

Knowledge, Attitudes and Practices of Male Circumcision as an HIV Prevention Method among Males in a Mine, Geita, Tanzania

by

Constance Mubekapi

*Assignment presented in fulfilment of the requirements for the degree of
Master of Philosophy (HIV/AIDS Management) in the Faculty of Economic
and Management Science at Stellenbosch University*



Supervisor: Mr Burt Davis

March 2013

DECLARATION

By submitting this assignment electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Date: March 2013

ABSTRACT

HIV and AIDS remains the most important public health problem in Tanzania. Male Circumcision (MC) has been hailed as an effective intervention for the prevention of HIV-1 among heterosexual transmission. There is convincing evidence that MC has a positive effect on the control of HIV infection. As a result, this procedure has been widely promoted as a preventive effort that might have a significant decrease in the rate of HIV transmission. This study aimed to establish the knowledge, attitudes and practices of MC as an HIV prevention strategy among males in Geita Gold Mine (GGM), Geita, Tanzania.

Random sampling was used to select participants (n=164) who worked at GGM. Respondents were asked to complete a standardised self-reported questionnaire. In total, 95 participants (57.9%) were circumcised while 69 (42.1%) were not circumcised. The acceptability of MC among uncircumcised males was high (95.6%). Reasons for this desire included prevention of STIs/HIV, promoting hygiene and for religious and cultural grounds. Overall, the majority of the respondents were knowledgeable about the health benefits of MC. Nearly all respondents (89.6%) expressed willingness to circumcise a male child.

This study provided baseline information with regards to male circumcision among GGM employees. Though data reveals that respondents were aware of the health benefits of MC, results indicated that there is need to further impact this knowledge and promote the adoption of the practice among uncircumcised individuals/communities on a larger scale. It was recommended that the mine, through its HIV/AIDS programme, should promote MC awareness and recommend appropriate channels for access to MC for its employees.

OPSOMMING

MIV en VIGS is steeds die belangrikste gesondheidsprobleem in Tanzanië. Manlike besnyding (MC) is lof toegeswaai as 'n doeltreffende intervensie vir die voorkoming van MIV-1 veral wat betref heteroseksuele oordraging. Daar is oortuigende bewys dat MC 'n positiewe invloed op die beheer van MIV-infeksie het. Die gevolg is dat dié prosedure wyd en ver lof toegeswaai is as 'n voorkomende poging wat 'n beduidende afname in die tempo van MIV-oordraging kan teweeg bring. Die doel van hierdie studie was om die kennis, ingesteldhede en praktyke van MC as 'n MIV-voorkomingstrategie onder mans by die Geita-goudmyn (GGM) in Geita in Tanzanië te bepaal.

Ewekansige steekproewe is van gebruik gemaak om deelnemers (n=164) te selekteer wat in diens van GGM is. Respondente is versoek om 'n gestandaardiseerde selfverslagdoeningsvraelys te voltooi. In totaal was 95 deelnemers (57,9%) besny en 69 (42,1%) was nie besny nie. Die aanvaarbaarheid van MC onder onbesnyde mans was hoog, naamlik 95,6%. Redes vir die koestering van hierdie begeerte het onder meer die voorkoming van seksueel oordragbare infeksies/MIV en die bevordering van hygiene ingesluit – verskeie godsdienstige en kulturele redes is ook in hierdie verband gemeld. In die geheel was die meerderheid van die respondent ingelig oor die gesondheidsvoordele van MC en bykans almal van hulle (89,6%) het te kenne gegee dat hulle 'n seun sou wou laat besny.

Hierdie studie het basiese inligting opgelewer met betrekking tot manlike besnyding onder GGM-werknemers. Hoewel data daarop dui dat respondente heel bewus is van die gesondheidsvoordele wat MC inhou, dui die bevindinge daarop dat daar die behoefte bestaan om hierdie kennis verder uit te brei en die aanvaarding van dié gebruik onder onbesnyde individue/gemeenskappe op groter skaal te bevorder. Daar is aanbeveel dat die myn deur middel van sy MIV/VIGS-programme die bewusmaking van MC behoort te bevorder en toepaslike wyses daar moet stel sodat MC vir sy werknemers 'n uitvoerbare opsie word.

