FACTORS INFLUENCING CIRCUMCISION OF YOUNG MALES IN HARARE, ZIMBABWE.

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DATE: APRIL 2017

DECLARATION

I hereby declare that, except for references to other research works which have been duly acknowledged, this thesis is the results of my own research and it has not been submitted elsewhere either in part or wholly for another degree.

Signature …….

Kudzaishe Mangombe

(Candidate)

Date……..

DEDICATION

I dedicate this work to my family and friends

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ABSTRACT

This thesis is a study of the factors influencing young male circumcision in Harare, Zimbabwe utilising an explanatory sequential mixed method research approach to examine the factors. The study used cross-sectional data on 784 men, 26 in-depth interviews with the study population and 6 in-depth interviews with key informants (opinion leaders) collected in 2014. The quantitative data sought to examine factors influencing male circumcision and willingness to circumcise among men aged 15-35, utilising various data analysis techniques such as frequencies, binary logistic regression and multinomial logistic regression to achieve the objectives of the study. The qualitative data built on the quantitative results, which sought to provide a deeper understanding of the myths and perceptions surrounding male circumcision uptake and willingness to circumcise, using the thematic analysis approach.

Respondents who had tested for HIV were less likely (OR=0.13, $p<0.05$) to be circumcised compared to those who never tested. There was a positive significant relationship between knowledge about male circumcision and male circumcision status. With respect to attitudes, men who indicated that they had favourable attitude towards male circumcision were more likely (OR, 2.79, $p<0.05$) to be circumcised. In addition, the study found that, there was a negative association between age and willingness to circumcise. Specifically, youth aged 25-29 were less likely (OR, 0.91, $p<.0.1$) to be willing to circumcise compared to those aged 30-35. Youth who reported to have attained primary education were less likely (OR=0.395, $p<0.05$) to be willing to circumcise compared to those aged 30-35. Additionally, youth who indicated that they had secondary education were (OR=0.581, $p<0.05$) less likely to be willing to circumcise. Respondents who belonged to the Apostolic sect were more likely (OR, 2.78, $p<0.05$) to be willing to circumcise than respondents who belonged to No religion.

Furthermore, perception of risk to HIV infection was significantly related to willingness to circumcise. Respondents who perceived themselves to be at a higher risk to HIV infection were less likely (OR=0.573, $p<0.1$) to be willing to circumcise compared to those who perceived themselves to be at no risk. Moreover, the findings showed that young men who had favourable attitudes towards male circumcision were more likely (OR, 3.29, $p<0.05$) to report willingness to circumcise compared to those who had unfavourable attitude. Knowledge of male circumcision was not significantly related to willingness to circumcise. The qualitative results revealed that perceptions and myths surrounding male circumcision were widespread and they either inhibit or promote male circumcision uptake or willingness to circumcise. For instance, myths surrounding foreskin disposal, perceived fear of HIV testing, perceived adverse effects and perceived effect of circumcision on sexual pleasure impacted on uptake of male circumcision. There was also the recognition that respondents had incomplete knowledge about male circumcision and it partial prevention of HIV infection.

The study's findings highlight the need to promote HIV health education, which would emphasise the health benefits of male circumcision and deliver correct messages about the partial protective effects of male circumcision against HIV infection. In addition, there is the need to run programmes that would demystify perceptions and myths surrounding male circumcision in the communities.

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1.1 Introduction

Both observational and ecological studies have shown that male circumcision (MC) prevents female to male HIV transmission and has the potential to significantly alter the HIV epidemic (Cameron et al., 1989; Easton & Kalichman, 2009; Moses et al., 1990). The success of the random clinical trials and the endorsement of the procedure by the World Health Organisation (WHO)/United Nation Joint AIDS Programme (UNAIDS), as well as the empirical evidence that male circumcision can partially prevent HIV/AIDS infection and reduce certain types of cancers have further confirmed that HIV prevalence can be lowered in former non circumcising countries (Drain, Halperin, Hughes, Klausner, & Bailey, 2006; Gray et al., 2009; Tobian, Gray, & Quinn, 2010; WHO/UNAIDS, 2011). The Zimbabwean government integrated male circumcision into the country's health care system as a means of reducing the spread of HIV. In Zimbabwe, male circumcision has been performed since time immemorial on a small scale among specific ethnic groups, such as the Venda, Xhosa, Tonga and Shangani, as a mark of cultural identity. The country introduced the National Male Circumcision Policy in 2009, targeting to circumcise 80% of men aged 15–49 by 2015; however, by 2013 only 10.6% of the national target had been met. The uptake of the practice has been slower than expected.

Male circumcision remains one of the oldest and most common surgical procedures worldwide (Kacker & Tobian, 2013). However, the practice of male circumcision is not universally standard, as many forms of male circumcision procedures are practised across the world (Bonner, 2001; Doyle, 2005). Generally, male circumcision can be seen as the surgical or non-surgical removal of all or part of the foreskin of the penis (Siegfried, Muller, Deeks, & Volmink, 1996). It is estimated that 30% of the world's males aged 15 years or older are circumcised and a greater proportion (69%) of the circumcised men globally, are Muslims (WHO/UNAIDS, 2007). Male circumcision is often practiced for various reasons. In most cases, it is practiced as part of a religious ritual, a traditional custom for initiating young men into manhood or as a medical procedure for health related benefits (WHO/UNAIDS, 2007).

Male circumcision is not an ordinary cut of the prepuce but it is heavily laden with an array of social interpretations among several ethnic groups in Africa (WHO, 2009b). The practice and meaning of male circumcision varies from one cultural group to another. Male

circumcision in some instances is often associated with values such as masculinity, social cohesion of boys of the same age who are circumcised at the same time, self-identity and spirituality (Niang & Boiro, 2007).

In recent years, there seems to be a paradigm shift from traditionally-inclined male circumcision to a Medical Male Circumcision (MMC) across the general population as a means of HIV prevention, especially in previously non-circumcising countries (WHO/UNAIDS, 2007). This shift was necessitated by the WHO/UNAIDS in 2007 who endorsed male circumcision as one of the HIV combating strategies, particularly in countries with high HIV prevalence and low MC rates (WHO/UNAIDS, 2007). The major reasons for such a position were motivated by the results of three Randomized Controlled Trials (RCTs) which demonstrated that male circumcision substantially reduces the chances of HIV transmission from heterosexual intercourse by approximately 60% (Auvert et al., 2005; Bailey et al., 2007; Gray et al., 2007b).

It has been reported that male circumcision reduces a number of infectious diseases such as HIV (Tobian & Gray, 2011), urinary tract infections in infants (Shaikh, Morone, Bost, & Farrell, 2008), phimosis (inability to retract the foreskin) or paraphimosis (swelling of the retracted foreskin resulting in an inability to return the foreskin to its normal position (Huang, 2009), reduced incidence of other Sexually Transmitted Infections (STIs) in both partners (Auvert et al., 2005; Bailey et al., 2007; Gray et al., 2007b), and penile cancer (Larke, Thomas, dos Santos Silva, & Weiss, 2011). Some studies showed that an uncircumcised penis contains langerhans's cell with HIV receptors which can be primary entry point for HIV virus (Szabo & Short, 2000).

In 2011, there were an estimated 1.8 million new HIV infections in sub-Saharan Africa compared to 2.4 million new infections in 2001 showing a decline of 25% in the number of HIV infections (UNAIDS, 2012). Sub-Saharan Africa has the highest HIV prevalence rate with nearly 1 in every 20 adults (4.9%) living with HIV, thus accounting for 69% of people living with HIV worldwide (UNAIDS, 2012). Although strides have been made concerning improved sexual behaviour in most countries, some countries in sub-Saharan Africa have detected low condoms use and an increase in the number of sexual partners in their recent surveys (UNAIDS 2012). This is disturbing and it is an indication that people are failing to adhere to ABC for HIV prevention (Abstain, Be faithful and Condomise). Thus, in sub-

Saharan Africa, there is currently a push for male circumcision meant to reduce the risk of HIV infection. To this effect, 14 countries[1] in the southern and eastern Africa region heeded the call to circumcise when the WHO/UNAIDS endorsed it as an effective way for the prevention of HIV and other infectious diseases (Curran et al., 2011). Although the introduction of male circumcision was a noble idea, studies have shown that there are still factors such as perceptions, knowledge, attitudes, myths and beliefs surrounding the practice that hinder male circumcision uptake (Dionne & Poulin, 2013; Gasasira et al., 2012; Jayeoba et al., 2012; Moyo, Mhloyi, Chevo, & Rusinga, 2015).

In the context of Zimbabwe, male circumcision was practiced by certain minority ethnic groups such as the Xhosa in Ntabazinduna, the Venda in Beitbridge, the Tonga in the Lower Zambezi valley and the Shangani in Chiredzi as well as the Chewa and Muslims dotted around major cities (Ministry of Health and Child Welfare, 2009). The practice was mainly done for religious reasons among the Chewa and the Muslims, and as a rite of passage among the Venda, Xhosa, Tonga and Shangani (Ministry of Health and Child Welfare, 2009). Zimbabwe did not have a standardised policy to provide guidelines for male circumcision up until 2009. The male circumcision policy came into being in 2009 and aimed at standardising male circumcision as a national programme/response to HIV/AIDS. Secondly, the policy sought to provide an operational framework with set targets. Zimbabwe's target was to circumcise 80% of men aged 15-49 by 2015 (Ministry of Health and Child Welfare, 2010).

Zimbabwe has recorded some success in lowering HIV prevalence. For instance, national HIV prevalence has declined from 18% to 15% between 2005 and 2011 among adults aged 15-49 years (Zimbabwe National Statistics Agency (ZIMSTAT) & ICF International, 2012). Despite the national HIV prevalence showing a decline over the years, the prevalence is one of the highest in the world. The effort to avert new HIV infections has been slow, with a total of 47,309 new infections estimated by 2011 (Government of Zimbabwe, 2010). Consequently, the rate of HIV related mortality remains very high, making the achievement of the national Sustainable Development Goals a challenge (Gregson et al., 2010). Existing approaches to prevent HIV have been anchored on the 'ABC' approach to behaviour change, which entails promoting abstinence, faithfulness and correct use of condoms. However,

[1] These include: Botswana, Ethiopia, Kenya , Lesotho, Malawi, Mocambique , Swaziland, Namibia, Rwanda, South Africa, Tanzania, Uganda, Zambia and Zimbabwe

sustaining behavioural change has been a challenge as results of the economic meltdown in Zimbabwe. Thus, most Zimbabweans cross borders into neighbouring countries to earn livelihood. This has fuelled risky sexual behaviour and the spread of HIV (Medecins Sans Frontières, 2009). Substantially lowering HIV prevalence rates will only be achieved with the introduction and scale-up of new prevention strategies like male circumcision. It was expected that if 80% of men aged 15-49 are circumcised by 2015 about 42% of new HIV infections could be prevented between 2011 and 2025 in Zimbabwe (Njeuhmeli et al., 2011). Njeuhmeli et al. (2011) revealed that an increased uptake of male circumcision reduces HIV prevalence in both males and females. In order to make male circumcision affordable to the majority of men, it is offered for free in public hospitals (Ministry of Health and Child Welfare, 2010).

Besides male circumcision, other interventions to curb HIV include social and behavioural change communication, condom promotion and distribution, Prevention of Parent to Child Transmission (PPTCT), Voluntary Counselling and Testing (VCT), prevention and control of sexually transmitted infections, blood safety and Post Exposure Prophylaxis (PEP) (National AIDS Council, 2011). All these seek to reduce the HIV burden through an increase in knowledge about HIV and increased personal risks thus, adopting safer sex practices, which in the long run will trigger maximum uptake of prevention services in Zimbabwe. Although, a lot has been happening as noted above, the uptake of male circumcision in Zimbabwe is still a challenge.

1.2 Statement of the problem and rationale of the study

Male circumcision has been identified as a key intervention strategy to reduce HIV infection in sub-Saharan Africa. Existing literature shows that male circumcision can partially prevent HIV infection in heterosexual men by 60% (Auvert et al., 2005; Bailey et al., 2007; Drain et al., 2006; Gray et al., 2007b). Thus, male circumcision has been adopted for medical benefits such as HIV prevention, hygiene and reduction of certain types of cancers (Drain et al., 2006; Gray et al., 2009; Tobian et al., 2010). In fact, Zimbabwe is one of fourteen Eastern and Southern African countries that are currently scaling-up male circumcision in an effort to prevent new HIV infections (WHO/UNAIDS, 2010).

Despite the significant investment Zimbabwe has made in male circumcision, the uptake has been rather very low. The low uptake of male circumcision might be due to the fact that it is

being implemented without understanding the socio-cultural context, which can have negative implications for its uptake. In rural Zimbabwe, for instance, it was noted that there is limited knowledge of male circumcision practices such that partial male circumcision was confused with full male circumcision and participants failed to differentiate between castration and circumcision (Khumalo-Sakutukwa et al., 2013).

Moreover, only 10.6% of the target population was circumcised by 2013 since the adoption and introduction of male circumcision in 2009 (WHO, 2014). In comparison with other countries, this is extremely low. In Botswana for instance, 32% of the targeted population has been circumcised, despite the fact that male circumcision was introduced in both countries at the same time. And in Lesotho, which introduced male circumcision in 2011, three years later after Zimbabwe, 13% of the targeted population has been circumcised (WHO, 2014).

Studies on the subject of male circumcision have been conducted globally, regionally and in Zimbabwe looking at various aspects of it (Goodreau et al., 2014; McQuoid-Mason, 2013; Moyo et al., 2015; Mutombo, Maina, & Jamali, 2015). Specific to Zimbabwe, studies on male circumcision have focussed on attitudes of males towards male circumcision in rural Matobo District of Zimbabwe, using the quantitative method approach to assess the determinants of male circumcision (Nkala & Mbuisa, 2014). In addition, studies have examined socio-cultural barriers and motivators of male circumcision uptake in rural and urban areas in Zimbabwe among men aged 15-49 years using quantitative and qualitative method approaches (Hatzold et al.,2014) and socio-cultural barriers to medical male circumcision in traditional non-circumcising rural communities in sub-Saharan African countries including Zimbabwe (Khumalo-Sakutukwa et al., 2013). Further, studies have looked at beliefs explaining male circumcision among men aged 18-30 years in rural and urban areas using the quantitative method approach (Montaño, Kasprzyk, Hamilton, Tshimanga, & Gorn, 2014). Infant male circumcision (Mavhu et al., 2012), and prevalence and factors associated with knowledge and willingness for male circumcision in rural Zimbabwe among women and men age 18-44 years (Mavhu et al., 2011).

However, there is little empirical evidence in Zimbabwe on uptake of male circumcision, as well as willingness to circumcise in urban areas among young men aged 15-35 years using the mixed method approach. Aside the age range that sets apart this study quantitative component, what makes the present study different from for example Hatzold et al. (2014)

study is that Hatzold et al. (2014) used focus group discussions based on young men aged 18–24 years and older men aged 25–49 years. The selection of men aged 15-35 years, as a target population for the present study is not arbitrary. Different legal instruments define youth to include different age categories. According to the African Charter, youth is anyone aged 15 - 35 years (Bartlett, 2010 : 8), while for WHO it is 15 to 24 years (WHO, 1989). This study confines itself to youth aged 15-35 years, which is in line with African Charter definition unlike other studies on male circumcision in Zimbabwe that have left out the 15-17 year olds (Chikutsa & Maharaj, 2015a; Mavhu et al., 2011; Montaño et al., 2014; Rupfutse et al., 2014). The rationale is to encompass men aged 20-29 with the highest incidence of new HIV infection (Ministry of Health and Child Welfare, 2010) and to include men aged 15-24 who are an important group in monitoring HIV incidence in a population as specified by the United Nations General Assembly Special Session (ZIMSTAT & ICF International, 2012). In this study, men aged 15-35, youth and young men will be used interchangeable.

In addition, rural areas have poor access to services and resources as compared to urban areas. This was evident in the initial pilot male circumcision centres, which were heavily concentrated in urban areas (Mtemeri, Zivanai, & Shoniwa, 2014). However, studies have shown that urban areas tend to exhibit high HIV prevalence than rural areas. For instance, HIV prevalence has been reported to be higher (4.5%) among male urban youth aged 15-24 compared to rural youth (3.2%) (ZIMSTAT & ICF International, 2012). Recent reports show that STIs are increasing among certain population groups including youth in Harare (United Nations World Food Programme, 2015). In addition, some studies also show that there is just a marginal difference in male circumcision uptake between urban and rural areas in Zimbabwe. For example the 2011 Zimbabwe Demographic and Health Survey reported that male circumcision uptake was about one percentage point higher in urban areas compared to rural areas (urban, 9.7% and rural areas, 8.7%) (ZIMSTAT & ICF International, 2012).

Considering the higher levels of HIV and STIs in urban compared to rural areas and the relatively low level of male circumcision uptake in urban areas, there is need to focus male circumcision research in urban areas as a way to curb the further HIV and STI infections by integrating male circumcision to the existing HIV prevention measures. The findings of this study might contribute to change in perception of risk to HIV infection among young men in urban Zimbabwe by emphasising the benefits of male circumcision. Thus, it is expected that life expectancy is going to improve considerably with uptake of male circumcision in

Zimbabwe (WHO, 2009). In 2010 estimates and projections of adult mortality showed that Zimbabwe had the highest rates of pre-mature adult mortality in the world, largely due to AIDS (United Nations World Food Programme, 2015). Furthermore, a prevention of new HIV infections among young men especially, can create an HIV free generation for both women and children.

The present study will contribute to the understanding of the social, cultural and demographic factors influencing male circumcision and willingness to circumcise, an important study in a former generally non-circumcising country experiencing low circumcision rate and high HIV prevalence among a crucial subpopulation (urban youth aged 15-35 years) in the fight against HIV. Approximately 50% of the new annual HIV infections in all heavily burden HIV countries in sub-Saharan Africa are youth aged 15-24 (UNICEF, 2010). In Zimbabwe, about 40% of the new HIV infections have been reported to be among youth aged 15-24 (UNAIDS, 2006). There is much, as a result, that needs to be done to reduce HIV infections among the youth.

Research related to social, cultural and demographic factors related to male circumcision uptake and willingness to circumcise among urban men aged 15-35 years in Zimbabwe is scarce despite risky sexual behaviours associated with this age group. The present study seeks to fill this gap in the existing literature by systematically examining the important background factors the influence social variables related to male circumcision (knowledge about male circumcision, attitude towards male circumcision and perception of risk to HIV infection). Additionally, the study also examines the underpinning factors influencing male (aged 15-35 years) circumcision and willingness to circumcise in Harare, Zimbabwe as well as the role of perceptions and myths surrounding male circumcision. The findings of the present study will help to dispel the myths and misperceptions surrounding male circumcision. Such a contribution will enrich the existing policy initiatives with regards the uptake of male circumcision.

In addition, studies in Zimbabwe have often utilised either qualitative or quantitative methods to investigate male circumcision (Nkala & Mbuisa, 2014; Rupfutse et al., 2014; Tsvere & Pedzisai, 2014). Using either the quantitative or qualitative method is insufficient by itself to reveal the complexities in the issues surrounding male circumcision (Ivankova, Creswell, & Stick, 2006). Hence, making mixed method research approach a more

appropriate approach in examining the current state of the affairs with regards the underpinning factors that underlie male circumcision uptake in Zimbabwe. It is against the backdrop of the limited in-depth empirical studies of the subject of male circumcision among men aged 15-35 years in Zimbabwe that the present study utilises both quantitative and qualitative methods to get at the complexities of uptake of male circumcision, as well as willingness to circumcise.

Since the partial protective effect of male circumcision was empirically demonstrated (Bailey et al., 2007; Drain et al., 2006), governments and non-governmental organisations in sub-Saharan Africa and especially in Southern Africa developed policies and strategies to improve uptake of male circumcision. Despite these efforts, uptake of male circumcision is still low in Zimbabwe (Hatzold et al., 2014). Policies and strategies need to be informed by contextual empirical evidence in order to achieve their objectives. The lack of in-depth research, which informs interventions and programming, could be one of the probable reasons for low male circumcision uptake.

Thus, this study contributes by providing evidence, which can be used in informing MC programming (evidence-based programming). Government and development agencies can benefit in designing appropriate interventions that will increase uptake of male circumcision especially in urban areas and ultimately achieve their goal of lowering HIV incidence. In addition, the study provides a more defined theoretical contribution to the field of male circumcision as an HIV prevention strategy.

1.3 The aim of the study

The aim of this study is to examine factors that influence circumcision and willingness to circumcise among men aged 15-35 in Harare, Zimbabwe, which is a traditionally non-circumcising community.

1.3.1 Specific objectives

The study seeks to specifically:

- examine predictors of knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection among men aged 15-35;

- investigate the key factors that influence uptake of male circumcision among men aged 15-35;
- examine the main factors that are related to willingness and uptake male circumcision among men aged 15-35 and
- explore perceptions and myths surrounding male circumcision as well as the deep seated reasons that influence the uptake of male circumcision among men aged 15-35

The research questions (section 1.3.2) seek to answer the set objectives.

1.3.2 Research Questions

- To what extent do predictors of knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection influence circumcision among youth in Harare?
- Which key factors influence uptake of male circumcision among men aged 15-35?
- What are the main influences regarding willingness to circumcise among men aged 15-35?
- How do young men's perceptions and myths influence the uptake of male circumcision?

1.4 Background of Zimbabwe

Geography: Zimbabwe is a landlocked country in Southern Africa with a total land area of 390,757 square kilometres. Zimbabwe is bordered by Mozambique to the east, South Africa to the south, Botswana to the west, and Zambia to the north and northwest. The country is divided into 10 administrative provinces: Manicaland, Mashonaland Central, Mashonaland East, Mashonaland West, Matabeleland North, Matabeleland South, Midlands, Masvingo, Harare and Bulawayo. The provinces are further divided into 62 administrative districts. The capital city is Harare and other major cities include Bulawayo, Gweru, Kadoma, Kwekwe, Masvingo and Mutare. The climate of Zimbabwe is a combination of cool, dry, sunny winters and warm, wet summers.

Population size and distribution: Population size and distribution: The population of Zimbabwe is 13,061, 239 million according to the 2012 Population Census (ZIMSTAT, 2012). Less than fifty percent (42.94%) of males are aged 15-35 years in Harare (ZIMSTAT, 2012). The major ethnic groups are Shona (82%), Ndebele (14%) and Other (4%). About 70% of the population resides in the rural areas. Africans constitute 98% of the population

(ZIMSTAT, 2012). In terms of religion, Zimbabwe is generally a Christian nation, but some Christians still believe in their African traditions (Kerina, Babill, & F, 2013). Muslims make 1% of the population (MOHCW, 2009).

Economy: Mining and agriculture are the backbone of the country's economy. The country is endowed with some impressive manmade and natural tourist attractions, such as the mighty Victoria Falls and the Great Zimbabwe Ruins (Zimbabwe National Statistics Agency (ZIMSTAT) & ICF International, 2012). The tourism sector significantly contributes to the country's GDP. For instance, the tourism sector has contributed more than 10 percent of Gross Domestic product in 2012 (Makochekanwa, 2013). Zimbabwe has vast tracks of land covered with national parks, game reserves and wildlife estates. It also has a variety of minerals such as platinum, gold, asbestos, nickel, lithium, and precious stones such as emeralds and diamonds, which are for export. The agricultural sector comprises of commercial and communal farms. Due to the land reform programme, many Zimbabweans are owners of A1 or A2 farms, which previously were largely commercial farms. However, poor performance has been recorded by the agricultural sector such as liquidity constraints and this has kept production capacity low, below 30% in 2012 (Saungweme, 2013). Although communal and resettlement farmers continue to contribute immensely in food security and the production of industrial raw materials. The agricultural sector is facing several challenges such as poor irrigation, erratic power supply, and erratic rains due to climatic change (Mushore, 2013). The manufacturing sector, just like the agricultural sector, has its fair share of challenges. These challenges include high inflation, a shortage of foreign currency, lack of aid and lack of investor confidence in the local economy and this resulted in the closure of many firms (Muzumara, 2012). The poor performance by the manufacturing sector contributed to a decline in the GDP from 24% in 1991 to 16% in 2007 (Confederation of Zimbabwe Industries (CZI), 2009).

Thus, Zimbabwe has faced some socio-economic and political challenges in the last decade which have driven the economy into partial oblivion. All sectors of the economy have not performed as expected. Economic problems in Zimbabwe include infrastructure decay, regulatory deficiencies, ongoing indigenisation pressure, policy uncertainty, a large external debt burden, poor foreign direct investment, sanctions, insufficient formal employment and recorded the highest rate of inflation of more than ten digits (Mzumara, 2012). The economy deteriorated from one of the strongest African economies to the world's worst. However,

following a decade of poor economic growth from 1998 to 2008, Zimbabwe's economy recorded real growth of roughly 10% per year in 2010-11, before slowing down in 2012-13 due to poor harvests and low diamond revenues (Mzumara, 2012).

As a temporary measure to curb hyperinflation, the government dollarised the Zimbabwean currency in early 2009. It abandoned the use of the local currency. This allowed the use of multi-currencies such as the Botswana Pula, the South Africa Rand, and the US dollar to be used locally (Kerina et al., 2013). This ended the hyperinflation and reduced inflation below 10% per year, but exposed structural weaknesses that continue to inhibit broad-based growth (International Monetary Fund (IMF), 2013). Poor economic performance has caused the formal employment sector to shrink. Consequently, by 2013 the informal sector accounted for over 89% of employment in Zimbabwe (Saungweme, 2014). The lack of formal employment pushed a lot people to resort to cross border trading and vending. However, the cross border trading fuelled the spread of HIV. In addition, the lack of employment forced many youth to be involved in risky sexual behaviour, as they want to put food on the table (Adams, 2008). Thus, fighting the HIV/AIDS epidemic remains very crucial against a background where all economic sectors, including the health sector, are facing challenges. Consequently, promoting and implementing new effective HIV/AIDS prevention strategies (male circumcision) to complement the existing measures targeting the youth who are vulnerable is critical in Zimbabwe.

Health and HIV/AIDS: Zimbabwe has good health care infrastructure and 85% of the population lives within a radius of 10 kilometres from a health care facility. Despite, accessibility to health care centres, the key health indicators have diminished because of brain drain and prohibitive user fees in public hospitals. For instance, maternal mortality ratio increased from 612 deaths per 100 000 live births in 2005 to 960 deaths per 100 000 live births in 2011 and Child Mortality rate rose from 24 per 1000 live births in 2006 to 29 per 1000 live births in 2011 (ZIMSTAT & ICF International, 2012).

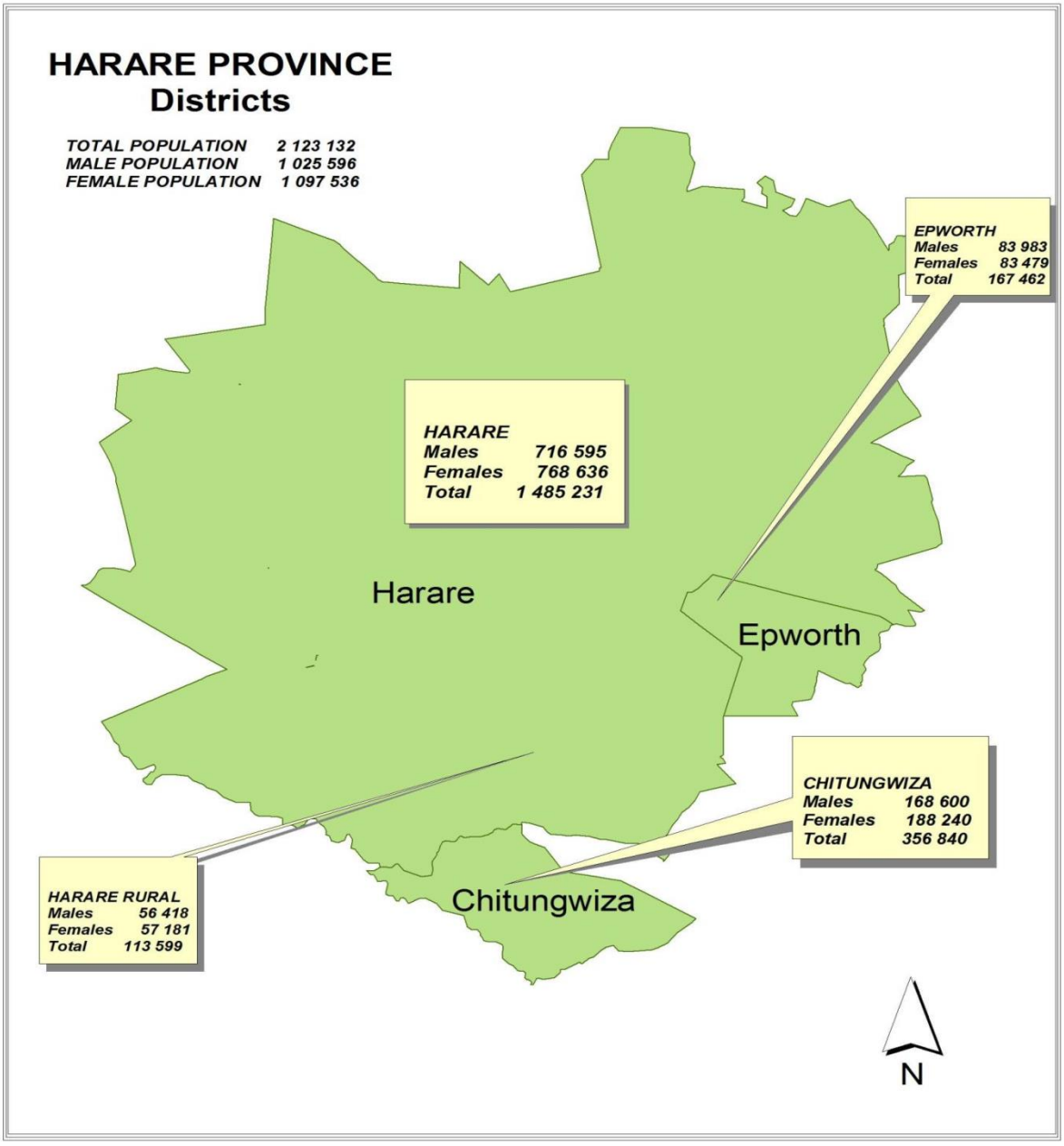
With regards to HIV, there has been a decline in the HIV prevalence rate from 29% adult prevalence in 2007 and estimated to be at 15% in 2010-11 (ZIMSTAT & ICF International, 2012). The decline can be attributed to a comprehensive and multi-sectorial approach to HIV prevention and mitigation. Zimbabwe is one of the success stories in reducing the HIV prevalence rate through behaviour change programmes. However, new HIV infections, which

are being recorded every year, are a cause for concern. Following the success of random trials of male circumcision, Zimbabwe like other sub-Saharan countries adopted male circumcision as one of the many HIV prevention strategies. In 2009 it embarked on a male circumcision programme targeting to circumcise 1.2 million men aged 15-49 by 2015 (Ministry of Health and Child Welfare, 2010).

1.4.1 Study area

Harare: The study was conducted in Harare province, which is the capital city of Zimbabwe. Harare is connected by cities such as Bulawayo, Masvingo, Mutare and Gweru. It is highly urbanised, relatively better developed than all other provinces of the country. The city is the leading financial, commercial and communications centre, and trade hub. Although named the sunshine city, it has been adversely affected by the political and economic crisis that is currently affecting the country. The city is industrialised, and densely populated with 2 123 132 million people (Zimbabwe National Statistics Agency, 2012). It has a relatively good road network and infrastructure such as schools, hospitals, tourism and agriculture. Despite being the capital, it has its own share of development challenges such as; over population, dilapidated roads and poor infrastructure such as, water and sewerage system. The city has poor residential accommodation facilities and social vices such as; crime, drug abuse, prostitution and ever growing population of street kids, vagrants and child delinquency, to mention but just a few (Parliament of Zimbabwe, 2011). Figure 1.1 shows Harare province and its population distribution.

Figure 1. 1 : Map of Harare province and population distribution



Source: (Zimbabwe National Statistics Agency, 2012)

Table 1.1 shows the population size and distribution of Harare province between 2002 and 2012. Table 1.1 shows that more than two (2) million people were living in Harare province in 2012, with 70% of the population residing in Harare Urban district, while the rest was distributed amongst the remaining three districts (Zimbabwe National Statistics Agency, 2012).

Table 1. 1: Population size and distribution of Harare province

Districts	Population 2002	Population 2012	% change (2002-2012)
Chitungwiza	332 260	356 840	7.4
Epworth	114 067	167 462	46.8
Harare Rural	23 023	113 599	393.4
Harare Urban	1 435 784	1 485 231	3.4
Total	1 896 134	2 123 132	11.0

Source: (Zimbabwe National Statistics Agency, 2012)

1.5 Organisation of the study

This thesis consists of eight chapters. Following the introductory chapter, chapter two, deals with the literature review and the theoretical framework. Chapter three deals with the research methodology, chapter four examines youth's knowledge about male circumcision, attitudes towards male circumcision and perceptions of risk to HIV infection. Chapter five is devoting to the factors influencing uptake of male circumcision among men aged 15-35 while chapter six is focusing on factors influencing willingness to circumcise among men aged 15-35. Chapter seven is the qualitative component of the thesis. The chapter is exploring youth's perceptions and myths surrounding male circumcision. Each analytical chapter is presenting a detailed discussion of the study findings. In chapter eight, an effort is made to summarise the findings and to draw specific conclusions emanating from the study as well as policy implications and recommendations for future research.

CHAPTER 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

Following the introductory chapter, the present chapter looks at the literature review and the theoretical framework that guides the present study. First, the historical perspectives of male circumcision are presented from the global perspective, regional and to the Zimbabwe context. Second, the literature review looks at the relationships between knowledge, attitudes, the perceptions of risk to HIV infection, as well as, the socio-demographic characteristics that are related to uptake and willingness to circumcise. Third, the Health Belief Model (HBM) which informs the theoretical foundation of the study is explored, which is built on 'costs' and 'benefits' rationale. Specifically, the costs and benefits are illustrated by how the decision to circumcise depends on perceived susceptibility to the disease on one hand , and taking precautionary measures (circumcision) to prevent the illness (HIV and other sexual reproductive diseases) on the other. Other theories which cover the shortcomings of the HBM are also reviewed for instance, the Theory of Reasoned Action and Theory of Planned Behaviour. Last, the chapter presents the conceptual framework.

2.2 Ritual circumcision to medical male circumcision

Male circumcision (MC) has been practised since time immemorial. The procedure has been performed for religious, cultural and medical reasons over the years. The history of male circumcision is highly contested because it is not known when, where and how male circumcision began to be practiced and for what specific reason(s) (Dunsmuir & Gordon, 1999). Some literature points to the fact that, male circumcision began as a ritual practice before the procedure evolved and became 'medicalized' (Aggleton, 2007; Doyle, 2005; Dunsmuir & Gordon, 1999; Silverman, 2004) and later became a public health intervention strategy in the 19th century onwards (Aggleton, 2007). With HIV/AIDS continuing to cause deaths after its first discovery about three decades ago, male circumcision has become one of the new public health intervention introduced to minimise HIV infection in former non circumcising countries.

Some historians are of the view that the practice is strongly linked to the canonical narratives and thus began among the Egyptians and was later assimilated and established itself amongst

the Israelites and became embedded in Judaism, Christianity and Islam (Aggleton, 2007; Gollaher, 2000). But, other historians are of the view that the children of Israel introduced it in Egypt during the period of captivity around 1200 BC (Doyle, 2005). However, some anthropologists consider male circumcision to have originated independently within several cultures (Dunsmuir & Gordon, 1999). Regardless of the differences in opinions on the origin of male circumcision, among the Egyptians, male circumcision was comparatively symbolised both as physical and spiritual purification, meant for people in the upper echelon and also marked the rite of passage to manhood (Gollaher, 2000).

Male circumcision is part of the Judaic religious practice. Taking a cue from the Torah (Genesis 17:10-13 New International Version), Abraham was commanded by God to circumcise himself, all members of the household, his descendants and slaves in an everlasting covenant. Male circumcision has been used as a metaphor in the Bible, for example, Deuteronomy 10:16, Jeremiah 9:25-26, Romans 2: 25-29 and Galatians 5-6. Some argue that in these chapters in the Bible, male circumcision means circumcision of the 'foreskin of the heart' or 'spiritually circumcision', which is seen to be more important than physical circumcision of the foreskin (Downs et al., 2013; Gollaher, 2000). Along this line, Christians took a strong stance concerning circumcision in the first century; they rejected circumcision as pre-condition for being a Christian or for one to be saved at the Council at Jerusalem (Acts 15). Another line of thinking suggests that, Apostle Paul figuratively assumed that being circumcised did not make one pure or being a Jew (Roman 2:29). Muslims, however take the practice of male circumcision as part of their Abrahamic faith and constitute the largest religious group that practice male circumcision (WHO/UNAIDS, 2007).

Even though circumcision was important among the Jews and Muslims in ancient times, the Greeks and the Romans placed a high value on the prepuce (Hodges, 2001). Owing to this, the Roman emperor passed several stringent laws such as the death penalty for male circumcision (Schultheiss, 1998). Consequently, the Jews were forced to hide their genitalia or restore their prepuce through stretching it with some instruments (Brandes & McAninch, 1999; Schultheiss, 1998). Later in the Hellenic period, about 140 C.E., the Jews modified the circumcision practice by stripping much foreskin and it became impossible to conceal a circumcised penis (Schultheiss, 1998). This became a scar of identity and they would easily appear different from the uncircumcised Greek. Though male circumcision is perceived as a universal acceptable practice among the Jews, the Reformed Jews question the necessity of

male circumcision (Hoffman, 1996). Reformed Judaism made circumcision practise optional and it no longer defined a male Jew. Full Jewish status could be attained through birth and any child born of a Jewish mother is a Jew, whether circumcised or not (Hoffman, 1996).

Nevertheless, Jews have maintained a tradition of circumcising babies on the eighth day of life. On the other hand, prophet Mohammed recommended circumcision on the seventh day, however, Muslims can circumcise at any age, especially for uncircumcised people who join Islam at a later age (Rizvi, Naqvi, Hussain, & Hasan, 1999). Age at circumcision varies by family, region and country. For example, in Turkey, Muslim boys are circumcised between the eighth day and puberty (Ozdemir, 1997), while in Zimbabwe amongst the Varemba who are believed to be Muslims, circumcision is done after puberty as a rite of passage to manhood (Maposa, 2011). However, the ultimate goal of the government is to introduce male circumcision among males aged 15-49 across all ethnics as an effective HIV prevention programme. There is no doubt that the youth/young men stand to benefit more from male circumcision since the epidemic remains highest among the youth. There are relatively few scholarly articles on factors influencing male circumcision and willingness to circumcise among men/youth aged 15-35 in Southern Africa.

There seem to be no consensus about the origins of male circumcision. This lends credence to the fact that the practice of male circumcision perhaps was developing simultaneously at different places and times. The impact and influence of migration cannot be ruled out as one of the mechanisms/avenues through which the practice spread across the world. For example, as Muslims and Jews migrated across the Middle East, Southern Europe and North Africa so did male circumcision practices (Doyle, 2005). With the world becoming a global village the spread and acceptability of male circumcision is expected to be high.

Another source of controversy emanates from the exact time of male circumcision 'medicalisation'. What is more fascinating is how doctors became involved in performing the male circumcision surgical operation, which was in Biblical times performed by women and later priests at home (Allan, 1989). Indeed the change took place between mid-19th to early 20th century. It coincided with the quest for surgical cures which were being explored at that time (Lynch & Pryor cited in (Dunsmuir & Gordon, 1999). As a result, male circumcision was alleged to cure a wide array of diseases and conditions. Some posit that male

circumcision was seen as a panacea for any incurable diseases (Howe, Svoboda, & Hodges, 2005).

For example, it is indicated that male circumcision among American medical professionals was an effective cure for masturbation, headache, insanity, epilepsy, paralysis, rectal prolapsed hydrocephalus and clubfoot (Hodges (1997) cited in Fleiss, Hodges, & Van Howe, 1998). Despite all the diseases documented, once perceived to be cured through male circumcision, there were no scientific studies to determine the efficacy of male circumcision. Some scholars have asserted that it all turned out to be a clear plain medical mistake (Rennie, Muula, & Westreich, 2007). In recent times, empirical evidence shows that circumcision can partially prevent female to male HIV transmission by 60% (Auvert et al., 2005; Bailey et al., 2007; Gray et al., 2007b). Despite this empirical evidence available, uptake of male circumcision for HIV prevention and STIs has been far below the targeted numbers in Eastern and Southern Africa (WHO, 2014). The current state of affairs in these countries requires empirical based research as to why few men are coming in for circumcision.

