findings are similar to that conducted in Onandjokwe hospital by Ngodji in 2010 majority of participants were unemployed and those who were formally employed were few (8). This study found out that majority of participants had various occupation types, some were teachers, health profession also administrators.

The unemployed group displayed adequate knowledge and positive attitudes compared to the employed participants. This could be due to the reasons that the unemployed group were just many and majority were students/leaners. This shows a good picture, as their unemployment status did not deprive them from the adequate knowledge and positive attitudes towards VMMC. Employment status also affect uptake of VMMC, a study

conducted in Kenya reported that some male entrepreneurs refused to go for VMMC because the long healing process affected their business/ work therefore they were not willing to get circumcised (33).

5.3. Knowledge on VMMC

The knowledge specific questions on VMMC was found to be adequate in majority (93%) of participants. These men were aware of VMMC and the protection benefits of reducing the chances of getting infected with HIV and other sexual transmitted infections. Furthermore, most participants confirmed that a circumcised man can still contract HIV if he has unprotected sex with an infected person. This is encouraging, as it suggests that HIV-related knowledge and benefits of circumcision are reaching the target populations. Findings in a study done by Faleye in South Africa in 2014 reported that, messages on HIV/AIDS prevention are having positive effect on sexual practices because it enhances people's knowledge (28). Moreover, participants think that more education on VMMC is still required as they lack some information/knowledge about VMMC.

Similar to this study findings on a study conducted in Zambia on attitudes, knowledge and beliefs of men's readiness to undergo medical male circumcision found out that, males had adequate knowledge on medical male circumcision and this influenced them positively (44).

A study conducted by Fritz in Zimbabwe 2010 found out that, in the current days people are having more information about HIV and male circumcision then before (45). This could be attributed to many information/ literature available regarding HIV/AIDS. Our

findings could also be attributed to many campaigns which have been conducted by Ministry of Health and Social Services and other stakeholders in communities and through media on VMMC.

Inadequate knowledge was also found among some participants. This study findings concur with that of Lukobo conducted in Zambia 2007, where by the respondents who showed inadequate knowledge were the majority who were not circumcised, however after being provided with information they showed willingness to get circumcised (46).

This study finding revealed that majority of participants knew that male circumcision reduces the risk of contracting HIV infections and it also had benefits of preventing other sexual transmitted infections. A randomized controlled trial of men conducted in Kenya, South Africa and Uganda demonstrated that male circumcision has a protective effect against HIV infections in men (35,22). Another study conducted in Zimbabwe reported that most participants knew that male circumcision prevent some sexual transmitted infections and maintain hygienic purposes (7). Association of circumcision status and level of knowledge, majority of circumcised males (60%) had adequate knowledge compared to those not circumcised, moreover this was not statistically significant. Similar study done by Nyaga found that majority of participants had a high level of knowledge towards VMMC and this influenced their willingness to get circumcised (47).

5.4. Attitudes of males towards VMMC

Over 85% participants in Zambezi Region had positive attitudes towards medical male circumcision. Associations of age groups and the type of attitudes was found to be more positive among age groups between 20-29 years however it was not statistical significant. This could be attributed to the information they had about VMMC which enhanced their understanding and attitudes towards VMMC (own view). Positive attitudes were also observed among participants from rural areas, those that could read and write and those that were single (not married).

Association among circumcision status and level of attitudes showed that circumcised males had positive attitudes than those that were not circumcised. This confirmed a significant association between circumcised status and type of attitudes.

Some negative attitudes were also discovered among participants. This could be due to various reasons or it could also be associated to inadequate knowledge on medical male circumcision among males in the region.

A study conducted by Lukobo in Zambia 2007 reported that participants with positive attitudes towards medical male circumcision, following an awareness campaigns in the community. They understood the benefits that comes along with VMMC and there were less complications involved (46). Some participants (38%) this study did not agree to the statement that male circumcision does not affect sexual pleasures. This agrees with a study done by Nkala in Zimbabwe in 2014, majority of the participants reported that male circumcision reduces sexual pleasures, although this is not scientifically proven. Studies should be carried out to come up with scientific conclusion (7). This study found out that

most participants agreed that it is important for all males to be circumcised to reduce the risk of HIV transmission. This concur with a study done by Nyaga in Kenya 2014 where by majority of participants responded that male circumcision was important program that contributed in curbing the HIV infections (47).