ACKNOWLEDGMENTS

I wish to express my utmost sincere appreciation and gratitude to the following people in no particular order:

- Burt Davis for his judicious support, encouragement and critical guidance throughout this period.
- Dr K Mvungi (Geita Gold Mine) Mwanza Region for granting me the permission to carry out the study and the Geita Clinic Staff Team who made it possible for me to conduct the study and I genuinely thank all who participated in the study.
- The Senate Research Committee of the Stellenbosch University for granting me the permission to conduct the study.
- Teacher Saida Manane and Deogratias for translating the English Questionnaire to KiSwahili.

DEDICATION

Firstly, I would like to thank God the almighty who guided me during this phase and made it possible for me achieve my goals through the faith and trust I put in him. I would like to dedicate this to my husband, Jasper and my children, Makanaka and Henry for their understanding, patience and allowing me to deprive them of quality family time. I will always treasure their love and support which got me through this period. Lastly, I would like to dedicate this to my mother and late father, Sihle and Aaron Toendepi respectively who have always inspired me to do great.

TABLE OF CONTENTS

| | |
|----------------------------|------|
| Declaration..... | i |
| Abstract..... | ii |
| Opsomming..... | iii |
| Acknowledgements..... | iv |
| Dedication..... | v |
| Table of Contents..... | vi |
| List of Abbreviations..... | ix |
| List of Figures..... | xi |
| List of Tables..... | xii |
| List of Addendums | xiii |

Chapter One: Introduction to the Study

| | |
|---|---|
| 1.1. Introduction..... | 1 |
| 1.2. Male Circumcision and HIV Infection..... | 5 |
| 1.3. Research Problem..... | 7 |
| 1.4. Research Question..... | 8 |
| 1.5. Significance of the Study..... | 8 |
| 1.6. Aims and Objectives..... | 9 |
| 1.7. Summary..... | 9 |

Chapter Two: Literature Review

| | |
|---------------------------------------|----|
| 2.1. Introduction..... | 10 |
| 2.2. Origin of Male Circumcision..... | 10 |

| | |
|--|----|
| 2.3. Global Prevalence of Male Circumcision..... | 12 |
| 2.4. Male Circumcision Determinants..... | 13 |
| 2.5. Preferred Age of Male Circumcision care..... | 15 |
| 2.6. Male Circumcision and HIV Infection..... | 16 |
| 2.7. Acceptability of Male Circumcision..... | 18 |
| 2.8. Knowledge, Attitudes and Beliefs of the Benefits of Male Circumcision | 20 |
| 2.9. Barriers to Male Circumcision..... | 22 |
| 2.10. Source of Information about Male Circumcision..... | 24 |
| 2.11. Summary..... | 25 |
| Chapter Three: Methodology | |
| 3.1. Introduction..... | 27 |
| 3.2. Research Setting | 27 |
| 3.3. Research Method and Study Design..... | 28 |
| 3.4 Study Population | 29 |
| 3.5. Sampling Method and Sample Size..... | 29 |
| 3.6. Data Collection Procedure..... | 30 |
| 3.7. Data analysis | 32 |
| 3.8. Validity and Reliability..... | 34 |
| 3.9. Pilot Study..... | 35 |
| 3.10. Ethical Considerations..... | 35 |
| 3.11. Conclusion..... | 36 |

Chapter Four: Results and Discussion

4.1. Introduction.....37

4.2. Demographic Characteristics.....37

4.3. Prevalence of Male Circumcision.....39

4.4. Knowledge of the Benefits of Male Circumcision.....41

4.5. Beliefs and Attitudes of Male Circumcision.....46

4.6. Acceptability of Male Circumcision.....50

4.7. Barriers to accessing Male Circumcision Services.....55

4.8. Source of Information55

4.9. Conclusion.....57

4.10. Discussion.....58

4.11. Summary.....65

Chapter Five: Conclusion and Recommendations

5.1. Introduction.....66

5.2. Conclusion.....66

5.3. Recommendations.....69

5.4. Study Limitations.....70

REFERENCES.....71

APPENDICIES.....79

LIST OF ABBREVIATIONS

| | |
|--------------|--|
| AIDS | Acquired Immunodeficiency Syndrome |
| ART | Antiretroviral Therapy |
| AVAC | AIDS Vaccine Advocacy Coalition |
| DHS | Demographic and Health Survey |
| GGM | Geita Gold Mine |
| GUD | Genital Ulcer Disease |
| HIV | Human Immunodeficiency Virus |
| ILO | International Labour Organisation |
| KAP | Knowledge, attitudes and practices |
| MARPs | Most at risk population |
| MC | Male circumcision |
| MMC | Medical Male Circumcision |
| MSM | Men having sex with men |
| PITC | Provider Initiated Testing and Counselling |
| PLWHA | People living with HIV/AIDS |
| RCT | Randomised Controlled Trials |
| SPSS | Statistical Package for Social Sciences |
| STIs | Sexual Transmitted Infections |

| | |
|----------------|--|
| TACAIDS | Tanzania Commission for HIV/AIDS |
| UNAIDS | Joint United Nations Programme on HIV/AIDS |
| WHIPT | Women's HIV Prevention Tracking Project |
| WHO | World Health Organisation |