Despite Voluntary Medical Male Circumcision being recommended by WHO and UNAIDS, it has received a fair share of criticism and raised a lot of arguments on its efficacy, feasibility, acceptability, affordability as a preventive measure for HIV infection. Contemporary opponents of male circumcision (Boyle & Hill, 2011; Garenne, 2008; Green, McAlliste, Peterson, & Travis, 2008) do not perceive male circumcision as a panacea to HIV prevention. A study using data from several demographic surveys showed a contradictory association between male circumcision and HIV prevalence (Mishara, Hong, & Gu, 2009). For example, among the seven countries, Burkina Faso, Côted'Ivoire, Ethiopia, Ghana, India, Kenya and Uganda, the HIV prevalence rate was higher among men who were not circumcised. In seven of the countries namely: Cameroon, Haiti, Lesotho, Rwanda, Malawi, Tanzania and Zimbabwe, the HIV prevalence rate was higher among circumcised men. However, Demographic and Health Surveys results on the association between circumcision and HIV status have been criticised for assuming a linear relationship between circumcision status and HIV infection (Parkhurst, 2010). The mixed results mentioned above create an environment where young men's attitudes towards male circumcision might be affected negatively. This raises some disbelief that male circumcision can partially prevent HIV. This has implications for the adoption of male circumcision.

Male circumcision for medical and hygienic reasons has become popular in Canada, Australia, USA and South Korea in recent years. This has given rise to routine infant circumcision not related to a specific religion or cultural group (Bonner, 2001), commonly done to prevent urinary tract infections amongst infancy (Wiswell & Roscelli, 1986). Not at any given time has male circumcision been accepted without controversy. For instance, in Britain male circumcision was said to cause complications and death hence, it was medically unnecessary and non-beneficial (Gairdner, 1949). Therefore, the British National Health Service removed non-therapeutic neonatal from the schedules covered by health insurance. Twenty years later, in the United States of America, it was also noted that male circumcision had no therapeutic benefit (Preston, 1970). Indeed, these events resulted in the decline of the incidence of neonatal circumcision in both countries to date.

2.3 Male circumcision

In the world, it is estimated that 30% of males aged 15 years and over are circumcised. Of these, more than two-thirds (69%) are Muslim and living mainly in Asia, the Middle East and North Africa, while 0.8% are Jews and 13% are non-Muslim and non-Jewish men living in the United States of America (WHO/UNAIDS, 2007). Although Muslim men are concentrated in these regions, they are also dotted all over the world. For instance, Angola, Australia, Canada, Democratic Republic of Congo, Ethiopia, Ghana, Kenya, Madagascar, Nigeria, Republic of Korea, South Africa, Uganda, United Kingdom, United States and Tanzania practice male circumcision (WHO/UNAIDS, 2007).

2.4 Male circumcision in sub- Saharan Africa

There is a significant body of evidence showing that medical male circumcision offers a wide range of health benefits. In Africa there is historical evidence to suggest that ritualistic circumcision has been a general practice among the Bantu speaking people, who make up the largest linguistic group (Marck, 1997). Male circumcision has been in existence for more than 5000 years among several ethnic groups in West Africa (Moses et al., 1990). Male circumcision is mainly associated with rite of passage from childhood to manhood (Deacon & Thomson, 2012; Marck, 1997).

Male circumcision is common in most African countries. West and North African countries have higher prevalence of male circumcision than Southern African countries and it is almost universal in both West and North Africa (WHO/UNAIDS, 2007). However, the contextual

meaning and practice of male circumcision varies across countries and communities. For example, in Lesotho, 'circumcision' means being culturally initiated with little or without cutting of any foreskin in the traditional passage of age rituals (WHO/UNAIDS, 2007). A qualitative study in rural KwaZulu-Natal revealed that partial circumcision practice (*ukugweda*) is favoured by the Zulu more than the Xhosa (Sithole, Mbhele, van Rooyen, Khumalo-Sakutukwa, & Richter, 2009). A similar practice was also revealed in a qualitative study in rural Zimbabwe among the Shona in Mutoko (Khumalo-Sakutukwa et al., 2013). In both studies, no foreskin is removed but, the elastic band under the penis is cut to allow free movement of the foreskin. Research up to this point has indicated that there are many forms of circumcision being practiced by different ethnic groups in different countries, which were ear marked by WHO/UNAIDS to introduce male circumcision to prevent HIV. What current researchers have failed to reveal is whether people have knowledge about the current form of circumcision (Voluntary Medication Male Circumcision) and how perceptions are likely to be formed among communities that previously did not practice any form of circumcision.

Traditional Male Circumcision (TMC) has been practiced in sub-Saharan Africa since pre-colonial times and in many ethnic groups for ritual purposes. Male circumcision is a ritualistic process, for example, among most ethnic groups in Southern Africa. Circumcision is viewed by some ethnic groups as scars of identity, initiation to manhood, evidence of bravery, removal of feminine part and transfer of fertility to the next generation (Crowley & Kesner, 1990; Silverman, 2004).

Indeed, traditional male circumcision has been condemned by health experts because it is not safe and does not remove as much of the foreskin as medical circumcision (Peltzer, Nqeketo, Petros, & Kanta, 2008). Traditional male circumcision is argued not to offer the same protective effect as medical circumcision since the remaining foreskin can become a point of entry for the HIV virus (Szabo & Short, 2000).

Traditionally, male circumcision often occurred outside the hospital setting in sub-Saharan Africa (Wilcken, Keil, & Dick, 2010), where no records are kept on the number of initiates and data on male circumcision are marred by unreliable self-report information (Hewett, Haberland, Apicella, & Mensch, 2012; Westercamp, Agot, Ndinya-Achola, & Bailey, 2012). This is due to variations in the form of circumcision, what it means and how it is done across different groups (Doyle, 2005). There seems to be a paradigm shift from Traditional Medical

Circumcision to Voluntary Medical Male Circumcision (VMMC) in sub-Saharan Africa, because it was recommended by the WHO and UNAIDS.

To synthesise the practice of male circumcision, the WHO and the UNAIDS came up with a universal manual for male circumcision under local anaesthesia and operational guidelines in scaling up MC in sub-Saharan Africa (WHO/UNAIDS, 2008). The manual provided a definition and standardised form of male circumcision procedures, which has helped consolidate the varying definitions and practices of male circumcision. Countries in sub-Saharan Africa and especially southern Africa have adopted and massively rolled out programmes to get men circumcised. Even though male circumcision has been recommended by the WHO and UNAIDS, cultural and religious beliefs will continue to be a challenge to the scaling-up of Voluntary Medical Male Circumcision (Deacon & Thomson, 2012). Hence, there is the need for research on how factors such as religion and cultural beliefs among former non-circumcising communities can influence perceptions and myths surrounding male circumcision uptake and willingness to circumcise to prevent HIV.

In Southern Africa, the prevalence of adult male circumcision is rather low and it is estimated to be around 15% in the following countries: Zimbabwe, Zambia and Swaziland, while it is between 21% to 80% in Malawi, Botswana, South Africa, Lesotho, Mozambique, Angola and Madagascar (WHO/UNAIDS, 2007). Coincidentally, these countries form what Caldwell & Caldwell, (1995) termed the 'AIDS Belt' which is generally characterised by low circumcision rates and high HIV rates. In contrast, North Africa and West Africa regions are traditionally linked with high circumcision rates and low HIV rates.

Owing to this relationship, circumcision status and HIV have been explored through observational studies (Cameron et al., 1989; Gray et al., 2000) and ecological studies (Drain et al., 2006; Moses et al., 1990). These studies fail to account for confounding factors, which might explain the differences in HIV prevalence and circumcision status, hence encouraging further studies. Actually, further doubts were eliminated about the protective effects of MC by the three Randomized Controlled Trials (RTCs) in Kenya, South Africa, and Uganda (Auvert et al., 2005; Bailey et al., 2007; Gray et al., 2007a), which found that male circumcision partially protected HIV transmission from females to males by 60%.

In fact, MC uptake has been slower in Southern Africa. For instance, the latest WHO/UNAIDS report indicates cumulative male circumcision figures up to 2010 since the scale-up started in 2008 was at 555,202 male circumcisions performed (WHO/UNAIDS, 2011). This figure only translates to less than 2.7% of 80% male circumcisions, which was earmarked to be attained by targeting men aged 15-49 by 2015 in 14 priority countries of eastern and southern Africa (WHO/UNAIDS, 2011). However, achieving the target of circumcising 80% of all men aged 15-49 years in all these countries has its own challenges. So far in a sub-regional consultation which was held in Arusha, Tanzania, several countries reported facing challenges such as health systems failing to match demand and supply, lack of proper skills to convey correct messages about partial protectiveness of MC, weak monitoring and evaluation systems (WHO/UNAIDS, 2010).

2.5 Male circumcision in Zimbabwe

Male circumcision prevalence can be linked to religion and ethnicity. Some ethnic groups in Zimbabwe such as the Xhosa, VaRemba, Chewa, Shangani and Tonga practice traditional circumcision. Historically, the Xhosa, Tonga, Venda and the Shangani practiced male circumcision as part of initiation rites to manhood (MOHCW, 2009). These ethnic groups represent a relatively small proportion of the Zimbabwean total population. Indeed male circumcision is not common among the dominant Shona and Ndebele ethnic groups of Zimbabwe.

In addition, male circumcision was historically perceived by whites as a cultural or traditional act that is backward and not necessary after colonization of Zimbabwe (Maposa, 2011). Zimbabweans who do not practice male circumcision have socially stigmatized it (Khumalo-Sakutukwa et al., 2013). Colonisation and urbanisation have contributed to the cultural erosion of many African traditional practices, including male circumcision because of their push for western cultures. Furthermore, some historians believe that the European missionaries and colonial administrators stopped male circumcision practices in some parts of Southern Zimbabwe, Botswana and Malawi (Peltzer et al., 2008). Communities who traditionally practised male circumcision were until recently, discouraged from doing so. There was fear that male circumcision fuelled the spread of HIV through the sharing of unsterilized knives (Gwandure, 2011). Such a shift in ‘policy’ may have discouraged the uptake of male circumcision even among the former traditionally circumcising groups. The non-traditional circumcising ethnic groups might become sceptical about the male

circumcision practice although the program was endorsed by WHO/UNAIDS because it is considered to be clean and safe from transmitting HIV infections. Studies that explore misconceptions about male circumcision are essential since all Voluntary Medical Male Circumcision operations are performed at public hospitals under health professionals.

Male circumcision was kept as a secret among the traditionally male circumcising ethnic groups. A further understanding of male circumcision groups is hindered by the elusiveness and peculiarity on how they operate (Mavhu et al., 2012; Sibanda, 2013a). For instance, the Shangani community is such a closed society to outsiders that even Shangani academics and policy makers are not at liberty to disclose any information which pertains to their cultural circumcision practice (Sibanda, 2013a). This affects the assimilation of male circumcision practises among the non-circumcising ethnic groups in Zimbabwe. However, in some countries male circumcision has been easily adopted by non-traditionally circumcising groups. For instance, in Northern Tanzania, there have been rapid increases in the uptake of male circumcision in non-traditionally circumcising settings because of intermixing of the different cultures, religions and socio-economic groups (Nnko, Washija, Urassa, & Boerma, 2001).

2.6 Knowledge about male circumcision

Male circumcision uptake in sub-Saharan Africa varies across countries and within countries. These variations in circumcision uptake are influenced by the levels of knowledge, attitudes and beliefs about male circumcision practices, especially among non-traditionally circumcising communities. The level of knowledge about male circumcision can either positively or negatively influence men's attitudes towards circumcision. In a review of acceptability and feasibility of male circumcision, it was noted that the median proportion of uncircumcised men willing to undergo the surgical procedure was 65% (range 29-87%), 66% of women wanted their partners to be circumcised (range 47-79 %) while 71% (50-90%) of men and 81% (70-90%) of women were willing to have their sons circumcised (Westercamp & Bailey, 2007). The study focused on thirteen studies from nine countries in sub-Saharan Africa, including Zimbabwe (Westercamp & Bailey, 2007). These male circumcision acceptability studies were all conducted before the WHO/UNAIDS (2007) endorsed male circumcision to be part of HIV prevention strategies. These studies were done as from 1991 to 2003. The factors which were identified in all the studies which influenced the uptake of MC were before the WHO/UNAIDS (2007) endorsed MC. No single country during that

period had incorporated MC to be part of the HIV prevention strategy. However, studies that assess acceptability of male circumcision among specific age group and region after the launch and roll-out of male circumcision for HIV prevention programme are encouraged (Andersson & Cockcroft, 2012).

In the review by Westercamp and Bailey (2007), the influence of the differences in acceptability could be attributed to how the questions were posed and the context of the study. For instance, Botswana recorded one of the highest acceptability levels. The respondents had two sessions of interviews and after an information session it recorded one of the highest acceptability levels (Kebaabetswe et al., 2003). However, the study which was reviewed in Zimbabwe was not representative of men in Zimbabwe since it targeted men attending beer halls (Halperin, Fritz, McFarland, & Woelk, 2005). The men who participated in the study were conveniently sampled from the beer hall. The study was done before WHO/UNAIDS endorsed male circumcision to be part of the HIV prevention strategies. Additionally, Halperin and colleagues' (2005) study sample size was too small to draw general conclusions about acceptability. Furthermore, given that their study was qualitative in nature, it lacked the quantitative assessment thus making it difficult for one to determine the statistical relationship among factors. Hence, there is the need fill this gap in Zimbabwe by assessing acceptability of male circumcision in different contexts including urban areas during the scaling-up of male circumcision programme. The results of this study fill up the knowledge gap with regards to HIV prevention and male circumcision among young men in urban areas using a mixed method research approach, which covers the pitfalls of using either qualitative or quantitative research method approaches.

Indeed, acceptability does not translate into being knowledgeable about male circumcision. For example, about 30% of circumcised men and 18% uncircumcised men in Westonia, South Africa believed that circumcised men could safely have sex with multiple partners (Lagarde, Dirk, Puren, Reathe, & Bertran, 2003). Also, a study in the rural areas of Zimbabwe found that 75% of men who reported being HIV positive were willing to be circumcised, even though according to the policy HIV positive men are not supposed to be circumcised. On the other hand, 52% of those who reported being HIV negative were willing to circumcise (Mavhu et al., 2011).

Even though the efficacy of male circumcision has been demonstrated in ecological and observational studies, often the circumcision of HIV positive men has been questioned and so far no conclusive research has been done. WHO/UNAIDS (2007) does not recommend the circumcision of HIV positive men because there is currently insufficient evidence of individual or public health benefits to recommend such a practice. This might bring out the issue of subtle stigmatization and violation of human rights principles and HIV positive men might turn to traditional circumcision; yet it is heavily criticized for the likelihood of transmitting the HIV virus through sharing unsterilised knives (Gwandure, 2011).

There appears to be some idea of what male circumcision is among men. For example, participants in a focus group discussion in Tanzania were able to define circumcision and they mentioned that MC may prevent HIV and STIs, increased virility, sexual pleasure and hygiene as the major motivation to circumcise (Plotkin et al., 2013; Tarimo et al., 2012). However, in a qualitative study done among the Mutoko (a non-circumcising community) in Zimbabwe, the study revealed that participants could not conceptualise 'circumcision'. The study participants perceived circumcised men to be abnormal (Khumalo-Sakutukwa et al., 2013).

Studies have shown the health benefits of male circumcision but the poor understanding and limitations of male circumcision have been documented in recent studies. For example, the majority of men believed that circumcision almost offer full protection from contracting HIV (Andersson & Cockcroft, 2012). Similarly, in Papua New Guinea men who had undergone VMMC felt they could have sex with a HIV positive woman after misunderstanding the information that male circumcision conferred partial protection against HIV infection (Kelly et al., 2012). Studies have shown, men with low knowledge of health benefits in rural Kwa Zulu–Natal, South Africa were least willing to circumcise (Scott, Weiss, & Viljoen, 2005).

Studies in Zimbabwe reveal low levels of knowledge about male circumcision. For instance, a study by (Mavhu et al., 2012) found that only 38% of men and 25% of women were aware that male circumcision had health benefits which included partially preventing HIV infection. In the same study, men were only willing to be circumcised if they had high knowledge about male circumcision. A qualitative study conducted in Harare revealed that 43% reported to have heard about the positive health benefits of male circumcision, 69% mentioned that male circumcision reduced the risk of STIs and only 6 men mentioned the protective effect of MC

to HIV infection (Halperin et al., 2005). These findings concur with another qualitative study in Masvingo district of Zimbabwe which found that 60% of the respondents were not sure whether or not MC prevents the spread of HIV, 27% knew about MC's protectiveness and 50% feared the procedure among the non-traditionally circumcising group (Phillip, Dominic, & Achievement, 2012).

In the male circumcision literature, men have mentioned other factors besides using circumcision to prevent men from contracting STI's and HIV. A cross-sectional study in rural Uganda, identified religion as the major reason for circumcision, followed by hygiene and culture for uptake of male circumcision by both uncircumcised and circumcised men (Wilcken et al., 2010). In the same study uncircumcised men considered enhanced sexual pleasure more significantly in determining willingness to circumcise, while the demand for circumcision in Johannesburg, South Africa, was motivated by condom avoidance among whites, however, male circumcision to avoid condom use was not a major facilitator among blacks and coloureds (Bridges, Selck, Gray, McIntyre, & Martinson, 2011). Since Knowledge informs individuals, in this study, it is hypothesised that respondents with more knowledge about male circumcision will be more willing to circumcise than those with less knowledge of male circumcision. There is little agreement on the level of knowledge about male circumcision in different settings. It is often assumed that being knowledgeable about male circumcision generates demand but few studies have been conducted to investigate these important dynamics in male circumcision.

2.7 Attitudes towards male circumcision

In non-traditionally circumcising communities, the attitudes individuals have towards male circumcision can greatly influence their willingness to circumcise. People with a favourable attitude towards male circumcision would most likely be circumcised compared to those who have unfavourable attitudes. Specifically, people with favourable attitudes would be receptive to the procedure. For example, participants in a focus group discussion in Tanzania who had positive attitudes towards male circumcision were more willing to circumcise and this was also a result of a combination of reasons such as peer pressure, perceptions that women preferred circumcised men than uncircumcised, disease prevention and cleanliness. In spite of this, partner infidelity during post-surgical abstinence, loss of income and the shame of circumcising at an advanced age were mentioned as the perceived major barriers to Voluntary

Medical Male Circumcision uptake in both studies held in Tanzania (Plotkin et al., 2013; Tarimo et al., 2012). However, in all these studies respondents held favourable attitudes towards male circumcision. These studies, on attitudes towards male circumcision, were all based on qualitative research method. Thus, they lacked the quantitative assessment making it difficult to determine statistical relationships between attitudes and male circumcision.

A qualitative study done among the Mutoko (a non-circumcising community) in Zimbabwe showed that the participants used derogatory and stigmatising terms such as '*nzvonyo'*, 'red head' or 'small head' to refer to circumcised men (Khumalo-Sakutukwa et al., 2013). In contrary, among the Shangani in Zimbabwe, the term '*maxuvuri'* is used to refer to uncircumcised men (Sibanda, 2013a). In addition, among the Xhosa in South Africa uncircumcised men are termed '*ilulwane'* and are further rejected by the family, community, members of the opposite sex and are treated as dogs (Mavundla, Netswera, Toth, Bottoman, & Tenge, 2010). However, in other traditionally circumcising communities circumcised men are regarded in high esteem. For example, a new initiate is regarded as an adult and circumcision is the gateway to sex and girls fall for circumcised men among the Xhosa in South Africa (Vincent, 2008).

Among the Sukuma in North West Tanzania men used '*njilwa'* as a derogatory word for circumcised men. Even though such derogative term is used, male circumcision is now popular among this ethnic group tribe because of intermixing with other ethnic groups who practise circumcision (Nnko et al., 2001). The major reasons cited for the uptake of male circumcision are health, sexual pleasure and religion.

Some scholars on male circumcision argue that male circumcision is not just an ordinary procedure or "just a little snip", whether performed under traditional or medical settings (Aggleton, 2007). In a South African study conducted in a Xhosa community, it was believed that initiates were supposed to stick to a strict dietary plan such as limiting the amount of liquid they drank and soft food they ate as these are believed to cause the circumcised penis to become septic (Vincent, 2008). After the circumcision process the new initiate is regarded as a man with several privileges such as ownership of property, taking part in family courts, having the right to marry, control over uncircumcised men and women in the community (Mavundla et al., 2010; Vincent, 2008). In the same vein, some scholars claim that in some West African countries such as Senegal and Guinea-Bissau, a circumcised man is believed to

be wise, does not get involved in petty crimes, and is privileged to have sex with virgins, while an uncircumcised man is said to transmit a disease similar to HIV called *Pusoonis* (Niang & Boiro, 2007).

Members of a traditionally circumcising ethnic group showed that they had positive attitudes towards male circumcision for biomedical intervention. They supported it to enhance personal hygiene and protective effect against sexually transmitted infections (Mshana et al., 2011). Despite some ethnic groups having their own socio-cultural meaning attached to circumcision a relatively large percentage (8-34%) of the respondents believed that circumcised men can expect sex without a condom (Andersson & Cockcroft, 2012). This attitude has some scholars worried that the chances of sexual risk compensation behaviour after circumcision are likely to be promoted. They argue that circumcised men are likely to fail to negotiate for safe sex and that any significant risk compensation could completely offset any declines in HIV incidence owing to circumcision and could potentially trigger HIV incidence rates higher than the observed incidence in the absence of the MC program (Cassell, Halperin, Shelton, & Stanton, 2006; Gray et al., 2007a)**.**

For instance, women in Malawi mentioned that it was easier for circumcised men to maintain a proper penile hygiene, which also reduced the chances of women contracting STIs such as HIV (Ngalande, Levy, Kapondo, & Bailey, 2006). In addition, male circumcision is said to enhance sexual performance and sexual pleasure in both sexual partners, which can be a motivation for circumcision (George et al., 2014). However, women in Zambia had the opinion that both circumcised and uncircumcised enjoy the same sexual pleasures (Lukobo & Bailey, 2007), while men in the same study believed uncircumcised men were highly sensitive and therefore, ejaculate easily. In another dimension, men in a focus group discussion in North-East Tanzania did not think there were any differences in sexual pleasure experienced by circumcised or uncircumcised males (Mshana et al., 2011). In addition, some scholars believed that circumcision adversely affected the sexual pleasure in many men. For instance, circumcision destroys the sensitive nerves which might bring sexual pleasure in men (Kim & Pang, 2007). Indeed, sexual pleasure is difficult to measure, thus the following are believed to be the main factors which may affect sexual pleasure: age, alcohol consumption, relationship dynamics and underlying health conditions of individuals, sexual feelings between partners and place where they are having sexual relations (WHO, 2009a).

Taken together, these studies suggest that men's perceived sexual pleasure might influence uptake and willingness to circumcise.

Negative beliefs of male circumcision such as causing pain, fear of surgical complications and perceived threats to masculinity may be perceived barriers to the uptake of circumcision (Westercamp & Bailey, 2007). In a Focus Group Discussion in Zimbabwe, fear of HIV testing prior to circumcision, pain, infertility and long waiting period of abstinence after circumcision were mentioned as the major barriers to MC uptake (Hatzold et al., 2014). Previous studies in South Africa, Kenya, Malawi and Zimbabwe where uncircumcised men were asked if they were willing to get circumcised, the studies found positive attitudes towards circumcision (Bailey, Muga, Poulussen, & Abicht, 2002; Halperin et al., 2005; Mattson, Bailey, Muga, Poulussen, & Onyango, 2005; Ngalande et al., 2006).

2.8 Perception of risk to HIV infection and male circumcision

There is a relationship between perception of risk to HIV infection and uptake of circumcision. Convincingly, the results from the studies have found that perception of risk to HIV infection is a predisposition for willingness to circumcise (Keetile & Rakgoasi, 2014;Macintyre et al., 2014). In some cases, men are motivated to undergo male circumcision, largely because they perceive themselves to be at risk of getting infected with HIV. In a qualitative study in Kenya, older men believed that they were at low risk of contracting HIV infection compared to young men who perceived themselves to be at higher risk of HIV infection. Thus, the older men believed that there was no need for them to go for circumcision. The older men indicated that marriage offered some form of protection and married people were less promiscuous than young unmarried men (Macintyre et al., 2014). The older men in this study were not willing to circumcise compared to young unmarried men.

In another study conducted in Thailand in 2010 among 358 men who were uncircumcised, 66.2% of the respondents who were contacted during a 3-month follow up, only 1 (0.3%) participant underwent male circumcision to reduce the risk of HIV acquisition. The major reasons for refusing male circumcision by the other participants included fear of pain and other risks of the surgery, having no time for the surgery and the belief that they were not at risk of contracting HIV (Tieu et al., 2010). In Zimbabwe, low risk perception to HIV infection was noted to be a barrier to male circumcision (Hatzold et al., 2014). In Kenya, a

cultural belief such as "(*kuhurwo mbiro*)'' encourages the initiates to engage in sexual act just after circumcision. "*Kuhurwo mbiro*'' is presumed to clean the soot that gathers around the cooking pot, which means cleaning the penis after circumcision through sexual intercourse poses a great risk of infection among these initiates (Ahlberg, Kimani, & Kirumbi, 1997). Such cultural norms, that encourage risky sexual behaviour by the newly circumcised youth, make them to perceive themselves to be at no risk to HIV infection. Yet, the risk of contracting HIV to their partners during the healing period is great. Hence, UNAIDS/WHO recommends that circumcised men to abstain from sexual intercourse for 6 weeks after going for circumcision.

Poor understanding of the limitations of circumcision could affect accurate assessment of one owns' risk of HIV infection. For instance, in Kisumu, Kenya, 26% of the women and 19% of men agreed that condom use was less necessary now that male circumcision is available (Westercamp et al., 2012). Furthermore, a qualitative study in Zambia found that circumcised men perceived themselves to be a low risk of contracting HIV (Lundsby, Dræbel, & Meyrowitsch, 2012).

Despite the fact that male circumcision has been recommended by WHO and UNAIDS to be one of the HIV prevention strategies, a major concern is whether people understand that circumcision only decreases the risk of infection and should not be used as a 'magic bullet'(Bell, 2015, p. 562). This situation, if not correctly addressed, may create incorrect perceptions of protection; may lead circumcised men to develop a false sense of complete protection; and may lead to an increase in risk behaviours such as a reduction in condom use or increase in number of sexual partners (Riess, Achieng, Otieno, Ndinya-Achola, & Bailey, 2010).

An individual's perceived susceptibility to a disease influences their health seeking behaviour. If they perceive the problem to be threatening to their health and they perceive that the benefits from circumcision are greater than the threats (barriers), they are likely to support male circumcision practice. It is hypothesised in the study that individuals who perceive themselves to be at no risk of HIV infection will not be willing to circumcise or be circumcised compared to those who perceive themselves to be at low or high risk.

Although past research has focused on barriers to circumcision such as pain, culture, lack of knowledge about the health benefits of male circumcision and fear of surgery, little is known on how perception of risk to HIV infection can overall affect uptake and willingness to circumcise. Instead, the bulk of the literature within the Zimbabwe context did not control for the effect of perception of risk to HIV infection (Hatzold et al., 2014; Mavhu et al., 2011; Moyo et al., 2015; Sibanda, 2013b). There is a need for research, which incorporates perception of risk to HIV infection to see how that influence circumcision uptake. This is more pressing because the Zimbabwean government has integrated male circumcision into its health care system as a means of curbing the spread of HIV/AIDS. The Health Belief Model has been advanced to explain why susceptibility or personal risk influence uptake of an intervention. By falling short to pay attention to perception of risk to HIV infection limits the ability to create demand for male circumcision and integrate male circumcision to other existing HIV prevention interventions.

So far, there is little evidence on how background characteristics influence knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection (social variables) among youth in Zimbabwe. Undeniably, some attempts have been made to investigate a number of issues pertaining to male circumcision. However, the limited research that has been carried out has not controlled for knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection (social variables) (Chikutsa & Maharaj, 2015b; Gore, Chiweshe, Mangundu, & Mangundu, 2014; Moyo et al., 2015; Sibanda, 2013b). To understand the underlying factors influencing uptake and willingness to circumcise among youth in Zimbabwe, it is important to assess how these social variables impact on scaling up of male circumcision. Studies in Uganda on male circumcision have found no significant association between age and knowledge about male circumcision among young people and adults in rural areas (Wilcken et al., 2010).

2.9 Background characteristics and male circumcision

Age: As people grow older it is believed that they get exposed to various social and cultural dynamics that shape their views and behaviours. Thus, age can influence men's uptake of circumcision and their willingness to circumcise. It has been demonstrated that age is a significant predictor of circumcision status; in general, older men are more likely to be circumcised than younger men. Hence, the number of circumcised men increase with increase in age (Tram & Bertrand, 2014). Willingness to circumcise is also associated with younger

men (Gasasira et al., 2012). Similarly, other studies have found that younger men were willing to circumcise and none of the participants reported willingness to allow MC in infancy or childhood (Mark et al., 2012). Hence, in the Zimbabwean context, age is likely to influence uptake of circumcision and willingness to circumcise. In the present study, It is expected that younger men (≤ 24 years) will be more willing to circumcise or be circumcised than older men (>24 years) because they are early adopters of change.

Marital status: Women play an important role in their partners' health seeking behaviours. They can influence uptake and willingness to circumcise for their partners. A married man is more likely to be willing to be circumcised because of penile hygiene benefits. Hence, marital status has the potential to influence uptake of male circumcision and willingness to circumcise. A study of thirteen sub-Saharan Africa countries revealed that, in general, women supported the idea that their partners should be circumcised (Westercamp & Bailey, 2007). Studies in Kenya also found that men in union received support for male circumcision from their partners (Lanham, L'Engle, Loolpapit, & Oguma, 2012). In addition, the perception of unmarried men that young girls preferred circumcised men influenced uptake of circumcision and willingness to circumcise (George et al., 2014; Mavundla et al., 2010). However, other studies have found that women show a lack of support for male circumcision (Hatzold et al., 2014). The relationship between marital status and circumcision uptake is also important in showing the influence of significant others in decision making with regards to male circumcision and willingness to circumcise. It is expected in this study that married men will be more willing to circumcise or be circumcised than single or never married men.

Education: Uptake of circumcision and willingness to circumcise can be influenced by education. Education has the potential to expose men to the health benefits of male circumcision. However, studies in other places show mixed relationships between education and male circumcision. While studies in countries like Tanzania show that male circumcision is common among men with higher levels of education (Nnko et al., 2001). Other studies for example in rural Uganda, Lesotho, Malawi and Zimbabwe show that uptake of male circumcision is associated with men with no or low levels of educational attainment (Asiimwe, 2011; Tram & Bertrand, 2014). Even though, the relationship between educational attainment and uptake of male circumcision has been studied, the relationship remains

unclear. In this study, it is expected that respondents who have higher education would be more willing to circumcise or be circumcised than those with primary education.

Religion: In most Eastern and Southern African countries male circumcision is mostly associated with religious beliefs and practices. For instance, studies in these regions show that compared to men of other religious groups, Muslim men are more likely to be circumcised (Tram & Bertrand, 2014; WHO/UNAIDS, 2007). Supporting this finding, studies in Western Tanzania, which is mainly populated by Christians, have found that the prevalence of male circumcision is much lower (Nnko et al., 2001; Wambura et al., 2009). Some Christians are encouraged to take up circumcision to be part of the church members (Mattson et al., 2005; Ndeda, 2011). However, some of the African Independent Churches have church doctrines that are less favourable to the medical approach and this indirectly discourage uptake of circumcision and willingness to circumcise (Chimininge, 2014; Machingura, 2014).Thus, the decision to circumcise or willingness to get circumcised might be influenced by religious identity. The use of conventional medicine is discouraged among Apostolic Sect and Other Christians. However, medical male circumcision is undertaken in hospitals thus they are less likely to be willing to circumcise. In this study, it is hypothesised that respondents who belong to Mainline and Pentecostal churches will be more willing to be circumcised than those who belong to Apostolic Sect and Other Christians.

Ever heard of Voluntary Medical Male Circumcision (VMMC): Exposure to information about health benefits of practices equips people to make informed decisions as to whether to accept it or not. Hence, ever hearing about VMMC, which sought to educate people about the health benefits of MMC, could have positive effects on male circumcision or willingness to circumcise. A population-based survey conducted among 2350 respondents aged 15 to 49 years in rural and urban areas of Zimbabwe revealed that a higher proportion of people had heard of male circumcision as an HIV prevention method, with majority of the respondents citing radio as the main source of information followed by television (Hatzold et al., 2014). In the present study, it is hypothesised that those respondents who have heard about VMMC will be more willing to be circumcised than those have not heard of it.

Approval of HIV Voluntary Counselling and Testing prior to male circumcision: Male circumcision services are designed to be part of comprehensive HIV prevention strategies, which includes Voluntary Counselling and Testing (VCT) prior to circumcision and STI

screening. Circumcision of HIV positive men is not recommended in view of the increased risk of passing HIV infection to female partners during the healing stage of the operation (MOHCW, 2009). This is in line with WHO/UNAIDS recommendation that an HIV test be done before performing medical circumcision (WHO, 2007). In Zimbabwe, an HIV status is a requirement for undergoing circumcision. Studies have shown that potential Voluntary Medical Male Circumcision clients opt not to be tested prior to being circumcised even though it is a requirement (Hatzold et al., 2014). Other studies show that participants feared HIV testing prior to circumcision because they felt they were being forced to take the HIV test (George et al., 2014; Skolnik, Tsui, Ashengo, Kikaya, & Lukobo-Durrel, 2014). Even though there is increasing knowledge about HIV/AIDS in Zimbabwe, HIV remains highly stigmatised. Hence, few men will be willing to undergo Voluntary Counselling and Testing before male circumcision. In this study, it hypothesised that respondents who approve of Voluntary Counselling and Testing (VCT) prior circumcision will be more willing to circumcise than those who disapprove of it.

Ethnicity: Male circumcision prevalence is correlated to ethnicity in most countries in sub-Saharan Africa. For example, studies in South Africa have shown that circumcision is highly prevalent among certain ethnic groups such as the Xhosa, Pedi and Venda (Garenne, 2008). In Malawi, the Yao reported higher circumcision rates than the national average (Tram & Bertrand, 2014). Circumcision appears to be part of the traditions of certain ethnic groups and thus probably influence the uptake of male circumcision and willingness to circumcise. In the present study, we hypothesise that respondents who belong to the Shona ethnic group will be less willing to be circumcised than other ethnic group.

Wealth status: Wealth status can influence access to information on male circumcision. Men in higher wealth status are more likely to be exposed to various sources of information about male circumcision thus are likely to be willing to circumcise or be circumcised than men in low wealth status. In addition, they are more likely to afford transport costs to the nearest health institution in view of the fact that male circumcision is offered for free in most government hospitals in Zimbabwe. This can have a positive effect on uptake of male circumcision and willingness to circumcise. Studies across Eastern and Southern African countries found that wealth is a significant predictor of uptake of male circumcision. Overall, men in higher wealth quintiles were found to be more likely to be circumcised, for instance, in Kenya, Namibia and Rwanda (Tram & Bertrand, 2014). Similarly, in Uganda men who

belonged to the middle and higher wealth statuses were more likely to be willing to circumcise than those from the lowest wealth status. However, a study in Lesotho observed that men in low quintiles were more likely to be circumcised (Tram & Bertrand, 2014). In this study, it is hypothesised that respondents who belong to higher wealth quintiles will be more willing to be circumcised than those who belong to low quintiles.

Employment status: Research has shown that men who are employed are less likely to be willing to circumcise (Agot et al., 2007; Herman-Roloff, Otieno, Agot, Ndinya-Achola, & Bailey, 2011; Herman-Roloff et al., 2011; Obure, Nyambedha, Oindo, & Kodero, 2009; Obure et al., 2009). These findings from these studies are significant in that they demonstrate that employment status can be a hindrance to willingness to circumcise. The present study hypothesises that respondents who are unemployed will be more willing to circumcise or be circumcised than the employed.

2.10 Theoretical perspectives

2.10.1 Introduction

This section presents the theoretical perspectives that underpin the present study. The present study employs the Health Belief Model (HBM), the Theory of Reasoned Action and Theory of Planned Behaviour to guide the study.

2.10.2 The Health Belief Model

The Health Belief Model (HBM) is one of the earliest social psychological theories developed in the 1950s to explain health behaviour (Hochbaum, Rosenstock and Kegel (Janz & Becker, 1984). It was developed in response to the failure of free tuberculosis (TB) health screening program. Since then, it has been adapted to explain both long and short term health behaviours; including risky sexual behaviours and the transmission of HIV/AIDS (Asare, Sharma, Bernard, Rojas-Guyler, & Wang, 2013). With the advent of male circumcision the HBM has been used to explain behavioural intentions and attitudes towards male circumcision in non-circumcising communities (Ramaprasad, Lang, & Sessa, 2014).

The HBM is a psychological model that attempts to explain and predict behaviours by focusing on the individual's socio-demographic characteristics, attitudes and beliefs in the effectiveness of the recommended health behaviour. Four perceptions serve as the main construct of the HBM model; the perceived seriousness or severity of a disease, the perceived susceptibility or personal risk, the perceived benefits in adopting a healthier behaviour and the perceived barriers in adopting a new behaviour (Rosenstock, Strecher, & Becker, 1994) (See Figure 2.1).

In the context of male circumcision, the decision to undertake male circumcision and especially as a preventive measure (against HIV) is likely to be dependent on personal beliefs or perceptions about the disease (perceived seriousness of the disease). Regarding perceived susceptibility or personal risk, men who perceive themselves to be at low risk to contract HIV are likely to adopt a laid-back attitude towards adopting male circumcision as an HIV preventive measure (Taylor-Gooby & Zinn, 2006). Indeed, if an individual perceives himself to be susceptible to a disease, which has serious consequences, and that an effective solution exists, he will see it as a threat and would therefore take precautions to prevent it (Fishbein & Ajzen, 2010). With respect to perceived benefits in adopting a healthy behaviour, men will

assess the health benefits of male circumcision before undertaking the procedure. It is only when perceived benefits of male circumcisions are greater than perceived costs of male circumcision that an individual will be willing to take up male circumcision.

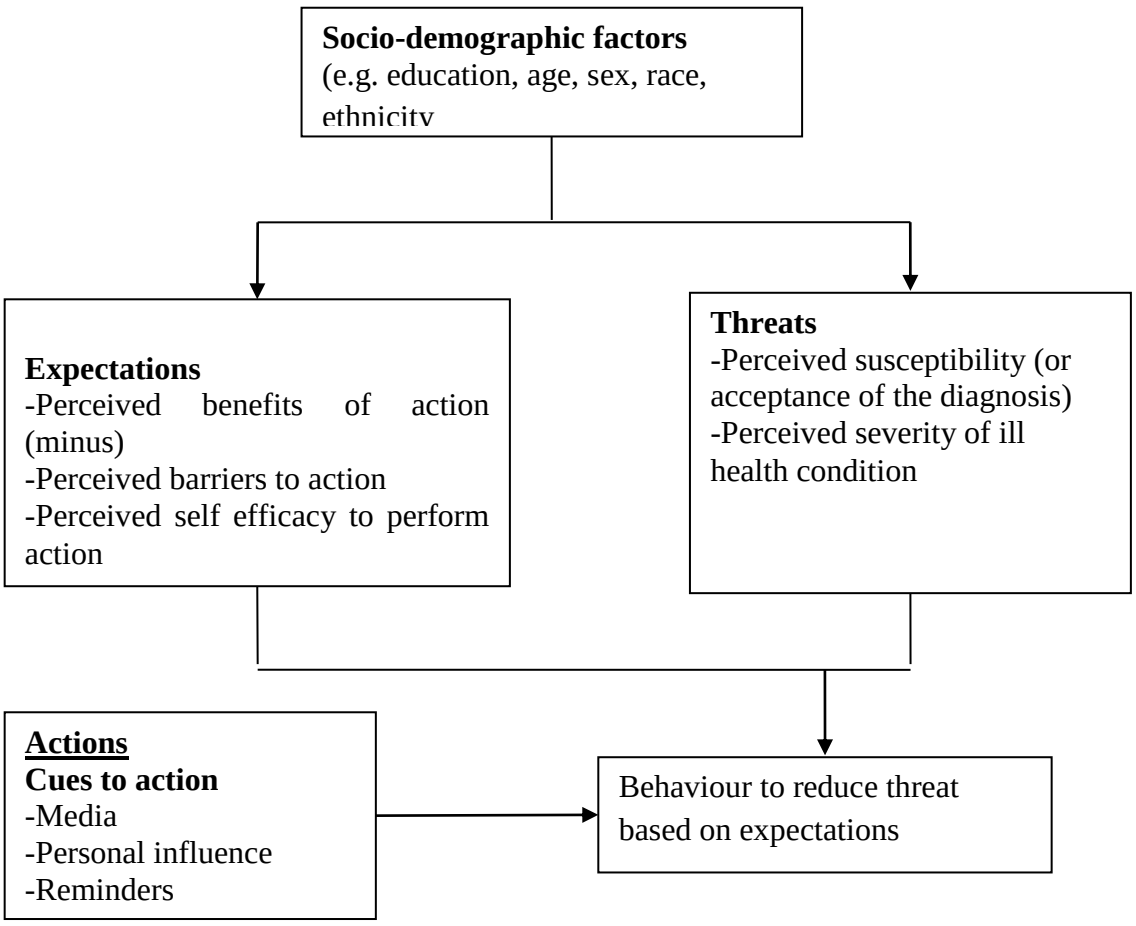
With regard to the perceived barriers in adopting a new behaviour, fear of pain during the circumcision procedure, surgical complications, cost of procedure and stigma would be the perceived barriers (George et al., 2014). The trade-off between perceived costs and benefits is determined by demographic (age, sex, ethnicity/race), socio-psychological (social class, peers, religion) and structural (knowledge, publicity) factors that affect an individual's perceptions and indirectly influence health-related behaviour.