5.5 Practice and responsiveness

Majority of participants indicated health facilities as the place where male circumcision is practiced and they knew the facility names near them where male circumcision is practiced. Zambezi region is a non-traditional circumcising region. Most of the people in Zambezi region became aware of circumcision through health campaigns conducted by MoHSS (20). Moreover, some residents in Zambezi were circumcised in other regions before migrating to Zambezi region.

The study furthermore wanted to know the prevalence of male circumcision amongst participants. A high number (62%) of participants indicated that they were circumcised and about half of them were circumcised between the ages of 5 to 18 years, while the second majority were circumcised from ages 19 years and older, some participants could not remember at what age they were circumcised, but they believed it was done at childhood ages. Many of the circumcisions were done at health facilities.

A study on knowledge, attitude and practice in Uganda showed that majority of participants were not circumcised and this affected the prevalence of male circumcision in the country (43). A similar study conducted in Zimbabwe assessing barriers to VMMC

among males found that about 11% of the participants reported to have undergone circumcision while the majority were not (48).

This study revealed that about 38% of participants were uncircumcised. Majority of them indicated ‘pain’ as the main reason for not wanting to go for the procedure, while others indicated that they do not have time to go for circumcision because the healing time takes long and this will interfere with their daily activities. Other participants pointed out that; they don’t want at all, don’t have access to the facilities (distance is far from where they reside), don’t want to be attended to by female nurses/ doctors, fear of taking HIV test. This concur with a study conducted in Lesotho to identify the barriers to MMC, some respondents pointed out that they were afraid of pain and did not support the idea of being attended to by female health workers as they don’t feel comfortable (31). A study conducted in Malawi discovered that some barriers hindering the VMMC as fear of HIV test, fear of surgical procedure and pain (49). In South Africa, a similar study by Peltzer and Mlambo, reported that men did not want to go for the VMMC due to pain and the long healing period as these affected their business and as for the young boys it affected their sporting activities (46).

According to this study findings, it shows that although some did not want to get circumcised, majority (96%) of the participants responded that they would recommend MMC to their male relatives and friends to get circumcised at health facilities.

A total of 96% participants were aware of HIV/AIDS. However, 17% responded that they have never been tested for HIV in their lives. While 83% have been previously tested for HIV at institutions were the HIV screening is provided. Participants who responded that

they never had any HIV test in their lives were provided with information on the importance of knowing their HIV status and they indicated willingness to get tested for HIV. They were provided with information where to go for the test. Moreover, there were still participants who indicated that they do not want to get tested for HIV at all.

Participants who responded that they were previously/ recently tested for HIV, majority responded that their HIV test results were negative (73%), 11% were HIV positive and 16% did not want to reveal their results. The HIV positive participants, 90% indicated that they have started with their ARV therapy and had no challenges regarding their treatment. On association of circumcision and HIV status, our study found out that majority of participants who were circumcised tested HIV negative, however about 9% of participants who are not circumcised never been tested for HIV in their lives. Similar findings were reported in Zimbabwe were participants refused to go for medical male circumcision because the procedure required HIV test (7). This could be a contributing factor in Zambezi region, some men are not ready to get tested for HIV and this affects the uptake of VMMC (own view).

5.6 Summary

This chapter highlights some similarities and differences of this study with other literature. It adds to the information on knowledge, attitudes, practice and responsiveness of VMMC.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

Zambezi Region is not a traditional circumcising Region, this study concludes that majority of males generally have adequate knowledge and positive attitudes towards VMMC, however there are still a few of males that needs more education regarding VMMC in order for them to change their behaviors towards VMMC.

Information obtained from this study provides insight on knowledge, attitudes and responsiveness towards VMMC in the region. This may assist the policy makers on making decisions to improve the VMMC program in the region.

6.2. Recommendations

Ministry of Health and Social Services (National level)

- The MOHSS together with the relevant stakeholders should conduct ongoing campaigns on VMMC, disseminating accurate information on the benefits and the process of the programme as well as addressing misconceptions and fears of the people.