LIST OF FIGURES

| | |
|---|----|
| Fig 1: Circumcision Status..... | 39 |
| Fig 2: Knowledge on MC and HIV infection..... | 44 |
| Fig 3: Knowledge on MC and STDs..... | 44 |
| Fig 4: Knowledge on MC and Penile Hygiene..... | 45 |
| Fig 5: Knowledge on MC and Penile Cancer..... | 45 |
| Fig 6: MC and Sexual pleasure..... | 47 |
| Fig 7: MC and Sexual feelings..... | 47 |
| Fig 8: MC and HIV infection..... | 48 |
| Fig 9: MC and Age of Circumcision..... | 48 |
| Fig 10: MC and Manhood..... | 49 |
| Fig 11: MC and Reintroduction of the Practice..... | 49 |
| Fig 12: Reason for the possible adoption of Circumcision..... | 51 |
| Fig 13: Ideal age of Circumcision..... | 53 |
| Fig 14: Barriers to accessing MC..... | 55 |
| Fig 15: Source of Information..... | 57 |

LIST OF TABLES

Table 1: Age in Years.....37

Table 2: Demographic Characteristics.....38

Table 3: Age of Circumcision39

Table 4: Circumcision Performer.....40

Table 5: Place of Circumcision.....40

Table 6: Age of Circumcision* Place of Circumcision Cross-tabulation.....41

Table 7: Reason for Male Circumcision.....41

Table 8: Circumcision of an HIV negative man reduces HIV risk.....42

Table 9: MC does not completely reduce HIV risk.....42

Table10: Circumcised men cannot get HIV.....42

Table 11: MC does not protect partner.....43

Table 12: MC reduces STIs.....43

Table 13: Respondents Knowledge on MC and HIV prevention, cancer and STIs.....46

Table 14: Acceptability of MC among Uncircumcised Respondents.....50

Table 15: Acceptability of MC if offered free of charge.....50

Table 16: Acceptability of MC if offered free of charge.....51

Table 17: Recommendation of MC to male child.....52

Table 18: Circumcision Status * MC Recommendation to own son Crosstabulation.....52

Table 19: Ideal Circumcision Performer.....54

Table 20: Health facilities offering MC.....54

Table 21: Acquiring information from any source in the last 12months.....56

Table 22: Information about MC reducing chances of HIV acquisition.....56

LIST OF ADDENDUMS

| | |
|--|----|
| Appendix I: English Questionnaire..... | 79 |
| Appendix II: KiSwahili Dodoso..... | 85 |
| Appendix III: GGM Authorisation Letter..... | 91 |
| Appendix IV: Participant Information Sheet..... | 92 |
| Appendix V: Informed Consent..... | 95 |

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1. Introduction

1.1.1. Global Overview of HIV/AIDS

Since the inception of the epidemic, more than 60 million people have acquired the Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) related illnesses have claimed nearly 20 million lives (WHO, 2012). Amid intense and continued response to the pandemic, HIV continues to spread; causing more than 14 000 new infections everyday and 95% of these occur in the developing world (WHO, 2012). To date, AIDS is the leading cause of death in Africa and the fourth worldwide (WHO, 2012). The magnitude of the human tragedy has become clear particularly in the most affected countries. It is unmistakable that HIV/AIDS is a major development problem which is threatening to reverse generations of achievements (ILO, 2006). Statistics for the year 2010 revealed that around 33.4 million people were infected with HIV/AIDS (UNAIDS 2011). Approximately 2.7 million people were newly infected with the virus with 1.8 million deaths occurring by the end of 2010 (UNAIDS, 2011). HIV/AIDS has continued to manifest itself globally affecting all levels of human existence and development.