In recent years, other constructs have been added to the HBM model. One such construct is self-efficacy. Self-efficacy denotes that individual behaviours are shaped on the behavioural settings, the danger or benefits driven from such change or adoption of such behaviour. In short how much effort they expend, and how long they will persist in the face of obstacles and aversive experiences will determine their action. The stronger the perceived self-efficacy or the assumed benefits, the more active the coping effort. Those who persist in subjectively threatening activities will eventually eliminate their inhibitions through corrective experience. While on one hand, those who avoid what they fear, or, who cease their coping efforts prematurely, will retain their self-debilitating expectations and defensive behaviour (Bandura & Adams, 1977).

In the context of this study, self-efficacy is an individual's confidence in successfully undergoing a circumcision surgical procedure after overcoming the fears associated with the surgical procedure as well as considering the perceived benefits to outweigh the perceived costs. Self-efficacy in most cases is heavily influenced by individuals evaluating their previous mastered experiences, witnessing other people successfully completing a task, getting the verbal encouragement from other people who are important to them (Bandura, 1977). In the context of uptake of male circumcision and willingness to circumcise, the decision to circumcise could depend on overcoming HIV testing which is a prerequisite for someone to take up circumcision. The schematic presentation of the HBM is shown in figure 2.1.

Several studies have used the HBM in predicting behaviour on uptake of health interventions. The model has been applied to university students' nutrition beliefs (Kim, Ahn, & No, 2012), cervical cancer screening perceptions (Sauvageau, Duval, Gilca, Lavoie, & Ouakki, 2007), to understand poor contraceptive use (Hall, 2012) and condom use among sex workers (Zhao et al., 2012). In addition, the model's health behaviour predictive power has been validated on healthy eating behaviour study (Orji, Vassileva, & Mandryk, 2012). It has also been used successfully in designing health interventions (Kharrazi, Faiola, & Defazio, 2009). In Africa, HBM has been applied to studies of HIV testing and risky behaviour change among single youths in Nigeria (Oyekale & Oyekale, 2010). Indeed, other studies have employed the HBM in examining the prevalence of conditional willingness to circumcise and factors associated with anticipated risk compensation due to MC among clients of female sex workers (CFSW) in China (Wang, Lau, & Gu, 2012). Hence, HBM comes in handy to examine the predictors of male circumcision and willingness to circumcise.

Figure 2. 1 : The schematic representation of HBM



Source: Rosenstock et al., (1994)

However, the model has its own shortcomings in that it assumes rational-decision making, and it does not take into account health behaviours people engage in without weighing the costs and benefits. For instance, some young men may circumcise for social desirability. In addition, the HBM assumes that decision-making to uptake a health intervention is purely an individual decision; yet, in the African context for instance, the family system and peer influence play an important role in shaping attitudes, decision-making and behaviour.

The role of significant others cannot be undermined. In some studies, interpersonal influences from peers, youth groups, parents, spouses are identified as some of the key influences which can negatively or positively influence uptake of circumcision and willingness to circumcise (Obure, Nyambedha, & Oindo, 2011). In addition, it does not account for person's attitudes, beliefs, environmental factors that may positively or negatively support the recommended action (circumcision to prevent HIV and other reproductive health diseases). The model Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) take into account the social norms and the role played by significant others as well as attitudes and environmental factors in influencing willingness to circumcise. Therefore, these factors are explored in the qualitative chapter of the study.

2.10.3 Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB)

The Theory of Reasoned Action contains some aspects of the HBM (Ajzen & Fishbein, 1980). However, what sets the two models apart is that, the TRA model presupposes that the major tenet of behaviour is the intention to perform a specific behaviour. A person's intentions remain the best indicator that the desired behaviour will occur (Fishbein & Ajzen, 2010). Nevertheless, the person's intentions are a function of attitudes towards the behaviour, which refers to the person's positive or negative beliefs with regards to the subject matter. In addition, the person's intentions are influenced by subjective norms. These subjective norms (societal pressures) are beliefs that an individual has on how significant others approve or disapprove of their behaviour (See figure 2.3). Subjective norms consist of normative beliefs. These are important people's opinions and the degree to which individuals are in agreement to these opinions. Therefore, attitudes refer to evaluations by individuals about how good/bad a certain behaviour would be for them. Thus, the TRA takes into account the important role played by intention (a function of attitudes) to perform a specific behaviour, which the HBM does not take in to consideration.

In the literature, TRA model has been used to assess the predictors of intention to circumcise and to identify the effective strategies for increasing uptake of voluntary medical male circumcision. Social influence or subjective norms were found to be significant predictors among uncircumcised young men in Swaziland (Gurman et al., 2015). Social norms should be considered in non-circumcising African models because of the strong influence the society has on the decision-making of young men.

Nevertheless, the TRA has its own shortcomings. It assumes that individuals have full control of their behaviour. However, some behaviours are not fully under the control of individuals and require time, money and other people's co-operation (Ajzen, 1991). Both the TRA and HBM assume that people behave as they intend, behave in ways that allow them to gain favourable outcomes from that behaviour and that they meet the expectations of others who are important to them.

The Theory of Reasoned Action (TRA), assumes that behaviours are under volitional control (Ajzen, 1991). To account for this gap, Ajzen included the variable termed "perceived behavioural control" (Ajzen, 1985). Thus, formulating the Theory of Planned Behaviour (TPB) accounts for behaviours which are outside one's control (see Figure 2.2). The TPB is an extension of the TRA, which assumes that the extent to which one's intentions to perform a particular behaviour could depend to some extent on the amount of control one has over the behaviour. Behavioural control affects intentions as well as behaviour, as indicated in the diagram. Ajzen (1985) argued that a society may have values and norms, which young men are supposed to adhere to when taking up a program.

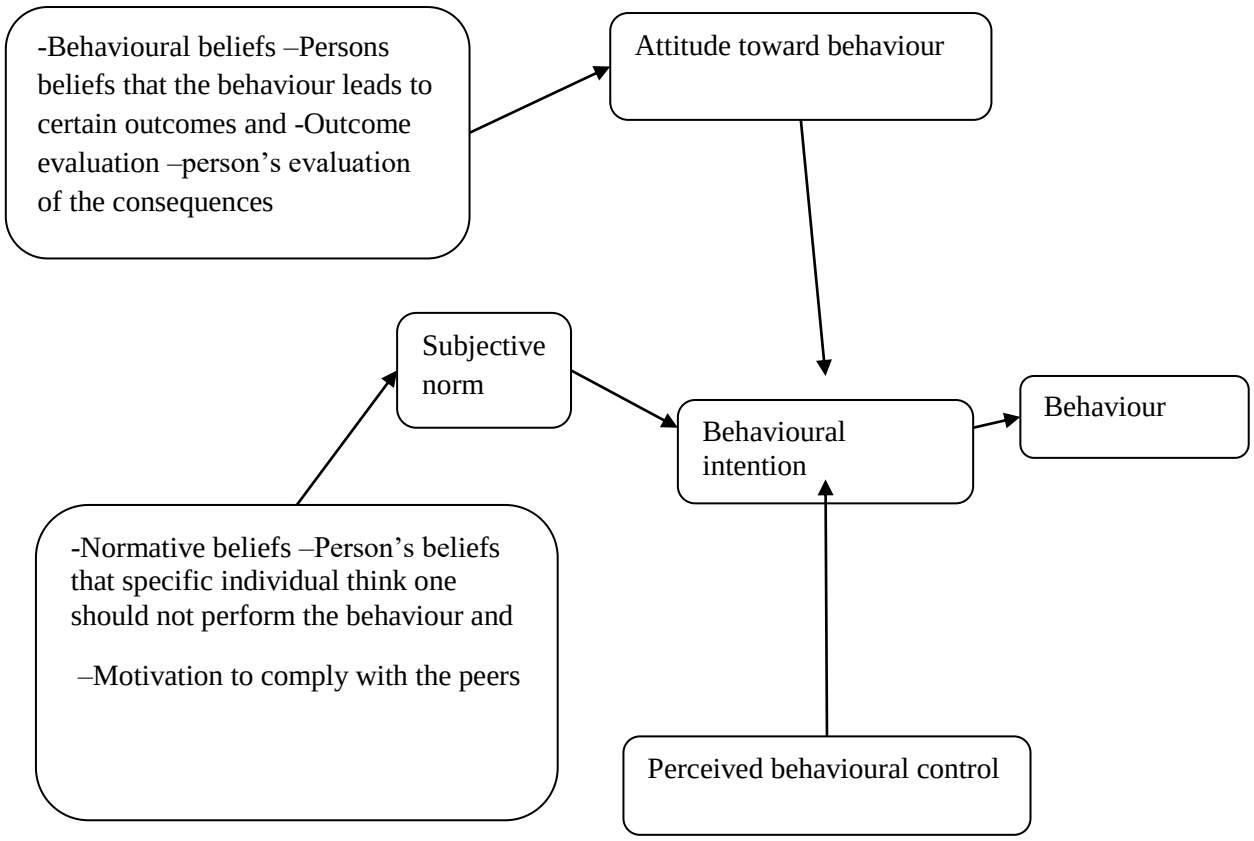
In the context of male circumcision, men may take up circumcision or will be willing to circumcise, if they believe that they are in control over their performance of the behaviour. In most cases, if the intended behaviour change conforms to societal expectations thus behaviour control depends on internal factors such as self-efficacy and external factors such as constraints/barriers to circumcision. However, in real life, some young men still need parental consent in order to undergo circumcision (Jayeoba et al., 2012). Sometimes young men are not at liberty to plan and decide over their reproductive health issues. In this scenario, external factors override self-efficacy. For example, studies have revealed that the legal age of consent of medical procedures can be a potential conflict among men aged 18 years and below. Some parents/guardians disagreed on who should decide whether the

adolescent should be circumcised (Jayeoba et al., 2012). In other instances, married men may also need their partners' approval for circumcision (Skolnik et al., 2014).

On the other hand, accessibility to medical male circumcision such as time constraints hinders uptake and willingness to circumcise. For instance, prospective male circumcision clients who are employed might weigh the opportunity cost in terms of time spent to undertake the operation (Moyo et al., 2015). Taking time off from work to circumcise can be a challenge especially to respondents who are self employed. Studies have shown that men shun circumcision because of perceived long healing time which might lead to loss of income (Herman-Roloff et al., 2011; Saungweme, Matsvai, & Sakuhuni, 2014). Moreover, the male circumcision clients need to do subsequent visits to the hospital during the post operative period and additional productive time is spend during the visits (Jung, 2012). There is growing recognition that that health seeking behaviours are not rooted in solely an individual effort but also external factors such as affordability of the procedure. Although male circumcision is being offered for free in public hospitals in Zimbabwe, studies have shown clients incur indirect burden such as transportation costs to the health institution (Jung, 2012). Because of such cost they might find the operation not easily affordable.

In the environment of intentions to circumcise, individual decisions may perhaps be affected by external factors that transcend an individual. For instance, subjective norms and environmental factors maybe against individual's freewill to circumcise (see Figure 2.3). The importance of these factors cannot be underestimated therefore were explored in the qualitative study.

Figure 2. 2 : Theory of Reasoned Action and Theory of Planned Behaviour



Source: Ajzen (1991); Ajzen & Fishbein, (1980)

The HBM, the Theory of Reasoned Action and Theory of Planned Behaviour together can provide a good foundation to understand health behaviours. Each model contributes in a unique way to inform behaviours, in this case uptake of male circumcision and willingness to circumcise.

2.11 Study's Conceptual Framework

The presented study is guided by the HBM, TRA and TBP theoretical perspectives discussed earlier. The conceptual framework of this study provided an opportunity to have a deeper understanding of various factors that influence uptake of male circumcision and willingness to circumcise (see Figure 2.3).

The framework is meant to explore the interrelationship between background characteristics and social variables (knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection) and uptake of circumcision and willingness to circumcise. Background characteristics as age, education, ethnicity, religion, marital status and employment status, ever heard of Voluntary Medical Male Circumcision (VMMC), ever tested for HIV and approval of Voluntary Counselling and Testing (VCT) prior circumcision operate through the social variables to influence uptake or willingness to circumcise. These factors were examined using the quantitative component of the study, thus using binary regression and multinomial regression models (chapter 4 section 4.3.3.2, chapter 5, section 5.4 and chapter 6, section 6.4).

The background characteristics have a great bearing on whether one will be circumcised or not. For instance, in Zimbabwe, being circumcised is primarily influenced by religion among the Chewa and among some specific minority ethnic such as the Venda, Shangani, Xhosa, VaRemba and Tonga circumcision is done for culturally reasons (MOHCW, 2009). The dotted line shows that ethnicity and religion can also determine the circumcision status directly (see figure 2.3). Circumcision status and willingness to get circumcised is also determined by other factors like education, wealth status, employment status, ever tested for HIV and marital status (WHO/UNAIDS, 2007). For instance, education attainment exposes men to knowledge about male circumcision and influence the uptake or willingness to circumcise. Wealthier men are more exposed to different media; such media may invoke the need to circumcise and willingness to circumcise. This would trigger action because of medical publicity, mass media campaigns, or a reminder from one's physician about male circumcision benefits thus motivating the individual to take actions.

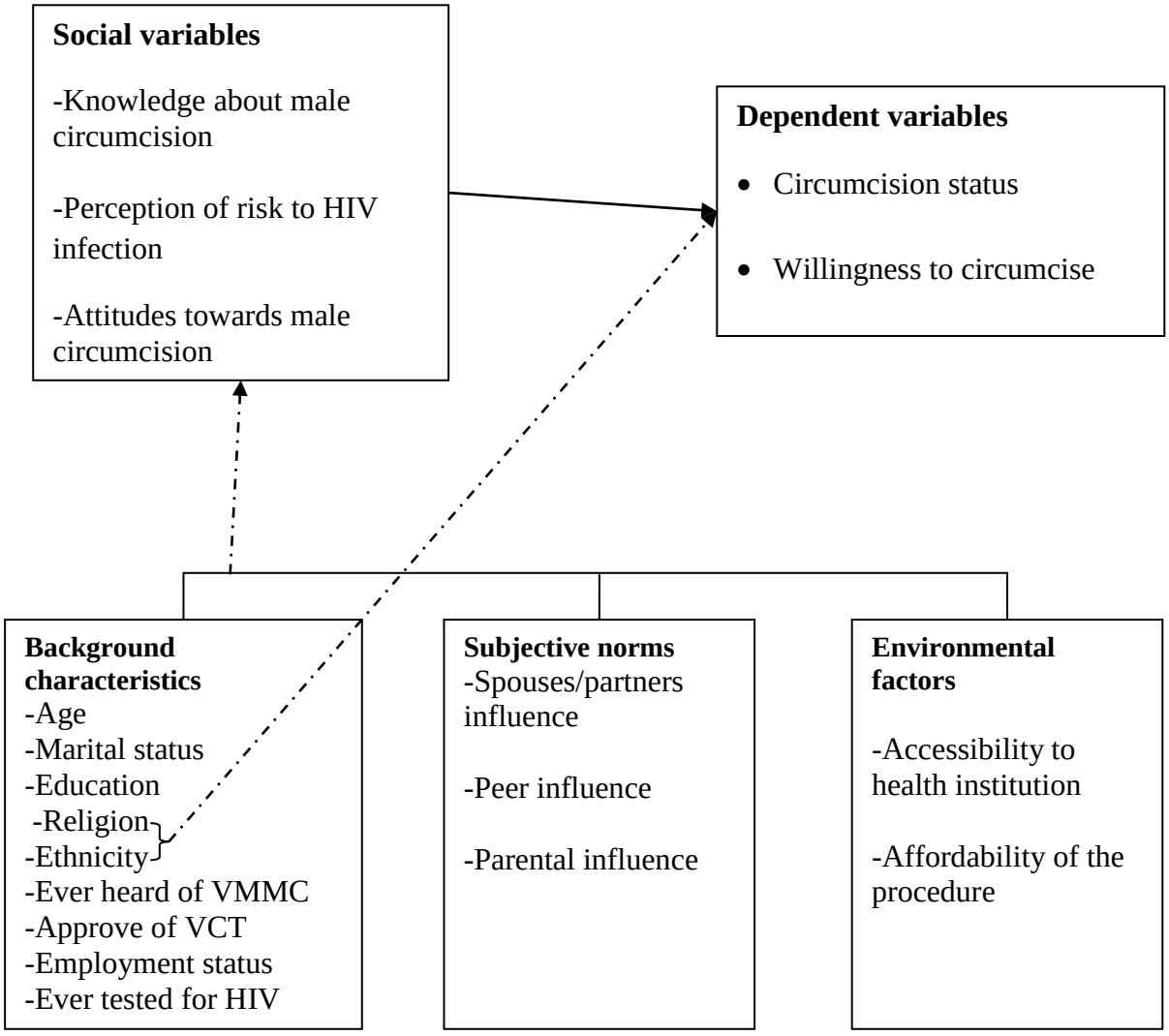
In non-circumcising areas decisions about circumcision would appear to be a matter of individual preference for men. Men who are knowledgeable about male circumcision are more likely to be circumcised and also willing to circumcise. Individuals with favourable attitudes are more likely to take up circumcision. In addition, if one perceives himself to be at high risk of contracting HIV he is more likely to accept male circumcision. Personal risk perception to HIV infection influences health-seeking behaviour and determines whether individuals either accept or deny circumcision. In most studies, uptake of male circumcision is mainly motivated by HIV prevention (Grund & Hennink, 2012; Macintyre et al., 2014; Skolnik et al., 2014;.Westercamp & Bailey, 2007).

The person's intentions remain the best indicator that the desired behaviour will occur. The person's intentions determine the perceptions and beliefs towards male circumcision. However, the person's intentions to circumcise are influenced by subjective norms. These subjective norms are beliefs that individuals have on how significant others approve or disapprove of their behaviour e.g. peer, spouses/partners and parents with regards to decision-making about male circumcision. Studies have shown that subjective norms either facilitate or impede male circumcision acceptability among young uncircumcised men (Nkala & Mbuisa, 2014; Obure et al., 2011).

These subjective norms can either negatively or positively influence individual's knowledge about male circumcision, perception of risk to HIV infection and attitudes towards male circumcision (see figure 2.3). Norms are the social expectations that groups maintain to define appropriate behaviour. The social environment where behaviour takes place is held in high esteem in Africa. For instance, if adolescent-parent/guardian lack knowledge about male circumcision, it can negatively affect the likelihood of supporting their child's circumcision (Jayeoba et al., 2012).

The decision to circumcise can be influenced by other external factors apart from subjective norms such as the availability of circumcision health services, affordability of the procedure and accessibility. Individuals may fail to have full control to their behaviours because of the above challenges. This can be explained by the Theory of Planned Behaviour, (Ajzen, 1991). The subjective norms and environmental factors such as affordability and accessibility of health services and how these influence circumcision and willingness to circumcise were explored in qualitative method of enquiry (see Figure 2.3).

Figure 2. 3 : Conceptual framework of the study: Showing factors related to male circumcision



Source: Author's construct

2.12 Summary

The literature review covered the global overview of male circumcision, male circumcision in sub-Saharan Africa and male circumcision in Zimbabwe. In addition, the review covered social variables and male circumcision and presented the theoretical foundation of the study. Despite national HIV prevalence showing signs of declining (15%), it is still considered relatively high compared to other countries. Thus, an HIV prevention method such as male circumcision is necessary to reduce further the current prevalence of HIV. From the

literature, studies that examine factors influencing male circumcision and willingness to circumcise among youth aged 15-35 are limited in Zimbabwe.

The bulk of the studies are in rural areas (Phillip et al., 2012; Rupfutse et al., 2014), or use single methodological approaches (Moyo et al., 2015; Nkala & Mbuisa, 2014; Tsvere & Pedzisai, 2014), which can be problematic in investigating an issue such as male circumcision. In addition, studies that are conducted in urban areas also eliminate key populations such as the 15-17 year olds (Chikutsa & Maharaj, 2015b; Montaño et al., 2014). The present study will address this gap in the literature by assessing the underlying factors that influence uptake and willingness to circumcise among urban young men (aged 15-35 years). The present study assessed the relationship between social variables (knowledge about male circumcision, attitude towards male circumcision and perception of risk to HIV infection), and male circumcision, as well as willingness to circumcise.

Further, the influence of background characteristics such as age, education, religion, wealth status, marital status, ever heard of VMMC, approval of VCT prior male circumcision and ever tested for HIV, on male circumcision uptake as well as willingness to circumcise among men aged 15-35 were assessed. In addition, the study explores myths, perceptions, barriers among others about male circumcision specific to men aged 15-35 in Harare, Zimbabwe.

CHAPTER 3: METHODS OF STUDY

3.1 Introduction

The previous chapter examined the relevant global, sub-Saharan, and Zimbabwean literature on male circumcision as well as the underpinning theoretical frameworks that guide this study. This present chapter discusses the methods of the study. First, the justification to employ an explanatory sequential mixed methods design involving the use of both quantitative and qualitative approaches. Second, the chapter looks at the sampling techniques, validity, and reliability of the research instruments for both qualitative and quantitative methods. Finally, the chapter covers the methods of data analysis for both the quantitative and qualitative data as well as the study limitations and ethical considerations of the study.

3.2 Research design

3.2.1 The mixed methods approach

Research designs are specific methods of enquiry, which use either quantitative or qualitative approaches. These approaches can either be used together (mixed method) or as standalone approaches. In recent times however, mixed method approaches have gained popularity. A mixed method research design can be defined as a type of research design which combines elements of qualitative and quantitative research approaches from the research questions, research methods, data collection and analysis, or in inferences (Johnson, Onwuegbuzie, & Turner, 2007) for the broad purpose of breadth and depth for understanding and corroboration (Johnson et al., 2007). In the literature, four major types of mixed methods designs (concurrent, embedded, explanatory, and exploratory) have been identified according to the timing of data collection, timing of data analysis and weighting between quantitative and qualitative data (Harrison & Reilly, 2011).

This study utilises the explanatory sequential mixed method research design, where researchers first collect and analyse quantitative data, then build on those results in a qualitative follow up. This seeks to provide a deeper understanding of the quantitative results. Building a strong case can involve either using the quantitative data to select cases or to identify questions that need further explorations in the qualitative phase (Harrison & Reilly, 2011). In this study, the quantitative data provides statistical power or breadth and the qualitative data provides meaning and depth. The quantitative data provides a broad

understanding (predictors) of men's uptake of male circumcision and willingness to circumcise. Specifically, research objective one (*examine how background characteristics influence knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection among youth in Harare)* requires a quantitative method approach in order to identify the key predictors of the social variables (knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection). Research objective two (*to investigate the key factors that influence uptake of male circumcision among men aged 15-35*) looks at the predictors of male circumcision status, which requires a quantitative method approach to determine the factors. Research objective three (*examines factors influencing willingness to circumcision thus focus on key predictors that influence men aged 15-35 willingness to circumcise*) also requires a quantitative method approach. On the other hand, research objective four (*exploring the perceptions and myths surrounding male circumcision that influences male circumcision uptake and willingness to circumcise among men aged 15-35)* requires the use of qualitative methods in order to get a deeper understanding of myths and perceptions surrounding male circumcision among the youth in Harare.

Previous studies within the Zimbabwean context have either quantitatively (Mavhu et al., 2011; Montaño et al., 2014) or qualitatively (Chigondo, 2014; Khumalo-Sakutukwa et al., 2013; Mavhu et al., 2012; Moyo et al., 2015) assessed factors that influence male circumcision and willingness to be circumcised. While the quantitative studies provide general patterns or ideas about male circumcision, they do not give a good account of the nuances surrounding male circumcision in a non-circumcising community (Gasasira et al., 2012; Montaño et al., 2014; Peltzer & Mlambo, 2012). Indeed, both qualitative and quantitative methods have their shortfalls. Therefore, employing a mixed method approach enabled this study to navigate the pitfalls of the individual approaches (Choy, 2014; Tewksbury, 2009). Thorough search in the literature shows a very small number of studies that adopt this approach, in most cases however, in different populations (Hatzold et al., 2014; Rupfutse et al., 2014).

3.2.2 Population and Sample size determination

In the present study, the sample size was determined using the Kish (1965) formula. The Kish takes the form:

$$n = \frac{pqZ^2}{e^2} \qquad 3.1$$

Where *n* is the sample size; Z^2 equals 1.96 at 95% confidence interval; p is the proportion of men taken to be 0.5 in order to have a maximum sample, *e* the margin of error, which in most typical surveys range between 1% and 5%. In the present study it was taken to be 5%. The calculated sampled size was 384 men. However, this formula assumes that data is collected using simple random sampling with a 100% response rate. In this study data was not collected by simple random sampling. In a bid to circumvent the problem of sampling error, the sample was then adjusted by multiplying by the design effect 2. This took into account the extent of the departure from the variance of the simple random sampling (Kish, 1965). Further, the sample was adjusted for non-response rate of 0.9. The total estimated sample size was therefore 853. Table 3.1 shows the actual sampled youth in each Harare districts. However, out of the 853 respondents approached in all four districts of Harare, 69 declined to be interviewed. This gave rise to a non-response of 12.4%. In all, 784 men aged 15-35 were successfully interviewed, yielding a response rate of 92%.

3.2.3 Sampling procedure

A total of 15 Enumeration Areas (EAs) were randomly sampled with probability proportional to the size (PPS) of the district population using the 2012 census estimates. Table 3.1 shows the distribution of males selected per district, EAs, number of households per EA and number of men aged 15-35.

Table 3. 1 : Population distribution of sampled men aged 15-35

District	Total population age 15-35	Sampled EAs	Sampled household	Sampled youth
Harare Rural	22 851	1	44	44
Harare Urban	310 025	11	600	600
Chitungwiza	72 006	2	139	139
Epworth	35 508	1	69	69
Total	440 390	15	853	853

Table 3.1 shows the population distribution of the sample. The sample of the study was drawn using the multi-stage sampling design involving three stages. Using the 2012 Zimbabwe Census as the sampling frame, the first stage involved the selection of Primary Sampling Units (PSUs) which were the Enumeration Areas (EAs). The second stage involved the selection of households[2] (Secondary Sampling Units (SSUs). The selection of households in the Enumeration Area (EA) was done serially. A random starting point was established within the EA and every house was picked along the street. Finally, in the third stage, the individual respondents from the selected households were selected. A list of male household members and their respective ages was drawn after eliciting the information from the head of household or from any knowledgeable adult person found present at time of the survey. This household enumeration ensured that all household members who were aged 15-35 were identified and given an equal chance to participate in the survey. An eligible participant was one *de-facto* male household member aged between 15-35 who was selected using the Kish Grid random selection method (Németh, 2004) (See Kish Grid Appendix E).

When multiple households existed within a single dwelling unit, a Kish grid was used to randomly select a responding household and one member of the selected household was eligible to participate. If the selected household had no eligible respondent, the next household within the same dwelling unit was selected. Thus, a Kish grid was used in the selection of a respondent in a multiple respondent household and multiple dwelling units.

[2] A household was defined as group of people living, eating together and share the same sleeping arrangements (Beaman & Dillon, 2012).

Call backs were arranged for members who were selected but not present at the time of the interview.

3.3 Quantitative Data Collection Procedure

3.3.1 Method of data collection

Male research assistants administered a structured questionnaire through face-to-face interviews. The rationale was to be gender sensitive because male circumcision issues are somewhat personal. The questionnaires used in this survey were developed in English. The questionnaires were translated into Shona and back translated into English to ensure consistency during data collection. Four research assistants were trained to conduct the interviews in either English or Shona. This was done to ensure that the respondents were afforded an opportunity to select the language in which they felt comfortable to be interviewed in. All questionnaires from each research assistant were checked for any inconsistency in the field prior to data capturing.

3.3.2 Questionnaire validity and reliability

Some questions in the questionnaire were drawn from various sources; however, they were modified to fit in the Zimbabwean context. Some of the questions were developed by the researcher to address the research objectives *(See questionnaire in Appendix B)*. The content validity of the questionnaire was established by having it read, corrected and analysed by the researcher's promoter and co-promoter as well as male circumcision experts in Zimbabwe.

Finally, the questionnaire was pilot tested by administering it to 20 men within the same sample age group of 15-35. The major reason was to assess if the questionnaire was understandable, if it elicits intended information and the ability of respondents to answer the questions. The pilot test helped in highlighting areas of confusion and to check for any routing errors. Furthermore, it provided a glimpse of the time it took to complete each questionnaire. The data was captured using CSPro 5.0. However, the data was exported to SPSS version 22 for further analysis. The pilot test sought to test internal consistency of the questionnaire. The Cronbach Alpha was used to establish the internal consistency and reliability of the scales for questions under section D of the questionnaire. The questions under this section explored attitudes towards male circumcision.

3.3.3 Procedure for administration of the research instrument

A formal written consent letter was obtained from the Medical Research Council of Zimbabwe to carry out the research in Harare Province. A formal letter was written to the gatekeepers (local councillors) in the EAs to inform them about the research for security reasons. The letter contained the target population and the objectives of the study. As far as the consent of the respondents was concerned, each questionnaire contained a cover page, which summarised the purpose of the study, pledge of confidentiality, while each respondent was issued with two written consent forms. They were given time to read the consent form, ask questions for clarity and sign if they agreed to take part in the research. The respondent signed the two consent forms, one for him to keep and the other was for filing. *(See Appendix F and G)*. In an event, that the participant selected was a minor (15-17 years - Zimbabwe's Constitution, 2010). Parental/guardian permission was sought through an adolescent assent form signed by the parent/guardian. The parental consent form was in English and Shona. *(See Appendix H and I*).The research assistants first explained the objective of the study to the parent/guardian. In cases where time for consideration was sought, they were afforded the opportunity to do so. However, in the event that they signed the consent form, interviews were done promptly. The adolescent also signed a consent form to take part in the study.

3.4 Measurements

The data collected covered demographic characteristics such as, age, marital status, education, ethnicity, employment status, religion, ever tested for HIV, approval of voluntary counselling and testing (VCT) before undergoing circumcision procedure, wealth status measured in quintiles, exposure to the program on VMMC (ever heard of VMMC). Besides these, information on knowledge about male circumcision, attitudes towards male circumcision and perceptions of risk to HIV infection was measured. In addition, information on circumcision status and willingness to circumcise for those not circumcised at the time of the interviews was collected.

3.4.1 Dependent Variables

The dependent variables used in this study were circumcision status and willingness to circumcise. Each dependent variable was assessed by a different question. First, the respondent's circumcision status was established using a closed ended question "Some men are circumcised, that is, the foreskin is completely removed from the penis, "are you circumcised"? (*Yes/No).* The respondents were shown pictures of both a circumcised and

uncircumcised penis (Hewett, Haberland, et al., 2012) (See *Appendix J)* This improves reporting when an illustration is provided since misreporting correct status emanates from lack of understanding of male circumcision (Hewett, Haberland, et al., 2012). It is worth noting that almost all (89 out of 118) the respondents who reported being circumcised were circumcised in health facilities. Then from the uncircumcised, the second dependent variable was established and assessed using the question "Are you willing to circumcise"(*Yes/No*). Each dependent variable is dichotomous and a value of one was assigned to men who responded in the affirmative (circumcised and willing to be circumcised). On the other hand, a value of zero was assigned to those men who were uncircumcised and unwilling to be circumcised.

3.4.2 Social Variables

In all, the three social variables examined were; knowledge about male circumcision, attitudes towards male circumcision and perceptions of risk to HIV infection.

Knowledge about male circumcision: According to the Collins dictionary (2008), knowledge is the awareness, consciousness or familiarity gained by experience or learning facts or specific information about a subject. In this study, knowledge about male circumcision is the awareness, consciousness or familiarity gained by experience or learning facts or specific information about male circumcision. Knowledge about male circumcision is essential. It helps people to know about the health benefits and limitations about the procedure. Knowledge about male circumcision can influence attitudes about male circumcision and uptake of male circumcision. Knowledge about male circumcision was measured by 10 items measured at the nominal level (see section 3 of the questionnaire in appendix B), question number, 312 - from item i-x). The responses for each item were coded 0 and 1, with 0 indicating that an individual does not have knowledge about that particular question and 1 indicating that an individual had knowledge about the particular question.

A knowledge score was obtained by summing up the individual knowledge questions. The score ranged from 0 to 10. The data failed the linear regression assumptions such as the linearity and normality test. Consequently, the knowledge score was dichotomised. Previous studies have also dichotomised knowledge score in a similar way (Hoffman et al., 2015). In addition, some suggest that dichotomisation of continuous variables makes interpretation

easy, and helps in simplifying analyses or presentation of results (MacCallum, Zhang, Preacher, & Rucker, 2002; Streiner, 2002). The dichotomisation was done at mean score (7.79). The value of '0' to '7.78' indicated that the respondents had low knowledge about male circumcision and score from '7.79' to '10', indicated that the respondents had high knowledge about male circumcision. For modelling purposes, a dummy variable was created with '0' indicated respondents had low knowledge about male circumcision and '1' for those respondents who had high knowledge about male circumcision.

Attitudes towards male circumcision: According to Collins dictionary (2008), attitude is defined as the way a person views something or tends to believe towards it, often in an evaluative way. Thus, attitudes can influence an individual to accept male circumcision. Young men were asked to rate their agreement or disagreement with a series of statements. Attitude towards circumcision was measured using five statements measured on a 5-point Likert scale (see Appendix B, question, 406, i-v). The responses to the attitudes statements ranged from (1) 'Strongly disagree', (2) 'Disagree', (3) 'Neutral', (4) 'Agree' and (5) 'Strongly agree'. Some items were reverse coded if they were un-dimensional for the purposes of statistical analyses. The Cronbach's alpha for attitude towards male circumcision 5-item scale was 0.60. An additive scale was computed by summing up the responses to the five statements. The total attitude score was 25 and mean attitude towards male circumcision score was 15.67. The attitude score was treated the same as the knowledge score. Similarly, the dichotomisation was computed at mean score. Therefore, a score from 0 to 15.67 was assigned =0 (unfavourable attitude towards male circumcision) and score from 16 to 25=1 (favourable attitude towards about male circumcision. Like with knowledge about male circumcision, the dummy for the attitude towards male circumcision index was created with '0' indicated unfavourable attitude towards male circumcision and '1', for respondents with favourable attitude towards male circumcision.

Perception of risk to HIV infection: Perception is defined as the state of being or the process of becoming aware of something in such a way of regarding, understanding or interpreting something (Concise Oxford Dictionary, 11th edition, 2004). In this study, perception of risk to HIV infection is examined to see how it influences uptake of male circumcision and willingness to uptake male circumcision. Perceived susceptibility to HIV infection may influence uptake of male circumcision if individuals perceive their risk of getting HIV to be high or low. Perception of risk to HIV infection was measured as a

categorical variable. The respondents were asked: “Do you think you are at risk of HIV infection”? The responses were “Yes at higher risk” and was assigned 3, “Yes at low risk” and was assigned 2 “No, not at risk at all” was assigned 1 (See section B, question 500).

3.4.3 Background characteristics

Age: Age is treated as a categorical variable because a group of people who belong to the same cohort are perceived to share the same characteristics and experience. The respondents were asked about their age in completed years. However, for the purposes of the present analysis their ages were categorised into 5-year age intervals: 15-19; 20-24; 25-29 and 30-35.

Level of education: Level of education was also treated as a categorical variable and was measured as the highest level of school attended. The following categories: primary, secondary and higher were used in this study.

Current marital status: Current marital status is a categorical variable originally measured by the following categories: married/living together, divorced/separated, widowed and never married/never lived together. These categories were re-coded into three categories at data analysis stage. Only divorced/separated and widowed were collapsed and treated as a category, formerly married. The rationale was they were once married and currently do not have spouses. Hence, in the final marital status variable, the categories were: never married, married/living together and formerly married.

Wealth status: Wealth status is measured by index of household goods, which was re-coded into low, medium and high wealth status. The measure is derived from the presence of eleven household assets within the respondent’s household: generator, solar panel, radio, television, refrigerator, non-mobile telephone, computer, washing machine, car and electricity connected to the dwelling unit.

Employment status: Employment is a categorical variable. During data collection, the following categories were used to classify employment status: full-time, part-time, unemployed and student. However, during data analysis, full-time and part-time employment categories were re-coded into one category because both had a source of income. Similarly, the unemployed and students shared the same economic background and they both did not earn an income. Therefore, they were put in the same category. Because of collapsing the

initial categories, employment status became a dichotomous variable that classified respondents as unemployed or employed.

Religion: Religion is represented as a nominal variable with seven categorises; Traditionalist, Roman Catholic, Protestant, Pentecostal, Apostolic Sect, Other Christians, and None. In the context of this study, these categories were collapsed into five for easy analysis. These are Mainline Christians, Pentecostal, Apostolic sect, Other Christian and "No religion". The Roman Catholics and Protestants for instance, were re-coded into a single category (Mainline Christians), the reason being that Catholics and Protestants are considered to be the mainstream/mainline denominations in Zimbabwe (Tarusarira & Ganiel, 2012). The Other Christian category was made up of Zionist Christians. The third category was the Apostolic Sect. The fourth category was Pentecostal Christians. These Pentecostal Christians have a common historical origin, the Azusa Street Revival in the United States of America (Onyinah, 2007). The last category is "No religion" which includes men who did not profess to any religion and the Traditionalists. The traditionalist and none were re-coded into No religion because the number of respondents who reported were both few in each case.

Ethnic Groups: Ethnic groups are presented as a categorical variable with two categories. Originally, ethnicity was categorised into: Shona, Ndebele, Shangani, Tonga, Venda and Chewa. However, for the purpose of meaningful statistical analysis these categories were re-coded into two (Shona and Other) at data analysis stage. Ethnic groups are almost co-terminus with region in Zimbabwe, although Harare is multi-ethnic in composition.

Ever tested for HIV: Ever tested for HIV is treated as dichotomous variable. Respondents were asked whether they had ever tested for HIV. The answers were "yes" and "no".

Approval of Voluntary Counselling and Testing (VCT) prior to circumcision: The respondents were asked whether they approved of VCT prior circumcision. Approval of VCT is a categorical variable. The responses were "yes" and "no".

Ever heard of Voluntary Medical Male Circumcision (VMMC): The respondents were asked whether they had ever heard of VMMC. The question sought to measure whether the respondent had ever heard of the government programme on VMMC. The responses were measured as a dichotomous variable, "yes" and "no".

3.5 Data management

3.5.1 Data entry

The data was captured using CSPro (Census and Survey Processing System) data entry program version 5.0. Double entry was done to ensure accuracy of the data entry process. Thus two data files were created during double data entries. The two data files captured were used to compare discrepancies between the files and this was used to ensure the quality of data. Descriptive tables were generated and used for exploratory data analysis and also for checking errors. The descriptive tables also helped in checking for inconsistencies. More so, a standard data management protocol was developed to ensure missing and ambiguous values were handled consistently. The data were exported to SPSS (Statistical Package for Social Scientists) Statistics 22.0 for further data analysis.

3.6 Quantitative data analysis

3.6.1 Reliability analysis

The Cronbach's alpha was used to determine internal consistency and reliability of questions that measured attitudes towards male circumcision from (see Appendix B question 406 i-v). Before the Cronbach's alpha test could be determined, all reverse phrased items (attitude section of the questionnaire) were reversed. For example, a score of 5 on a negatively formulated item in this section questionnaire was rescored to 1, a score of 4 to 2, until all 5 scores were reversed. During the pre-test, items that measured attitude towards MC were analysed using the Cronbach's alpha analysis. The alpha value computed was 0.418 for attitudes during pre-test. A complete bigger sample size of 784 men slightly changed the alpha to 0.60 for attitudes towards male circumcision during analysis of the whole data set. The items on attitudes towards male circumcision were considered to represent a good alpha internal consistency if the total alpha value was more than 0.6 (Downing, 2004). A lower acceptable limit of 0.50-0.60 is also suggested by some scholars (Kaplan & Saccuzzo, 1993). Some also indicate that the number of items in a scale influences the Cronbach's alpha (Cortina, 1993; Field, 2009), thus, a large number of variables can make the value of the Cronbach's alpha go up.

3.6.2 Univariate analysis

The univariate analysis involved examining the distribution of mainly the background characteristics such as age, marital status, education, wealth status, employment status, and religion, ethnic group, ever tested for HIV, approve of VCT prior testing, ever heard of

VMMC and circumcision status. Results were presented in the form of frequency distribution. In addition, the distribution of knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection was presented in form of frequency distribution.

3.6.3 Bivariate analysis

The bivariate relationship between the background characteristics and social variables as well as the relationship between the background characteristics and dependent variables (circumcision status and willingness to circumcise) was examined using cross tabulations (Chi-square test).

3.6.4 Multivariate analysis

This study employed multivariate regression models to evaluate the independent contribution of each predictor variable in explaining the variation in the dependent variable, controlling for the effects of other predictor variables in the models. In this study, four binary logistic regression models and multinomial logistic regression model were used to test its central hypotheses.