Zambezi Regional Health Team (MOHSS)

- The VMMC Regional team should intensify outreach services as well as expanding it to areas hard to reach in order to involve those who cannot access the service due to long distances.
- The outreach teams should communicate their schedule through local radio stations, traditional leaders and church leaders to make people in order for people to be aware of when to expect them.
- Should incorporate behavior change programme in the existing community awareness campaigns since there is good awareness on VMMC.

6.3 Future studies

This was a quantitative study and it was limited to assessing the knowledge, attitudes, practice and responsiveness of males towards VMMC in some parts of Zambezi region. More complex study may be carried out to explore more information on other areas / constituencies not included in this study.

6.4 Summary

This chapter concludes the whole study findings and indicated the recommendations made according to the study findings. Future studies were suggested to explore more information in constituencies that were not included in the study.

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ANNEXURE A: RESEARCH PERMISSION LETTER

CENTRE FOR POSTGRADUATE STUDIES

University of Namibia, Private Bag 13301, Windhoek, Namibia
340 Mandume Ndemufayo Avenue, Pioneers Park
☎ +264 61 206 3275/4662; Fax +264 61 206 3290; URL: http//www.unam.edu.na

UNAM
UNIVERSITY OF NAMIBIA

RESEARCH PERMISSION LETTER

Centre for Postgraduate Studies
Office of the Director
2018 -10- 05
University of Namibia
UNAM

Date: 25/09/2018

Student Name: Nairenge R

Student number: 200316281

Programme: Master in Field Epidemiology

Approved research title: Assessment of knowledge, attitudes, practices and acceptability of medical male circumcision among males in Zambezi region

TO WHOM IT MAY CONCERN

I hereby confirm that the above mentioned student is registered at the University of Namibia for the programme indicated. The proposed study met all the requirements as stipulated in the University guidelines and has been approved by the relevant committees.

The proposal adheres to ethical principles as per attached Ethical Clearance Certificate. Permission is hereby granted to carry out the research as described in the approved proposal.

Best Regards

---------- 05 Oct 18

Prof Marius Hedimbi **Date**

Director: Centre for Postgraduate Studies

Tel: +264 61 2063275

E-mail: directorpgs@unam.na

ANNEXURE B: ETHICAL CLEARANCE CERTIFICATE FROM UNAM

UNAM
UNIVERSITY OF NAMIBIA

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: SON /451/2018 **Date: 13 December, 2018**

This Ethical Clearance Certificate is issued by the University of Namibia Research Ethics Committee (UREC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the Faculty/Centre/Campus Research & Publications Committee sitting with the Postgraduate Studies Committee.

Title of Project: Assessment Of Knowledge, Attitudes, Practices And Responsiveness Of Medical Male Circumcision Among Males In Zambezi Region.

Researcher: ROSALIA NAIRENGE

Student Number: 200316281

Supervisors: PROF. O. Azu(Main) Dr. L. Lukolo (Co)

Faculty: School of Nursing

Take note of the following:

(a) Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the UREC. An application to make amendments may be necessary.

(b) Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the UREC.

(c) The Principal Researcher must report issues of ethical compliance to the UREC (through the Chairperson of the Faculty/Centre/Campus Research & Publications Committee) at the end of the Project or as may be requested by UREC.

(d) The UREC retains the right to:

(i) Withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,

(ii) Request for an ethical compliance report at any point during the course of the research.

UREC wishes you the best in your research.

Dr. J.E. de Villiers: UREC Chairperson

Ms. P. Claassen: UREC Secretary

ANNEXURE C: PERMISSION LETTER FROM MINISTRY OF HEALTH

REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

Private Bag 13198
Windhoek
Namibia

Ministerial Building
Harvey Street
Windhoek

Tel: 061 – 203 2537
Fax: 061 – 222558
E-mail: btjivambi@mhss.gov.na

OFFICE OF THE PERMANENT SECRETARY

Ref: 17/3/3 **RN**
Enquiries: Mr. B. Tjivambi

Date: 16 November 2018

Ms. Rosalia Nairenge
PO Box 1806
Rundu

Dear Ms. Nairenge

Re: Assessment of knowledge, attitudes, practices and acceptability of medical male circumcision among males in Zambezi Region.