The last decade has seen, 33 countries recording a decline in the HIV incidence (UNAIDS, 2011). This decline has been attributed to a number of factors. This decrease has been noted especially among young adults aged 15-24 years. Changes in sexual behaviours, especially unprotected sex and an increased utilisation of preventive measures are some of the contributing factors. Countries in Sub-Saharan Africa and the Caribbean have provided evidence for these changes. These include; Burkina Faso, Botswana, Democratic Republic of the Congo, Ethiopia, Ghana, Kenya, Malawi, Nigeria, Namibia and Togo (UNAIDS, 2011). In addition, the effects of antiretroviral therapy (ART) are particularly evident in Sub-Saharan Africa. The availability of ART has led to prolonged human life. In 2010, there was an estimated 30 % decline in the number of AIDS-related deaths than in 2004 when ART began to be expanded (UNAIDS, 2011).

The overall trend of HIV infections was reportedly different in the Middle East and North Africa region with an increase in HIV infections. According to the UNAIDS report (2011) the number of people living with HIV increased from 43 000 in 2001 to 59 000 in 2010. In the same period, the number of deaths due to AIDS-related diseases increased from 22 000 to 35 000 which represent 60 %. The major drivers of the HIV epidemic in this region relate to unprotected sex between men and drug abuse due to sharing of non-sterile needles among drug users (UNAIDS, 2011). For instance, in 2007, 14 % of the people who inject drugs were living with HIV infection in the Islamic Republic of Iran (Tehran, National AIDS Committee Secretariat, Ministry of Health and Medical Education, 2010 as cited by UNAIDS, 2011). Similarly, in Sudan 8-9 % of the men having sex with men (MSM) tested HIV positive (Van Griensven et al., 2009 as cited by UNAIDS 2011).

The HIV epidemic increased by 25 % in Western, Central and Eastern Europe, North America and Central Asia between 2001 and 2009 (UNAIDS, 2010). Unprotected sex between men is the main cause of HIV transmission. For instance, in the United States of America, although same sex among men represent 2 % of the total population, it accounts for 57 % of the HIV incidence (Purcell et al., 2010 as cited by UNAIDS, 2011). Similarly, in Western and Central Europe, men having sex with men reported increased HIV infection transmission from 7 601 in 2004 to 9 541 in 2009 (European Centre for Disease Prevention and Control and WHO Regional Office for Europe, 2009 as cited by UNAIDS, 2011).

1.1.2. HIV/AIDS in Sub-Saharan Africa

Though showing signs of HIV incidence decline, Sub-Saharan Africa continues to bear a disproportionate share of the HIV/AIDS burden. Sixty-eight percent of the HIV infected people live in this region which constitutes only 12% of the global population (UNAIDS, 2011). In 2008, an estimated 1.9 million people were newly infected with HIV, bringing the total to 22 million (UNAIDS, 2011). Seventy-two percent of the worldwide AIDS related deaths occurred in Sub-Saharan Africa (UNAIDS, 2009). Despite, the grim picture, the HIV incidence in this region is declining. There was a 16 % decrease in the number of people with

HIV infection in 2010 than in 2001 (UNAIDS, 2011). The rollout and accessibility of HIV treatment has improved the livelihood of people living with HIV/AIDS (PLWHA).

The HIV/AIDS epidemic in Sub-Saharan Africa varies considerably. Countries in the southern part of Africa bear the most burden. In Zimbabwe, the HIV prevalence fell from 26% in 2002 to 18% in 2006 (UNAIDS 2008). The main behavioural change appears to have been a reduction in the proportion of men with casual partners, while condom use with non-regular partners has remained high since the late 1990s (UNAIDS, 2010). Botswana, Namibia and Zambia also appear to a declining HIV prevalence, while Lesotho, Mozambique and Swaziland seem to be levelling off. Nevertheless, the proportion of the population living with HIV in these countries remains high (UNAIDS, 2011).

Within the East African region, the national HIV prevalence in Kenya fell from about 14% in the mid-1990s to 5% in 2006 (UNAIDS, 2010) while in Uganda, the HIV epidemic has been stable between 6.5% and 7.0% since 2001 (UNAIDS, 2010). The prevalence of HIV in Rwanda has been about 3.0% since 2005 (UNAIDS, 2010). On the contrary, the prevalence of HIV infections in West and Central Africa remains comparatively low, with the adult HIV prevalence estimated at 2 % or less in 12 countries (Benin, Burkina Faso, Democratic Republic of the Congo, Gambia, Ghana, Guinea, Liberia, Mali, Mauritania, Niger, Senegal and Sierra Leone) in 2009. UNAIDS (2010) reported that out of these countries, Cameroon is ranked highest with the HIV prevalence at 5.3 %. Others include: Gabon (5.2 %) the Central African Republic (4.7 %), Nigeria (3.6 %) and Côte d'Ivoire (3.4 %).