Multinomial Regression analysis of the effects of background characteristics on perception of risk to HIV

Multinomial Logistic Regression was used to predict the net effect of the predictor variables (background characteristics) on perception of risk to HIV infection. The model allows for a dependent variable with more than two categories, thus, it is used to predict a nominal dependent variable given one or more independent variables. However, it can also be used for variables which are ordinal in nature if the objective is to test for different effects across models, hence, discarding some information about the ordinal nature of the dependent variable (Long, 1997). In addition, each of the binary logit models computed within a multinomial regression is based on different samples. Suppose a dependent variable has *m* categories. One of the categories of the dependent variables is specified as the reference category. In this analysis, no risk to HIV infection was specified as the reference category. The probability of membership in the other categories is compared to the probability of membership in the reference category. This requires the calculation of *m*-1 equations, one for each category relative to the reference category, in order to describe the relationship between

the dependent variable and predictor variables. The multinomial regression equation takes the form:

$$\ln\Omega_{(m|b)}(x) = \ln\frac{\Pr\,(y=m|x)}{\Pr(y=b|x)} = x\beta_{(m|b)} \qquad 3.3$$

Binary Logistic regression

Logistic regression was used to predict the net effect of the predictor variables on willingness to circumcise. This model is often preferred for describing and testing hypothesis about the relationships between a dichotomous outcome variable and one or more categorical or continuous predictor variable (Peng, Lee, & Ingersoll, 2002; Williams, 2009).The logistic regression model predicts the logit, that is, the natural log of the odds of having made one or the other decision. Therefore, the binary logistic regression model was used to predict the probability of willingness to circumcise or not.

According to Kohler & Kreuter (2012), the logit model takes the form:

$$ln\left(\frac{P_i}{1-P_i}\right) = \alpha + \beta_i X_i \qquad 3.4$$

Where:

$ln\left(\frac{P_i}{1-P_i}\right)$- are the log odds that a man 'i' would be willing to circumcise;

X_i – is the vector of explanatory variables and;

β_i– are the coefficients.

Thus, given the above regression equation, the expected probability $\hat{p}$ that *Y=1* for a given value of *X* is calculated as,

$$\hat{p} = \frac{e^{B_0+B_1 X}}{1+e^{B_0+B_1 X}} \qquad 3.5$$

In this study, three binary logistic regression models were estimated to examine predictors of knowledge about male circumcision, predictors of male circumcision and predictors of attitude towards male circumcision. The goodness of fit of each of the binary logistic regression models was assessed using the Hosmer-Lemeshow Goodness of fit test described below.

Binary models goodness of fit test

In the present study, the Hosmer-Lemeshaw goodness of fit was used to assess whether the each binary regression model was correctly specified. The Pearson and Deviance goodness-of-fit measures were used to assess whether the multinomial regression model was correctly specified. In addition, goodness-of-fit is used to test the null hypothesis that the fitted model is correct and has a higher p-value[3]. After fitting the model, an observed number of events and an expected number of events for each profile are obtained.

Hosmer-Lemeshow Goodness of fit test

To assess the overall fit of the estimated model, this study adopted the Hosmer-Lemeshow goodness of-fit (H-L gof). The uniqueness of H-L statistic is that it divides the data into groups. The default number of groups according to Hosmer & Lemeshow (2000) and Kohler & Kreuter (2012) is 10 groups. It compares the frequency values to estimate a chi-square value known as H-L goodness-of-fit test statistic. In addition, the H-L gof statistic and the p-value were used as the basis to examine how well the model describes the observed data. It also tests the null hypothesis, "that there is no difference between observed and expected values". In statistical terms, a lower H-L chi-square value statistic and an insignificant *p* ($p>0.05$) implies less variance in the fitted model, resulting in the acceptance of the null hypothesis. This suggests that there is no significant difference between the observed and predicted values. In such circumstances, this implies that the model fits the data well, at the acceptable level of significance. However, when the H-L chi-square statistic value is significant, it means the model does not fit the data well because the observed and expected values are significantly different. According to Kuss (2002), the Hosmer-Lemeshow test statistic "H" takes the form shown in

[3] A p-values higher than ($p>0.05$) indicates a good fit, then the model passes the test. If the p-value is less than ($p>0.05$) the model is rejected.

$$H = \sum_{k=1}^{K} \frac{(O_k - E_k)^2}{N_k \pi_k (1 - \pi_k)} \qquad 3.6$$

Where: O_k-observed events; E_k-expected events; N_k-observations; π_k - predicted risk for the k^{th} risk decile group; K- is the number of groups.

Pearson and Deviance goodness-of-fit measures

Pearson and Deviance goodness-of-fit measures were used to assess whether the multinomial regression model is correctly specified. In addition, goodness-of-fit is used to test the null hypothesis that the fitted model is correct and has a higher p-value. After fitting the model, we can get an observed number of events and an expected number of events for each profile

3.7 The qualitative component of the study

In addition to the quantitative methodology as outlined above, the study was triangulated by using qualitative methods to complement the quantitative ones. Unlike quantitative research, which requires laid down standardised procedures of sampling participants to ensure generalisability of the findings, qualitative research does not require the sample size to be predetermined. The sample size is determined by the number required to inform fully all important elements of the phenomena being studied (Sargeant, 2012). Therefore, sampling and data collection were done after analysing the quantitative data. Respondents were purposely selected from each of the four districts of Harare and interviews continued until a saturation point was reached (no new concepts emerging from the interviews). In-depth interviews were held with key informants (opinion leaders) and with study population (men aged 15-35 but they were different from those selected for the main quantitative survey). This approach ensured that wide ranges of opinions were obtained.

3.7.1 Selection of participants for the In-depth interviews

Respondents were selected from the study population from contrasting residential areas, whose residents had different combinations of economic and/or cultural capital. These respondents were purposively selected to ensure varied views to be captured. It was noted that there was the need to sample for both heterogeneity (the different social mixes of the four residential areas) and homogeneity (all within Harare and therefore a common heritage is embedded) (Savage et al., 2013). In line with the above, respondents were selected across all Harare districts.

Eight in-depth interviews were conducted in Harare Urban, 6 Epworth, 7 Chitungwiza, and 5 Harare Rural. A total of 26 in-depth interviews were conducted with the study population and six in-depth interviews with key informants (opinion leaders) were conducted. The fact that the researcher is a woman meant that she could not be involved given the subject sensitivity of the subject. Therefore, the researcher listened to the audio taped interviews and read transcripts to check for new emerging themes during fieldwork. Hence, the researcher was able to guide the research assistants when necessary. Both the researcher and the research assistants sat and reviewed the interviews as the fieldwork unfolded. This allowed identification of new themes and perspectives which were emerging during fieldwork (Gioia & Corley, 2013).

3.7.2 Qualitative method of data collection

The in-depth interviews targeted men aged 15-35 residing in all the four Harare districts. The respondents for the interviews were conveniently sampled and recruited across Harare urban, Harare rural, Epworth and Chitungwiza. Participants recruited for in-depth interviews were different from those who took part in the quantitative survey. It was meant to reduce bias and captured a wide range of myths and perceptions about male circumcision. Participants were recruited through venue-based procedure. It involved visiting places where men congregated. For example, popular lunchtime restaurants, shopping centres, sport fields, bus and taxi ranks. Screening of participants for legibility and setting up of appointments were done during these meetings. Venue based recruitment offered diversity in the selection of participants instead of recruiting participants from one social network (Grund & Hennink, 2012). Later, the research assistants and selected participants would mutually choose a convenient place to undertake the interviews. This study maintained social stratification diversity by varying locations, socio-economic areas, and social networks used for recruiting.

In-depth interviews with key informants (opinion leaders) were recruited from people with a diversity of background on male circumcision. Information on perceptions, experiences and opinions regarding MC practices was gathered from them. The unique backgrounds of the key informants contributed to different perspectives on MC and reduced biases. Six in-depth interviews with key informants were held. They were done with traditional leaders, religious leaders, youth groups, men's forum group and health care organisations that are currently involved in MC activities. Interviews were scheduled and conducted at key informants' place of convenience. The two interview guides, which were used to collect qualitative data is

included (*See Appendix C and D).* In-depth interviews were used to collect data to complement statistical findings and critically explore the myths and perceptions surrounding male circumcision.

3.7.3 Training of field assistants and fieldwork

Two field assistants with prior experience in administering qualitative questionnaires were recruited. A two-day training session was held for the assistants. The aim of the training was to highlight the study objectives, reinforcing ethical issues, emphasis on recruiting participants, and pre-testing of the questionnaire. Research assistants were exposed to the translated instrument from English to Shona and back-translation for them to check for accuracy and maintain consistency.

Two semi-structured questionnaires for in-depth interviews with study population and key informants were pilot tested amongst two key informants and four in-depth interviews respectively following the two days training sessions. After the pilot test and the refining of the research tools, fieldwork commenced. Interviews were conducted in the language that participants felt comfortable conversing in, that is either English or Shona. Each interviewer kept field notes. These notes were used to keep track of emerging issues that arose during the interviews. Interviews were audio taped with prior permission from each respondent. Recordings were later transcribed and translated into English.

3.7.4 Qualitative data analysis

Analysis of the qualitative data was done using a computer aided analysis tool (Atlas.ti version 7) to come out with the themes which arose from the coding. Thematic analysis was used to analyse the data from the in-depth interviews. Six thematic analysis steps were used in this study to produce the themes (Braun & Clarke, 2006). These steps involved first, familiarising of data through "repeated reading" of the data in order to search for meaningful patterns. Second, the initial codes were generated which were later used to form the units of analysis (themes). Third, when all the data was coded and collated, with several codes indentified throughout the data set. Data was reanalysed at a broader level rather than treating the codes as separates entities but themes (Graneheim & Lundman, 2004). This was done by sorting the initial codes into potential themes by thorough reading and considering how different codes were to be integrated into an overarching theme. The fourth stage involved

setting up of potential themes and a further refinement of the themes identified. This was done by thoroughly reading of the collated extracts from each identified theme.

The researcher further checked for any overlapping or similar categories from the extracted themes. This analytical process is informed by theoretical ideas which are developed during the research (Burnard, Gill, Stewart, Treasure, & Chadwick, 2008). The themes are interpreted with a view of providing explanations for the findings. However, the interpretation is influenced by the original research findings as well as by themes that have emerged from the study (Pope, Ziebland, & Mays, 2000). Finally, a qualitative chapter was produced which included data extracts to support the themes within the data. In order to maintain rigour at the analysis stage, the researcher checked for representativeness of the key features, which emerged across other interviews. Furthermore, to ensure quality results, the emerging themes were cross-examined with the literature and consultation with other people familiar with the research topic. The data collected through in-depth interviews revolved around the following themes:

Knowledge about the role of VMMC in HIV prevention

- Under this theme, information on whether people have factual information on how male circumcision prevents HIV emerged.

Perceptions and myths surrounding foreskin disposal

- Respondents perceived that foreskins were sacred body part and highly valuable. As a result, they were in demand by Satanists, witchcrafts and fishermen as well as in the manufacturing of dried mince meat.

Perceived fear of HIV testing

- Respondents gave reasons why HIV testing prior circumcision was perceived to be barrier to willingness to circumcise.

Perception of risk to HIV infection

- Here respondents described the relationship between perception of risk to HIV infection and circumcision.

Perceived adverse effects

- Under this theme, respondents described the perceived rather than actual personal pain experienced because of male circumcision.

Cultural and religious perception towards male circumcision

- In this case, respondents explained how cultural and religious identity operated as barriers to willingness to circumcise**.**

Male circumcision and men's sexuality

- Respondents described how male circumcision was perceived to likely affect their sexual pleasure.
- Respondents described how the six-week post circumcision healing period was directly interfering with their sexual enjoyment.

Interpersonal influences

- Peer groups, partners/spouses and parents were identified as key influences in decision-making and acceptance of male circumcision practise.
- Several positive and negative aspects of social and interpersonal factors were described by the respondents and how they created opportunities and constraints among those willing to circumcise.

Environmental factors

- Respondents described how distance from the health services was perceived to be a barrier and transport cost the health centres.
- Some associated public health institutions with long queues, lack of privacy and irate health personal.

3.8 Data management

Data quality was maintained by following rigorous measures. The overarching concept of rigour is trustworthiness. Trustworthiness of quality content analysis is elucidated by using terms such as credibility, dependability, conformability, transferability, and authenticity (Elizabeth et al., 2014). In this study, trustworthiness was embedded at all phases of the

procedures from sampling size, sampling of participants, use of multiple data sources, use of interview guides, analysis procedures and resolving differences in team findings. Every part of the qualitative procedures was explicitly explained in detail. These processes were not executed in isolation but dove tailed into producing the final findings. Each analytical chapter will present a detailed discussion of these study findings along with implications, recommendations, and conclusion.

3.9 Study limitations

The findings from this study should be viewed within the context of the following limitations. The results of the study cannot be generalised to the general population of Zimbabwe because the sample came from only one out of 10 Provinces. In addition, the data on male circumcision status were based on self-reported information. No medical examination was done to establish the circumcision status of the respondents. Therefore, some respondents could have lied about their circumcision status to conform to societal expectations.

As a female researcher, I could not take part in interviewing the respondents because it is culturally unacceptable to interview men on sexuality issues. Even though male research assistants were used to circumvent this challenge, one could not guarantee that the problem of social desirability on the part of the participants could be avoided. Given the sensitivity of the issues covered by the survey the absolute objectivity of the responses could not be guaranteed despite assurances of anonymity and confidentiality.

Another limitation is that the study did not include women. Studies have shown that in non-circumcising societies women play an influential role in decision making on male circumcision uptake by either convincing or dissuading their partners (Lanham et al., 2012; Obure et al., 2011). However, the exclusion of women was done deliberately to enable the researchers to capture and have a deeper understanding of perceptions about male circumcision within the same sex. However, the voices of women were heard indirectly through the life experiences of men.

3.10 Ethical considerations

The proposal was submitted to the Higher Degrees Committee of the Faculty of Human and Social Science at North-West University, South Africa, where it was cleared and approved. Ethical approval was also obtained from the Medical Research Council of Zimbabwe. These

ethical approvals are attached (Appendix Ai and Appendix Aii). Finally, a written and verbal informed consent was obtained from all the participants after we had explained the objectives of the research to them. The participants were assured of confidentiality, voluntary participation and were allowed to withdraw from the study at any time without suffering any consequences.

3.11 Summary

In this chapter, the research approach (mixed method approach), study sample, data collection, and measurements of study variables. In addition, the data analysis procedure was presented as well as study limitations and ethical consideration. The mixed methodological approach adopted in the present study will help uncover a broader and deeper understanding of male circumcision uptake among males (aged 15-35 years) in Harare, Zimbabwe. The results and discussion of the first objective of the present study are presented in the next chapter.

CHAPTER 4: ANALYSIS OF THE EFFECTS OF BACKGROUND CHARACTERISTICS ON SOCIAL VARIABLES

4.1 Introduction

The previous chapter examined the methods of data collection and analysis used in the study. The present chapter investigates effects of background characteristics on knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection. First, the chapter provides the univariate descriptions of the background characteristics used in this study using descriptive statistics such as frequencies. Second, this chapter examines the relationship between the background variables and the social variables using Chi-square test of independence. The Chi-square test is used to assess whether there were significant associations between each of the background characteristics and knowledge about male circumcision, attitudes towards male circumcision, and perception of risk to HIV infection (social variables). Third, the chapter examines the net effect of each of the background variables on knowledge about male circumcision and attitudes towards male circumcision using binary logistic regression model. The rationale for using the binary logistic regression model was that both knowledge about male circumcision and attitudes towards male circumcision were dichotomous variables. The effect of background characteristics on perception of risk to HIV infection was examined by estimating a multinomial logistic regression model. This model was used to assess perception of risk to HIV because the variable had more than two categories. Detailed account of the data and methods of analysis are in chapter 3.

Chapter utilises data that was collected among 784 men aged 15-35 in Harare, Zimbabwe, for the purposes of this study. As indicated earlier, 853 respondents were sampled in all four districts of Harare, however, 69 declined to be interviewed. This gave rise to 784 men aged 15-35 who were successfully interviewed. To examine the effects of background characteristics on knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection, the following background characteristics were considered; age, marital status, education, wealth, employment status, religion, ethnic group, ever tested for HIV, approve of VCT prior circumcision and ever heard of VMMC.

4.2 Background characteristics of the sample

Table 4.1 presents the frequency distribution of background characteristics of the respondents. Less than one-quarter (23.2%) of the respondents were aged 15-19; almost a third (29.2%) of the respondents were aged 20-24, nearly a quarter (24.5%) was aged 25-29 while 23.1% aged 30-35. With regards to marital status, 63.1% had never married, whilst 33.5% were either married or living together. In terms of educational attainment, a majority of the respondents had secondary education (78.8%) while 16.5% had attained a higher level of education; slightly less than 5% had primary education. More than fifty percent (56%) of the respondents were employed as opposed to 44% who were not employed, 35,2% belonged to the low wealth status while a third 33.2% belonged to higher wealth status

With regard to religion, a little more than a third (33.8%) of the respondents were Mainline Christians while nearly a quarter (24.6%) were Pentecostal Christians. About 22 percent of the respondents belonged to the Apostolic Sect; about 11 percent professed to be in the Other Christian group and close to 10 percent had no religion. More than a third (34.7%) of the respondents had never tested for HIV prior to the survey. The majority (90.6%) of the respondents belonged to the Shona ethnic group and less than a tenth (9.4%) belonged to other ethnic groups. Seventy-eight percent of the respondents did not approve of HIV testing before circumcision, while almost all of the respondents (96.6%) had been exposed to VMMC. However, the majority (84.9%) of the respondents were not circumcised.

Table 4. 1 : Background characteristics of the study respondents (n=784)

Variable	Frequency	Percent
Age group		
15-19	182	23.2
20-24	229	29.2
25-29	192	24.5
30-35	181	23.1
Marital status		
Married/Living together	263	33.5
Formerly Married	26	3.3
Never Married	495	63.1
Education		
Primary	37	4.7
Secondary	617	78.8
Higher	129	16.5
Wealth Status		
Low	276	35.2
Medium	248	31.6
Higher	260	33.2
Employment status		
Employed	439	56.0
Unemployed	345	44.0
Religion		
Mainline	265	33.8
Pentecostal	193	24.6
Apostolic Sect	169	21.6
Other Christian	83	10.6
No religion	74	9.4
Ethnic group		
Shona	710	90.6
Ndebele	23	9.4
Ever tested for HIV		
Yes	512	65.3
No	272	34.7
Approval of VCT prior to MC		
Yes	171	21.8
No	613	78.2
Ever heard of VMMC		
Yes	759	96.8
No	25	3.2
Circumcision status		
Yes	118	15.1
No	666	84.9

Source: Fieldwork, 2014

4.3 Percent distribution of knowledge about male circumcision

4.3.1 Knowledge about male circumcision

Table 4.2 presents the frequency distribution of the respondent's knowledge about male circumcision. It is evident from the table that more than 9 in 10 respondents (94.1%) knew that it is still recommended that a circumcised man should still use a condom, 92.7% of the respondents knew that male circumcision should be integrated with other HIV prevention methods. Over ninety percent (92.7%) indicated that penile hygiene could be improved through circumcision. About eight in ten (81.4%) of the respondents indicated that an HIV negative woman can contract HIV after having unprotected sex with an HIV positive uncircumcised man. Reversing the question, about the same percentage (83.7%) indicated that a negative circumcised man could contract HIV after having unprotected sex with an HIV positive woman.

A little more than eight in ten (82.2%) of the respondents indicated that male circumcision was not as good as an invisible condom. On the other hand, 82.7% indicated that male circumcision reduces the chances of HIV transmission. With regards to male circumcision reducing penile cancer, 53.2% indicated that male circumcision reduces penile cancer. More than nine in ten (92.7%) indicated that male circumcision improves penile hygiene and about the same proportion (92.6%) indicated that male circumcision alone can prevent HIV infection. Less than half (46.8%) of the respondents were aware that it was recommended that circumcised men should abstain from sexual intercourse for a minimum period of six weeks following a circumcision. More than two thirds (66.5%) of the respondents were able to define male circumcision.

Table 4. 2 : Proportion of respondents who answered correctly to the knowledge questions about circumcision (n=784)

Variable	Yes	Percent
What do you understand by the term male circumcision?	521	66.5
Is circumcision as good as an 'invisible condom' in preventing HIV transmission?	648	82.2
Does male circumcision reduce the chances of transmitting HIV	668	82.7
Does Male circumcision reduce penile cancer?	417	53.2
Are Circumcised men still recommended to use condoms?	738	94.1
Does male circumcision improve penile hygiene?	727	92.7
Can male circumcision alone prevent HIV contraction?	726	92.6
Can an HIV negative woman contract HIV/STI after having unprotected sex with a HIV positive circumcised man?	638	81.4
Can an HIV negative circumcised man contract HIV/STI after having unprotected sex with a HIV positive woman?	656	83.7
How long should a circumcised man abstain from sexual intercourse after going for circumcision?	367	46.8

Source: Fieldwork, 2014

4.3.1.1 Background characteristics by knowledge about male circumcision

Table 4.3 shows the bivariate relationship between the background characteristics and knowledge about male circumcision. The results showed that there was a significant association between age and knowledge about male circumcision. Knowledge about male circumcision increases with increasing age. A higher percentage of respondents who were aged 30-35 had high knowledge about male circumcision (88.4%) compared to those who were aged 25-29, 20-24 and 15-19 (80.2%, 79.9% and 71.4% respectively), ($p<0.001$).

With respect to education, a higher proportion of respondents who had attained higher level of education had high knowledge about male circumcision (93.8%) compared to those who had attained primary and secondary education (77.7% and 70.3%, respectively). Thus, knowledge about male circumcision increased with increase in educational attainment.

With respect to wealth status, knowledge about male circumcision increased with increase in knowledge about male circumcision. High knowledge about male circumcision was more common in respondents in the high wealth status group (83.8%) compared to those who belonged to medium and low wealth status (80.6% and 75.7%, respectively). With respect to employment status, 26.6% of respondents who indicated that they were unemployed had low knowledge about male circumcision as compared to 16.4% of respondents who indicated that they were employed.

Eighty six percent of the respondents who had ever tested for HIV had high knowledge about male circumcision compared to 68.8% of those who had never tested for HIV. Finally, 80.8% of the respondents who reported that they had ever heard about Voluntary Medication Male Circumcision had high knowledge about male circumcision as compared to 56.0% who had never heard of Voluntary Medication Male Circumcision reported high knowledge. However, religion, ethnic and approval of VCT prior male circumcision were found not to be statistically significant at bivariate analyses.

Table 4. 3 : Background characteristics by knowledge about male circumcision

Variable	Low knowledge (%)	High knowledge (%)	χ-value	P-value	Total
Age			16.325	0.001	182
15-19	28.6	71.4			229
20-24	20.1	79.9			192
25-29	19.8	80.2			181
30-35	11.6	88.4			
Marital Status			10.197	0.006	
Married/Living together	13.7	86.3			263
Formerly married	19.2	80.8			26
Never Married	23.4	76.6			495
Education			19.618	0.000	
Primary	29.7	70.3			37
Secondary	22.3	77.7			618
Higher	6.2	93.8			129
Wealth status					
Low	24.3	75.7	5.616	0.060	276
Medium	19.4	80.6			248
High	16.2	83.8			260
Employment status			8.184	0.004	
Employed	16.4	83.6			439
Unemployed	24.6	75.4			345
Religion			4.425	0.352	
Mainline	17.0	83.0			265
Apostolic Sect	21.9	78.1			169
Pentecostal	18.7	81.3			193
Other Religion	25.3	74.7			83
No Religion	24.3	75.7			74
Ethnic group					
Shona	23.0	77.0	0.443	0.506	710
Other	19.7	80.3			74
Ever tested for HIV					
Yes	14.1	85.9	32.765	0.000	759
No	31.3	68.8			25
Approve of VCT prior MC					
Yes	19.3	80.7	0.072	0.788	171
No	20.2	79.8			613
Ever heard of VMMC			9.268	0.002	
Yes	19.2	80.8			759
No	44.0	56.0			25
Total	157	627			784
Percent	20.0	80.0			100

Source: Fieldwork, 2014

4.3.1.2 Predictors of knowledge about male circumcision

Table 4.4 shows the results from logistic regression model examining the influence of background characteristics on knowledge about male circumcision. The Hosmer-Lemeshow Goodness fit test showed that the model fits the data well (p= >0.980).

The results showed that marital status, wealth status, employment, religion, ethnicity, approval of VCT prior to circumcision, perception of risk to HIV infection, knowledge about male circumcision and attitude towards male circumcision were not statistically significant predictors of knowledge about male circumcision among men aged 15-35 years in Harare, Zimbabwe. Age, education, ever tested for HIV, ever heard of VMMC and male circumcision status appeared to be the main predictors of knowledge about male circumcision.

The results concerning age and knowledge about male circumcision showed that men aged 25-29 were significantly less likely to have high knowledge about male circumcision compared to those aged 30-35. The odds of young men aged 25-29 having high knowledge about male circumcision were 42% lower (OR=0.576) compared to those aged 30-35. Even though, young men aged 15-19 (OR=0.697) and 20-24 (OR=0.729) years showed to be less likely to have high knowledge about male circumcision compared to those aged 30-35, it was not statistically significant. Education was significantly related to knowledge about male circumcision. The results showed that, the odds of young men with primary education were lower compared to those with higher education having high knowledge about male circumcision were 78% lower (OR=0.223). In addition, young men who reported having secondary education compared to those with higher education having high knowledge about male circumcision were 71% lower (OR=0.292).

Further, ever tested for HIV was significantly related to knowledge about male circumcision. The odds of young men who reported ever tested for HIV having high knowledge about male circumcision were 93% higher (OR=1.93) compared to those who had never tested for HIV. With respect to ever heard of VMMC, the odds of young men who had ever heard about VMMC compared to those who had never having high knowledge about male circumcision were 250% higher (OR=3.50). In terms of male circumcision status, young men who reported circumcised were more likely (OR=1.78) to have high knowledge about male circumcision compared to those who were uncircumcised, with a 78% higher odds.

Table 4. 4 : Predictors of knowledge about male circumcision

	B	S.E.	Exp(B)
Age			
30-35(R)			
15-19	-0.361	(0.386)	0.697
20-24	-0.316	(0.342)	0.729
25-29	-0.552	(0.321)	0.576+
Marital status			
Never Married (R)			
Married /Living together	0.379	(0.289)	1.461
Formerly married	0.077	(0.552)	1.080
Education			
Higher (R)			
Primary	-1.503	(0.559)	0.223*
Secondary	-1.231	(0.402)	0.292*
Wealth			
High (R)			
Low	-0.209	(0.249)	0.811
Medium	-0.004	(0.248)	0.996
Employment status			
Unemployed (R)			
Employed	0.201	(0.231)	1.223
Religion			
No religion (R)			
Mainline	0.426	(0.342)	1.531
Pentecostal	0.321	(0.359)	1.378
Apostolic sect	0.245	(0.351)	1.277
Other Christian	0.024	(0.399)	1.024
Ethnic group			
Other (R)			
Shona	0.175	(0.316)	1.191
Ever tested for HIV			
No (R)			
Yes	0.660	(0.215)	1.934*
Approve of VCT prior to MC			
Disapprove (R)			
Approve	0.187	(0.233)	1.205
Ever heard of VMMC			
No (R)			
Yes	1.255	(0.465)	3.508*
Perception of risk to HIV infection			
No not at risk at all (R)			
Yes at high risk	-0.085	(0.322)	0.919
Yes at low risk	-0.041	(0.215)	0.960
Attitude toward male circumcision			
Unfavourable attitude (R)			
Favourable attitude	0.177	(0.197)	1.194
Circumcision status			
No (R)			
Yes	0.577	(0.333)	1.782+
Constant	0.511	(0.810)	1.667
Observations	784		
Nagelkerke	0.13.9		
H-L G gof test	0.993		

Source: Fieldwork. 2014

+p<.1. *p<.05. **p<.01

4.3.2 Percent distribution of background characteristics by attitudes towards male circumcision

This section looked at the percent distribution of the background characteristics by attitudes towards male circumcision. In the survey, respondents were asked to rate their level of agreement or disagreement with a series of statements about their attitudes towards male circumcision on a 5 point Likert scale (Table 4.5). The results showed about two fifths (37.0%) of the respondents strongly disagreed that an HIV infected man should be circumcised, 12% of the respondents disagreed while less than ten percent (9.2%) were neutral. A fifth (20.0%) of the respondents was in agreement with the statement, and about the same proportion (21.8%) of the respondents strongly agreed. With respect to promoting male circumcision to minimise cervical cancer in women, about two thirds (64.5%) of the respondents strongly agreed and 21.8% agreed. While less than two percent either strongly disagreed or disagreed, one in ten of the respondents were neutral.

The largest proportion (59.2 %) of the respondents strongly agreed that it is easier to keep clean if circumcised, compared to less than ten percent who either strongly disagreed or disagreed. Slightly above one in ten of the respondents, chose to be neutral and 26.9% strongly agreed. Almost two fifths (37.0%) of the respondents strongly disagreed that uncircumcised men were more likely to contract STIs including HIV, 21.9% were neutral, as compared to 46.3% who strongly agreed. Less than five percent (4.6%) of the respondents either disagreed while 5.0% agreed. Respondents were asked whether the promotion of male circumcision would trigger risky sexual behaviour among circumcised men. A little less than a third (30.9%) of the respondents agreed while a quarter (24.6%) is neutral. Above one-fifth (22.4%) of the respondents strongly disagreed, while one in ten either strongly disagreed or agreed.

Table 4. 5 : Respondents' attitude towards male circumcision (n=784)

Variable	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)
An HIV infected man should be circumcised	290 (37.0)	94 (12.0)	72 (9.2)	171 (21.8)	157(20.0)
Promoting MC minimise cervical cancer in women	12 (1.5)	13 (1.7)	82 (10.5)	171 (21.8)	506 (64.5)
Is it easier to keep clean if circumcised	4 (0.5)	8 (1.0)	97 (12.4)	211 (26.9)	464 (59.2)
Uncircumcised are more likely to contract HIV/STI	29 (37.0)	36 (4.6)	172 (21.9)	23 (5.0)	363 (46.3)
Promoting MC would cause an increase in risk sexual behaviour	98(12.5)	75(9.6)	193 (24.6)	24 (22.4)	242(30.9)

Source: Fieldwork, 2014

4.3.2.1 Background characteristics by attitude towards male circumcision

An attitude towards male circumcision variable was computed by from the Likert scale questions (see detailed description in chapter 3) and examined against background characteristics using Chi-square test. The Chi-square test of independence showed that wealth status, religion, ethnic group and approval of VCT prior VCT were not statistically significant with regard to attitude towards male circumcision.

From Table 4.6, in general, 47.0% youth had a favourable attitude towards male circumcision. With respect to age, having a favourable attitudes towards male circumcision increased with age. Seventy one percent of men aged 15-19 had a favourable attitude towards male circumcision. Eighty percent of those aged 20-24 had a favourable attitude towards male circumcision and it was the same among those aged 25-29 years. The proportion of those with a favourable attitude towards male circumcision further increased from 80% among those aged 20-24 and 25-29 years to 88% among those aged 30-35 years.

Marital status was significantly associated with attitudes towards male circumcision. A favourable attitude towards male circumcision was highest among women who were married/living together (86.3%) and lowest among women had never married (76.6%). The proportion formerly married who had favourable attitude towards male circumcision was 80.8%.

Education was statistically significantly associated with the attitude towards male circumcision. A favourable attitude towards male circumcision increased with increase in level of education. Ninety four percent of young men with a higher level of education had a favourable attitude towards male circumcision and 77.7% of those with secondary education had a favourable attitude towards male circumcision, while 70.3% of those with primary education had a favourable attitude towards male circumcision.

A higher proportion of young men who were employed (83.6%) had favourable attitudes towards male circumcision compared to those who were not employed (75.4%). Among respondents who reported ever tested for HIV, 85.9% had a favourable attitude towards male circumcision, while 68.8% of the respondents who had never tested for HIV had unfavourable attitude towards male circumcision. Finally, ever heard of Voluntary Medical Male Circumcision was significantly associated with an attitude towards male circumcision. Eighty one percent of those who had ever heard of Voluntary Medical Male Circumcision had a favourable attitude towards male circumcision compared to 56.0% of those who have never heard of Voluntary Medical Male Circumcision.

Table 4. 6 : Background characteristics by attitude towards male circumcision

Variable	Unfavourable attitude (%)	Favourable attitude (%)	χ-value	P-value	Total
Age			16.325	0.001	182
15-19	28.6	71.4			229
20-24	20.1	79.9			192
25-29	19.8	80.2			181
30-35	11.6	88.4			
Marital Status			10.197	0.006	
Married/Living together	13.7	86.3			263
Formerly married	19.2	80.8			26
Never Married	23.4	76.6			495
Education			19.618	0.000	
Primary	29.7	70.3			37
Secondary	22.3	77.7			618
Higher	6.2	93.8			129
Wealth status					
Low	24.3	75.7	5.616	0.060	276
Medium	19.4	80.6			248
High	16.2	83.8			260
Employment status			8.184	0.004	
Employed	16.4	83.6			439
Unemployed	24.6	75.4			345
Religion			4.425	0.352	
Mainline	17.0	83.0			265
Apostolic Sect	21.9	78.1			169
Pentecostal	18.7	81.3			193
Other Religion	25.3	74.7			83
No Religion	24.3	75.7			74
Ethnic group					
Shona	23.0	77.0	0.443	0.506	710
Other	19.7	80.3			74
Ever tested for HIV					
Yes	14.1	85.9	32.765	0.000	759
No	31.3	68.8			25
Approve of VCT prior MC					
Yes	19.3	80.7	0.072	0.788	171
No	20.2	79.8			613
Ever heard of VMMC			9.268	0.002	
Yes	19.2	80.8			759
No	44.0	56.0			25
Total	157	627			784
Percent	43.0	47.0			100

Source: Fieldwork, 2014

4.3.2.2 Predictors of attitude towards male circumcision

Table 4.7 shows the effects of the background characteristics on attitude towards male circumcision. From Table 4.7, the H-L gof test indicated that the model fits the data well (p>0.907). The following background characteristics: wealth, religion, ethnic, ever tested for HIV and knowledge about male circumcision did not show a statistically significant association with attitudes toward male circumcision.

Age was significantly related to attitudes towards male circumcision. The results showed that the odds of youth aged 20-24 compared to those aged 30-35 having favourable attitude toward male circumcision was 61% higher (OR=1.61). Even though youth aged 15-19 (OR=1.259) and 25-29 (OR=1.27) both showed more likely to have favourable attitude towards male circumcision compared to those aged 30-35, they were not statistically significant. The odds of youth who reported married/living together compared to those who were never married having favourable attitude towards male circumcision were 44% higher (OR=1.44). However, those who were formerly married were not significantly different from those had never married.

Level of education was significantly related to attitudes towards male circumcision. The results showed that while youth who had primary education were not significantly different from those who had higher education, the odds of those who had secondary education compared to those with higher education having a favourable attitude towards male circumcision was 46% higher (OR=1.45).

Youth who were employed were significantly less likely (OR=0.639) to have a favourable attitude towards male circumcision compared to youth who were not employed. These results indicated that, the odds of employed youth having a favourable attitude towards male circumcision were 37% lower compared to their unemployed counterparts.

With regards to approval of VCT prior circumcision, young men who reported to approve of VCT prior circumcision were significantly more likely (OR=1.72) to have favourable attitude towards male circumcision. In addition, the odds of young men who had ever heard of Voluntary Medical Male Circumcision compared to those who had never heard having favourable attitudes were higher (OR=4.37).

Perception of risk to HIV was a significant predictor of attitudes towards male circumcision among men aged 15-35. More specifically, youth who perceived themselves to be at higher risk of HIV infection were associated with higher odds of having a favourable attitude toward male circumcision (OR=1.53) compared to those who perceived themselves to be at no risk of HIV infection. However, those who perceived themselves to be at low risk of HIV infection were not significantly different from those who perceived themselves to be at no risk of HIV infection at all. Male circumcision status was a significant predictor of attitude towards male circumcision. The odds of circumcised young men having a favourable attitude towards male circumcision were 166% higher (OR=2.66) compared to those who were uncircumcised.

Table 4. 7 : Predictors of attitude towards male circumcision

	B	S.E.	Exp(B)
Age			
30-35(R)			
15-19	0.231	(0.313)	1.259
20-24	0.478	(0.255)	1.612+
25-29	0.241	(0.230)	1.273
Marital status			
Never Married (R)			
Married /Living together	0.367	(0.221)	1.444+
Formerly married	-0.139	(0.447)	0.870
Education			
Higher (R)			
Primary	0.701	(0.433)	2.015
Secondary	0.376	(0.225)	1.457+
Wealth			
High (R)			
Low	0.217	(0.199)	1.242
Medium	0.303	(0.191)	1.353
Employment status			
Unemployed (R)			
Employed	-0.448	(0.192)	0.639*
Religion			
No religion (R)	-0.105	(0.285)	0.900
Mainline	-0.022	(0.299)	0.979
Pentecostal	-0.107	(0.297)	0.899
Apostolic sect	0.248	(0.348)	1.282
Other Christian	0.170	(0.267)	1.185
Ethnicity			
Other (R)			
Shona	0.170	(0.267)	1.185
Ever tested for HIV			
No (R)			
Yes	-0.013	(0.182)	0.987
Approve of VCT prior to MC			
Disapprove (R)			
Approve	0.547	(0.189)	1.729*
Ever heard of VMMC			
No (R)			
Yes	1.476	(0.477)	4.377*
Perception of risk to HIV infection			
No not at risk at all (R)			
Yes at high risk	0.428	(0.263)	1.534**
Yes at low risk	0.148	(0.160)	1.160
Knowledge about male circumcision			
Low knowledge (R)			
High knowledge	0.151	(0.197)	1.163
Circumcision status			
No (R)			
Yes	0.978	(0.238)	2.658*
Constant	-2.247	(0.676)	0.106
Observation	784		
Nagelkerke	0.101		
H-L G gof test	0.907		

Source: Fieldwork. 2014

+p<.1. *p<.05. **p<.01,

4.3.3 Percent distribution of background characteristics by perception of risk to HIV infection

Table 4.8 presents the frequency distribution for respondents' perception of risk to HIV infection. Fifty four percent (54.0%) of the respondents perceived themselves not to be at risk of HIV infection compared to 10.5% who indicated that they were at a higher risk. About a third (35.6%) perceived themselves to be at low risk of HIV infection.

Table 4. 1 : Perception of risk to HIV infection

Perception of risk to HIV infection	Frequency	Percentage
No risk at all	423	54.0
Low risk	279	35.6
High risk	82	10.5
Total	784	100

Source: Fieldwork, 2014

4.3.3.1 Background characteristics by perception of risk to HIV infection

The respondents were asked whether they perceive themselves to be at risk of contracting HIV or not. The results showed that there was a significant association between the background characteristics and perception of risk to HIV infection with the exception of wealth status, religion, and ethnicity, approve of VCT and ever heard of VMMC (Table 4.9). There is an interesting pattern in the relationship between age and perception of risk of HIV infection. Perception of low risk and high risk of HIV infection increased with increase with age. For example, 67.6%, 23.6% and 8.8% of young people aged 15-19 indicated that they were at no risk, low risk and high risk to HIV infection respectively. On the other hand, 44.2%, 42.5% and 13.8% of those aged 30-35 indicated that they were at no risk, low risk and high risk to HIV infection respectively.

With respect to marital status, while about a third (30.8%) of formerly married men indicated that they were at high risk of HIV infection, only 10 percent of never married men and the same proportion of married/living together indicated that they were at high risk of HIV infection. Forty three percent of men in union indicated that they were at a low risk of HIV infection, on the other hand, about the same proportion of never married men (31.9%) and formerly married (30.8%) men indicated that they were at low risk of HIV infection.

There is a positive relationship between education and low risk and high-risk perception of HIV infection. Half (49.6%) of the respondents with higher levels of education indicated that they were at low risk of HIV infection. About a third (32.5%) of respondents with secondary education indicated they were at low risk and close to two fifth (37.8%) of those with primary education indicated that they were at low risk of HIV infection.

There was a significant relationship between employment status and perception of risk to HIV infection (significant at $p<0.001$). Forty-one percent of employed youth perceive themselves to be at low risk (40.8%) and 11.2% perceived themselves to be at high risk to HIV infection. On the other hand, 29% and 9.6% of the unemployed youth perceived themselves to be at a low risk and at a high risk to HIV infection respectively. Similar proportion of respondents who had ever tested for HIV (10.5%) or not (10.3%) indicated that they were at a high risk of HIV infection. Additionally, 34.4% and 10.6% of those who had ever tested for HIV reported that they were at a low risk and at a high risk of HIV infection. With those who had never tested for HIV, 47.3% and 9.5 indicated that they were at a low risk and at a high risk of HIV infection respectively.