1. Reference is made to your application to conduct the above-mentioned study.

2. The proposal has been evaluated and found to have merit.

3. **Kindly be informed that permission to conduct the study has been granted under the following conditions:**

3.1 The data to be collected must only be used for academic purpose;

3.2 No other data should be collected other than the data stated in the proposal;

3.3 Stipulated ethical considerations in the protocol related to the protection of Human Subjects should be observed and adhered to, any violation thereof will lead to termination of the study at any stage;

3.4 A quarterly report to be submitted to the Ministry's Research Unit;

3.5 Preliminary findings to be submitted upon completion of the study;

3.6 Final report to be submitted upon completion of the study;

3.7 Separate permission should be sought from the Ministry for the publication of the findings.

4. All the cost implications that will result from this study will be the responsibility of the applicant and **not** of the MoHSS.

Yours sincerely,

PERMANENT SECRETARY
MINISTRY OF HEALTH & SOCIAL SERVICES

MR. B.T. NANGOMBE
PERMANENT SECRETARY

"Health for All"

ANNEXURE D: PARTICIPANT INFORMATION AND CONSENT FORM

PARTICIPANT INFORMATION AND CONSENT FORM

My name is _____. I am working with Ms. Rosalia Nairenge, a student at the University of Namibia, studying Masters in Applied Field Epidemiology. She is undertaking a research on the knowledge, attitudes, practices and acceptability of medical male circumcision among males in Zambezi Region.

The purpose of this research is to assess the knowledge, attitudes, practices and responsiveness of males towards medical male circumcision in Zambezi Region. The study will provide insight on how to improve the program of medical male circumcision. Your participation in this study is voluntary and will not be of any harm to you. All information collected will be handled confidentially and there will be no disclosure of identity (your name will not be asked nor will it be written on the questionnaire). No physical or medical examination will be performed on you and no payment will be provided to you for participating in the research. You were selected randomly to participate in this research Once you agree to participate, I shall give you a questionnaire to answer questions or I shall assist you to complete the questionnaire to collect information that will be useful for the research. You are free to withdraw from the study at any stage if you become uncomfortable answering questions without any penalty.

If you have any questions concerning the research, feel free to ask or contact the under listed:

1. Prof OO. Azu at 0814573655 or email at oazu@unam.na or azu@ukzn.ac.za
2. Dr L. Lukolo at 0812742772 or email at lnlukolo@unam.na
3. Dr. N. Kofi 0813667332 or email at konyarko@yahoo.com
4. Ms. R. Nairenge at 0816675094 or email at rnairenge@yahoo.com
5. Research unit at Ministry of Health and Social Services at Tel: 061 2039111

Do you agree so I can proceed with the questions? If yes, please write your name below to give consent.

I _____ give consent (for myself/dependent) to take part in the research, I consent voluntarily.

I clearly understand:

- The purpose and procedure of the research
- That no harm will be done to me or information disclosed.
- Information concerning my identity will be treated confidential and will not be disclosed to anyone
- The information I provide will benefit the entire region in terms of voluntary medical male circumcision program.

Signature _____ At (place) _____

On (date)_____ Time _____

ANNEXURE E: RESEARCH TOOL (ENGLISH AND SILOZI QUESTINNAIRE)

PARTICIPANT QUESTIONNAIRE

(English)

Questionnaire Number_____ Name of interviewer_____

Date of interview_____

Section A

Socio-Demographic information

1. Age_____ 2. Physical Address_____

3. Constituency_____ ☐ Urban ☐ Rural

4.. Marital Status: ☐ Single ☐ Married ☐ Divorced ☐ Widow

Others_____

5. Literacy level ☐ Can read and Write ☐ Cannot read and write

4. Educational Level ☐ None ☐ Prima ☐ Secondary ☐ College ☐ University

6. What is your ocupation? ☐ Unemployed ☐ Teacher ☐ Health Practitioner

☐ Farmer ☐ Busness person ☐ Administrator Others_____

Section B: Knowledge

Questions	YES	NO
1. Have you ever heard of voluntary medical male circumcision?		
2. Males who are circumcised have a less chance of getting infected with HIV?		
3. Male circumcision reduces the risk of contracting other sexual transmitted infection?		
4. A circumcised man can still contract HIV if he has unprotected sex with an infected person?		
5. There are any risks associated with medical male circumcision?		
6. Voluntarily medical male circumcision is offered free at state health facility?		
7. More education is required on voluntarily medical male circumcision?		