1.1.3. HIV/AIDS in Tanzania

Tanzania is one of the countries that have not been spared by the HIV pandemic in the Sub-Saharan Africa region. It is among the least developed counties situated in the Great Lakes region of East Africa and is composed of two distinctive states, Zanzibar and Tanzania mainland (WHO, 2005). UNAIDS (2010), estimated the adult HIV/AIDS prevalence in 2009 to be at 5.6% and an estimated that 1.2 million adults (aged 15 years and older) were living

with HIV (UNAIDS, 2010) and 86 000 deaths were attributed to AIDS. Tanzania's HIV/AIDS epidemic is mature, generalized, and heterogeneous. Heterosexual contact is the main mode of transmission, accounting for approximately 80% of infections (Mujinja et al., 2009). HIV transmission from mother to child; vertical transmission and medical transmission accounts for 18% and 1.8% respectively (Mujinja et al., 2009). Within the generalised epidemic, some population subgroups are more affected. For instance, women in the reproductive age are more affected than men. Moreover, the most at risk populations (MARPs) such as; transactional sex workers, MSM and injecting drug users are more at risk. Although the HIV epidemic in Tanzania is relatively low, many challenges exist in an effort to reduce the HIV incidences. It is estimated that over 200 000 persons are infected annually (Mujinja et al., 2009). This is attributed to risky behaviours, for example, in 2008, 18% of men and 3 % of the women were reported having had multiple sex partners and 29% of the married or cohabitating men and 16% of the women were reportedly having extramarital affairs (the United Republic of Tanzania, UNGASS 2008 country report as cited by Mujinja et al., 2009). In addition, condom use has been reported to be low among individuals who engage in risky sexual acts. Gender norms and gender based violence are some of the factors driving the HIV epidemic (Mujinja et al., 2009).

In response to the HIV/AIDS epidemic, the government of Tanzania instituted preventive and curative measures to help curb the spread of HIV and AIDS. HIV prevention strategies comprised of both behavioural and biomedical strategies. These included voluntary counselling and testing (which was later incorporated the provider initiative counselling and testing (PITC) approach), condom use promotion and distribution, promotion of abstinence and treatment of sexual transmitted diseases (STIs). HIV prevention strategies are informed by national policies and technical guidelines that are evidence based. Despite the national achievements in the control of HIV/AIDS, evidence reveals that HIV prevention strategies are not sufficient. The desired level of success has not been achieved for various reasons. For instance, more than 60% of the Tanzanians aged 15-45 are not aware of their HIV status (Mujinja et al., 2009). In addition, more than 40% of pregnant women do not have access to prevention of HIV transmission from mother to child services and the uptake of antiretroviral medicine prophylaxis to babies exposed to HIV and HIV infected mothers is less than 50% (Mujinja et al., 2009). In 2003, Tanzania rolled-out antiretroviral drugs in the public health sector, with nearly 136, 000 people receiving treatment by 2008, however an estimated 440,

000 are still in need of treatment (UNAIDS, 2009). To curb the spread of HIV infection, Tanzania is in the process of introducing male medical circumcision (MMC) as a new prevention intervention into the existing national HIV prevention repertoire. Male Circumcision (MC) will be adopted as a preventive strategy that might have the potential to reduce the spread of HIV. This move followed a recommendation made by WHO and UNAIDS in 2007 after an expert consultation revealed that MMC should be promoted as part of a comprehensive HIV prevention package especially in countries with a high HIV prevalence and a low prevalence of MC (Wambura, Mwangi, Moshia, Mshana, Moshia & Changalucha, 2009).

1.2. Male Circumcision and HIV Infection

Male circumcision is the “surgical removal all or part of the prepuce (foreskin) of the penis” (Van Dam & Anastasi, 2000, p.3). Circumcision is one of the ancient and most common surgical procedures ever practised (Auvert et al., 2009 as cited by Iliyasu, Abubakar, Jibo & Salihu, 2012). Warner and Stratstrin (1981 as cited by Moses, Bailey and Ronald, 1998) revealed that male circumcision in West Africa dates back over 5000 years and for at least 3000 years in the Middle East. In the later part of the 19th and 20th century circumcision was performed mainly for medical reasons (Wirth 1978 as cited by Moses et al., 1998). Circumcision has been traditionally conducted for various reasons such as hygiene, medical, religion and ethnicity (Van Dam and Anastasi, 2000 as cited by Atashili, 2006). In most cultures, male circumcision is a symbol of manhood associated with bravery and endurance (Doyle, 2005). Moreover, it is also associated with masculinity, social cohesion, self-identity and spirituality (Niang, 2006 as cited by WHO, 2009).