Table 4. 2 : Background characteristics by perception of risk to HIV infection

	No risk	Low risk	High risk			
Variable	Percent	Percent	Percent	χ-value	P-value	Total
Age				24.193	0.000	182
15-19	67.6	23.6	8.8			229
20-24	55.5	35.8	8.7			192
25-29	48.4	40.1	11.5			181
30-35	44.2	42.5	13.8			
Marital Status				21.891	0.000	
Never Married	58.4	31.9	9.7			263
Married/living together	47.1	43.0	9.9			26
Formerly married	23.4	76.6	30.8			495
Education				17.487	0.002	
Primary	56.8	37.8	5.4			37
Secondary	57.1	32.5	10.4			618
Higher	38.0	49.6	12.4			129
Wealth status						
Low	55.1	34.8	10.1	1.970	0.741	276
Medium	56.0	34.7	9.3			248
High	50.8	37.3	12.4			260
Employment status				14.431	0.001	
Employed	48.1	40.8	11.2			439
Unemployed	61.4	29.0	9.6			345
Religion				12.154	0.144	
Mainline	53.2	37.0	9.8			265
Pentecostal	55.4	37.8	6.7			169
Apostolic Sect	58.6	29.6	11.8			193
Other Religion	54.2	31.3	14.5			83
No Religion	41.9	43.2	14.9			74
Ethnicity						
Shona	55.1	34.4	10.6	4.964	0.084	710
Other	43.2	47.3	9.5			74
Ever tested for HIV						
Yes	47.3	34.4	10.6	30.315	0.000	759
No	43.2	47.3	9.5			25
Approve of VCT prior MC						
Yes	57.9	42.2	10.5	5.103	0.078	171
No	52.9	23.2	10.3			613
Ever heard of VMMC				3.471	0.176	
Yes	53.4	36.1	10.5			759
No	72.0	20.0	8.0			25
Total	423	279	82			784
Percent	54.0	35.6	10.5			100

Source: Fieldwork, 2014

$^{+}$p<.1, *p<.05, **p<.01

4.3.3.2 Multinomial Logistic Regression analysis of the effects of background characteristics on perception of risk to HIV infection

Table 4.10 shows the results of a multinomial logistic regression model. The results show the relationship between the background characteristics and the perception of risk to HIV infection. Perception of risk to HIV infection has three categories: 1 = "No, not at risk at all", 2 = "Yes at low risk" and 3 = "Yes at higher risk". In the model, the reference category for the dependent variable is "No, not at risk at all. From the table, the goodness fit provided two measures which can be used to show how well the model fits the data. For instance, a large Pearson chi-square statistic (p=0.112) which was not statistically significant meant the model fits the data well. On the other hand, a large Deviance statistic also indicated that the model fits the data (p= 0.833).

The results showed that holding other variables constant, the odds of a man perceiving himself to be at a higher risk of HIV infection, relative to perceiving himself to be at no risk of HIV were 214% higher (OR=3.13) among formerly young married men than for never married young men. However, marital status was not statistically significant with respect to men perceiving themselves to be at low risk of HIV infection compared to perceiving themselves to be at no risk. Youth with secondary education were significantly less likely (OR=0.535) to perceive themselves to be at higher risk of HIV infection compared to those with higher education. In addition, youth with primary education were significantly less likely (OR=0.530) to perceive themselves to be at low risk of HIV infection compared to those with higher education.

With regards to religion, the odds of a Pentecostal Christian perceiving himself to be at higher risk of HIV infection is 66% lower compared to young men who did not profess any religious faith. On the other hand, the odds of Apostolic Sect youth perceiving themselves to be at low risk of HIV infection was lower by 49% compared to young men who did not belong to any religion. The odds of Shona young men perceiving themselves to be at low risk of HIV infection compared to young men who belonged to the Other ethnic group were 45% lower. Further, the odds of young men perceiving themselves to be at low risk of HIV infection relative to perceiving themselves to be at no risk were 102% higher (OR=2.01) for those who had ever tested for HIV than for those who had never tested for HIV. Finally, the odds of youth who approved of VCT prior male circumcision were less likely (OR=0.486) to

perceive themselves to be at a higher risk of HIV infection compared to their counterparts who did not approve of it.

Table 4. 3: Predictors of perception of risk to HIV infection

	Yes at higher risk			Yes at low risk		
		95% C.I			95%C.1	
	Exp(B)	LB	UB	Exp(B)	LB	UB
Age						
30-35 (R)						
15-19	0.588	0.223	1.551	0.733	0.379	1.419
20-24	0.561	0.254	1.241	0.886	0.526	1.491
25-29	0.813	0.400	1.651	0.888	0.553	1.426
Marital status						
Never married (R)						
Married/living together	0.727	0.364	1.452	1.090	0.693	1.714
Formerly married	3.135*	1.054	9.324	1.252	0.455	3.443
Education						
Higher (R)						
Primary	0.282	0.054	1.467	0.530*	0.223	1.258
Secondary	0.535+	0.264	1.085	0.487	0.306	0.776
Wealth						
Higher (R)						
Low	0.905	0.481	1.701	1.123	0.738	1.707
Medium	0.777	0.419	1.441	1.016	0.679	1.522
Employment status						
Unemployed (R)						
Employed	1.330	0.719	2.461	1.317	0.884	1.963
Religion						
No religion (R)						
Mainline	0.532	0.225	1.259	0.664	0.366	1.203
Pentecostal	0.343*	0.132	0.891	0.657	0.353	1.222
Apostolic Sect	0.598	0.248	1.446	0.518*	0.277	0.970
Other Religion	0.719	0.267	1.939	0.582	0.281	1.208
Ethnicity						
Other (R)						
Shona	0.994	0.406	2.435	0.554*	0.324	0.945
Ever tested for HIV						
No (R)						
Yes	1.197	0.678	2.113	2.016*	1.377	2.953
Approval of VCT prior MC						
Disapproval (R)						
Approve	0.486*	0.238	0.994	1.000	0.683	1.464
Ever heard of VMMC						
No (R)						
Yes	1.402	0.298	6.590	2.415	0.847	6.890
Knowledge about male MC						
Low knowledge (R)						
High knowledge	1.121	0.601	2.090	1.058	0.696	1.607
Attitude towards MC						
Unfavourable attitudes (R)						
Favourable attitudes	0.651	0.391	1.085	0.879	0.634	1.218
Circumcision status						
No (R)						
Yes	0.796	0.399	1.150	0.862	0.343	1.430
Observations	784					
Pearson	0.112					
Deviance	0.833					

Source: Fieldwork. 2014

$^{+}$p<.1. *p<.05. **p<.01.

4.4 Discussion

This chapter examined the association of knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection on the one hand, and selected background characteristics on the other. Several studies have been conducted on predictors of male circumcision (George et al., 2014; Obure et al., 2011; Skolnik et al., 2014). In the Zimbabwean context, little is known about the impact of background characteristics on social variables related to male circumcision (knowledge about male circumcision, attitude towards male circumcision and perception of risk to HIV infection) among urban men aged 15-35 years despite the fact that this is a key population in the fight against HIV. Indeed, some studies have looked these social variables related to male circumcision. However, it is mostly among different subpopulations, only included as predictor variables or not as exhaustive and critically analysed as done in the present study, for example, (Hatzold et al., 2014).

This study demonstrated that age is significant predictor of knowledge about male circumcision among youth in Zimbabwe. The results of this study indicated that age, was associated with knowledge about male circumcision. Knowledge about male circumcision appeared to increase with increase in age. Young men age 15-19, 20-24 and 25-29 years all showed to be less likely to have high knowledge about male circumcision. However, only men aged 25-29 compared to those aged 30-35 were less likely to have high knowledge about male circumcision. Studies elsewhere show contrary findings. For example, Wilcken et al. (2010) found no significant association between age and knowledge about male circumcision among young people and adults surveyed in rural Uganda.

The differences in these results could have been attributed to the differences in the context of the studies and the definition of youth. Youth in Wilcken et al. (2010) study was defined as men aged 14-24 and adults as those aged 24 years and above. However, there are little published quantitative studies in Zimbabwe that show evidence of how age affects knowledge about male circumcision among the youth. Perhaps the reason why older youth are more likely to have knowledge about male circumcision is that older youth are more likely to have been exposed to various forms of information on male circumcision over the years compared to their younger counterparts.

Furthermore, the findings showed that young people with primary and secondary education were less likely to have knowledge about male circumcision compared to those with higher level of education. Similar relationships have been observed in Zimbabwe, among soccer players which showed that those with higher levels of education were more knowledgeable about male circumcision than those who had lower levels of education (Kaufman et al., 2013). A possible explanation for the relationship between education and knowledge of male circumcision is that educational attainment influences health-seeking behaviours. Educational attainment predisposes individuals to appreciate health programmes better (McGill, 2016). Another possible explanation for this is that educational attainment is related to exposure to media. Generally, exposure to the media increases with increase in education (ZIMSTAT & ICF International, 2012). In that case, people with higher levels of education are going to be more likely to be exposed to information on male circumcision from various sources that can affect their knowledge about male circumcision.

The findings from this study also showed that ever tested for HIV was associated with knowledge about male circumcision. Respondents who had ever tested for HIV were more likely to be knowledgeable about male circumcision. This could be attributed to counselling sessions that happen before and after testing. In Zimbabwe, Voluntary Counselling and Testing centres disseminate information about male circumcision. Male circumcision services have been an integral part of male Sexual and Reproductive Health (SRH) programmes. Information about importance of reduction in the number of sexual partners, provision of condoms, delay in sexual debut, and early diagnosis of STIs is disseminated during VCT sessions and in some cases male circumcision (MOHCW, 2009). The likelihood is that those who have ever been tested for HIV were informed or educated about the availability of male circumcision as an option to prevent HIV infection. In essence, Voluntary Counselling and Testing centres reinforce the advantages of male circumcision in Zimbabwe.

In addition, ever heard of Voluntary Medical Male Circumcision was found to be statistically significantly associated with knowledge about male circumcision. Youth who had ever heard of Voluntary Medical Male Circumcision were more likely to have high knowledge of male circumcision compared to those had never heard. This could be as a result of availability of different mass media advertisement about Voluntary Medical Male Circumcision. According to a study in Zimbabwe among respondents aged 15-49 years in rural and urban areas, a higher proportion of the respondents had heard of VMMC (Hatzold et al., 2014).

The results also showed that male circumcision status was associated with knowledge about male circumcision. As expected, young men who were circumcised were knowledgeable about male circumcision in comparison to those uncircumcised. The present findings is consistent with other research, which found that males with high levels of knowledge about male circumcision were more likely to be circumcised compared with those uncircumcised (Futures Group, 2012). Perhaps the reason why circumcised young men have high knowledge about male circumcision is as a result of intensive information dissemination by health professionals before circumcision takes place in Zimbabwe, hence young men who are circumcised especially in health institutions are most likely going to have more knowledge about male circumcision compared to their counterpart who are not circumcised.

With respect to attitudes towards male circumcision, the results showed that age influences attitudes towards male circumcision. All the ages below 30 years showed a pattern where those aged 15-19, 20-24, and 25-29 years were all showing to have a favourable attitude towards male circumcision. Nonetheless, only men aged 20-24 were marginally significantly more likely to have a favourable attitude towards male circumcision compared to those aged 30-35. This could be attributed to the fact that most men aged 20-24 are still schooling at tertiary institutions. These young men (20-24 years) are usually trendsetters in communities compared to older youth. Hence, they influence each other on various issues, which can include male circumcision, which can make young end up having favourable attitude towards male circumcision. In addition, perhaps older youth tend to resist change. The literature on background characteristics and attitudes towards male circumcision in among young people aged 15-35 in Zimbabwe is limited as it is usually about general attitude towards male circumcision and in some cases age is not controlled for. Nevertheless, in the Zimbabwean context, studies have demonstrated that there is an unfavourable attitude towards male circumcision among both circumcised and uncircumcised men in Zimbabwe (Khumalo-Sakutukwa et al., 2013; Sibanda, 2013).

Juxtaposing the relationship between age and knowledge about male circumcision on the one hand, and age and attitudes towards male circumcision on the other appears to be contradictory. While older men relatively were more likely to have knowledge about male circumcision, younger men appeared to be more likely to have a favourable attitude towards male circumcision. This could be explained by the fact that knowledge does not necessarily

translate into a favourable attitude. Indeed, some studies have found that a higher proportion (95%) of uncircumcised men knew the health benefits of and places offering male circumcision, but only (27%) were willing to adopt male circumcision in Raka, Uganda (Kong et al., 2014). Another study on HIV/AIDS showed that the overall respondents' HIV/AIDS knowledge did not translate into positive attitude or behaviour in African American men in urban and rural communities in Mississippi, USA (Yarber, 2011). Nevertheless, some studies, however, show that knowledge about the potential benefits of male circumcision influenced women to indicate that they would encourage their partners to go for male circumcision in South Africa (Ikwegbue, Ross, & Ogbonnaya, 2015).

Marital status was a significant predictor of attitude toward male circumcision among young men aged 15-35 in Harare, Zimbabwe. Married youth were more likely to have a favourable attitude towards male circumcision compared to those who had never married. However, formerly married women were not significantly different from those who have never married. Cultural beliefs on sexual intercourse might influence a favourable attitude towards male circumcision. Even though some studies have shown that there is no relations between sexual performance and circumcision status (Lukobo & Bailey, 2007), other studies have demonstrated that in some African communities, married men perceive male circumcision to improve sexual performance (George et al., 2014). Perhaps, it is some of these beliefs among married men that make married men have a favourable attitude towards male circumcision. In addition, women indicated that circumcised men found it easy to maintain penile hygiene and that circumcision reduced the chances for women to contract STIs or HIV in a study in Zambia (Ngalande et al., 2006). Indeed, in a stable relationship like marriage/living together as if they are married women's favourable attitude towards male circumcision can influence their partners to have favourable attitude towards male circumcision. These findings of the study are consistent with the underlining assumptions of the Theory of the Reasoned Action, which suggest that individual behaviour is predicated by one's attitude towards that behaviour and how one's partner thinks about their behaviour. That said, if a man's partner perceives male circumcision to be beneficial she might, to a large extent, influence the husband to also perceive it in a positive light, which can subsequently lead to uptake of male circumcision.

The results of this study demonstrated that employment status was related with attitude towards male circumcision. Respondents who were employed were less likely to have

favourable attitude towards male circumcision compared to those unemployed. Perhaps, the greater likelihood of the employed respondents not to have favourable attitude could be attributed to perceived pain which might interfere with work activities and few can afford to take time off from work and attend to circumcision procedure as has also been shown in the Zimbabwean context by Hatzold et al. (2014). Thus, employed men end up forming negative attitude towards male circumcision.

Findings from this chapter suggest that approval of HIV testing before circumcision had a significant influence on positive attitudes towards male circumcision. However, the findings of this study were in disagreement with previous studies which found that HIV testing before circumcision resulted in negative attitudes towards male circumcision (Nkala & Mbuisa, 2014). The reason why those who approve of HIV testing before male circumcision had a favourable attitude towards male circumcision was that, perhaps these individuals were not engaging in sex or high sexual risk behaviours, such as sex without a condom or having multiple concurrent sexual partners. Hence, they feel it is okay taking the HIV test before circumcising. It could also be that these young men are well informed about the policy on male circumcision in Zimbabwe, which mandates HIV testing before male circumcision.

The study further revealed that young men who perceived themselves to be at higher risk of HIV infection were more likely to report a favourable attitude towards male circumcision. This can be explained through the Health Belief Model, which assumes that perceived susceptibility to a disease makes an individual to accept a health intervention (Rosenstock et al., 1994). Individuals' perceptions of risk to HIV infection strongly shape their attitudes towards male circumcision, which they might see as a way of protecting themselves from HIV infection.

In addition, circumcised young men were more likely to have favourable attitudes towards male circumcision compared to those who reported not to be circumcised. Few studies if any, have committed to investigate the relationship between young men who have been circumcised and their attitudes towards male circumcision. Hence, the current study offers a base line survey which needs further research which will examine the relationship. This finding can be explained in twofold. Perhaps, before circumcision, young men were convinced either by socio-cultural and/or medical reasons; hence, they formed favourable attitudes towards male circumcision compared to those who were not circumcised. Secondly,

it could be that, after circumcision, young men have realised the benefits of male circumcision such easy in cleaning the penis, which has cemented their favourable attitudes towards male circumcision. That said, subjective norms in societies may help in shaping either favourable or unfavourable attitudes with regards to male circumcision. For instance, studies have shown that uncircumcised men are usually proud of their circumcision status, which will surely make them have favourable attitudes towards male circumcision. In some cases, circumcised men coin derogatory names for uncircumcised men (Mavundla et al., 2010; Sibanda, 2013a). On the contrary, other studies have shown that circumcised men in some context are given derogative names by those who are uncircumcised, thus this can make men have less favourable attitudes towards male circumcision (Khumalo-Sakutukwa et al., 2013; Moyo et al., 2015; Nnko et al., 2001).

This chapter also examined the influence of background characteristics on perception of risk to HIV infection. The findings suggest marital status had a significant influence on perception of risk to HIV infection. Formerly married youths were more likely to perceive themselves to be at higher risk of HIV infection compared to those who had never married. Perceived susceptibility/vulnerability is a key component of HBM and for HIV prevention in particular, which suggest that the perceived seriousness or severity of a disease makes individuals to perceive themselves to be at higher risk of HIV infection. The formerly married youth were found to be more likely to perceive themselves to be at higher risk of HIV infection. This suggests that formerly married respondents did not underestimate their perception of risk to HIV infection considering their likely previous and current sexual risk behaviour. These formerly married young men, in order to sustain their sexual habits and adjust to life without a regular sexual partner, might end up having several partners to sustain their sexual habits unlike the never married young men. However, previous findings have found that, in general, people tend to underestimate their perception of risk to HIV (Ijadunola, Abiona, Odu, & Ijadunola, 2007; Sychareun, Thomsen, Chaleunvong, & Faxelid, 2013).

In addition, the present study found that education influences perception of risk to HIV infection. For instance, youth with secondary education were less likely to perceive themselves to be at a higher risk of HIV infection compared to respondents with higher education. However, youth with primary education were less likely to perceive themselves to be at low risk of HIV infection compared to those with higher education. As education increases, the young men are more likely to perceive themselves to be at high risk of HIV

infection most likely because they understand the dynamics of HIV infection. The plausible reason could be that education exposes men to considerable and reliable information on risk factors associated with acquiring HIV. Higher educational attainment contributes to increased knowledge about risk factors associated with acquiring HIV, hence putting them in a position to rightfully judge their level of risk to HIV infection. It could also be that, it is at the higher levels of education that young men explore their sexual behaviours, which in some cases are risky sexual behaviours; these behaviours might inform their risk perception to HIV infection. However, these results are inconsistent with previous studies, for instance, a study among military personnel in Nigeria found an inverse relationship between educational attainment and HIV risk perception (Essien et al., 2007). For, example those with higher education were less likely to perceive themselves to be at high risk of HIV infection.

Furthermore, the results showed religious variations in perception of risk to HIV infection. Young men who belong to the Pentecostal Churches and Apostolic Sect were less likely to perceive themselves to be at a higher risk of HIV infection compared to respondents with no religion. However, the findings of the current study do not support the previous research which found that these men perceived themselves to be at no risk of HIV (Gore et al., 2014). Apostolic Sect members usually put stringent measures on sexual behaviour, which make them to believe that they are not at risk of HIV infection (Gore et al., 2014). For instance, they encourage intermarriages within the church, virginity tests for young girls, polygamy practices and use of Holy Spirit to detect adultery. This has implications on young men affiliated to the Apostolic sect perception on HIV infection. While sometimes it is difficult to separate how religion impacts on cultural behaviour, studies have shown religion impacts on human behavioural and health outcomes (Trinitapoli & Regnerus (2006).

With regards to Pentecostal Christians, the findings of the current study are consistent with those of Trinitapoli & Regnerus (2006) who also found that Pentecostal Christians perceived themselves to be at low risk of HIV infection. Plausibly, the association between low perception of risk to HIV infection and Pentecostalism could be attributed to their teachings on nurturing religious experiences and strong synergies encouraged among members. Socialisation of congregants toward more frequent and overlapping interactions can discourage members involvement in risky sexual behaviours can impact their perception of risk to HIV infection (Garner 2000, cited in Trinitapoli & Regnerus 2006).

Youth belonging to the Shona ethnic group were less likely to perceive themselves to be at low risk of HIV compared to the Other ethnic group compared to perceiving themselves to be having no risk of HIV infection. Perhaps the Shona perception of risk to HIV infection is not surprising considering the fact that in Zimbabwe and other sub-Saharan Africa communities have cultural practices such as wife inheritance, which is conducive to spread HIV, involves relatives of the deceased husband marrying the widow (Drew, Foster, & Chitima, 1996). In most cases, condoms are not used in this new relationship, because they are not usually used among married couples (Exavery et al., 2012). Perhaps the widows' first husband could have died from HIV, thus she is more likely to transmit HIV/STIs to the new husband. According to Agot et al.(2010) such a practice is also prevalent in Bondo, District in Kenya.

In addition, those who have ever tested for HIV were more likely to perceive themselves to be at low risk of HIV infection compared to those who have never. This relationship could be explained by the fact that HIV is highly stigmatised. Hence, ever taking the test and obtaining negative HIV results makes men aged 15-35 years feel they are not at risk of HIV infection. With respect to approval of VCT prior male circumcision, respondents who approved of VCT prior male circumcision were less likely to perceive themselves to be at risk to HIV infection compared to those who did not approve of it. Perhaps those who approve of VCT prior to male circumcision are youth who regularly check their status and for that matter perceive themselves to be at low risk of HIV infection.

Although the findings of this study provide data regarding the influence of background characteristics on knowledge about male circumcision, attitude towards male circumcision and perception of risk to HIV infection, it may not capture all the dynamics surrounding youth circumcision, social norms and environmental considerations will be explored in the qualitative chapter.

4.5 Summary

This Chapter 4 provided the results and discussion to answer the address objective one of the present study. The findings showed that; age, education, ever tested for HIV, ever heard of Voluntary Medical Male Circumcision and male circumcision status were the main predictors of knowledge about male circumcision. About attitude towards male circumcision, age, marital status, employment status, approval of Voluntary Counselling Testing prior male circumcision, perception of risk to HIV infection and circumcision status were the main

predictors of attitude towards male circumcision. The main predictors of perception of risk to HIV infection were marital status, education, religion, ethnic group and ever tested for HIV. The next chapter will examine predictors of male circumcision among young men aged 15-35 years in Harare, Zimbabwe.

CHAPTER 5:PREDICTORS OF MALE CIRCUMCISION

5.1 Introduction

The previous chapter examined the effects of background characteristics on knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection. The purpose of the present chapter is to investigate the predictors of male circumcision among men aged 15-35 in Harare, Zimbabwe. It examines, first, the relationship between the background characteristics and male circumcision status, second, the relationship between the social variables and the outcome variable (male circumcision status) using cross tabulations (Chi-square test). Third, the net effect of each of the predictors of male circumcision is examined using logistic regression technique.

The data used for the statistical analyses in this chapter was collected among 784 men aged 15-35 in Harare, Zimbabwe. Because this chapter seeks to examine predictors of male circumcision, the dependent variable in this case is male circumcision status (male circumcision: no = 0 and yes = 1). The background characteristics considered in this chapter are age, marital status, education, wealth, employment status, religion, ethnic group, ever tested for HIV, approve of VCT prior circumcision and ever heard of VMMC.

5.2 Percent distribution of background characteristics by circumcision status

Table 5.1 shows the relationship between the background characteristics and circumcision status. The results showed that there was a significant association between age, ever tested for HIV and circumcision status. Age, ever tested for HIV and approve of VCT prior to male circumcision were the significantly associated with male circumcision uptake.

With respect to age (significant at $p<0.05$), the percentage of respondents who were circumcised declined with age from 16.5% among young men aged 15-19 to 14.8% among young men aged 20-24 and further decreased to less than ten percent (9.4%) among men aged 25-35, which is the lowest. However, the percentage circumcised increased to 19.9% among men aged 30-35, which was the highest.

There was a significant relationship between ever tested for HIV and male circumcision status (significant at $p<0.001$. About a fifth (20.6%) of respondents who indicated that they

had ever tested for HIV circumcised compared four percent (4.4%) of their counterparts who indicated that they had never tested. With regards to approval of VCT prior circumcision, it was also significantly related to uptake of male circumcision ($p<0.05$). of the respondents who indicated that they approve of VCT prior circumcision eight percent (8.2%) of them were circumcised, on the other hand a little below a fifth (17.0%) of those who did not approved of male circumcision were circumcised.

Table 5. 1 : Percent distribution of background characteristics by circumcision status

Variable	Yes (%)	No (%)	χ-value	P-value	Total
Age			8.452	0.038	
15- 19	16.5	83.5			182
20-24	14.8	85.2			229
25-29	9.4	90.6			192
30 and above	19.9	80.1			181
Marital Status			1.804	0.406	
Married/Living together	16.0	84.0			263
Formerly married	23.1	76.9			26
Never married	14.1	84.9			521
Education			0.525	0.769	
Primary	13.5	86.5			37
Secondary	14.7	85.3			665
Higher	17.1	82.9			129
Ethnicity			0.296	0.585	
Shona	14.4	85.6			710
Other	11.1	88.9			36
Employment Status			2.026	0.155	
Employed	13.4	86.6			439
Unemployed	17.1	83.9			345
Religion			5.324	0.256	
Mainline	14.0	86			265
Apostolic sect	13.0	87			193
Pentecostal	17.1	82.9			169
Other Religion	21.7	78.3			83
No Religion	10.8	89.2			74
Ever tested for HIV			36.873	0.000	
Yes	20.6	79.3			512
No	4.4	95.6			272
Approve of VCT prior MC			8.055	0.005	
Yes	8.2	91.8			171
No	17.0	83.0			613
Wealth status			1.613	0.446	
low	15.2	84.8			276
Medium	12.1	87.9			248
High	16.9	83.1			260
Ever heard of VMMC			0.188	0.665	
Yes	15.2	84.8			7.59
No	0.12	0.88			0.25
Total	118	666			784
Percent	15.1	84.9			100

Source: Fieldwork. 2014

5.3 Knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection by circumcision status

Table 5.2 shows the association between the social variables (between knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection) by circumcision status. Knowledge about male circumcision was significantly related to uptake of male circumcision ($p<0.05$). The results showed that as knowledge increased from low to high, the proportion of young men who circumcised increases. While 16.7% of respondents who had high knowledge about male circumcision were circumcised 8.3 percent of those who had low knowledge about male circumcision were circumcised.

Attitude towards male circumcision was significantly related to uptake of male circumcision ($p<0.001$). The results showed that favourable attitude was associated with male circumcision uptake. Whereas about a fifth (19.5%) of young men who had favourable attitudes towards male circumcision were circumcised, less ten percent (9.2%) of young men who had unfavourable attitude were circumcised.

Perception of risk to HIV infection was not significantly related to uptake of male circumcision. As risk perception of HIV infection increases from no risk to high risk, the proportion of young male who were circumcised increased. While 17.1% of young men who perceived themselves to be at a higher risk of HIV infection were circumcised, 15.8 percent of those who perceived themselves of be at low risk were circumcised and 14.2% of those who perceived themselves to at no risk at all were circumcised.

Table 5. 2: Knowledge about male circumcision, attitude towards male circumcision and perception of risk to HIV infection by circumcision status

Variable	Yes (%)	No (%)	χ-value	P-value	Total
Knowledge about male circumcision			7.039	0.008	
Low knowledge	8.3	91.7			157
High knowledge	16.7	83.3			627
Attitude towards male circumcision					192
Unfavourable attitude	9.2	90.8			181
Favourable attitude	19.5	80.5	15.833	0.000	
Perception of risk to HIV infection					
Yes at higher risk	17.1	82.9	0.624	0.732	82
Yes at low risk	15.8	84.2			279
No not at risk at all	14.2	85.8			423
Total	118	666			784
Percent	15.1	84.9			100

Source: Fieldwork, 2014

5.4 Predictors of male circumcision among men aged 15-35 in Harare, Zimbabwe

Table 5.3 shows the results of logistic regression model examining the effects of background characteristics on male circumcision status. The Hosmer-Lemeshow Goodness of fit test (H-L gof) showed that the model fits the data well with a significance greater than 0.05 (p=0.198). The results indicated that marital status, employment, education, wealth, religion, ethnic group, ever heard of VMMC, and perception of risk to HIV infection were not significant predictors of male circumcision status.

Age, ever tested for HIV, approval of VCT prior male circumcision, knowledge about male circumcision and attitude towards male circumcision were the main predictors of male circumcision status. The results showed that while youth aged 15-19 showed to be less likely to be circumcised, youth aged 20-24 years were more likely to be circumcised compared to those aged 30-35 years. However, those aged 25-29 years were significantly more likely to be circumcised compared to those age 30-35 years. The odds of men aged 25-29 years being circumcised was 131% higher (OR = 2.31) higher compared to those aged 30-35 years.

The results showed that ever tested for HIV was a significant predictor of male circumcision, show that the odds of youth who had ever tested for HIV was 87% lower (OR=0.13) compare to those who had never tested for HIV. In addition, approval of HIV testing prior to male circumcision was associated with male circumcision status. The odds of respondents who

approved of VCT prior circumcision being circumcised was 87% lower (OR=0.34) compared to those who disapproved of HIV testing prior to male circumcision.

With the exception of perception of risk to HIV infection, all the other social variables were significant predictors of male circumcision status. With regard to Knowledge of male circumcision, the odds of those who had high knowledge being circumcised was 97% higher (OR=1.96) compared to young men who had low knowledge about male circumcision. Additionally, the odds of young men with favourable attitude towards male circumcision being circumcised were 179% higher (OR=2.79) relative to those who had unfavourable attitudes towards male circumcision.

Table 5. 3 : Predictors of male circumcision status

	B	S.E.	Exp(B)
Age			
30-35 (R)			
15-19	-0.318	(0.438)	0.728
20-24	0.233	(0.344)	1.262
25-29	0.839	(0.340)	2.314*
Marital status			
Never Married (R)			
Married /living together	-0.024	(0.321)	0.976
Formerly married	-0.475	(0.581)	0.622
Education			
Higher (R)			
Primary	0.320	(0.619)	1.378
Secondary	0.200	(0.311)	1.221
Wealth status			
Low (R)			
Medium	0.246	(0.280)	0.782
High	0.321	(0.276)	1.379
Employment status			
Unemployed (R)			
Employed	0.389	(0.281)	1.475
Religion			
No Religion (R)			
Mainline	-0.384	(0.461)	0.681
Pentecostal	-0.513	(0.472)	0.599
Apostolic Sect	-0.343	(0.479)	0.709
Other Christian	-0.651	(0.509)	0.522
Ethnic group			
Other (R)			
Shona	0.411	(0.342)	1.508
Ever tested for HIV			
No (R)			
Yes	-2.006	(0.349)	0.134*
Approve of VCT prior MC			
No (R)			
Yes	0.914	(0.318)	2.494*
Ever heard of VMMC			
No (R)			
Yes	-0.120	(0.698)	0.887
Perception of risk to HIV infection			
No at no risk (R)			
Yes at higher risk	0.012	(0.358)	1.012
Yes at low risk	0.158	(0.240)	1.171
Knowledge about male circumcision			
Low knowledge (R)			
High knowledge	0.676	(0.341)	1.967*
Attitude towards male circumcision			
Unfavourable attitude (R)			
Favourable attitude	1.026	(0.244)	2.791*
Constant	2.235	(1.010)	9.343*
Observations	118		
Nalgelkerke R Square	0.215		
H-L gof test	0.198		

Source of data: Fieldwork, 2014
P<.1,*P<.05, **P<.01,

5.5 Discussion

The present chapter examined the predictors of male circumcision among men aged 15-35 in Harare, Zimbabwe. Medical male circumcision was recommended by WHO to be integrated into HIV prevention strategies which the Ministry of Health Child Welfare adopted and implemented. The findings of this chapter show how background characteristics, social variables (knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection) influence uptake of male circumcision.

Male circumcision over the years has been demystified from being an ethnic practice to a more acceptable health practice across ethnic groups (Khumalo-Sakutukwa et al., 2013; Sibanda, 2013a). While male circumcision is not prevalent in Harare, the findings appear to suggest an increase in the circumcision rates. Data from the 2012 Zimbabwe Demographic and Health Survey showed that 7.0% of respondents' aged 15-35 in Harare indicated that they were circumcised (ZIMSTAT & ICF International, 2012) compared to 15.1% of respondents in this study indicated that they were circumcised, conducted in 2014. A study in Tanzania showed that there was a significant increase in the number of men who were going for circumcision because of assimilation of cultures (Nnko et al., 2001). In Zimbabwe, however, the gradual increase in male circumcision rate could be attributed to the awareness and educational programmes on male circumcision by the government and non-governmental organisations in the quest to reduce HIV infections.

Worthy of note in the circumcision literature is the report of prevalence of male circumcision. There are a number of methodological issues associated with capturing the number of circumcised men and this has contributed to misclassification of circumcision status (Hewett, Haberland, et al., 2012). The literature on male circumcision suggests that several definitions and practices of male circumcision exist (Sithole et al., 2009), which can result in a significant proportion of the number of circumcised men either being under-reported or over reported. This may be caused by differences in forms of male circumcision practices and reporting can be affected by men trying to conform to societal expectations. A qualitative study in rural KwaZulu-Natal revealed that partial circumcision practice (ukugweda) was taken to be full circumcision among the Zulu in South Africa (Sithole et al., 2009). A similar situation was also revealed in a qualitative study in rural Zimbabwe among the Shona in Mutoko (Khumalo-Sakutukwa et al., 2013). This cultural practice does not partially prevent HIV because no foreskin is cut.

The findings in this chapter suggest that age had a significant influence on circumcision status. To some extent, men, aged 20-24 (not significant) and 25-29 years, all showed to be more likely to be circumcised compared to men aged 30-35 years. Other studies have also found that older men were less likely to undergo circumcision compared to young men in Uganda (Gasasira et al., 2012). In most cases, younger people are more susceptible to change compared to older people, which might explain the reason why young men showed to be more likely to uptake male circumcision compared to their older counterparts. Contrary to these findings from elsewhere, a study in Eastern and Southern African countries found that older men were significantly more likely to be circumcised in 8 out of 12 countries (Tram & Bertrand, 2014). In this study, the number of circumcised men increased with increase in age.

Further, the results show that youth who had ever tested for HIV were less likely to be circumcised compared to those who had were never tested. It could be that people who have ever tested for HIV, which not necessarily might be related to circumcision and received negative results feel they are safe and do not see the need to circumcise to protect themselves from HIV infection. In addition, the Zimbabwe Male Circumcision Policy states that an HIV test is a pre-requisite before medical male circumcision and is part of the package of health checks offered in the public circumcision services (MOHCW, 2009). Circumcision of men living with HIV is not recommended in view of the increased risk of passing HIV infection to female partners during the healing stage of the operation. Therefore, uptake of male circumcision amongst men who have ever tested for HIV could be attributed to the male circumcision packaging. Perhaps respondents who have ever tested for HIV were denied the opportunity to circumcise because they were found to be HIV positive. Evidence from several qualitative studies have shown HIV testing was a major barrier to uptake of circumcision (George et al., 2014; Grund & Hennink, 2012; Nkala & Mbuisa, 2014).

The present study also found that youth who approved of VCT prior male circumcision were more likely to be circumcised. This probably could be as result of respondents understanding the importance of VCT and circumcision. In addition, it is only those who are found to be HIV negative who are circumcised. HIV negative men tend to benefit from male circumcision unlike those who are already infected. For example, male circumcision reduces a number of infectious diseases such as HIV (Tobian & Gray, 2011), urinary tract infections in infants (Shaikh et al., 2008), reduced incidence of other Sexually Transmitted Infections

(STIs) in both partners (Auvert et al., 2005; Bailey et al., 2007; Gray et al., 2007b), and penile cancer (Larke et al., 2011). However, circumcision of HIV positive men is not encouraged. There are no conclusive studies which have shown that HIV positive men also tend to benefit from male circumcision (Waver, Makumbi, & Kigozi, 2010).The main objective why male circumcision was introduced in Zimbabwe was to try to reduce HIV incidence. The other benefits such as penile cancer, hygiene and prevention of cervical cancer in women are secondary benefits.

The study findings indicated that knowledge about male circumcision was a significant predictor of male circumcision uptake. Youth with high knowledge about male circumcision were more likely to be circumcised, controlling for other factors in the model. In countries with low male circumcision prevalence, knowledge about circumcision is used as a benchmark to an increase in acceptability and uptake of male circumcision. This study does concur with what other previous studies found in sub-Saharan Africa that knowledge about circumcision was positively associated with acceptability (Gasasira et al., 2012; Mavhu et al., 2011; Westercamp & Bailey, 2007; Wilcken et al., 2010).

Reported attitude towards male circumcision was one of the important predictors of male circumcision in this study. The odds ratio indicated that youth with a favourable attitude towards male circumcision were more likely to be circumcised compared to those with an unfavourable attitude. The results of the study are coherent with other studies that found favourable attitudes towards male circumcision was associated with male circumcision uptake (Dionne & Poulin, 2013). In addition, regional differences in prevalence of male circumcision in Malawi have been attributed to differences in attitudes towards male circumcision (Dionne & Poulin, 2013). Exposure to the male circumcision programmes helps to improve attitude towards it to a large extent. As reported by Bektaş & Kulakaç (2007), individuals' attitude becomes positive after they have been educated on the subject matter.

The broader spectrum of literature with regards to male circumcision and HIV in Africa has shown that negative attitudes towards male circumcision are formed by how circumcised and uncircumcised men are perceived in the community (Khumalo-Sakutukwa et al., 2013; Mavundla et al., 2010; Nnko et al., 2001; Sibanda, 2013b; Vincent, 2008). In general, the findings from the current in-depth interviews in the present study points to the fact that circumcised men are given derogative names. Thus, those who intend to go for circumcision

visit the circumcision centres without informing anyone because they fear the negative attitude they get from people around them.

5.6 Summary

The aim of this chapter was to examine the predictors of male circumcision. The results are fully presented and discussed. Fifteen percent (15.1%) of the respondents were circumcised. Youth aged 25-29 were more likely to be circumcised compared to youth aged 30-35. Respondents who had ever tested for HIV were less likely to be circumcised as compared to those who had never tested for HIV. It is also evident that youth who approved of VCT prior circumcision were more likely to be circumcised compared to those who disapproved. The results of the study have shown that youth who had high knowledge about male circumcision were more likely to be circumcised. Findings from this study suggest that positive attitude has a significant influence on the likelihood of being circumcised. The next chapter examines the predictors of willingness to circumcise.

CHAPTER 6: PREDICTORS OF WILLINGNESS TO CIRCUMCISE

6.1 Introduction

In the previous chapter, predictors of male circumcision among youth (aged 15-35) in Harare, Zimbabwe were examined. The present chapter examines the factors that influence willingness to circumcise at the univariate, bivariate and multivariate levels. However, because this chapter seeks to examine predictors of willingness to circumcise, respondents who were circumcised were dropped from this analysis. Hence, the effective analytical sample size is 666 youth who were not circumcised at the time of the survey. The dependent variable in this case is willingness to circumcise (willingness to circumcision: no=0 and yes=1). The background characteristics considered in this analysis of willingness to circumcise were age, marital status, education, wealth, employment status, and religion, ethnic group, ever tested for HIV, approval of VCT prior circumcision and ever heard of VMMC.

In this chapter, frequencies are used to assess the distribution of the background and dependent variables. The relationship between the background characteristics and willingness to circumcise are examined using the Chi-square test to determine whether there were significant associations between each of the predictor variables and the dependent variable. To assess the predictors of willingness to circumcise the binary logistic regression model was used. The binary logistic regression model is used because the dependent variable is dichotomous. See detailed account of the data and methods of analysis in chapter 3.

6.2 Background characteristics of the sample

Table 6.1 shows the characteristics of respondent who were not circumcised at the time of the survey. Slightly more than two-fifths (40.8%) of the respondents were willing to circumcise. Almost a third (29.4%) of young men who were not circumcised were aged 20-24 years, which was the highest, while more than a fifth (21.5%) of the them were aged 30-35 which was the lowest. About 23% of youth men who were not circumcised were aged 15-19 years and 26.2% of them were aged 25-29 years.

In terms of marital status, the highest proportion of men (15-35 years) in Harare, Zimbabwe who were not circumcised, had never married, making up almost two-thirds (63.8%) of the sample. Only three percent of youth who were not circumcised at the time of the survey were

formerly married and 33.2% of them were married/living together. The highest (79.1%) proportion of men aged 15-35 who were not circumcised had secondary level education and five percent of them had primary education. A little less than a fifth (16.1%) of them had higher level of education.

The highest (35.1%) proportion of the youth aged 15-35 who were not circumcised was in the low wealth status. Almost one-third of the youth (32.4%) were in the medium and high wealth status categories. Majority (57.1%) of the respondents were employed. Slightly more than a third (34.2%) of the youth who were uncircumcised, were affiliated to the Mainline Christian group while about ten percent (9.8%) of them profess Other Christian group. In addition, close to 10% of them had no religious affiliation and 24.0% were affiliated to the Pentecostal group. Majority (91.3%) of the youth who were not circumcised were Shona. Sixty-one percent (61.0%) of the respondents had never tested for HIV and over 76.4% of the youth who were not circumcised did not approve of voluntary counselling and testing before male circumcision. Only (1.1%) of the respondents had never heard of Voluntary Medical Male Circumcision.