Section C: Attitudes

Statements /questions	Agree	Don't agree
8. Medical male circumcision is an important health program		
9. Is it important for all males to be circumcised to reduce the risk of HIV transmission		

10. Penile hygiene is more improved when a man is circumcised.		
11. would you recommend your male relative/friend to get circumcised?		
12. Male circumcision does not affect sexual pleasures.		

Section C: Practice and Responsiveness

15. Where is male circumcision practiced in your Region? (tick all applicable)

☐ Health Facilities ☐ Traditional ☐ No idea

16. a) Do you know any facility near you where they perform male circumcision?

☐ Yes b) if yes, which facility? _____ ☐ No

17. a) Are you circumcised? ☐ Yes ☐ No (go to question 15)

b) if yes at what age where you circumcised?

☐ At birth- 1 year ☐ 1 yr- 5 yrs ☐ 5-18 yrs ☐ 19 yrs – 0lder

c) where was it performed? ☐ Health Facility ☐ Traditional ☐ Don't know

18. If not Circumcised, what could be the reason?

☐ Fear of Pain ☐ don't have time

☐ Don't have access to facility ☐ Don't want ☐ Other_____

19. Where would you recommend male circumcision to be performed?

☐ Health Facility ☐ Traditional ☐ None

20. Do you know about HIV/AIDS ☐ Yes ☐ No

21. Have you been tested for HIV? ☐ Yes (go to q 23) ☐ No (if No, go to q22)

22.Would you want to be tested for HIV?

☐ Yes (give information on where to get tested for HIV) ☐ No (Give information of the importance of knowing his HIV status)

23. If yes, what was the result?

☐ Negative ☐ Positive (go to q 24) ☐ Don't want to reveal (end of interview)

24. Have you started with ARV therapy? ☐ Yes ☐ No (end of interview)

23. Do you have any challenges with taking HIV treatment**?**

_____

****THE END. THANK YOU FOR YOUR TIME******

SILOZI QUESTIONNAIRE

Section A

Socio-Demographic information

1. Munani lilimo ze kai…….

2. Mwina kai……

3. Silalo se muzwa

- Mwabukowa kappa
- Matakanyani

4. Munelo
   - Munosi
   - Munyezi
   - Mukahi mbelwa
5. Kwituta kwamina
   - Mwaziba kunola nikubala
   - Hamuzibi kubala nikunola
6. Muyezani
   - Namugebezi
   - Bahoki
   - Ticele
   - Bahoki
   - Balimi
   - Baipeleki
   - Ofisi

Section B: Knowledge

Questions	Mwalomwela	Mwahana
1. Nese muvawile kwamona nimupato wa baana?		
2. Kana mwaziba kuli baana babaile kwa mupato habaipumeneli feela kakokweni kaHIV?		
3. Kana mwaziba kuli mupato usileleza kwakufomo na matuku abozwa?		
4. Kana mwaziva muuna yaile kwamutato usakona kufumana, kokakweni ka HIV nakopana ni mutu yanini kakolwani basasebelisi condomu?		
5. Muhupula kuli konani bumaswe bubufumane ha mwa mupata?		
6. Kana mwaziba kuli mapato wafiwa mahala kwasipatela?		
7. Muhupula kuli kunani zibo?		

Section C:

	Mwalumela	mwahanyeza
8. Makete a muputokibutokwa mwalikolo la makete		
9. Kikwabutokwa baana kuufela kuyakwa nmupato kunyenisenza kwambala kakwakweni kaHIV.		
10. Makete a kwaboona a yekeza hebe nemule kwamupato.		

11. Mwakona kutusa wahabu mina kappa mulika na a mina koya kwa mupato.		
12. Mupato haukoni kusuya buuna bwamina		

Section D

15. mupata upongahalela kai mwasikiliti somina?

☐ Upatola nyana ☐ Upatela zasizo ☐ Hamuzibi

16. a) kana kunani kumuziba fakauti kobayeza mupato?

☐ mwaziba ☐ mwahana b) hebe mwaziba kasiti sipatela nyana?

_____

17. a) Nemuke kwamupato? ☐ Mwasaba butuku ☐ hamuno nako