Though being an ancient practise, WHO (2009) estimated that worldwide, only 30% of the males aged 15 years and above are circumcised. Around 69% are Muslim, 0.8% are Jewish and 13% are non Muslim and Jewish men living in the United States of America (WHO, 2009). In the Jewish and Muslim religion, male circumcision is chiefly informed by religious beliefs and is mostly carried-out in the eighth and seventh day respectively (WHO, 2009). According to WHO (2009), Buddhism, Christianity and Hinduism have a neutral stance on male circumcision. Various ethnic groups practice MC in Sub-Saharan Africa and in Aboriginal Australasians (Dunsmuir & Gordon, 1999; Beidelman, 1987 as cited by WHO, 2009), the Aztecs and Mayans in the Americas (Tierney, 2003; Remondino, 1891; Schendel,

Alvaraz Amezquita, Bustamante Vasconcelos, 1968 as cited by WHO, 2009) and the Philippines and Eastern Indonesia (Hull & Budiharsana, 2001 as cited by WHO, 2009) circumcision has been practised for non religious reasons.

The practise of male circumcision within countries varies. For instance, in Kenya 84% of the men are circumcised, yet, the percentage is much lower for the Luo and Turkana ethnic tribes with 17% and 40 % respectively (DHS, 2006 as cited by WHO, 2009). Similarly, in Uganda and South Sudan male circumcision is not practised among the Jopadhola, Acholi and other Luo-speaking River-Lake Nilotic who are the descendants of the Luo tribe (Bailey et al., 2002 as cited by WHO, 2009). In Tanzania, male circumcision is mainly conducted as a cultural and religious practice (Mujinja et al., 2009). Like in Kenya, the prevalence of the practise among other ethnic groups is low. The Demographic Health Survey data in Tanzania confirmed that 96.8% of Muslim, 60-70% Christians and 25% of men with indigenous beliefs were circumcised (Wambura et al., 2009). On the other hand, Mwanza Region comprise of the customarily non-circumcising population. Seventy-four percent of the Muslim Sukuma men were not circumcised signifying the influence of the non-circumcising tradition among Muslims in this locale (Nnko, Washija, Urassa, & Boerma, 2001).

The advent of the HIV/AIDS epidemic in the 1980s prompted researchers to explore the correlation between MC and HIV infection (Rennie, Muula & Westreich, 2007). In 1986 Fink (1986 as cited by Auvert et al., 2005) published a paper that suggested the protective effect of MC against HIV infection. Since then, various epidemiological studies have documented a significant protective effect of MC against HIV infection and other sexual transmitted infections (STIs) in men (Moses, Bailey & Ronald, 1998; Bailey, Plummer & Moses, 2001, Wilson & de Beyer, 2006). Evidence suggests that circumcision reduces the risk of becoming infected with HIV through heterosexual intercourse by at least one-half, and possibly as much as two thirds (Wambura et al., 2009). The landmark randomised clinical trials (RCT) conducted in Orange Farm in South Africa (Auvert et al., 2005), Rakai in Uganda (Gary et al., 2007), Kisumu in Kenya (Bailey et al., 2007) demonstrated a reduction in HIV incidence among circumcised men. Moreover, biological studies of the foreskin have indicated that a high concentration of stratified squamous epithelial cells of the foreskin are very susceptible to HIV-1 infection (Patterson et al., 2002 as cited by Wambura et al., 2009), which is one of the possible biological rationalization as to why circumcision may reduce

HIV acquisition. Furthermore, circumcision leads to a decrease in STIs and a possible reduction in micro tears and trauma to the foreskin during sex (Rasool, Sameer & Saddiqi, 2011). Based on the epidemiological and experimental substantiation, MC could have a considerable impact on the HIV epidemic especially among the most highly affected countries (Westercamp and Bailey, 2007). In fact, models have estimated that routine MC in Sub-Saharan Africa could highly avert about 6 million new infections and 3 million deaths in the next two decades (Williams et al., 2006 as cited by Wambura et al., 2009).