Table 6 . 1 : Background characteristics of youth who were uncircumcised (n=666)

Variable	Frequency	Percent
Age group		
15-19	152	22.9
20-24	195	29.4
25-29	174	26.2
30-35	143	21.5
Marital status		
Married/Living together	221	33.2
Formerly Married	20	3.0
Never Married	425	63.8
Education		
Primary	32	4.8
Secondary	527	79.1
Higher	106	16.1
Wealth status		
Low	234	35.1
Medium	216	32.4
Higher	216	32.4
Employment status		
Employed	380	57.1
Unemployed	286	42.9
Religion		
Mainline	228	34.2
Pentecostal	160	24.0
Apostolic Sect	147	22.1
Other Christian	65	9.8
No religion	66	9.9
Ethnicity		
Shona	608	91.3
Other	58	8.7
Ever tested for HIV		
Yes	406	61.0
No	260	39.0
Approval of VCT prior MC		
Yes	157	23.6
No	509	76.4
Ever heard of VMMC		
Yes	659	98.9
No	7	1.1
Willingness to circumcise		
Yes	272	40.8
No	394	59.2
Total	666	100

Source: Fieldwork, 2014

6.2 Percent distribution of background characteristics by willingness to circumcise

Table 6.2 shows the relationship between the background characteristics and willingness to circumcise. The results show that there was a significant association between, marital status, education, religion and approval of VCT before circumcision, on one hand and willingness to circumcise on the other. From Table 6.2, marital status, education and approval of HIV test prior to male circumcision.

Marital status was significantly related to willingness to circumcise ($p<0.05$), 44.3% of young married men indicated they were willing to circumcise, which was the highest compared to 39.1% and 40.0% of never married and formerly married young men respectively who were will to circumcise. Contrary to expectation, the proportion of youth who were willing to circumcise decreased with increase in education. Fifty six percent of the youth who had primary education were willing to circumcise, which was the highest and 29.9% of those who had higher level of education were willing to circumcise, the lowest. Forty two percent of the youth who had secondary education were willing to circumcise.

In addition, approval of VCT prior to male circumcision was statistically associated with willingness to circumcise ($p<0.05$). Specifically, willingness to circumcise was higher (48.4%) among youth who reported approval of VCT prior to male circumcision than their counterparts who did not approve of VCT prior male circumcision (38.5%).

Table 6 . 2 : Background characteristics by willingness to circumcise

Variable	Yes (%)	No (%)	χ-value	P-value	Total
Age			4.633	0.201	
15-19	37.5	62.5			152
20-24	47.2	52.8			195
25-29	38.5	61.5			174
30-35	38.6	61.4			145
Marital Status			8.452	0.038	
Married/Living together	44.3	55.7			221
Formerly married	40.0	60.0			20
Never married	39.1	60.9			425
Education			8.799	0.012	
Primary	56.3	43.8			32
Secondary	42.1	57.9			527
Higher	29.9	70.1			107
Wealth quintile			2.508	0.285	
low	43.6	56.4			234
Medium	42.1	57.9			216
High	36.6	63.4			216
Employment Status			0.367	0.545	
Employed	41.8	58.2			380
Unemployed	39.5	60.5			286
Religion			11.066	0.256	
Mainline	41.7	58.3			228
Apostolic sect	42.5	57.5			160
Pentecostal	32.7	67.3			147
Other Religion	36.9	63.1			65
No Religion	56.1	43.9			66
Ethnicity			0.223	0.637	
Shona	41.1	58.9			608
Other	37.9	62.1			58
Ever tested for HIV			0.017	0.90	
Yes	40.6	59.4			406
No	41.2	58.8			260
Approve of HIV test prior MC			4.868	0.027	
Yes	48.4	51.6			157
No	38.5	61.5			509
Ever heard of VMMC			0.000	0.995	
Yes	40.8	59.2			644
No	40.9	59.1			22
Total	272	394			666
Percent	40.8	59.2			100

Source: Fieldwork, 2014

6.3 Knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection by willingness to circumcise

Table 6.3 presents the relationship between knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection by willingness to circumcise. From Table 6.3, knowledge about male circumcision and attitudes towards male circumcision were significantly related to willingness to circumcise.

A higher (16.7%) proportion of the youth who had high knowledge about male circumcision were willing to circumcise compared to 8.3% of their counterparts who had low knowledge about male circumcision. With respect to attitude towards male circumcision, while 19.5% of the youth who had favourable attitude towards male circumcision were willing to circumcise, less than ten percent (9.2%) of young people who had unfavourable attitudes towards male circumcision were willing to circumcise. With regards to perception of risk to HIV infection, as risk perception increased the proportion of those willing to circumcise increases but the results were not significant. While 17.1% of respondents who perceived themselves to be at higher risk of HIV infection were willing to circumcise, 15.8% of those who perceived themselves to be at low risk to HIV infection and 14.2% indicated that they were at no risk are willing to circumcise.

Table 6. 3: Knowledge about male circumcision, attitude towards male circumcision and perception of risk to HIV by willingness to circumcise

Variable	Yes	No	χ-value	P-value	Total
Knowledge about male circumcision			7.039	0.008	
Low knowledge	8.3	91.7			157
High knowledge	16.7	83.3			627
Attitude towards male circumcision					192
Unfavourable attitude	9.2	90.8			181
Favourable attitude	19.5	80.5	15.833	0.000	
Perception of risk to HIV infection					
Yes at higher risk	17.1	82.9	0.624	0.732	82
Yes at low risk	15.8	84.2			279
No not at risk at all	14.2	85.8			423
Total	118	666			784
Percent	15.1	84.9			100

Source: Fieldwork, 2014

6.4 Predictors of willingness to circumcise among men aged 15-35 in Harare, Zimbabwe

As depicted in Table 6.4, the Hosmer-Lemeshow Goodness of fit test (H-L gof) shows the model fits the data well with a significance greater than 0.05 (p>0.265). Logistic regression was performed to assess the impact of background characteristics on willingness to circumcise. The results indicate there was a statistically significant impact of age, education, religion, perception of risk to HIV infection and attitude towards male circumcision on willingness to circumcise. However, knowledge about male circumcision, marital status, wealth status, employment status, approval of VCT before circumcision, ethnic group, ever tested for HIV and ever heard of VMMC were not statistically significant predictors of willingness to circumcise.

Age was marginally related to willingness to circumcise. Men aged 15-19, 20-24 and 25-29 all showed to be less likely to be willing to circumcise compared to those aged 30-35 years, however, it was only men aged 25-29 who were significantly different from those who were 30-35 years. The odds of men aged 25-29 compared to those aged 30-35 years being willing to circumcise was 9.4% lower (OR=0.906). With respect to education, youth who reported they had primary and secondary education were less likely to be willing to circumcise compared to those who had higher level of education. The results showed that the odds of youth with primary education compared to those with higher level of education were 61% lower (OR=0.395). In addition, the odds of youth who had secondary education compared to those with higher level of education being willing to circumcise were 42% lower (OR=0.581).

Furthermore, respondents who belonged to the Apostolic sect were more likely (OR=2.78) to be willing to circumcise than respondents who belonged to No religion. In addition, Other Christians were more likely (OR =2.13) to be willing to circumcise compared to respondents who belonged to No religion.

Furthermore, perception of risk to HIV infection was significantly related with willingness to circumcise. That is, respondents who perceived themselves to be at higher risk to HIV infection were less likely (OR=0.573) to be willing to circumcise compared to those who perceived themselves to be at no risk. Finally, table 6.4 shows that men aged 15-35 years

who had favourable attitudes towards male circumcision were more likely (OR=3.29) to report willingness to circumcise compared to those who had unfavourable attitude.

Table 6. 4: Predictors of willingness to circumcise among men aged 15-35 in Harare, Zimbabwe

	B	S.E.	Exp(B)
Age			
30-35 (R)			
15-19	-0.217	0.360	0.805
20-24	-0.554	0.294	0.575
25-29	-0.099	0.262	0.906+
Marital status			
Never married			
Married/living together	-0.343	0.251	0.710
Formerly married	-0.012	0.542	0.988
Education			
Higher education (R)			
Primary	-0.929	0.473	0.395*
Secondary	-0.543	0.268	0.581*
Wealth status			
High (R)			
Low	-0.062	0.228	0.940
Medium	-0.059	0.217	0.943
Employment status			
No (R)			
Yes	-0.159	0.214	0.853
Religion			
No religion (R)			
Mainline	0.423	0.313	1.526
Pentecostal	0.333	0.330	1.395
Apostolic Sect	1.023	0.330	2.781*
Other Christian	0.756	0.387	2.131+
Ethnicity			
Other (R)			
Shona	0.005	0.311	1.005
Ever tested for HIV			
No (R)			
Yes	0.099	0.202	1.104
Approval of VCT prior to MC			
No (R)			
Yes	-0.305	0.200	0.737
Ever heard of VMMC			
No(R)			
Yes	0.537	0.484	1.712
Perception of risk to HIV infection			
No Not at risk at all (R)			
Yes at higher risk	-0.556	0.293	0.573+
Yes at low risk	-0.234	0.191	0.791
Knowledge about male circumcision			
Low knowledge (R)			
High knowledge	0.243	0.213	1.275
Attitude towards male circumcision			
Unfavourable attitude (R)			
Favourable attitude	1.192	0.178	3.294*
Constant	-0.118	0.755	0.888
Observations	666		
Nagelkerke R Square	0.168		
H-L gof test	0.265		

Source of data: Fieldwork, 2014
+P<.1,*p<.05,**P<.01,

6.5 Discussion

This chapter addressees research objective three. The chapter revealed that less than half of the young men who were not circumcised at the time of the survey were willing to circumcise (40.8%). This proportion is much lower compared to a study conducted among rural men aged 18-44 in Zimbabwe where willingness to circumcise was 52% (Mavhu et al., 2011). The plausible explanation for the differences in the two studies could be an artefact of the data used in the respective studies. For instance, the differences in these studies could be attributed to differences in the samples. Despite the differences, the proportion of respondents willing to circumcise in both studies were still relatively low considering efforts that have been put in place to educate people on the importance of male circumcision in Zimbabwe. Further, there is a positive association between level of urbanisation and education. Thus, the fact that the sample for the present study was selective of relatively more educated persons who reside in an urban, cosmopolitan area like Harare could explain the lower willingness rate in this study. So the educated people perhaps are not willingness to circumcise because they might be sceptical about the efficacy of male circumcision in preventing HIV.

The present study also established that age and willingness to circumcise was statistically related, the results showed that respondents were less likely to be willing to circumcise even though it was only younger men aged 25-29 who were significantly less likely to be willing to circumcise compared to those aged 30-35. The study findings are dissimilar to other studies that have found that younger men were more likely to be willing to get circumcised compared to the older men (25 years and above) (Gasasira et al., 2012; Macintyre et al., 2014). It has been reported that youth aged 20-29 have the highest incidence of new HIV infection in Zimbabwe and risky sexual behaviour has also been reported among young males in urban areas (Ministry of Health and Child Welfare, 2010). Hence, it is expected that this cohort would be willing to circumcise because of its protective effect against HIV infection (WHO/UNAIDS, 2011). Perhaps those aged 25-29 are less likely to be willing to circumcise because the likelihood of this cohort to have entered into marriage is high. Studies have shown that the median age first marriage among men aged 25-49 is 24.8 years (ZIMSTAT & ICF International, 2012). Further studies confirm that married men are sometimes discouraged from going for circumcision because their spouses are against male circumcision, hence, these men aged 25-29 might not be encouraged to undertake circumcision (Bailey et al., 2007; Obure et al., 2011).

In addition, younger youth usually find it easy to adapt to change than older men as a result of their responsiveness to peer pressure (Skolnik et al., 2014). However, peer pressure may negatively impact on decision making among younger youth. The desire to conform to social norms might play an important role in willingness to circumcise. Therefore, in a bid to belong to a group, young people make group decisions unlike older people who are more independent and discreet in decision making. Individual behaviour intention is influenced by whether the significant others approve or disapprove of their behaviour (subjective norms) to take circumcision (Gurman et al., 2015; Jayeoba et al., 2012; Obure et al., 2009; Skolnik et al., 2014). Perhaps peer pressure can be more important among younger youth (25-29 years) than the advice coming from conventional sources such as medical authorities, which is making them less willing to circumcise. In addition, perhaps the on-going male circumcision marketing strategy in Zimbabwe, which portrays circumcised men to be perceived as being smart has failed to appeal to the youth, aged 25-29 to report willingness to circumcise.

Despite little being known about the impact of education on willingness to circumcise in 14 east and southern African countries, which have integrated male circumcision to their health systems, the current study demonstrated that education is a significant predictor of willingness to circumcise among men aged 15-35 years in Zimbabwe. Specifically, the findings from this study show that both respondents with primary and secondary education were less likely to be willing to circumcise than those with higher educational attainment. The findings of the study do not concur to Asiimwe (2011) who noted that men in Uganda, with primary education were more likely to be willing to circumcise than men with higher educational attainment.

Perhaps the HIV prevention health education offered in primary and secondary schools is different from what is being taught at higher education (tertiary institutions). The Ministry of education might be teaching different HIV prevention methods to youth who are in both primary and secondary schools compared to those at higher learning institutions. Hence, youths with primary and secondary may be taught to abstain to prevent HIV infection and they end up internalising it as the only effective method available to prevent HIV. Youth who are currently in tertiary institutions (higher education) youth may be taught different method apart from abstaining such as circumcising. The qualitative findings of this study, found that

key informants (religious and cultural leaders) were not supportive of male circumcision because they thought it encouraged premature sex among youth.

A number of studies in both developed and developing countries have shown that male circumcision is associated with religious affiliation. Studies usually indicate that Muslim men are more likely to be circumcised compared to men of other religious groups with reference to Christians (Tram & Bertrand, 2014; WHO/UNAIDS, 2007). Against a background of less than 1% Muslims in Zimbabwe (MOHCW, 2009), the present study could not assess the Muslim/Christian differences in Zimbabwe.

The present study found that religion influences willingness to circumcise. For instance, both the Apostolic Sect Christians and Other Christians were more likely to be willing to circumcise compared to those respondents who were not affiliated to any religion. These Christians groups both belong to the African Independent Church. The study findings seem to be contrary to religious doctrines of both Apostolic Sect Christians and Other Christians. Religious doctrines play a pivotal role in determining the acceptance of certain health behaviours. For instance, some of the African Independent Churches (Apostolic Sect Christians and Other Christians) have church doctrines that are against conventional medical approach. Their members are totally prohibited from seeking Western medical care, traditional medicine and also sending their children to school (Machingura, 2014). Both Apostolic Sects and Other Christians believe in healing through the prophet and exorcism of evil spirits. As a result, the beliefs they hold de-motivate them from seeking modern medical attention. In as much as their doctrine is silent on male circumcision, it is their belief in the power of the holy waters that perhaps curtails the uptake of male circumcision.

With this in mind, male circumcision might not be acceptable because it is performed within the clinical settings which they do not ascribe to. However, youth from the Apostolic Sect Christians and Other Christians were more likely to be willing to circumcise. Perhaps those youth who belong to the Apostolic Sect Christians and Other Christians have developed a more liberal approach to new HIV intervention such as male circumcision due to intermixing with other religious and cultural groups that encourage it. This view is consistent with previous research that associated uptake of male circumcision with intermixing of urban pupils at school with different religious and cultural backgrounds. Thus, male circumcision prevalence in urban areas was gradually increasing in Western Tanzania (Nnko et al., 2001).

Generally, Christians are sceptical about male circumcision practice because the fundamental basis of male circumcision has been linked more to the reduction of HIV and STIs contraction. This is contrary to the Christian belief and teaching about abstinence and being faithful to one partner as the only ways and means to prevent STIs. This perception is supported by previous findings which revealed that Christians view and link male circumcision to promiscuous behaviour (Downs et al., 2013). Perhaps, with this in mind, generally Christians are likely to be less willing to undergo and promote circumcision. Consequently, this has posed a serious challenge for the acceptance of male circumcision wholly for HIV prevention. This perhaps explains the reason why Mainline and Pentecostal Christians are not significantly different from young men with no religion.

Perception of risk to HIV infection influences behaviour change among youth men who might feel immune to HIV infection. Perception of risk to HIV infection was statistically significant to willingness to circumcise. That is, respondents who perceived themselves to be at higher risk to HIV infection were less likely to be willing to circumcise compared to those who perceive themselves to be at no risk. Studies have found that HIV risk perception was an important factor in determining men's willingness to circumcise (Keetile & Rakgoasi, 2014; Lundsby et al., 2012; Macintyre et al., 2014). Perhaps the youth who perceived themselves to be at high risk of HIV infection were not willing to circumcise because they might be suspecting that they were already HIV positive. Circumcising HIV positive men is not recommended. This suggests that perception of risk to HIV infection play an influential role in determining willingness to circumcise.

The study findings were contrary to HBM which suggest that individuals who perceive themselves to be susceptible to HIV infection are more willing to take precautionary actions to mitigate the threat of contracting it, a situation which can be explained by the Health Belief Model (Rosenstock et al., 1994). In view of the above, what people think, believe, and feel about male circumcision will ultimately shape their final decision to take up male circumcision. They weigh costs/threats and benefits offered by going through circumcision. However, based on previous studies, youth in urban areas tend to exhibit high HIV prevalence compared to those in rural areas. For instance, based on the 2010 estimates, HIV prevalence was higher (4.5%) among male urban youth aged 15-24 compared to rural youth (3.2%) (ZIMSTAT & ICF International, 2012). Nevertheless, those who perceived themselves to be at high risk to infection should be willing to circumcise but should not

undermine the existing preventive strategies. Concerns are that people might engage in risky sexual behaviours under the impression that they are fully protected from contracting HIV.

Within the Zimbabwean context, no study has controlled for perception of risk to HIV infection., for example (Hatzold et al., 2014; Mavhu et al., 2011; Moyo et al., 2015; Sibanda, 2013b). Therefore, the result of this research adds to the existing body of knowledge and become a baseline study on perception of risk to HIV infection and willingness to circumcise in future. Although it is important to note that perception risk to HIV infection data can be inaccurate, perhaps those respondents who reported that they were at low risk of HIV infection actually perceived themselves to be at high risk. Therefore, social desirability is not ruled out in the current study.

The results of present study showed that attitudes towards male circumcision influence willingness to circumcise. For instance, the results showed that those with positive attitude towards male circumcision were willing to circumcise. This finding is consistent with previous studies done in Kenya and Malawi which revealed that participants who had positive attitude towards male circumcision were more likely to show willingness to circumcise (Mattson et al., 2005; Ngalande et al., 2006). The factors influencing attitude towards male circumcision vary from perceived improved sexual pleasure, disease prevention and cleanliness, belief that circumcised men can have sex without a condom and social desirability (Andersson & Cockcroft, 2012; Lukobo & Bailey, 2007; Mshana et al., 2011; Vincent, 2008). Thus assessing factors influencing attitude toward male circumcision is critical in understanding how male circumcision can be used to prevent HIV infection.

However, the study finding indicates that knowledge about male circumcision was not significantly related to willingness to circumcise but respondents with high knowledge showed to be more likely to be willing to circumcise. The lack of significant relationship between knowledge about male circumcision and willingness to circumcise likely reflect that men aged 15-35 years are willing to get circumcised for many reasons. This could be a function of the appreciation of previous social health programmes which has proved to be effective and successful. For instance, in Zimbabwe, social health programmes do not have a tainted history. Thus, previous successful health programmes in Zimbabwe like Family Planning (FP), Antiretroviral Therapy (ART), Immunisation and Malaria programmes have made individuals to be willing to circumcise and place their faith based on the track record,

rather than information. Indeed, people are likely to develop a positive attitude without being knowledgeable about the male circumcision intervention.

In as much as, comprehensive and factual information on male circumcision is still limited, myths and misconceptions are widespread. Thus, a positive attitude on male circumcision could be strongly linked to myths and misconceptions. Individuals, for example, might assume that if circumcised, one is immune to HIV infection. More so, the male circumcision programme in Zimbabwe is heavily incentivised through the provision of free t-shirts, hats, bangles and satchels. This looks attractive to individuals thus invoking a positive attitude.

Furthermore, in the in-depth interviews, knowledge about male circumcision was not very clear. Some of the responses seemed to pinpoint that youth had a lot of unanswered questions with regards to the efficacy of male circumcision in preventing HIV infection. For instance, one respondent thought that after circumcision condoms were not necessary. Some participants also indicated that the wound might take four months to heal. During the four months, individuals were compelled to visit the clinic everyday so that the wound could be dressed up. Therefore, based on the current study findings, it is clear that current awareness programmes are not very effective in disseminating knowledge about male circumcision. Yet it key that youth should have fully knowledge about male circumcision benefits and efficacy. The lack of knowledge about male circumcision creates fear of risky sexual behaviour among the circumcised youth and affects uptake and willingness to circumcise.

6.7 Summary

This chapter examined the predictors of willingness to circumcise among youth aged 15-35 in Harare, Zimbabwe. This chapter focused on presentation of results and the analyses of data extracted from logistic regression as well as discussion of the results. The study found age was negatively associated with willingness to circumcise. The results showed youth who have attained primary and secondary education and youth who belonged to the Apostolic sect and Other Christians were more likely to be willing to circumcise. Contrary to expectation, youth who perceived themselves to be at higher risk of HIV infection were less likely to be willing to circumcise. The study found youth who had favourable attitudes towards male circumcision, were more likely to be circumcised.

CHAPTER 7: PERCEPTIONS AND MYTHS SURROUNDING MALE CIRCUMCISION UPTAKE IN HARARE, ZIMBABWE

7.1 Introduction

The previous chapter examined factors influencing willingness to circumcise. As reflected in the results, less than 50% (40.8) of young men in Harare, Zimbabwe were not willing to circumcise. This calls for further investigation into the reasons why some men are still not willing to circumcise considering the efforts the government has put in place to inform and educate people on the benefit of male circumcision especially in HIV prevention.

The present qualitative chapter examines perceptions and myths surrounding male circumcision using data obtained through in-depth interviews with Zimbabwean men aged 15-35 and key informants (opinion leaders) in Harare, Zimbabwe. The chapter addresses the fourth objective of the study: *to explore perceptions and myths surrounding Male Circumcision* utilising the thematic approach. The participants who were interviewed for this chapter are different from those interviewed in the previous chapters. The findings are organised into sections. These perceptions and myths either inhibit or promote the uptake of male circumcision in Zimbabwe. The first section of the chapter explores the relationship between knowledge about male circumcision and HIV prevention among participants. The second section explores perceptions and myths surrounding foreskin disposal and how these beliefs have negatively influenced the uptake of male circumcision.

The third section of the chapter examines perceived fear and stigma associated with HIV testing prior to circumcision. The fourth section examines individuals' perceived susceptibility to HIV infection and perceived barriers in adopting male circumcision. The section describes the multiple costs that participants perceive they are likely to experience as a result of male circumcision. The fifth section focuses on perceived adverse effects based on perceived pain rather than actual personal experience. However, some few circumcised participants' reported actual pain than perceived pain. Cultural and religious beliefs that hinder male circumcision uptake are discussed in section six. Section seven of the chapter examines how participants' perceptions of male circumcision affect sexual pleasure and daily work activities respectively. Section eight of the chapter describes the influence of peers, partners/spouses and parents on the decision-making relating to circumcision-seeking

behaviour. Lastly, the chapter describes the environmental factors that are likely to curtail or promote willingness to circumcise.

7.2 Knowledge about the role of male circumcision in HIV prevention

The participants showed a lack of information about how male circumcision partially prevents HIV. Perhaps, the information participants had on particularly voluntary medical male circumcision was not comprehensive and the information did not come from service providers but from informal sources such as peers and family members. Even though participants indicated willingness to circumcise, limited knowledge about male circumcision is preventing them from going for the actual surgery. Some participants misconstrued the 60% partial prevention male circumcision offered in HIV infection.

> *I have heard rumours that once one is circumcised his chances of contracting HIV are reduced by 97% (Man from Harare urban)*

Another example of lack of knowledge about the benefits of male circumcision is illustrated by the statement below by a participant in regard to the procedure's effect in reducing HIV viral load in HIV positive patients:

> *You know, we are not understanding as individuals like the issue of HIV prevention. But we are interested in circumcising. If I have HIV and get circumcised are there chances that the virus will decrease a bit or if you are HIV positive and you get circumcised, then your HIV remain the same (Man from Chitungwiza).*

The lack of knowledge about the health benefits of male circumcision ranged from misinformation about the procedure to scepticism about the procedure's efficacy in preventing HIV infection. Generally, some participants did not believe that male circumcision was an effective method to prevent HIV infection but maybe was, only good for hygiene. The statement below articulates this disbelief by a participant:

> *I think male circumcision does not prevent HIV transmission but only help in maintaining a clean penis. If you are not circumcised if you do not bath for two or three days you will see something like "masadza" [whitish stuff] forming on your penis (Man from Chitungwiza)*

> *Male circumcision enables one to be smart [maintain penile hygiene] because this time (winter) some of us do not bath, a person can spend many days without bathing and the organ will remain smart [penis remains clean]. But I don't believe that it can*

prevent HIV transmission. These male circumcisers want to mislead us (Man from Epworth).

Indeed, some of the participants indicated that they had unanswered questions about the link between male circumcision and reduced risk of HIV infection. This was notable when some participants instead of explaining their knowledge about male circumcision, demanded the research assistant to provide them with more information about how male circumcision could prevent HIV infection. One participant had this to say:

Please explain to me about the whole process so that I am convinced then I will go for circumcision. So far the information that I have is still hanging. I still need some clarification on how just cutting of my thing [prepuce] reduces the chances of HIV infection (Man from Harare Urban).

7.3 Perceptions and myths surrounding foreskin disposal

The perceptions and myths held by men with regards to the disposal of foreskins shaped negative attitudes towards male circumcision. Fears about foreskins being used for ritual purposes were expressed by some participants as articulated by one participant:

I cannot go for circumcision because of the rumours circulating around. It is alleged that the foreskins are being used by Satanists or witchcrafts in performing their rituals and some are being used for baiting sharks in South Africa. What if the rituals end up negatively affecting my fertility and my health? Why is the government not explaining how the foreskins are being disposed or handled? (Man from Harare Urban).

Other participants were of the view that the foreskins were being exported to Zambia for use in the manufacturing of "dried minced" meat.

I heard something very interesting about foreskins. It is rumoured that foreskins are used to make "makanyanisi", (dried mincemeat like) so they are sold to a company in Zambia. I am not sure if we have that company in Zimbabwe (Man from Harare Rural).

Participants believed foreskins were used for satanic rituals. To legitimise their perceptions, participants thought the government was not addressing these issues on disposal of the foreskin therefore the rumours were true. They also mentioned that the foreskins were exported to South Africa and were used in "baiting sharks".

However, a key informant from a male circumcision organisation provided an important insight into how human tissues including the prepuce were disposed.

> *Well, we have heard such rumours circulating but it's not true, foreskins are treated like any other human body parts which are removed in a hospital setting. There is a law called "Human Tissue Act"; under this law all human parts are burnt in an incinerator and not to be issued to individuals to dispose them (Health officer).*

Even though some participants were aware of the fact that the foreskins were burnt, they still did not believe it, and demanded to witness the process.

> *This foreskin is important … aaah, what we heard is that it is burnt. It is difficult to believe, we need other people to witness the process. But I cannot say that is the main problem that is stopping people from getting circumcised but it's a problem (Man from Harare Rural).*

7.4 Fear of HIV testing

Besides myths and perceptions surrounding foreskins disposal inhibiting uptake of male circumcision, the fear of HIV testing is another outcome of the general lack of adequate knowledge about male circumcision in Zimbabwe. While generally, participants appeared willing to circumcise, they were afraid of HIV testing prior to undergoing the procedure, and disclosing their HIV status prior to it. Participants indicated that they were unhappy and frustrated with the procedure, mentioning that they had to undergo HIV test. Overcoming HIV test was perceived to be the greatest challenge. This fear was articulated by a key informant from the National AIDS Council to illustrate the challenges male circumcision programme is facing was the mandatory HIV testing prior to male circumcision:

> *We link circumcision to HIV testing; these are two programmes that create challenges in terms of adult men to go for HIV testing when they know they have been exposed to HIV. HIV testing is a big decision and statistics show that a lot of men have never been tested in their lives. If only we could just circumcise these men without testing them. I think a lot will be coming forward and the government will reach its target. I think policy makers should look at the opportunity cost of making HIV testing compulsory when one wants to circumcise. Let say we want to circumcise 100 men without testing them for HIV but among them there might be only four who are HIV positive. We would have saved HIV transmission on 96 men. But if HIV testing is made compulsory may be only 20 men will come forward.*

Some men feared HIV testing and disclosing their HIV status to family members, friends and spouses. Therefore, men were found to have negative attitudes towards male circumcision because of HIV testing. In addition to the fear of HIV testing, participants also mentioned the issue of stigmatisation. The following quotes illustrate the perceived fear of HIV testing and stigma surrounding HIV testing:

> *I can't go for HIV testing because I am afraid. Knowing my HIV status is like a death sentence. Therefore, if I decide to go for circumcision I will not inform anyone. Because if I come back without being circumcised my friends will start speculating about my HIV status. It creates stigma especially if you have informed your friends about your intention to circumcise (Man from Epworth).*

> *In fact, I do want to circumcise ……but I'm worried in a way. You know this compulsory HIV testing. Can they just circumcise without someone going through this hell? I have engaged in risky sexual behaviour previously I am afraid to get tested (Man from Chitungwiza).*

7.5 Perception of risk to HIV infection

In addition to fear of HIV testing and stigma, some participants felt it was not worth going through the trauma of HIV testing, pain, convincing a spouse and still recommended to use a condom. Generally, men suggested that male circumcision was not important since there were other known effective methods which could be used to prevent HIV, for instance, condom use and being faithful to one's partner.

> *If I am going to still use a condom. So why continue to cut, being tested, negotiating with wife, why not just continue using protector (common brand of condoms). While condoms have a high chance of protecting, why worry about using both, cut and using condoms (Man from Chitungwiza).*

> *Even if I am circumcised I still have to wear a condom, so why bother. I would use other prevention measures like being faithful to my partner because circumcision is not fair (Man from Epworth).*

However, a few participants viewed male circumcision to be an important emergency HIV prevention method in case of unplanned sex without a condom. But this is reflective of lack of knowledge since circumcision does not prevent HIV infection 100%.

> *Yes, there are good benefits of male circumcision. Sometimes as men we are involved in sex under the influence of alcohol and the sex escapade is not planned so no time to*

buy condoms. If you circumcised, you are protected from HIV. I'm better off than those uncircumcised men (Man from Harare Rural).

7.6 Perceived adverse effects

Not only were participants afraid of HIV testing but the participants also feared adverse effects from male circumcision. The participants expressed that, fear of pain during and after the procedure and surgical accidents, were perceptions that hinder the uptake of circumcision. Below is how one opinion leader expressed this fear of the pain that comes with the procedure:

I think I will never circumcise because of the pain, which some circumcised men say lasts for two weeks. I saw my neighbour's teenager son who had come from circumcision and I said to myself I cannot manage this. The way the teenager was walking….. I could tell he was in great pain (Key informant from Men's forum group).

However, the issues of pain also brought in new dimension of masculinity as those who had undergone male circumcision portrayed themselves as strong men who can endure pain.

You need to endure three phases of pain for instance, you are injected before circumcision, and stitches are made right round the …… and you deep it regularly in salty water until the wound heals. This is a dilemma facing men. On one hand, there is fear of physical pain and on the other hand, there is the cultural expectation regarding what constitutes masculinity….. (Man from Harare urban).

Beside fear of pain during male circumcision, some participants believed doctors were likely to make a mistake and cut the whole penis. Some respondents described male circumcision as a small surgical operation performed by a medical professional. They believed it was a small operation done on a "big engine" (penis), so only specialised personnel with "sober habits" should undertake the procedure.

I can't imagine a doctor making a mistake and cutting my "big engine" [penis] because I have heard that doctors can make a mistake and cut the head of the penis. This means the length of my penis is reduced and I suffer from erectile dysfunction. I would not father babies and fail to satisfy my wife when I marry. I will regret the *whole of my life seeing others getting married and enjoying sex with their partners (Man from Chitungwiza).*

Furthermore, participants saw male circumcision as a delicate operation like a heart operation and the penis was perceived to be an important organ. As a result of the importance men

ascribe to their penises, participants suggested radical measures which were to be done to safe guard against botched surgical procedure. This is how one participant put it:

> *Any doctor who undertakes male circumcision should be put under a "breathalyser" to see whether they are not performing the procedure under the influence of alcohol. Otherwise, a lot of men will end up having their original penis replaced with a rubber penis because of the mistakes a drunken doctor is likely to make (Man from Harare Urban).*

Even though one health professional concurred with the participants that men feared pain, he indicated that these adverse effects were over stated by most men. In addition, he pointed out that men in general, have poor health seeking behaviours:

> *Well, men associated male circumcision with self-inflicting injury while some one is healthy. Generally, men do not like seeking medical attention even if they are sick. So it is difficult for men to come for circumcision. They have myths surrounding men who visit hospitals more often. They are usually labelled weaklings (Health professional).*

> *Hospitals are considered as women's place. Since women visit hospitals more frequent than men even to seek medical help for minor ailments such as headache and flu. They are perceived care givers at home. So they sometimes take the responsibility to take sick children and relatives to hospitals (Health professional).*

7.7 Cultural and religious perceptions towards male circumcision

Participants mentioned circumcision as a cultural identity that distinguishes the majority Shona who previously did not practise circumcision from the minority ethnic groups such as Shangani, Venda and the Remba, hence some participants felt that introducing it could make them lose their cultural identity. They feared that the government was imposing an alien culture on them to wipe away their own identity.

> *Generally, the uptake of male circumcision has been low because it may threaten our own cultural identity as the Shona people. It appears as if we are forfeiting our own birthright to other cultures. The biggest challenge we have with ministry of health is the failure to involve us and be sensitive to our own way of life. What is exactly wrong with us being uncircumcised? If it is about hygiene, we bath every day. We feel we are being forced into an alien practise, which is not ours (Man in Chitungwiza).*

> *At my son's school they organised a group circumcision program. I did not allow my son to circumcise because of cultural reasons. I do not come from a circumcising ethnic group. I feel my son is now being ridiculed at school because he did not go for this group circumcision program (Man from Epworth).*

Other participants mentioned that male circumcision should be banned because it was against their culture. This perspective among participants was described by one of the traditional key informants.

> *Male circumcision is an old tradition among other cultures not ours the Shona. We have our own cultural ways to deal with the penis. I think it is unfair to embrace other people's culture at the expense of ours.*

In fact, the association of male circumcision with cultural identity might have contributed to derogative terms, which were alleged to be used to refer to circumcised men. Participants mentioned that they feared being labelled with such derogative names. This attitude has led to a situation where men who want to circumcise do so in secret. A circumcised man reported that he never told his peers about his intentions to circumcise and will keep his circumcision status secret to all his peers. The participant said that he was already aware of bad names being given to circumcised men. This is how he put it:

> *You know what my friend? ..... people in this community have several derogative terms that are being used to refer to circumcised men. Terms such as shondo, mupositori, yakamenya and sfu (straight from the underwear) (Man from Harare urban).*

A closer analysis of these terms reveals they are very derogative Shona terms, which demean the social status of circumcised men.

On the other hand, other participants indicated that culture should not be a barrier to male circumcision uptake. They perceived culture to be dynamic and can change anytime. Some participants agreed that modernisation has resulted in a lot of people accepting other people's cultural practises as a result of intermingling with different cultural groups. Therefore, some participants believed male circumcision was a good thing and should be sanctioned by law.

> *I think circumcision is a good practice with a lot of health benefits. …… in fact all stakeholders involved should advocate for circumcision practice to become a law. Once it becomes law I don't think anybody can shun it. I think most Zimbabweans should not deny themselves the benefits of male circumcision because our fore fathers were not cutting [circumcising]. I think cultural diversity is increasing, exposing us to new ways of life [Man from Chitungwiza]*

On the other hand, some Christian participants believed that male circumcision was no longer a necessary practise. They argued that Christians do not need to go through circumcision as long as they lead a faithful Christian life.

> *I hear people saying that we need to undergo circumcision. What is the purpose of male circumcision among Christians? Male circumcision was an Old Testament practise which fell away when Jesus came into the picture. Moreover, Christians are supposed to be faithful to their partners. According to Christians male circumcision is a non-event with no significance (Pastor from a Pentecostal Church).*

7.8 Perceived sexual satisfaction and abstinence during the six weeks healing period

There is a need to understand how men link male circumcision to sexual performance and satisfaction as this affects men's willingness to circumcise. Culturally, men are supposed to sexually satisfy their women. Men with weak erections are not regarded as men. This can either positively or negatively influence their uptake of male circumcision. A lot of suggestions were put across as to how sexual pleasure improved or deteriorated as a result of male circumcision in both men and women. Participants with reference to the removal of the foreskin and sexual pleasure expressed various views. For example, a number of participants mentioned, "improved number of rounds", "reduction in foreskin sensitivity" and prolonged ejaculation.

> *The reason is that when the organ is covered with foreskin it becomes too soft but when circumcised the organ develops a grip, a rough surface that gives pleasure during sexual intercourse. Personally I asked my wife what she feels now as compared to a period before and she said things have changed. I am now lasting longer, before I used to ejaculate too soon. Because of lack of skin I can have many rounds. My wife now even cries like a baby during sexual intercourse because of pleasure. I can tell myself that things have changed for the good (Circumcised man from Harare Urban).*

> *I might leave a wife before she reaches orgasm. So it is said that if someone has been circumcised, it prolongs ejaculation to the extent that the man will reach orgasm at the same time with her wife [Man from Harare Urban).*

In contrast to the above, some of the participants believed that the removal of the foreskin during circumcision resulted in dry sex because the foreskin harbours some lubricants. This dry sex was believed to affect female sexual satisfaction negatively and they may shun circumcised men.

> *The removal of the foreskin deprives the penis of the natural lubricant, which makes it easy to penetrate. The removal of the fluids makes sex dry for women and they develop abrasions. You'll end up abstaining from sex for a long time waiting for your woman to heal [Man from Epworth]*.

Moreover, some participants were of the view that male circumcision leads to loss of penile sensitivity, reduce ejaculation and reduced sexual pleasure in men. The penis became like a "dead rubber". Consequently, it was perceived that male circumcision was making women to enjoy sex at the expense of men. Circumcision was perceived to reduce ejaculation more often and the accumulation of semen could make men sick. Below is how some of the participants expressed this negative view about circumcision:

> *Circumcision makes ejaculating difficult and some sperms will accumulate in the "men's bag" (epididymis) and this makes men to experience pain because the bag will be over flowing with sperms. Failure "to produce" makes women frustrated during love making because they are supposed to feel the fluid [sperms] being deposited inside them [Man from Harare Rural]*.

> *I think the foreskin increases friction, sensation and increase penile size. The size of the penis matters for women. I think male circumcision reduces sexual pleasure for both women and men [Man from Harare Urban]*.

In addition, participants felt sexual abstinence during the six weeks post operative surgery deprived them of sexual pleasure. They believed it was difficult to adhere to the six weeks without sex especially for married men. In addition, they believed sharing a bed with a woman during post operative period was difficult.

> *My brother, after circumcision one has to abstain from sex since it's a requirement to allow the wound to heal before resuming sexual activities. I find it as challenge if you are married and used to sex every day. Unless we sleep in separate bedrooms or my wife visits her people for six weeks. I cannot resist her. Maybe I can try up to two weeks but beyond ….. I really feel it is a great challenge. It is like forced sex leave [Man from Harare urban]*.

A health worker (key informants) shared the same views on the challenges married men faced during the healing period. A health worker expressed considerable concern about married men failing to adhere to the stipulated six weeks of abstinence because some were not coming back for the routine check up. He assumed that the married men were doing self

diagnosis about whether the wound had healed through early resumption of sexual activities. The health worker stressed the following:

> *I think circumcising men aged 14-30 is good because this age group, most are not married. Mostly it is the time when one is not married and hence a person can manage to wait for the required time before re-engaging in sexual intercourse. It is difficult for married men to get circumcised because most cannot wait for six weeks without sex. We do not encourage this as health professions because fresh wounds may encourage re-infection with HIV.*

Not only were challenges associated with abstinence and sexual activities. Participants also felt that the healing period kept them from work. They perceived a long period of pain and spending several weeks being a "cabbage" without working, loosing on income especially those who were self employed.

> *For me I fear that period. I heard that you spend three weeks in pain, the penis being bandaged and suspended. I am a vendor I cannot afford to waste time and my family needs food on the table. I am supposed to be at work 365 days a year [Man from Chitungwiza].*

> *I cannot take sick leave from work because I want to go for circumcision. I work at a flea market and my wages are calculated on the number of items sell [Man from Epworth].*

7.9 Interpersonal influences

Peer pressure

Although the decision to circumcise may be a personal decision more often, social, cultural, economic reasons and interpersonal factors also come into play. For instance, peers, spouses/partners, parents and church leaders were found to be significant in influencing the decision to circumcise. Most of the participants spoke positively about how they were encouraging each other to take up circumcision as peers.

> *It is not painful to get circumcised. I can say a toothache is more painful than getting a circumcision. I recently advised a friend of mine and he went for circumcision two days ago. He is also testifying the same thing. He told me he never stopped driving and the pain that was said by many is not real. Most of my friends are going for circumcision. So far three have taken up circumcision [Circumcised Man from Harare Urban].*

On the other hand, several participants shared different views from the one above, especially, among uncircumcised peers. They were still having the "wait and see attitude". Some were waiting patiently to see who was going to take the "bull by its horns" amongst their circle of friends. Some of the participants needed first hand information from a close friend. The friend was supposed to describe the amount of pain expected and how the wound was managed. A participant explained this perception as follows:

> *I definitely want to circumcise but I don't have at least one friend who has undergone circumcision. Yes, with friends we discuss but at times you find that it is of no importance because we end up discouraging each other. Surely, if you have not experienced the surgery, you cannot lead your friend into doing the thing. What if they suffer "permanent disability" and also fail to "resurrect from the operation"? You end up regretting the rest of your life [Man from Harare Rural].*

It is quite clear from the above statements that peer influence is very crucial in the decision to circumcise or not. In addition, in all the above scenarios, there was a general consensus among participants that it is easy to discuss male circumcision issues with their friends than spouses/partners, parents and religious leaders.

Influence and perception of partners/spouses with regards to male circumcision

The significant role women play in influencing their partners to circumcise also emerged in most interviews. The participants were asked if they discussed circumcision issues with their spouses/partners. Those men who said they discuss such issues with their partners/spouse felt, in general, that most women were up in arms with the government's circumcision programme. There were two main views held by women. Firstly, women perceive male circumcision to be promoting risky sexual behaviours in their partners. The following statements illustrate how women by and large perceive male circumcision:

> *Whenever, I suggested to my wife that I was planning to go for circumcision. My friend…., my wife was angry with me. She said eeish you want to now start sleeping around with different women because you will feel protected. She said this government programme is encouraging men to be promiscuous. Where is the infection coming from if we are both faithful? Then I decided to stop the discussion because I realised that my wife thought I wanted to have sex outside marriage [Man from Chitungwiza].*

Secondly, participants concurred that most women lacked basic knowledge about the benefits of male circumcision. Indeed, participants indicated that it was difficult for women to support their spouses/partners if they were not knowledgeable about male circumcision. Furthermore, various participants described how male circumcision discussions with their spouses were a subject of contention. Some men in relationships were blaming the government for not involving women in this programme.

> *You have to first negotiate with your wife and convince her about male circumcision benefits. I was forced to bring information about male circumcision which I downloaded from an internet café. This was a way of trying to convince her that she was also going to benefit from circumcision, for instance, I highlighted how she was also going to benefit like in preventing of cervical cancer and HIV infection. My wife's response was, "Are you mad?" ……. cervical cancer and HIV [surprised] how do I get protected from these diseases when they cut [circumcise] you? If you don't sleep with other women why do you want to cut? [Man from Harare Rural].*

Even participants who were unmarried but had girlfriends also expressed the difficultly they faced in discussing male circumcision issues with women. There was fear of being rejected by their girlfriends if they went for circumcision. They pointed out that it was difficult to determine the position of a girlfriend with regard to circumcision. Some participants have kept their circumcision status as a secret to their girlfriends. This was evident among those who circumcised before they got married:

> *I did not disclose my circumcision status to my girl friend. I was afraid to be rejected because I did not know her attitude towards the practise. It was funny that my wife later got to know about my circumcision after several months we got married. She was angry with me because I did not disclose my circumcision status. I think she did not like it circumcised [Man from Harare Rural].*

Earlier in this discussion lack of factual information with regards to male circumcision was also highlighted to be also common among men. Some men demanded to be educated about male circumcision. Then they would be in a position to convince their partners.

> *I am failing to convince my wife because I don't have enough facts to tell her. How can a blind man lead another blind man? Right now I told her about my intentions to circumcise. I told her about the benefits of male circumcision like hygiene and prevention of HIV transmission. She said the whole idea of circumcising [laughs] so you end up having a permanent condom on you. She asked me a lot of questions and I felt stupid [Man from Harare Urban].*

Lack of women involvement in the male circumcision programme from the onset of the programme was perceived to be a challenge in bringing women on board. So women perceived it as a men's programme. May be if we have started this programme highlighting the benefits of male circumcision on women. It was going to be easy to rope in men because women have better health seeking behaviours than men. Women were going to convince their partners about the health benefits of male circumcision (A male circumcision health worker).

Thus, for all intents and purposes, women play an important and influential role in decision making and encouragement for their partners to seek male circumcision services. Most women were not supportive of male circumcision because they lacked adequate information about male circumcision.

Parental influences

Parental influence was found to be a key factor that influenced decisions to seek male circumcision. Parents are perceived to be role models to adolescents and they motivate them to circumcise. Interestingly, some parents had negative attitudes towards male circumcision and they also perceived male circumcision to be a gateway for adolescents to have "free sex" since the children might feel protected from HIV. Other parents were now forcing their children to go for circumcision as a stop gap measure to see whether their children have had unprotected premarital sex.

Aaaaah, it's difficult to tell your parents that you want to go for circumcision because they might force you to get circumcised yet you are not ready to face the pain. If you refuse, they might want to see if I have not been involved in risky sexual behaviours before since they do HIV testing first [Man from Harare Urban.]

However, some parents supported their son's circumcision and knew the benefits of male circumcision.

I think what made me go for circumcision was the support I received from my father. My father said "my son circumcision is good because you will be preventing a lot of diseases and makes you clean" [Man from Epworth].

In addition, some parents believed male circumcision promoted risky sexual behaviour. They believed that circumcised children might want to experiment with the new penis [circumcised penis] hence promoting premarital sex.

I think male circumcision will promote premarital sex among adolescence. After circumcising they might want to have sex. We have heard stories of students from a certain boarding school that went on sex spree after they were circumcised under a school based circumcision programme. I understand a lot of students at that boarding school developed a lot of STI's. When the ministry of health investigated it was found that most of students who have had an STI were circumcised during the school circumcision programme [Man from Chitungwiza].

The problem with respect to the family's role in the circumcision decision making process seems to be lack of parent-child communication on the subject of circumcision. Issues of sexuality are considered a taboo in many African cultures. In fact, some adolescents who were interviewed felt that parents were letting them down by refusing to sign the hospital consent form to allow them to be circumcised. Some parents cited cultural barriers to be militating against them in making informed decision.

Honestly speaking how can I allow my son to be cut when I am not cut? My fore-fathers did not cut. I have managed to father two sons without any cut. So I won't allow it. If he wants to cut he is going to cut when he is an adult by then he will be out of my house. I don't care about his decision then. It will be up to his wife to support such a weird thing [Man from Harare Rural].

I want to go for circumcision but I am afraid to discuss this matter with my parents. It is not easy to talk about my intentions to cut my penis [circumcise]. Man from Harare Urban].

Some parents lacked adequate information regarding risks and benefits of male circumcision.

It's only that we do not have enough knowledge on how male circumcision partially reduces STI's infections. We just hear through gossip but we don't know if it is true or its just gossip. I need to fully get the information before I take my son to the hospital get him circumcised [Man from Harare urban].

7.10 Environmental factors

Participants had mixed reaction to the quality of the circumcision services offered in public hospitals. Some suggested that there was no privacy and they were exposed to other patients who were not seeking male circumcision services. They were likely to be labelled as promiscuous.

I don't think I am comfortable in seeking male circumcision at a public hospital. I think the other patients in the hospitals will think "ndirimombwe" [someone who

sleeps with a lot of women in Shona]. A lot of people will question my motivation for taking up circumcision [Man from Chitungwiza].

Other respondents suggested that even though male circumcision is free, it incurred transportation costs to the hospitals and the subsequent visits during post operative period.

It is difficult for me to accept male circumcision. I need to pay bus fare. The circumcision centre is not at my door step. Things are tough in Zimbabwe I should save every dollar [Man from Epworth]

Another point raised was that public hospitals were known for rude staff and slow services. They perceived that they might end up waiting for a long time to be circumcised.

Well I had a bad experience with these public hospitals… the nurses are rude and slow. I wonder if they have changed their attitudes because of this circumcision programme. They can afford to leave someone dying what more attending to someone who is not sick. Circumcision is not sickness [Man from Harare Urban]

7.11 Discussion

This chapter addressed research objective four, that is, to explore men's perceptions and myths surrounding Voluntary Medical Male Circumcision. The discussion was organised around nine themes that emerged during the in-depth interviews with study population and key informants (opinion leaders) and knowledge about the role of VMMC in HIV prevention. In addition, the chapter also looked at perceptions and myths surrounding foreskin disposal, fear of HIV testing, perception of risk of HIV infection and condom use, perceived adverse effects, cultural and religious barriers, interpersonal influences and environmental factors.

It is six years after the roll out of the National Male Circumcision Programme in Zimbabwe and most people have been exposed to promotional campaigns about VMMC. It is therefore, important to continuously assess factors that influence uptake and willingness to circumcise, as scaling up is gaining momentum and services are widely being made available at no cost. As the analysis in this chapter has clearly shown, generally, the men interviewed for the study presented, supported male circumcision. However, knowledge about the efficacy of male circumcision in preventing HIV infection was inadequate, which might demotivate youth from accepting male circumcision. Participants displayed poor knowledge of the role of male circumcision in the prevention of HIV infection. These results are inconsistent with other acceptability studies that suggest that male circumcision is generally acceptable if the benefits were made clear (Brito, Luna, & Bailey, 2010; Castro, Jones, Lopez, Barradas, & Weiss, 2010; Ikwegbue, Ross, & Ogbonnaya, 2015).

Other research has shown that perceptions and myths surrounding foreskin disposal negatively impact on willingness to circumcise (Chikutsa & Maharaj, 2015a), a belief which also emerged in this study. The participants believed that foreskins were being exported to Zambia to manufacture dried minced meat and others believed they were used for baiting sharks. In addition, some participants believed that, Satanists and Witchdoctors used foreskins for ritual practices. It was also shown by a health worker that clients were worried about the disposal of the foreskin. These stories about foreskin disposal have been raised in the media. This was even debated in the House of Senate of Zimbabwe and some senators demanded the ban of circumcision (Zhou, 2014). These myths can militate against government's effort in scaling up male circumcision.

The study also revealed that overall, HIV counselling and testing prior to circumcision was a challenge because it was compulsory. Although it was a necessary step to undergo HIV testing because male circumcision was not being offered in isolation but integrated with other Sexual Reproductive Health benefits such as screening of STI's and management, provision of condoms, family planning, and behavioural change in screening for HIV before undertaking male circumcision But the fear of HIV testing and knowing one's serostatus is perceived as a primary barrier to willingness to circumcise. Participants expressed that men were still reluctant to go for HIV testing because of the stigma associated with being HIV positive. Similar results were reported in several studies which found that HIV testing was perceived to be a barrier to circumcision more often than not from VMMC clients who feared testing positive (Grund & Hennink, 2012; Hatzold et al., 2014; Layer et al., 2013; Moyo et al., 2015). A lack of understanding by men about the fundamental importance of HIV testing may inhibit adoption of the new intervention.

Another key finding was that some few circumcised men believed they were at low risk of contracting HIV than uncircumcised men. The problem with this belief is that such men are more likely to take chances and have unprotected sex. There are similarities between the attitudes expressed by the circumcised in this study and those described by Andersson & Cockcroft (2012); Lundsby et al., (2012); Westercamp et al., (2012). This poor understanding of the limitations of circumcision could exaggerate the protective effect of male circumcision even though not many of the participants mentioned that male circumcision lowers their perception of risk to HIV infection.

These findings are important for three reasons. Firstly, because some circumcised men mentioned that they perceived themselves to be at low risk of contracting HIV compared to those who are uncircumcised. Secondly, this is an indication of poor messaging about male circumcision and its potential to prevent HIV infection. Thirdly, this might undermine known HIV prevention method such as consistent condom use and being faithful to one partner. Studies have shown that circumcision can lead to inconsistent condom-use among circumcised men (Riess, Achieng, Otieno, Ndinya-Achola, & Bailey, 2010). Thus, based on these beliefs, that circumcised men were at low risk of contracting HIV, it is important to continue enforcing that male circumcising only partially prevent HIV acquisition to these few men.

While it emerged that a few men were less likely to develop a low risk perception of HIV infection as a result of undergoing circumcision, most men in this study acknowledged that male circumcision only partially prevented HIV infection. However, some men had negative attitudes towards male circumcision because of the numerous problems they would have to overcome such as excessive pain, negotiation with sexual partners and HIV status testing before circumcision. The major challenge mentioned was that condom use was still recommended after male circumcision. These results are in consonance with findings of previous studies which show that men were against using a condom and having a circumcision at the same time to prevent HIV infection (Chikutsa & Maharaj, 2015b).

As noted in previous studies, fear of adverse effects such excessive pain and bleeding during and after operation, penis reduction and death were the most commonly perceived barriers to uptake of VMMC in this study and were also cited as impediments in other studies (George et al., 2014; Herman-Roloff et al., 2011; Skolnik et al., 2014). However, it is crucial to note that during the in-depth interviews only a few participants reported that they were circumcised. Therefore, the fears reported by most participants were based on perceived fear, stories from those circumcised rather than personal experience.

Those circumcised acknowledged that circumcision was a painful procedure from surgery and after surgery. The Health Belief Model can explain this behaviour; individual's go through a process of weighing the perceived benefits and perceived costs before engaging in certain behaviour. In this study, individuals assessed the perceived benefits of male circumcision (partial protection against HIV, hygiene and other health benefits) and the perceived costs (pain during and after surgery). Hence, it is only when perceived benefits of male circumcision are greater than perceived costs that individuals will be willing to take up male circumcision.

It was further found that cultural and religious beliefs were associated with negative attitudes towards male circumcision among some religions and ethnic groups. This has the potential of inhibiting the uptake of male circumcision. These findings are consistent with those found in non-traditionally circumcising communities who do not support circumcision because they want to maintain cultural identity (Chikutsa & Maharaj, 2015b; Obure et al., 2009). The association of culture and VMMC has generated a lot of debate. Even the ethnic groups which traditionally circumcise are facing challenges in embracing Voluntary Medical Male

Circumcision (Mavundla et al., 2010; Sibanda, 2013a; Vincent, 2008). They want to maintain their cultural heritage and continue circumcising in the bush or mountains.

Some participants considered male circumcision inappropriate among Christians but this was reported by 10 percent of the participants in the present study. The view held by these Christians was that male circumcision is not important therefore, a non-event after the coming of Jesus Christ. Moreover, Christians leading a faithful life were less likely to contract HIV. The present findings seem to be consistent with those of other research which found Christians associating circumcision with promiscuous behaviour (Downs et al., 2013; Kelly et al., 2012).

Interestingly, some participants felt that intermixing with other people from various cultural backgrounds has made them appreciate other people's cultures and accept male circumcision. However, at the back of their minds they appreciate the cultural dilemma they might face if they disclosed their circumcision status. Participants in the study articulated concern about stigmatisation. Many or most of the participants were concerned that some uncircumcised members of the community have coined some derogative terms to refer to circumcised men. This finding is consistent with findings from previous studies (Chikutsa & Maharaj, 2015b; Khumalo-Sakutukwa et al., 2013; Moyo et al., 2015).

Consistent with other qualitative studies on acceptability on male circumcision among traditionally non circumcising communities, participants in this study believed that male circumcision affected sexual satisfaction (Castro, Jones, Lopez, Barradas, & Weiss, 2010; Chikutsa & Maharaj, 2015a; Herman-Roloff et al., 2011; Obure et al., 2011). Several views were raised on how both circumcised and uncircumcised penises were perceived to affect sexual performance and satisfaction on both males and females. For instance, in this study, participants attributed sexual satisfaction to the foreskin's degree of sensitivity. The foreskin's presence or absence, according to the participants either decreased or increased erotic sensitivity. As in previous studies, circumcision was perceived to improve sexual pleasure in both males and females (Ngalande et al., 2006).Similar studies are in agreement with the present study's findings which found that most participants believed that circumcision reduced sexual pleasure impeding willingness to circumcise (Bailey et al., 2007; Obure et al., 2011).

The relationship between male circumcision and sexual pleasure has been and remains a contentious issue, with most of the controversy surrounding whether circumcised men enjoy more sexual pleasure than the uncircumcised men. Consequently, scholars have put a lot forward a lot of argument on the relationship between circumcision and sexual pleasure but it seems that there is no consensus. Several studies have reported that circumcised men are more likely to express significantly decreased sexual pleasure, lower orgasm, discomfort or pain (Boyle, 2015; Bronselaer et al., 2013). On the other hand, circumcised men have also reported improved sexual performance by prolonged ejaculation and decrease in penile sensitivity thus contributing to sexual satisfaction (Senol, Sen, Karademir, Sen, & Saracoglu, 2008). Other studies have maintained that circumcision does not affect the sensitivity of the penis and sexual satisfaction (Morris & Kienger, 2015).

The study revealed that many participants indicated it was difficult to abstain from sex during the six-week healing process if one is married. The results for married men and non-compliance to six weeks post surgery abstinence are consistent with other studies from South Africa (Toefy, Skinner, & Thomsen, 2015) and Kenya (Odoyo-June, Rogers, Jaoko, & Bailey, 2013). Men in the study attributed this to the living arrangement and sleeping on one bed with the wife during the post operative period. This made it difficult to avoid sexual arousal because of body contact before the recommended six weeks post operation abstinence. The married men were forced to resume sexual intercourse before the recommended time. The results support the Theory of Reasoned Action (Ajzen & Fishbein, 1980).

The findings points to the cultural beliefs that men cannot do without sex and it was impossible to go for several weeks without sex. The present study underscored the myth that men cannot do without sex for a long time hence they fail to adhere to post operative abstinence instructions. This could be influenced by low perceived susceptibility to HIV infection within a union. Resuming sex before the wound's complete healing could increase the risk of HIV infection through the fresh wound on the penis (Hallett et al., 2011; Hewett, Hallett, et al., 2012). These results suggest that men in sexual relationships largely influence on how MC is effectively planned and scaled-up as a public health intervention.

Responses from the participants indicated that they were worried about severe pain after the operation and the pain could curtail their daily activities. Many of the men who were willing

to circumcise reported perceived pain rather than pain based on experience. It is possible that the participants' perception of pain was more likely to be coming from rumours circulating in the community and could have observed someone coming from the circumcision clinic walking with difficulties. Lastly, their peers who had undergone circumcision could have been exaggerating the pain to prove their masculinity.

The present study found that participants were concerned about time off from work coupled with severe pain during the post circumcision sexual abstinence, and this largely mirrors the findings of other studies (Herman-Roloff et al., 2011). The self employed indicated that they were reluctant to forgo income during the period of post circumcision. For the self employed, timing of male circumcision is crucial given the harsh economic environment in Zimbabwe.

The decision to circumcise is made at an individual level but it is intertwined with interpersonal factors such as; peers, partners/spouses, and family influence. In addition to the interpersonal factors, other factors such as; cultural identity, religious beliefs and environmental factors influence the decision to circumcise. Another key finding of the present study is peer group influence. Peer pressure played an important facilitative role in either motivating or discouraging uptake of male circumcision. Increased social pressure from peers to circumcise are similar to those which has been found elsewhere (George et al., 2014; Obure et al., 2011).

The role of peers in the decision to circumcise or not, came out in the present study as active involvement of those circumcised in recruiting others indicated the role of significant others in influencing others to accept/deny male circumcision. The results support the Theory of Reasoned Action and Theory of Planned Behaviour model of health promotion (Fishbein & Ajzen, 2010) that takes into cognisance the importance of norms and significant others in influencing decision making. The circumcised participants identified themselves as a source of influence and as role models. For instance, two of the circumcised participants demystified the perceived pain by giving realistic information about the amount of pain expected. Studies have shown that uptake of male circumcision can be influenced by significant others such as friends, partners and parents who share information before these youth go for circumcision (Jayeoba et al., 2012; Obure et al., 2009; Sithole et al., 2009).

The study has also shown that the role of spouses/partners in influencing uptake of male circumcision cannot be underestimated. Previous studies have confirmed that women are more likely to play a crucial role in motivating their male partners to take up male circumcision (Herman-Roloff et al., 2011; Layer et al., 2013; Macintyre et al., 2014). The majority of participants in this study spoke negatively about the kind of support they were getting from their spouses. Although women were not interviewed, it was apparent from the study that they had limited knowledge about the health benefits of circumcision. These results suggest that women's lack of knowledge about male circumcision was negatively impacting the decision of men to circumcise and ultimately affecting the uptake of male circumcision.

Furthermore, a lack of information about male circumcision by some participants exacerbated lack of spousal support. They failed to convince their spouses about the health benefit of the procedure. For instance, while some men in the study were willing to circumcise, their partners felt male circumcision was for promiscuous partners. In addition, the results indicated high perception of risk to HIV infection among married women with partners who were willing to circumcise was a common concern. The present findings seem to be inconsistent with other research which found women had strong preferences for circumcised men because women thought it was difficult for circumcised men to acquire HIV (Layer et al., 2013). This is an indication of low risk perception of HIV infection among women with circumcised men. If women are not enlightened about the partial protective effect of male circumcision, they might fail to negotiate for safe sex.

The study has shown that parental perceptions of and attitudes towards male circumcision practise play a major role in decision–making relating to circumcision-seeking behaviour. The study's findings seem to be consistent with other studies which show parental involvement in decision making for young people (George et al., 2014; Jayeoba et al., 2012; Obure et al., 2011). While parents were important forerunners in accepting VMMC, there were perceived cultural barriers, which negatively impacted on the decision of parents to support their son's circumcision. There were divergent views about parents supporting their children to circumcise. Some parents supported their children to be circumcised and some did not support the idea. In addition, parents' level of knowledge may play a major role in influencing decisions to circumcise especially among adolescents who still needed parental consent.

It is evident from the present chapter that environmental factors were more likely to impact the uptake and willingness to circumcise. Participants indicated that they associated public hospitals with poor services for instance, health staff members were perceived to be rude and uncooperative. In addition, perceptions and myths surrounding male circumcision practice also manifested even in a hospital environment. For example, men who were willing to circumcise were more likely to be perceived promiscuous. Thus, being seen queuing for male circumcision services at a hospital raised eyebrows. Although, male circumcision is offered for free in most Zimbabwean public hospitals, the cost does not factor in other hidden costs such as; transport costs to the hospital during subsequent visits during the post operation period.

7.12 Summary

This Chapter focused on presentation of results and the analyses of data extracted from the qualitative component of the present study. The chapter addressed the objective, to explore perceptions and myths surrounding male circumcision among youth aged 15-35. The results obtained from the analyses are fully discussed and are presented under different themes. The current study findings point to the effect that youth still have myths and misperceptions as well as lack of knowledge about male circumcision. Lack of knowledge about male circumcision and misperceptions may translate into risky sexual behaviour after circumcision thereby contributing to the spread of HIV and reversing the gains of lowering the HIV prevalence rate.

CHAPTER 8: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

8.1 INTRODUCTION

The present study sought to examine factors that influence male circumcision and willingness to circumcise among young men aged 15-35 in Harare, the national capital of Zimbabwe. The study was grounded on the Health Belief model, Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) for health promotion. The male circumcision policy in targets men aged 15-49 in Zimbabwe, but little is known about the factors that influence male circumcision uptake among the young in urban Zimbabwe.

Specifically, the study sought to address four objectives. First, the study sought to examine young men's knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection among young men in Harare. Second, the study examines the factors that influence uptake of male circumcision among the study sample. Third, the study sought to investigate the factors that are related to willingness to circumcise and finally, the study explored the perceptions and myths surrounding male circumcision and how these have been a hindrance or promoted uptake and willingness to circumcise. This objective was a standalone objective, which qualitatively sought to investigate why few men had taken up circumcision and why a few were willing to circumcise.

In order to achieve the aforementioned study objectives, the study used explanatory sequential mixed method research approach, utilising quantitative and qualitative data collected between May and July 2014. The study used frequency univariate techniques (frequencies), bivariate techniques (Chi-square test) and regression model techniques (binary logistic regression and multinomial logistic regression models) for the quantitative data, as well as the thematic analysis approach for the qualitative data to address the set objectives of the study. This present chapter presents the summary of the findings of this study, the conclusions, policy implications and recommendations for further research.

8.2 Summary of findings and discussion

Young men's knowledge about male circumcision, attitudes towards male circumcision and perception of risk to HIV infection

In summary, the study demonstrated the predictors of knowledge about male circumcision were age, education, ever tested for HIV, everheard of VMMC and circumcision status. With regards to attitude towards male circumcision, age, employment status, marital status, approval of VCT prior male circumcision, perception of risk to HIV infection and circumcision status were the main predictors. In addition, marital status, education, ethnic group, religion, evertested for HIV and approval to VCT prior male circumcision were significant predictors of perception of risk to HIV infection.

The findings in this study found that each social variable related to male circumcision considered in this study have different predictors. For instance, education was found to be a significant predictor for knowledge about male circumcision and perception of risk to HIV infection. The findings showed that education was negatively associated knowledge about male circumcision. Both respondents who had primary and secondary education were less likely to have knowledge about male circumcision. In addition, the study found differences in perception of risk to HIV infection according to religious affiliation. With regards to Pentecostal Christians, they were less likely to perceive themselves to be at higher risk of HIV infection compared to men who did not profess any religion. In addition, the Apostolic Sect Christians were less likely to perceive themselves to be at low risk compared to men with no religion.

The findings also revealed that respondents who have ever tested for HIV had high knowledge about male circumcision compared to those who had never tested. In addition, respondents who approve of VCT were more likely to have favourable attitude towards male circumcision than those who did not approve of it. In addition, circumcised youth had high knowledge about male circumcision as compared to uncircumcised youth. Circumcised youth were also found to have had favourable attitude towards male circumcision.

Key factors that influence uptake of male circumcision among young men aged 15-35

This section synthesises the empirical findings of objective two. The study examined the factors that influence uptake of male circumcision among youth aged 15-35. The results showed that age, ever tested for HIV, approval of VCT prior male circumcision, knowledge about male circumcision and attitude towards male circumcision are the main predictors of male circumcision.

The study found that youth aged 25-29 were less likely to be circumcised than those aged 30-35 and youth who had ever tested for HIV were more likely to be circumcised than those who had never tested. The findings revealed that respondents with high knowledge about male circumcision were more likely to be circumcised compared to respondents with low knowledge. In addition, the results found that attitude towards male circumcision significantly influenced male circumcision.

Factors that are related to willingness to uptake male circumcision

Research objective three was to examine the factors that influence willingness to circumcise. Analysis of the data showed that less than 50% of the respondents were willing to circumcise. The present study also showed that age and willingness to circumcise was statistically related to willingness to circumcise. Young men aged 25-29 were less likely to be willing to circumcise compared to those aged 30-35. Youth who had primary and secondary education were less likely to be willing to circumcise than those with higher level of education. Youth who perceived themselves to be at higher risk were less likely to be willing to circumcise than those who perceived themselves to be at no risk.

Perceptions and myths surrounding male circumcision as well as the deep seated reasons that influence the uptake of male circumcision

This section explores how perceptions and myths surrounding male circumcision can be a hindrance or facilitate uptake and willingness to circumcise. The participants believed that perception and myths exist in the community and they affect willingness to circumcise.

The study has shown that although men supported male circumcision they expressed limited knowledge about the role of male circumcision in prevention HIV. With considerable lack of knowledge of the partial efficacy of male circumcision, men believed that it could be used to reduce viral load in HIV positive men. Over exaggeration of the efficiency of male

circumcision in preventing HIV was common. Men placed a lot of value on foreskin hence they were worried about how the foreskins were being disposed. They perceived the foreskin to be a sacred body part. Therefore, the foreskin could be used by Satanists and witchdoctors in performing their rituals. Some believed that foreskins were exported to neighbouring countries where they are in demand.

Men perceived HIV testing to be a key barrier to uptake and willingness to circumcise. For instance, some men perceived HIV testing be as good as a death penalty. In addition, they feared the stigma associated with being HIV positive. This implies that men were more willing to circumcise if only HIV testing was not made compulsory. In addition, participants expressed that the perceived costs (pain, HIV testing) were greater than the perceived benefits (partial HIV prevention) but were still recommended to use condoms.

The study revealed that men wanted to maintain their cultural identity. As a result, they were against circumcising as it meant adopting other people's culture. Male circumcision was perceived as a sexual enhancer by some participants but some only perceived it as a practise that contributed to sexual displeasure. Some associated it with involuntary abstinence from sex during the post surgery healing period.

In addition, some were against male circumcision because of economic reasons. They said male circumcision contributed to absenteeism from productive work activities during the post operative period. The participants articulated that they were afraid of the forgoing income by going for circumcision. Those participants who were self employed underscored the necessity of circumcision at the expense of earning an income. Some suggested that although male circumcision was offered for free at public hospitals they still incurred transport cost to the health services because of the distance.

Some participants described how peers, parents and partners influenced decision-making in circumcision. Participants mentioned the positive and negative encouragements they were getting from peers. Parents and partners/spouses were also involved in decision making. The level of encouragement by parents and spouses was determined by their knowledge about male circumcision and attitudes towards male circumcision. Some parent's decisions to circumcise their sons were influenced by their cultural beliefs.

The findings revealed that some expressed that health services at public hospitals were not good. A few participants perceived male circumcision at public hospitals to be lacking privacy and were subjected to rude health workers. They were likely to be labelled by other patients who are not seeking male circumcision services to be promiscuous. People perceive that those who seek circumcision services have had STIs and some wanted to prepare in advance to be having many partners.

8.3 Conclusion

Since the initiation of the national male circumcision policy, the rate of uptake of male circumcision, as well as willingness to circumcise among youth (15-35 years) in Harare, Zimbabwe are still lower than what was expected, despite the efforts by government and non-governmental organisations. Indeed, this study demonstrated that the decision to undergo male circumcise or an individual's willingness to circumcise is influenced by a multiplicity of factors. Factors that influence male circumcision were; age, ever tested for HIV, approval of VCT prior male circumcision, knowledge about male circumcision and attitude towards male circumcision were the main predictors of male circumcision. However, there was no evidence that perception of risk to HIV infection influence uptake of circumcision.

On the other hand, willingness to circumcise was influenced by age, education, religion and respondent's perception of risk to HIV infection and favourable attitude towards male circumcision. In addition, there was evidence that perceptions and myths surrounding male circumcision continue to have either a negative or positive impact on uptake and willingness to circumcise. However, of concern was the incomplete information about male circumcision and its partial protectiveness against HIV infection among those willing to circumcise. It was evident that, the fundamental reason why formerly non-circumcising communities are embracing male circumcision is to reduce their risk of HIV infection. Indeed male circumcision is small operation on a "big engine" [penis] men possess with pride, which can save lives (stop the spread of HIV). However, if men are not made aware that male circumcision is not 100% full proof against HIV transmission, they will engage in risky sexual behaviours after circumcision.

8.4 Policy Implications

Zimbabwe introduced a National Male Circumcision Policy in 2009, with a target of circumcising 80% of men aged 15–49 by the year 2015. However, by year 2013 only 10.6% of the national target had been met. Indeed, the uptake of male circumcision has been slow than expected, juxtaposing the prevalence of male circumcision as at 2013 and the efforts of Government and non-Governmental organisations to upscale male circumcision in Zimbabwe.

Evidence from the present research indicates that both uptake and willingness to circumcise are low, despite the fact that male circumcision is being offered for free, a few men who are willing to undertake the operation. Specific to young men aged 15-35 in Harare, Zimbabwe, this study demonstrated that less than 20% of were circumcised and less than 50% were willing to do so as at May/July 2014. Based on the findings it is prudent that policy makers need to step up the awareness campaign on male circumcision targeting this cohort, as well as their parents to create higher demand, who are to be critical in the fight against HIV.

Further, religion also appeared to be related to willingness to circumcise. Hence, there is the need to create a cultural and religious sensitive male circumcision public health intervention programme to help scale-up male circumcision services throughout among young people. This can be done by including religious and cultural leaders in the male circumcision scale-up projects.

In addition, the present study found that a fifth (20.0%) of the youth in Harare, Zimbabwe had low knowledge about male circumcision. In addition, the study also found gaps in young men's knowledge about male circumcision. For example, the partial protection of male circumcision was not well understood, young men did not equally understand the reason why VCT was an important pre-requisite prior to male circumcision and the need to wait six weeks for the wound to heal before engaging in sexual actives. In light of the above, programmes and policies on male circumcision should focus on educating young men on the importance of circumcision, why they need to circumcise including the social and health benefits of male circumcision and educate young men about the importance of abstaining from sex during post operation period.

The present study found that there were misperceptions and myths surrounding male circumcision some of which hindered male circumcision such as perceived pain and disposal of foreskins. Hence, conscious efforts should be made to demystify perceptions and myths surrounding male circumcision among the youth. The government should start initiatives such as door to door campaigns to demystify some of the beliefs and popularise the practice. In addition, it is imperative to try and address the issue of fear by providing information that is realistic with regards to the expected amount of pain and how it can be managed. Circumcised young men can be made peer educators to dispel the fears in other young men. Improving the method of circumcision may also improve the opportunity for young men who are employed to go for circumcision, for instance, use of PrePex method might create demand among those employed (WHO/UNAIDS, 2011).

Findings from this study suggest that education has a significant influence on willingness to circumcise. For instance, both youth who reported to have had attained primary and secondary education were less likely to be willing to circumcise compared to those who had attained tertiary education. Hence, programmes to promote male circumcision can target these young men with primary and secondary education in Zimbabwe. This will likely improve acceptability of VMMC in the long run.

8.5 Recommendations for future research

Factors that influence uptake and willingness to circumcise have been investigated in present study. Based on this study some inconclusive results might need to be examined in future research, which might go a long way to help in the discourse of upscalling male circumcision among the youth especially in urban areas.

In the data, young men indicated that their partners played an important role in whether they would undergo circumcision or not. In some cases, men's account of women's knowledge about male circumcision was not enough hence they were not convinced with the benefits of male circumcision. Indeed, male circumcision encompasses gender issues. Women perhaps would support their partners to go for male circumcision and adhere to the 6-week post surgery abstinence if they were actively engaged in the discourse of male circumcision. Women are known to have better health seeking behaviours than men. Thus, they might encourage the circumcision of their sons and partners. Hence, future research needs to

include women to get a better understanding of the position of women in the dynamics of male circumcision uptake.

This study found that the media was playing a crucial role in male circumcision uptake; however, an exhaustive analysis of which source of information was the most important was beyond the scope of this study. Hence, in the future, efforts should also be made to examine type of mass media translates into uptake of circumcision or willingness to circumcise in Zimbabwe.

The present study found that peers played an important role in uptake of male circumcision; however, peer influence in some cases was negative. There is a need to get an understanding of how the use peers especially; peer educators can help in the uptake of male circumcision. Thus future research should explore the role of peers in up scaling male circumcision in Zimbabwe. For example, case studies should be conducted to examine the feasibility of peer educators in the upscale of male circumcision among the youth.

Further, the current study findings showed that further investigations are needed to understand attitude towards male circumcision and sexual performance among youth in order to advance perceived sexual performance to inform policy development in future.

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Appendix Ai: North West Ethics Letter

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

Private Bag X6001, Potchefstroom
South Africa 2520

Tel: (018) 299-4900
Faks: (018) 299-4910
Web: http://www.nwu.ac.za

Ethics Committee
Tel +27 18 299 4849
Email Ethics@nwu.ac.za

ETHICS APPROVAL OF PROJECT

The North-West University Research Ethics Regulatory Committee (NWU-RERC) hereby approves your project as indicated below. This implies that the NWU-RERC grants its permission that provided the special conditions specified below are met and pending any other authorisation that may be necessary, the project may be initiated, using the ethics number below.

Project title: Predictors of male circumcision in Zimbabwe. The case of Harare

Project Leader: **Prof I Kalule-Sabiti**
Student: **K Mangombe**

Ethics number: N W U - 0 0 2 1 0 - 1 4 - A 9
(Institution - Project Number - Year - Status)
Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Approval date: 2014-04-07 **Expiry date**: 2019-04-06

Special conditions of the approval (if any): None

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following:

- *The project leader (principle investigator) must report in the prescribed format to the NWU-RERC:*
  - *annually (or as otherwise requested) on the progress of the project,*
  - *without any delay in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.*
- *The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project, the project leader must apply for approval of these changes at the NWU-RERC. Would there be deviated from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.*
- *The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date, a new application must be made to the NWU-RERC and new approval received before or on the expiry date.*
- *In the interest of ethical responsibility the NWU-RERC retains the right to:*
  - *request access to any information or data at any time during the course or after completion of the project;*
  - *withdraw or postpone approval if:*
    - *any unethical principles or practices of the project are revealed or suspected,*
    - *it becomes apparent that any relevant information was withheld from the NWU-RERC or that information has been false or misrepresented,*
    - *the required annual report and reporting of adverse events was not done timely and accurately,*
    - *new institutional rules, national legislation or international conventions deem it necessary.*

The Ethics Committee would like to remain at your service as scientist and researcher, and wishes you well with your project. Please do not hesitate to contact the Ethics Committee for any further enquiries or requests for assistance.

Yours sincerely

Prof Amanda Lourens
Chair NWU Research Ethics Regulatory Committee (RERC)

Please note that the title of the thesis has been reworded

Appendix Aii: Medical Research Council of Zimbabwe Ethics Letter

Telephone: 791792/791193
Telefax: (263) - 4 - 790715
E-mail: mrcz@mrcz.org.zw
Website: http://www.mrcz.org.zw

Medical Research Council of Zimbabwe
Josiah Tongogara / Mazoe Street
P. O. Box CY 573
Causeway
Harare

APPROVAL

REF: MRCZ/A/1848

09 June, 2014

Kudzaishe Mangombe
North-West University
Population Research and Training Centre
Private Bag X2046
Mmabatho 2735
South Africa

RE:- Predictors of male circumcision in Zimbabwe: The case of Harare

Thank you for the application for review of Research Activity that you submitted to the Medical Research Council of Zimbabwe (MRCZ). Please be advised that the Medical Research Council of Zimbabwe has **reviewed** and **approved** your application to conduct the above titled study.

This approval is based on the review and approval of the following documents that were submitted to MRCZ for review:-

a) Study protocol
b) Adult Informed Consent Form (English and Shona)
c) Parental Consent and Child Assent 15-17 yrs (English and Shona)

- **APPROVAL NUMBER : MRCZ/A/1848**

This number should be used on all correspondence, consent forms and documents as appropriate.

- **TYPE OF MEETING : Full Board**
- **EFFECTIVE APPROVAL DATE : 09 June 2014**
- **EXPIRATION DATE : 08 June 2015**

After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Offices should be submitted three months before the expiration date for continuing review.

- **SERIOUS ADVERSE EVENT REPORTING**: All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Offices or website.
- **MODIFICATIONS**: Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Offices is required before implementing any changes in the Protocol (including changes in the consent documents).
- **TERMINATION OF STUDY**: On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Offices or website.
- **QUESTIONS**: Please contact the MRCZ on Telephone No. (04) 791792, 791193 or by e-mail on mrcz@mrcz.org.zw

Other

- Please be reminded to send in copies of your research results for our records as well as for Health Research Database.
- You're also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
2014 -06- 09
APPROVED
P O BOX CY 573 CAUSEWAY, HARARE

Yours Faithfully

.....
MRCZ SECRETARIAT
FOR CHAIRPERSON
MEDICAL RESEARCH COUNCIL OF ZIMBABWE

PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH

Please note that the title of the thesis has been reworded

Questionnaire source

The following questionnaire was adopted from several sources and some were developed by the researcher informed by the literature to suit the research objectives. In addition, to questions formulated for the purposes of this study, questions were also adopted from other studies. For example, questions 100-114, 200-206, 403,600-603 (Zimbabwe National Statistics Agency (ZIMSTAT) & ICF International, 2012), 309,312 vii,viii,ix,400,401,402, 701,801 (WHO, 2009), 312 i,iii, vi,900 i,ii,iv,viii,ix (Futures Group, 2012), 406 i,v (Naidoo et al., 2012), 406 iii,iv (Mattson et al., 2005), 502 (Westercamp et al., 2012),705,800 (Hoffman et al., 2015),500 (Anderson, Beutel, & Maughan-Brown, 2007).

Appendix B: Questionnaire

Predictors of male circumcision in Zimbabwe: The case of Harare

IDENTIFICATION				
Province	Harare			
District Code	921	922	923	924
Household number				
Name of the household head				
Questionnaire number				
Interviewer number				
Total persons in the household				
Total eligible men				

INTERVIEWER VISITS				
	1	2	3	Final visits
Date				
Time of start (24 hour clock)				
Time at the end of the interview				
Result of visit				
Result codes 1-completed 2-refused 3 Not at home 4-interview terminated				
Supervisor's Code				
Data Entrant Code				

Introduction

Hello. My name is …….... I am conducting interviews on behalf of Mrs K. Mangombe, a PhD student and she is undertaking a study on knowledge, attitudes and perceptions towards male circumcision among residents of Harare. The information we collect will help government of Zimbabwe to plan for male circumcision services and to manage the spread of HIV and AIDS in the country. Your household was selected to be part of the survey. We are targeting men aged 15-35. All of the answers you give will be

confidential and will not be shared with anyone. The information will be used strictly for research purposes only.