Although studies have shown the effectiveness of male circumcision in reducing HIV transmission in heterosexual contact, there are concerns over acceptability. Atashili (2006) noted that the stigma associated with circumcision, fear of pain and bleeding, reduced libido and unavailability of male circumcision services have the potential to hinder the successful implementation of interventions. Studies conducted in South Africa (Scott, Weiss & Viljoen, 2005), Kenya (Bailey, Muga, Poulussen & Abicht, 2002) and Botswana (Kebaabetswe, Lockman, Mogwe, Mandevu, Thior, Essex and Shapiro, 2003) reported acceptability rates of 51-61% in uncircumcised men. Similarly, a review carried out by Westercamp and Bailey (2007) to establish the acceptability of MC for prevention of HIV infections in non-circumcising societies in Eastern and Southern Africa, revealed that the median proportion of uncircumcised men willing to become circumcised was 65%, ranging from 29% in Uganda to 81% and 87% in Swaziland and Botswana respectively .

1.3. Research Problem

The prevention and control of HIV/AIDS remains a challenge to health care policy makers and health care providers worldwide. Ecological studies have shown that the countries in sub-Saharan Africa with the highest HIV prevalence are those in which MC is little practiced (Westercamp & Bailey, 2007). Promoting effective interventions that prevent new infections and controls the epidemic is a priority. Circumcision is proposed to be an effective intervention for HIV prevention in men. In Tanzania, MMC as an HIV prevention intervention was introduced to curb the spread of HIV; however, the practice is not universally accepted. Traditional male circumcision among Tanzanians varies across different tribes and cultural groups. In 2007, the government of Tanzania formed a Task Force to implement the roll out of MC services especially among traditionally non circumcising communities. An estimated 67% of Tanzanian men are circumcised but this prevalence varies

from one region to another (Wambura et al., 2009). MC is common among pastoralists and tribes along the eastern coast (mostly Muslims). Like in other East African countries, the Bantu-speaking groups do not traditionally practice MC (Bailey & Egesah, 2006). Also, MC is not a tradition among communities of the Lake Victoria Basin in Tanzania, comprising of large tribes of the Sukuma, Haya and Nyamwezi. Despite the strong evidence between HIV prevention and male circumcision, few studies have been conducted to assess the knowledge, attitudes and perceptions of non circumcising males towards MC especially if offered as an HIV prevention measure.

1.4. Research Question

What are the knowledge, attitudes, beliefs and practices of MC as an HIV prevention intervention among men?

1.5. Significance of the Study

Little research has been conducted among males in Tanzania to elicit their knowledge, attitudes and perceptions on MC as an HIV preventive measure. Various studies have focused mainly on the association between MC and HIV infection (De Vincenzi & Mertens, 1994; Auvert et al., 2005; Gary et al., 2007; Westercamp & Bailey, 2007). There is convincing substantiation from observational data and three randomized controlled trials that circumcision can significantly lower the risk of acquiring HIV-1 infection (Auvert et al., 2005; Gary et al., 2007; Bailey et al., 2007). In addition, WHO (2009) reported a significant indication that male circumcision protects against several sexual transmitted infections such as urinary tract infections, syphilis and chancroid. Male circumcision has other benefits, for instance, hygiene and reducing the chances of cervical cancer in women with circumcised partners. As a result, male circumcision has been regarded as an imperative public health intervention for preventing the spread of HIV. Despite, the illustrious benefits the acceptability of male circumcision among non-circumcising communities maybe problematic. Several barriers cited earlier may limit the uptake of MC. Tanzania is in the process of rolling out male circumcision as an HIV prevention method. However, there is a dearth of data regarding the knowledge, attitudes and practices towards this practice. The aim of the present study is to address a gap in the field by exploring the knowledge, attitudes and practices of MC as an HIV prevention strategy. This research is expected to provide valuable information that will enhance our understanding of the dynamics of acceptability and uptake

of MC. In addition, given national variations in cultural and religious attitudes towards circumcision, country-specific information is needed. It is therefore imperative that plans for large-scale roll-out of male circumcision should be informed by a thorough knowledge of factors which may impact uptake of this intervention. The findings of this research are expected to not only inform interventions, but also to impact on information communication and dissemination, MC uptake, training programmes and policy formulation.

1.6. Aims and Objectives

Aim

To establish the knowledge, attitudes, beliefs, and practices of MC as an HIV prevention strategy among males in Geita Gold Mine (GGM), Geita, Tanzania.