We appreciate your co-operation to be part of this important study. However, should you find some of the questions undesirable, please just let me know and l will stop and go to the next question or you can stop the interview completely at any time. The whole interview will take any average of 30-40 minutes.

For further queries please contact:

Kudzaishe Mangombe at cellphone number: 0712 954 769 or 0774 641 551

May l begin the interview now? 1- Yes 2-No *Circle appropriate response (*If the respondent does not agree to be interviewed and end the interview). Signature of interviewer……..

Have you ever heard of male circumcision? ……Yes/ No

If No terminate the interview and thank the respondent. If yes precede to question 100.

Section A: Respondent's Demographic Background

No	QUESTIONS AND FILTERS	Coding Categories	SKIP
100	In what month and year were you born?	Month…….. Year …….. …… Don't know year …….. Don't Know……..	
101	How old were you on your last birthday? ***Compare and correct 100 and /or 101 if inconsistent***	Age in completed years ☐☐	
102	Have you ever been to school?	Yes……1 No……2 →	105
103	What is the highest level of school you attended: primary, secondary, or higher?	Primary ……....1 Secondary ……....2 Higher…….….3	
104	What is the highest (grade/form/year) you completed at that level?	Grade/Form/Year…….. ☐☐	
105	What is your current marital status?	Married/living together……..1 Divorced/Separated ……...2 Widowed …….. 3 Never married/never lived together 4 ►	108
106	What is the highest level of education your wife/ partner attained?	Primary ……....1 Secondary ……....2 Higher…….….3	
107	What is the highest (grade/	Grade/Form/Year ☐☐	

	form/year) completed at that level?		
108	Which Ethnic group do you belong to?	Shona …….....1 Ndebele……...2 Shangaan …….. ……3 Tonga ……..4 Venda…….5 Ndau…… 6 Other (specify)…….X	
109	What is your religion?	Traditional ……1 Roman Catholic……...2 Protestant……..3 Pentecostal……4 Apostolic Sect…….5 Other Christians……. 6 None ……7 Other (Specify)……... 8	
110	Are you employed? **Read the responses**	Full time ……..1 Part time…….2 Unemployed ……..3 Student……4	→1 &2 skip to 111
111	What is your occupation, that is, what kind of work do you mainly do?		
112A	Do you listen to the radio?	Yes……..1 No……2	
112B	Do you watch television?	Yes…….1 No……2	
112C	Do you read a newspaper / magazine?	Yes…….1 No……2	

113

	Yes	No
Does your dwelling unit/household have :		
Electricity that is connected?	1	2
A battery or generator for power?	1	2
A solar panel for power?	1	2
A radio in working condition?	1	2
A television in working conditions?	1	2
A Non-mobile telephone?	1	2
A refrigerator in working condition?	1	2

	A computer in working condition?		1	2	
	A washing machine in working condition?		1	2	
	A car in working condition?		1	2	
114	Place of residence	Chitungwiza……1 Epworth……2 Harare Urban……...3 Harare Rural……4			

SECTION 2: SEXUAL BEHAVIOUR			
Now l would like to ask some questions about sexual activity in order to gain a better understanding of some important issues. Let me assure you again that the answers are completely confidential and will not be told to anyone. If we should come to any question that you don't want to answer, just let me know and will go to the next question.			
200	Have you ever had sexual intercourse?	Yes ……1 No……2⟶	300
201	How old were you when you had sexual intercourse for the first time?	Age in years …… ☐☐	
202	When was the last time you had sexual intercourse? Circle first then complete *If less than 12 months ,answer must be recorded in weeks/months*	Less than a day……1 ☐ Days ago …….. 2 ☐ Weeks ago ……3 ☐ Months…….....4 ☐ Years Ago……5 ☐	
203	What was the relationship to this person with whom you had sexual intercourse? *If girlfriend, were you living together as if married.*	Wife ……1 Live-in partner……2 Girlfriend not living with respondent ……3 Casual acquaintance……4 Prostitute……5 Other specify ……...6	

	If yes, circle '2'.If no, circle '3'		
204	Was a condom used when you had this last sexual intercourse?	Yes……1 No……....2	
205	Have you had sexual intercourse with any other person/persons in the last 12 months?	Yes……1 No…….2	
206	In total how many people have you had sexual intercourse in the last 12 months?	Record figure …….. ……. ☐☐ Don't know……88	
Section 3: Knowledge about male circumcision and HIV			
300	Have you ever heard of VMMC this year?	Yes …….. 1 No……2 →	303
301	How did you get to know about VMMC in the past 12 months?		

	Yes	No
Heard about male circumcision on the radio?	1	2
Seen anything about male circumcision on the television?	1	2
Read about male circumcision in a newspaper or magazine?	1	2
Received pamphlets or posters on male circumcision?	1	2
Heard any information from a Health worker	1	2
Heard from a	1	2

	friend Mobile Unit		
302	What are the sources of information that you think can most effectively reach people like you with information on MC. Circle all mentioned responses	Radio…….…....A Television……B Pamphlets……C Newspaper……..…D Posters/billboards……....E Brochure/magazine…… …….....F Health worker……..G	
303	Do you think male circumcision clinics /hospital are accessible?	Yes…….1 No……2	
304	What health benefits have you heard about MC? Circle all mentioned responses	Improves Penile hygiene ……A Minimize STIs infections…….B Reduces HIV infections …… C Prevent penile cancer…….D Minimise cervical cancer in women……E Other (Specify)……F Don't Know…… G	
305	How can HIV be prevented? *Probe to identify each type of method and circle all mentioned*	Abstaining……A Being Faithful…….....B Condomising……C Circumcising …….....D Other (Specify)……E Don't Know……G	
306	Have you ever heard of VMMC as an HIV prevention method?	Yes…….1 No……...2	
307	Do you know of a place where a person can get male circumcision?	Yes……1 No……2	
308	Where is that? Please name the place you know *Mark all mentioned*	Government Hospital/clinic..……A Rural/Municipal clinic…….....B Rural Health Centre……C Private hospital/clinic……..D ZNFPC Clinic……..E Traditional Circumciser…….. F Don't know.....G Other (Specify)……...….H	

309	What are the likely problems/effects of male circumcision? *Probe to indentify each type possible reason. Circle all mentioned responses*	Excessive bleeding ……A Infections……..B Disfigurement …….……C Impotence……..……..D Reduced sexual performance ……...F Other (specify)…….....G Don't know……..H	
310	Do you anyone who have circumcised after the government introduced VMMC	No ……1 Yes…….2	
311	Male circumcision should be used with other HIV prevention methods. Which ones? Probe to identify the other methods	Use of male and female condoms……A Abstaining from sex……B Treatment of STIs……... C Delaying sexual debut……..D HIV testing and counselling ……...E Reducing sexual partners……F Being faithful to one sexual partner…….G Don't know……H	

312	I will read the following statement and you will tell me whether you support the statements?				
	Read the responses and circle the answers. One response per row.	Yes	No		
i.	What do you understand by the term male circumcision? ***Listen to the respondent and probe further to get definition***	1	2		
i.	Does male circumcision reduce the chance of getting HIV?	1	2		
ii.	Is male circumcision as good as "an invisible condom" in preventing HIV transmission?	1	2		
iii.	Does mc reduces penile cancer?	1	2		
iv.	Are circumcised men still recommended to use condoms?	1	2		
v.	Does male circumcision alone can prevent HIV contraction?	1	2		
vi.	Does male circumcision makes it easier to maintain penile hygiene?	1	2		
vii.	Can an HIV negative woman contract STI/HIV after having unprotected sex with a HIV positive circumcised man?	1	2		
viii.	Can an HIV negative circumcised man contract STI/ HIV after unprotected sex with a HIV positive woman?	1	2		

ix.	How long should a circumcised man abstain from sexual intercourse? ***Listen to the respondent and get duration.***				

Section 4 : Attitudes towards Male circumcision

	Now l would like to ask you about your attitudes towards male circumcision.	
400	Do you think circumcision is appropriate for males?	YES……1 No……...2
401	At what age do you think MC is most appropriate?	Infants (0-<1 year)……. 1 Children (1-9 years)…….2 Adolescents (10-16 years)……..3 Young men (17-24 years)…….4 25 years and over……..5 All ages ……6
402	What are your reasons for choosing the age group above?	
403	I don't want to know the results, but have you ever tested for HIV?	Yes ……..1 No……..2
404	Do you approve of VCT prior male circumcision?	Yes……1 No……..2 Don't know……3
405	Would you recommend male circumcision to members of your family?	Yes…….1 No……2 Don't know …….3

I would like to read some statements and would like you tell me whether or not you strongly disagree, disagr neutral, Agree, strongly agree" with them.

406 **Read *and circle the answer. One response per row***	Strongly disagree	Disagree	Neutral	Agree	Strenglyag
i. An HIV infected man should be circumcised	1	2	3	4	5
ii. Promoting male circumcision is good in preventing cervical cancer in women	1	2	3	4	5
iii. It is easy to keep clean if circumcised	1	2	3	4	5
iv. Uncircumcised men are	1	2	3	4	5

	more likely to contract HIV and STIs					
v.	MC would cause an increase in risk sexual behaviour	1	2	3	4	5

Section 5 : Perceptions of risk to HIV/AIDS and MC

Personal perception of risk and individual behaviour

500	Do you think you are at risk of contracting HIV infection?	Yes, at higher risk……3 Yes, at low risk ……...2 No, not at risk at all…….1
501	Why? Probe for reasons	

502	I would like to read some statements and would like you tell me whether or not you strongly disagree, disagree, neutral, Agree, strongly disagree" with them.

Read and circle the answer. One response per row	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agr**
Now that MC is available, you are less worried about HIV	1	2	3	4	5
Now that MC is available men are more likely to have sex without condoms	1	2	3	4	5
Now that MC is available HIV is less serious threat than it used to be	1	2	3	4	5
Now that MC is available circumcised men can afford to have multiple sexual partners	1	2	3	4	5

Perception of sexual pleasure

Ask the respondent about their perception of sexual pleasure , whether they think sexual pleasure wo differ by circumcision status

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly**
Circumcised men enjoy more sexual pleasure than uncircumcised	1	2	3	4	5
The partners of circumcised men get less sexual pleasure than the partner of un circumcised men	1	2	3	4	5
Circumcised men have more sexual partners than uncircumcised men	1	2	3	4	5
Circumcision changes the sensitivity of the man's penis	1	2	3	4	5

Section 6: Circumcision status

Now l would like to find out about your circumcision status. *Show picture of uncircumcised and circumcised penis after asking question 600.*

600	Some men are	Yes ……...1	

	circumcised, that is, the foreskin is completely removed from the penis. Are you circumcised?	No…….. 2→	700
601	How old were you when you got circumcised? *Probe Age in completed years*	Age in completed years…….. ☐☐ Don't Know……...88	
602	Who did the circumcision?	Traditional Practitioner ……...1 Family member/friend……..2 Health Worker/Professional…….3 Other…….4 Don't know……...8	
603	Where was it done?	Health Facility ……..1 Home of health worker/professional ...2 Circumcision done at home……..3 Ritual site……..4 Other home/Place……..5 Don't know…….... 8	
604	Who made the decision to have you circumcised	Live in partner……1 Wife……2 Friends……3 Parents……4 Own decision…….5 Church……..6 Cultural group ……..7 Other Specify……..8	
605	What were the main reasons why you were circumcised? ***Record all mentioned and skip to 900***	To prevent HIV……A Penile Hygiene……B Religious reasons……. C Cultural reasons…….D To prevent cancer ……E Sexual pleasure……F Prevention of STIs……G Other (Specify)…….X	
Section 7: Willingness to circumcise Now l would like to find out about why you are willing to circumcise.			
700	Are you willing to circumcise?	Yes ……1 No …….2 → Don't Know……8	800
701	Why would you want to be circumcised? ***Probe and circle all mentioned responses***	To prevent HIV……A Penile Hygiene……B Religious reasons……. C Cultural reasons…….D To prevent penile cancer ……E Sexual pleasure……F	

		Prevention of STIs……G Other (Specify)…….X	
702	Where would you prefer the circumcision procedure to be done?	Health Facility ……..1 Home of health worker/professional ...2 Circumcision done at home……..3 Ritual site……..4 Other home/Place……..5 Don't know……....8	
703	Who will you prefer to do the circumcision?	Traditional Practitioner……..1 Family member/friend……..2 Health Worker/Professional…….3 Other…….4 Don't know……...8	
704	Who will make the decision if you want to be circumcised?	Live in partner/wife……1 Friends……2 Parents……3 Own decision…….4 Cultural group ……..5 Other Specify……6	
705	Why you were not circumcised yet? ***Probe and circle all mentioned responses AND SKIP TO 900***	Cost of procedure …….A Cost of transport …….B Fear of pain……C Cultural norms……D Religion……..E Fear of complications……F Cannot time off school /work……G Other(Specify)……X	

Section 8: Not willing to circumcise

Now l would like to ask you why you are not willing to circumcise.

800	Why are you not willing to circumcise? **Probe and circle all mentioned responses**	Cost of procedure …….A Cost of transport …….B Fear of pain……C Cultural norms…….D Religion……..E Fear of complications……F Cannot time off school /work……G Other(Specify)……X	
801	If you knew that MC was an effective partial HIV prevention, would you be willing to undertake MC? ***Proceed to 900***	Yes……1 No……...2 Not sure……....3	

900. **Section 9: Barriers to circumcision**

To what extent do you consider the following be the likely perceived potential barriers to uptake of MC in general? Read to the respondent the questions.

1 response per row	To no extent	To a small extent	To a medium extent	To a large extent	To a very large extent

Lack of access to information about MC	1	2	3	4	5
Need time off from school or work	1	2	3	4	5
Fear to bleed to death after the procedure	1	2	3	4	5
Fear of pain	1	2	3	4	5
Perceived fear of surgical procedure	1	2	3	4	5
Against cultural/religious beliefs	1	2	3	4	5
Fear of stigma from family/friends/community	1	2	3	4	5
Fear of abstaining from sexual intercourse during healing period	1	2	3	4	5
Fear of prior HIV testing	1	2	3	4	5
Fear of being labelled promiscuous	1	2	3	4	5
Low risk perception of contracting HIV	1	2	3	4	5

Appendix C: In-depth interview guide (study population)

1. Knowledge about male circumcision and the role of VMMC in HIV prevention

a. Please describe what you understand about male circumcision? What is your local term for male circumcision?

b. How would describe the mechanism/way male circumcision prevents HIV transmission?

2. Perceptions and myths surrounding foreskin circumcision

a. What happens to these foreskins after circumcision?

b. Do you see yourself worried about how the foreskin is disposed? *Probe why*?

c. How do you want the foreskin to be disposed?

3. Perceived fear of HIV testing

a. What is difficult about having an HIV test before circumcision?

b. Why do you think men are afraid of HIV testing?

c. Why do you think men would support male circumcision without going for HIV testing?

4. Perception of risk to HIV infection

a. Do you see condoms being useful again after circumcision?

b. What is difficult about having to use condoms after circumcision?

c. Are they any benefits to having circumcised and still continue use condoms?

5. Perceived adverse effects

a. What type of adverse effects linked to male circumcision that you have heard of?

b. Describe how these perceived adverse effects are making it difficult for a Zimbabwean to go for circumcision?

6. Cultural and religious perceptions towards male circumcision

a. How does your cultural belief influence decision –making with regards to willingness to circumcise?

b. How would circumcision practise contradict with your faith?

c. What experiences have you witnessed in your community about how circumcised men are perceived?

7. Perceptions about sexual pleasure and abstinence during the post operative stage

a. In your opinion do you see circumcised men enjoying sex differently than those uncircumcised?

b. How does circumcision perceived to change sexual pleasure?

c. Do you think circumcision status matters for women?

d. Why is it difficult for men to abstain from sex during the six week post operative stage?

e. Why do you think that post operative period might interfere with your daily work activities?

8. Interpersonal influences with regards to decision-making to circumcise

Peer pressure

a. Where there any particulars friends who strongly influenced you about male circumcision?

b. How would you describe a friend who has taken circumcision?

c. What is difficult to recommend a friend to go for circumcision?

d. How does your decision to circumcise influenced by your peers?

Influence of partners/spouses

a. Who makes the decision in your relationship if you want to go for circumcision?
b. Do you see yourself discussing about your intention to go for male circumcision with your spouse/ partner?
c. What difficulties do you perceive to meet when discussing about your intentions to circumcise?

Influence of parents

a. How does your parent influence your decision to circumcise?

b. Do you see yourself discussing your intentions to circumcise with your parents?

Environmental factors

a. Do you see yourself going for male circumcision in any of the public hospitals where it is being offered?

b. What difficulties do you perceive you are likely to face in getting male circumcision in one of these public hospitals?

c. Would you recommend your friends, family and peers to seek male circumcision in a public hospital? Probe if yes and also probe if know.

Thank the respondent at the end of the interview.

Appendix D: In-Depth Key Informants Guide (opinion leaders)

1. What are the main factors which determine the rate of male circumcision?
2. What are the main factors which can be done to increase the number of men coming for male circumcision?
3. What factors need to change in order to increase the provision of male circumcision services in health facilities?
4. Is there any stigma attached to men being circumcised?
5. At what age do you think is the most appropriate for male circumcision to take place? Why?
6. What do you think are the myths surrounding male circumcision practise?
7. What are women's perceptions towards male circumcision?
8. What are the negative, or bad things associated with male circumcision in this area?
9. Do you think these negative things influence the uptake of MC? Probe how?
10. Do you think male circumcision will affect other HIV prevention strategies such as Abstinence, Be Faithful and Condom use? Probe how?
11. Would circumcision cause men to exhibit risk sexual behaviour? Probe how ?

12. Do you think male circumcision will be accepted in Zimbabwe among traditionally non-circumcising groups? *Probe – Give reasons*
13. Would you encourage male circumcision for HIV prevention? Yes/No. If yes why would you encourage. If No why would you discourage MC? Give reasons why you would encourage or discourage male circumcision?
14. In your opinion what can be done to enhance MC practice in Zimbabwe? Probe what can be done by the ministry of health?
15. Any other information you would like to share with me about male circumcision which is important and may be omitted during the discussions.

Appendix E: Kish Grid

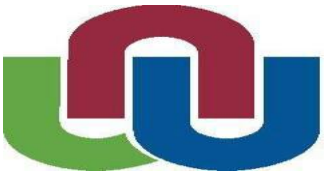
	LAST DIGIT ON QUESTIONNAIRE NUMBER									
Total numbers of males in the Household	1	2	3	4	5	6	7	8	9	0
1	1	1	1	1	1	1	1	1	1	1
2	2	1	2	1	2	1	2	1	2	1
3	1	2	3	1	2	3	1	2	3	1
4	1	2	3	4	1	2	3	4	1	2
5	4	5	1	2	3	4	5	1	2	3
6	4	5	6	1	2	3	4	5	6	1
7	3	4	5	6	7	1	2	3	4	5
8	3	4	5	6	7	8	1	2	3	4
9	2	3	4	5	6	7	8	9	1	2
10	1	2	3	4	5	6	7	8	9	10

Selection of respondents

Number your questionnaires from 01,02,03 ……..

- List all usual males in the household aged 15-35 and give them unique person numbers from 1 onwards.
- Record the total number of males in the age group 15-35
- Take the last figure of the questionnaire number and the other side take the total of males within 15-35 move with those lines and were they meet that is the number of the male you interview according to how you listed them.

Appendix F: English Adult Consent Form



NORTH-WEST UNIVERSITY ®
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
MAFIKENG CAMPUS

Informed Consent to participate in PhD research

Date: _____

Study Title or Topic: Predictors of male circumcision in Zimbabwe: the case of Harare

Introduction

You are asked to participate in a PhD research study conducted by Kudzaishe Mangombe, from the Population Training and Research Unit at North-West University Mafikeng Campus in South Africa. You have been selected as a possible participant in this study because you are a man aged 15-35 years, reside in Harare and may be a possible beneficiary from the positive outcome from the research.

1. Purpose of the study

The purpose of this study is to gather baseline information on men's knowledge, attitudes and perceptions towards male circumcision and HIV.

2. Participation and withdrawal

Your participation in the study is completely voluntary and you may refuse to answer any question and still remain in the study, or choose to stop participating at any time without consequences of any kind. If you so decide; your decision to stop participating, or to refuse to answer particular questions, will not be questioned or contested. No coercion will be used to keep the participants in the study. In addition no questions will be asked to justify the withdrawal. You may be asked to be audio recorded during interview session, but you may refuse and still remain in the study.

3. Risk/benefits to participants

The research has minimum risk this might cause some minimum discomfort since we would be asking you questions about your sexual history that are of a personal nature. The respondent will be assured that the information gathered will help the government of Zimbabwe to plan for male circumcision services.

4. Costs and compensation

The participants will not receive any payment.

5. Confidentiality Assurances

All information you supply during the research will be held in confidence and, your name will not appear in any report or publication of the research. The data is confidential and will not be disclosed without the participants consent or as required by law. Participants will not be required to put their names on the questionnaire. The data will be safely stored in a locked facility and only the researcher and Supervisor will have access to this information. Confidentiality will be provided to the fullest extent possible by law. The findings of the research study will be presented in a report without identifying the participants by name.

6. Intended use of the results

Although this study is purely an academic research the results however, may be disseminated to the Ministry of Health Department of Zimbabwe to assist in program and policy development.

7. Identification of the investigators

If you have any questions and concerns about the research, feel free to contact

Principal investigator:	Mrs Kudzaishe Mangombe
Department:	Population Training Research Unit, North-West University Mafikeng Campus
Telephone:	(00263) 712 954 769 or (0027) 797 753 187 or Professor
Email:	kmangombe@yahoo.com
Supervisor:	Professor Ishumael Kalule-Sabiti
Telephone:	081-389-2333
Department:	Population Training Research Unit, North-West University Mafikeng Campus
Email:	Ishumael KaluleSabiti @nuw.ac.za
Co-investigator	Dr Naomi Netsayi Wekwete
Department	Centre for Population Studies, University of Zimbabwe
Telephone	(00263) 772 523 918

Signature of the research subject

The information was described by……. in my language. I was given the opportunity to ask questions and these questions were answered to my satisfaction.

I hereby consent to participating in this study. I have been given a copy of this form.

_____

Name of the subject/participant

_____

Signature of the subject /participant

_____ **Date** _____

Signature of Witness _____

Signature of Research Staff _____

I declare that l have received adequate information pertaining to the research and was given time to ask any questions.

Appendix Fi: Shona Adult Consent Form

Mvumo yokupinda muchichidzo chePhD

Date: _____

Study Title or Topic: Zvioniso zvekuchecheudzwa muZimbabwe kuvagari vomuHarare

Nhanganyaya

Munokumbirwa kuti mupinde muchidzidzo che PhD chirikuitwa na Kudzaishe Mangombe. Masarudzwa kuti muve wevamwe vachapinda muchidzidzo nokuti makore enyu ari pakati pegumi nemashanhu- kusvika pamakumi matatu nemashanhu (15-35 years) vanogara muHarare uye murimumwe vachabatsirika kubva muchidzidzo.

1. Chinangwa Chechidzidzo

Chinangwa ndechekuunganidza umbowo pamusoro peruzivo, mafungiro nemaitiro pamusoro pekuchecheudwza uye HIV.

2.Kupinda kana kubuda muchidzidzo

Kupinda muchidzidzo kwenyu hapana kumanikidzwa munogona kuramba kupindura imwe mibvunzo asi munoramba muri muchidzidzo. Kana muchinge mafunga kubunda muchirongwa chero nguva hamuzobvunzwa mibvunzo kana kusungwa .Hamuzomanikidzwa kupinda muchidzidzo. Munozokwanisa kubvunzwa mibvunzo muchitorwa mazwi asi munokwanisa kuramba kana musingadi asi munoramba muri muchidzidzo.

3. Zvinokanganisa kana zvinowanikwa kune vapinda muchidzidzo

Chidzidzo chinogona kuvanezvinokanganisa kune vachapinda muchidzidzo nokuti mimwe mibvunzo inonyadzisa zvokuti munogona kuramba kupindura. Vachapinda muchirongwa vanovimbiswa kuti hurumende yeZimbabwe ichabatsirwa kuronga chirongwa chekuchecheudzwa.

4. Mubairo kana kuripo

Vachapinda muchidzidzo havana mubairo kana muripo yavachawana.

5. Vimbiso kunavachapinda muchidzidzo

Umbowo hwose huchapiwa muchidzidzo hucha chengetedzwa zvakanyanya. Hapana zita richanyorwa pazvinyorwa zvichaburitsa pasina mvumo yawakapa umbowo. Senzinodiwa nemutemo. Vachapinda muchirongwa havazonyorwe mazita pabvunzurudzo. Umbowo hwese huchachengetedzwa zvepamusoro. Muridzi wechidzidzo uye mutevedzi wake chete ndivo vachange vanawo umbowo. Zvichabuda muchidzidzo zvichabudiswa mubhuku asi pasina mazita evakapinda muchidzidzo.

6. Zvichashandiswa zvichabuda muchidzidzo

Zvichabuda muchidzidzo zvichashandiswa muzvidzidzo zvekuchecheudzwa uye nebazi ne Ministry of Health vachabatsirikana pakuronga rebudiriro.

8. <u>Tsvakurudzo yevaunganidzi voumbowo</u>

Kana pane anemubvunzo kana zvichemo nechidzidzo ngasununguke kutsvaga ava:

Mukuru wechidzidzo:	Mrs Kudzaishe Mangombe
Bazi :	Population Training Research Unit, North-West University Mafikeng Campus
Foni:	(00263) 712 954 769 or (0027) 797 753 187 or Professor
Email:	kmangombe@yahoo.com
Mudzidzisi :	Professor Ishumael Kalule-Sabiti
Foni :	081-389-2333
Bazi :	Population Training Research Unit, North-West University Mafikeng Campus
Email:	Ishumael KaluleSabiti @nuw.ac.za
Mubatsiri wechidzidzo	Dr Naomi Netsayi Wekwete
Bazi	Centre for Population Studies, University of Zimbabwe
Foni	(00263) 772 523 918

<u>Kusaina kwechidzidzo</u>

Umbowo hwese hwatsanangurwa kuna ..... na Kudzaishe Mangombe nerurumi rwamai . Ndapiwa mukana wokubvunza mibvunzo nemhinduro dzapiwa ndikagutsikana. Ndiri kubvumirana kupinda muchidzidzo uye ndapiwa rimwe pepa randasaiana

.

_____

Zita

_____

Signature yangu

_____ **Date** _____

Signature yo munhu achapa huchapupu _____

Signature yemunhu andibvunza mibvunzo _____

Ndinobvuma kuti ndawana umbowo hwakanangana nechidzidzo nenguva yokubvunza nokupiwa mhinduro.

Appendix Fii: English Parental Consent and Adolescent Assent Form

Parental Consent and Adolescent Assent Form

Children age 15-17 to participate in PhD research

Date: _____

Study Title or Topic: Predictors of male circumcision in Zimbabwe: The case of Harare

Identification of the investigators

If you have any questions and concerns about the research, feel free to contact

Principal investigator:	Mrs Kudzaishe Mangombe
Department:	Population Training Research Unit, North-West University Mafikeng Campus
Telephone:	(00263) 712 954 769 or (0027) 797 753 187 or Professor
Email:	kmangombe@yahoo.com
Supervisor:	Professor Ishumael Kalule-Sabiti
Telephone:	081-389-2333
Department:	Population Training Research Unit, North-West University Mafikeng Campus
Email:	Ishumael KaluleSabiti @nuw.ac.za
Co-investigator	Dr Naomi Netsayi Wekwete
Department	Centre for Population Studies, University of Zimbabwe
Telephone	(00263) 772 523 918

Introduction

Hello. My name is …….... I am conducting interviews on behalf of Mrs K. Mangombe, a PhD student and she is undertaking a study on knowledge, attitudes and perceptions towards male circumcision among residents of Harare. The information we collect will help the government of Zimbabwe to plan for male circumcision services and to manage the spread of HIV and AIDS in the country. Your household was selected to be part of the survey and your child was selected randomly as a possible participant. We are targeting men aged 15-35. You have the right to refuse to allow your child to take part or agree for your child to take part now and change your mind later. If you decide not to allow your child to participate in this study your decision will not affect your child's future relations with this university. All of the answers your child gives will be confidential and will not be shared with anyone. The information will be used strictly for research purposes. If you are willing to let your son take part in this survey, you can sign below. We will give you this consent form so that you may read about the purpose, risks, and benefits of this research study. But before you sign this form, please ask questions on any part of the study. The whole interview will take an average of 30-40 minutes.

1. Purpose

You are being asked to allow your child to take part in a research study of Predictors of male circumcision in Zimbabwe: The case of Harare. The purpose of this study is to gather baseline information on men's knowledge, attitudes and perceptions towards male circumcision and HIV. Your child was selected as a possible participant in this study because his age is within ages (15-35 years) which form the target age groups under study.

2. Procedure and duration

If you decide to allow your child to participate, your child will be interviewed between 30-40 minutes about male circumcision issues.

3. Risk/benefits to participants

The research has minimum risk this might cause some minimum discomfort since we would be asking you questions about your sexual history that are of a personal nature. The respondent will be assured that the information gathered will help the government of Zimbabwe to plan for male circumcision services.

4. Costs and compensation

The participants will not receive any payment.

5. Confidentiality Assurances

All information your child supply during the research will be held in confidence and, your child's name will not appear in any report or publication of the research. The data is confidential and will not be disclosed without the participants consent or as required by law. Participants will not be required to put their names on the questionnaire. The data will be safely stored in a locked facility and only the researcher and Supervisor will have access to this information. Confidentiality will be provided to the fullest extent possible by law. The findings of the research study will be presented in a report without identifying the participants by name.

6. Participation and withdrawal

Participation in the study is completely voluntary. If you decide not to allow your child to participate in this study, your decision will not affect you or your child's future relations with this institution. If you decide to allow your child to participate, you and your child are free to withdraw your consent and assent and discontinue participation at any time without penalty. Your child may be audio recorded during interview session, but may refuse and still remain in the study.

7. Intended use of the results

Although this study is purely an academic research the results however, may be disseminated to the Ministry of Health Department of Zimbabwe to assist in program and policy development.

Authorisation

You are making a decision whether or not to allow your child to take part in this study. Your signature indicates that you have understood the information provided above, have had all your questions answered, and have decided to participate.

Name of the child …….
Date/Time……../……

Name of parent……..

Signature of parent or legally authorised representative

…….

Relationship to child……..

For children 15-17 years

My participation on this research is voluntary. I have read and understood the above information; asked any questions which I may have and have agreed to participate. I will be given a copy of this form to keep. I declare that l have received adequate information pertaining to the research and was given time to ask any questions.

Signature of the child……..

Signature of Witness…….

Signature of Research Team……..

Appendix G: Shona Parental Consent and Adolescent Assent Form

Mvumo yomubereki kuti vana vapinde muchidzidzo chePhD vane makore ari pakati pegumi nemashanu negumi nemanomwe.

Zuva : _____

Musoro wechidzidzo : Zvioniso zvokuchecheudzwa muZimbabwe: Muzvimbo yeguta re Harare

1. **Tswakurudzo yevaunganidzi voumbowo**

Kana mune mubvunzo kana zvichemo bvunzai vanotevera pazasi :

Mukuru wavaunganidzi :	Mrs Kudzaishe Mangombe
Bazi:	Population Training Research Unit, North-West University Mafikeng Campus
Foni:	(00263) 712 954 769 or (0027) 797 753 187 or Professor
Email:	kmangombe@yahoo.com
Mudzidzisi:	Professor Ishumael Kalule-Sabiti
Foni:	081-389-2333
Bazi :	Population Training Research Unit, North-West University Mafikeng Campus
Email:	Ishumael Kalule-Sabiti @nuw.ac.za
Mubetseri wemuunganidzi	Dr Naomi Netsayi Wekwete
Bazi:	Centre for Population Studies, University of Zimbabwe
Foni	(00263) 772 523 918

Nhanganyaya

Kwaziwai makadii? Zita rangu ndini ……. Ndiri kuitawo tsvakurudzo youmbowo ndakamirira mai K. Mangombe, mudzidzi we PhD. Ari kuita chidzidzo cheruzivo, mafungiro pamusoro pekuchecheudzwa kwevarume muvagari vomu Harare. Umbowo huchawanikwa huchabetsera hurumede ye Zimbabwe kuronga chirongwa

chekuchecheudzwa uye kubatsira kuderedza kuparirira kwechirwere cheHIV neAIDS munyika.Pamba penyu pasarudzwa kuti paitirwe chirongwa ichi. Mwana wenyu asarudzwa semumwe achaita chirongwa ichi. Tiri kutarisa varume vanemakore gumi nemashanu kusvika makumi matatu nemashanu (15-35). Munemvumo yekuramba kuti mwana wenyu apinde muchidzidzo ichi, kana kubvuma kuti mwana wenyu aite chidzidzo ichi iye zvino kana kuti mafunga zvakare munokwanisa kumurambidza imi mambobvuma. Kana muchinge mavimba kuti mwana wenyu apinde muchidzidzo hazvizokanganise ramangwana rake neukama hwake neUnivheti yedu. Mhindiro dzose mwana wenyu dzaachapa dzichachengetedzwa nedanho repamusoro uye hadzizoziviswa kunani naani zvake. Umbowo hwose huchashandisva pazvidzidzo chete. Kana muchibvumira kuti mwana wenyu kuiti aite zvidzidzo, munosaina pazasi. Tichakupai pepa rokunyora kuti mabvumira mwana wenyu kuti aite chidzidzo ichi. Munofanira kuverenga basa racho uye zvakanakira kuita chidzidzo ichi. Asi musati masaina mune mvunzo yokubvunza mibvunzo pane zvose zvamungada. Tsvakurudzo inoita nguva ingangosvika maminitsi makumi matatu (30) kana makumi mana(40)

1. Chinangwa chechidzidzo

Murikukumbirwa kuti mubvumirewo mwana wenyu kuti apinde muchidzidzo chezvioniso zvekuchecheudzwa kwevarume muZimbabwe muHarare. Chinangwa chechidzidzo ndechekutsvaga umbowo pamusoro pepfungwa maitiro nemaonero anoitwa kuchecheudzwa kwevarume ne HIV ne AIDS. Mwana wenyu asarudzwa semumwe achaita chidzidzo nokuti makore ari pakati pegumi nemashanu (15) nemakumi matatu nemashanu (35) anodiwa nechidzidzo.

2.Maitiro echidzidzo uye urefu hwechidzidzo kana tsvakurudzo

Kana muchibvumira mwana wenyu kuti aite chirongwa , mwana wenyu achabvunzurudzwa kwekanguva kangaite maminitsi makumi matatu (30) kana kusvika makumi mana(40) pamusoro pekuchecheudzwa

.3.Zvinokanganiswa kana zvinowanikwa nevapinda muchidzidzo

Chidzidzo chine zvinokanganisa zvishoma kune vachaita tsvakurudzo nokuti pane mibvunzo inonyadzisa iripamusoro penyaya dzebonde yavangangonyara kupindura. Vachabvunzwa vachawana vimbiso yokuti umbowo hwavachapa huchabatsira hurumende yeZimbabwe kuronga chirongwa chekuchecheudzwa.

4. Mibayiro kana muripo

Vachaita chidzidzo hapana muripo kana mibayiro yavachapiwa

5. Vimbiso kune vachapinda muchirongwa

Umbowo hwose huchapiwa nemwana wenyu huchachengetedzwa pasina anoudzwa uye zita remwana wenyu harinyorwe pasi muzvinyorwa zvechidzidzo. Umbowo hwose huchachengetedzwa uye hauzombobudiswa pasina mvumo kubva kuvaridzi sezvinodiwa nemutemo. Umbowo kuchagara hwakakiirwa. Vacahpinda muchidzidzo havazonyorwa mazita avo mutsvakurudzo. Muridzi wechidzidzo chete uye nemutevedzi wake ndivo vachapiwa umbowo. Zvichabuda muchidzidzo zvichazaburitsa mubhuku zvisinangaburitse mazita evakaita zvidzidzo.

6. Kupinda muchidzidzo kana kubuda

Kupinda muchidzidzo kunoitwa nekuda pasina kumanikidzwa. Kana mabvumira kuti mwana wenyu apinde muchidzidzo hazvizokanganise ramangwana neukama hwemwana neunivesiti. Kana muchinge mabvumira mwana wenyu kuti apinde muchidzidzo, munobvumirwa kubuda muchirongwa pamunodira pasina muripo kana murango. Mwana wenyu achazobvunzwa mubvunzo achitorwa mazwi asi anemvumo yokuramba asi oramba ari muchirongwa .

7. Zvichashandiswa pane zvichabuda

Zvichabuda muchidzidzo zvichashandiswa pakuwedzera nokuronga zvidzidzo zvekuchecheudzwa asi zvinokwanisa kushandiswawo nebazi re Ministry of Health kubatsira mukugadzira urongwa hwehurumende nebudiriro yezveutano.

<u>Chibvumirano</u>

Muri kuita chibvumirano chokubvumira kana kuramba mwana wenyu apinde muchidzidzo. Kusaina kwenyu knoratidza kuti manzwisisa umbowo hwapiwa pamusoro , uye mabvunza mibvunzo ikapiwa mhinduro uye mabvumira kuti mwana apinde muchidzidzo.

Zita remwana ……..

Zuva negore……

Zita remubereki ……

Signature yemubereki……..

Ukama nemwan ……..

<u>Kuvana vane makore gumi nemashanu kusvika pagumi nemanomwe (15-17)</u>

Kupinda muchidzidzo kwangu handina kumanikidzwa. Ndaverenga ndikanzwisisa zviri pamusoro, ndabvunza mibvunzo ndikapindurwa saka ndabvumira kupinda muchidzidzo . Ndichapiwa pepa rimwe rakasainwa . Ndataura pachena kuti ndapiwa umbowo hwakakwana zvichienderana nechidzidzo uye ndapiwa nguva yokubvunza mibvunzo.

Kusaina mwana…….

Kusaina hwitinisi……..

Kusaina Research team……

Appendix H: Ilustrations of circumcised and uncircumcised penis

Uncircumcised Penis Circumcised Penis

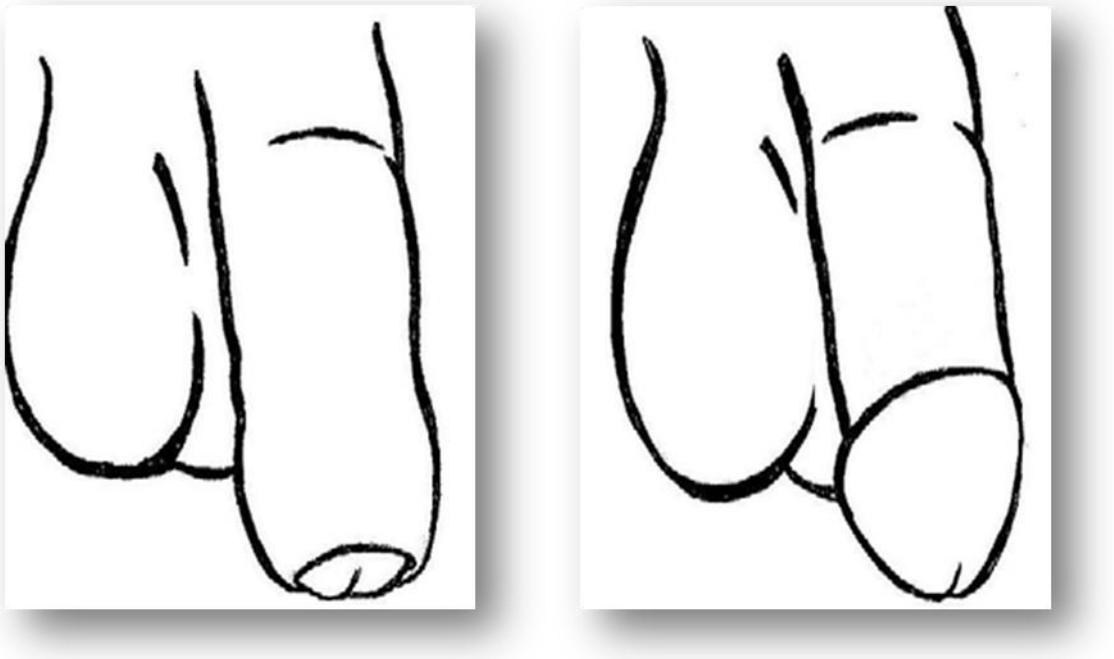


Illustration of uncircumcised and circumcised penises (Hewett, Hallett, et al., 2012)

Appendix I: Journal Articles Published from Thesis

Kudzaishe Mangombe, Acheampong Yaw Amoateng and Ishmael Kalule-Sabiti. 2015. "Is male circumcision an Invisible condom?" Men's knowledge, Attitudes and Perception of Risk to HIV Infection and willingness to circumcise in Harare, Zimbabwe. African Population Studies 29 (2): 2064-2080.

Kudzaishe Mangombe and Ishmael Kalule-Sabiti. Reviewed (2/04/16) and Accepted for publication 25/06/16). Predictors of male circumcision among men aged 15-35 years in Harare, Zimbabwe. Bisocial Science Journal.