Objectives

- To establish the level of knowledge regarding MC among males in GGM.
- To describe the attitudes and beliefs of males about MC.
- To establish the acceptability of MC for HIV prevention.
- To identify barriers to MC practices.

1.7. Summary

This chapter presented the introduction to the study. It outlined and discussed the global and Sub-Saharan Africa regional trends in HIV/AIDS, the statement of the problem, the purpose of the study, the aims and objectives of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter outlines and discusses the global and the Sub-Saharan Africa regional trends in male circumcision. It continues with the determinants of male circumcision. Moreover, the review presents a number of studies on knowledge, attitudes, beliefs and acceptability of male circumcision.

2.1.1. Scope of Literature Review

A search of online databases including MasterFILE Premier, Academic Premier, SocINDEX, Cumulative Index to Nursing and Allied Health (CINAHL), Health Source: Nursing/Academic Edition, JSTOR, MEDLINE, Sage Journals, Science Direct, SpringerLINK Journals and Wiley Online Library was conducted. The researcher reviewed published articles between 1990 and 2012. Search terms included male circumcision, circumcision and HIV, foreskin, acceptability, attitudes, beliefs, practises and Tanzania. Moreover, extensive internet searches were also carried out. Relevant articles were located through broader searches with the following key terms: HIV/AIDS epidemic, Sub-Saharan Africa, HIV prevention, sexual transmitted diseases.

2.2. Origin of Male Circumcision

Male circumcision is the surgical removal of all or part of the foreskin of the penis (Kilima et al., 2012). Bonner (2001) revealed that circumcision practises are not universally standard. In the developed world circumcision involves the complete removal of the prepuce. Some Thai populations incise the prepuce into segments but do not remove it (Wassana as cited by Bonner, 2001). In the Solomon Islands, circumcision is in the form of a superficial incision without the removal of the flesh (Treadaway, 2000 as cited by Bonner, 2001) while in the Sub-Equatorial Africa, a small skin of the prepuce is left on the glans penis (Marck, 1997 as cited by Bonner, 2001). Despite the types of male circumcisions practised across nations, Doyle (2005) notes that the most prominent is where the foreskin is completely removed exposing the entire glans of the flaccid penis. Male Circumcision is the oldest known surgical

procedure and widely practised worldwide for various reasons. According to Keller (1956 as cited by Doyle, 2005) circumcision began around the 4th millennium BCE among the Sumerians and the Semites who are the fore fathers of the Hebrews. Ritual circumcision has long been practised by the South Sea Islanders, Australian Aborigines, Sumatrans, Incas, Aztecs, Mayans and Ancient Egyptians (Doyle, 2005). It is currently practised by Jews and Muslims and many tribes in East and Southern Africa.

There is speculation over how Jews and Muslims adopted the practice. It is believed that Abraham and the prophet Mohammed the founding fathers of faith among the Jews and the Muslim respectively adopted the practise from the tradition of the groups of people, the Sumerians and the Semites. Jordan (1952 as cited by Doyle, 2005) suggests that the Jews adopted the practice as a rite of passage into adulthood. In essence, this marked the rite of passage into manhood although as a symbol of a covenant, a solemn connection with God. The procedure is mainly carried out at the eighth day of a boy's life (The Bible Lev. 12:3 as cited by Doyle, 2005) and when non-Jewish male adults convert to Judaism.

Egyptians adopted the circumcision practice around 1200BCE from the people of the South, what is known today as Sudan and Ethiopia. The Southerners were of Sumerian and Semite origin who were in regular contact with Egyptians during trading (Doyle, 2005). Within the Aborigines and Polynesians circumcision was an initiation rite, a test of bravery and suitability to adopt the responsibilities of manhood (Elkin, 1938; Meggitt, 1962; Ponder, 1983; Brendt, 1987 as cited by Doyle, 2005).

Within Africa, male circumcision is widely practiced and almost universal in the North and West Africa. The global spread of Islam from the 7th century AD necessitated the adoption of male circumcision in non-circumcising communities. In East and Southern Africa circumcision is conducted mainly as a traditional rite often linked to toughening, training and initiation of male adolescents (Doyle, 2005). In East Africa, the original inhabitants of Sudan, Somalia and Ethiopia were of the Sumerian and Semitic origin who came from Arabia (Parfitt, 2002). People from north-east Africa migrated down South and populated the coastal

belt meeting with the Arabs who settled in Zambesi on the Mozambique Coast. This migration led to what is known as the Bantu today, who are composed of many tribes practising ritual circumcision (Doyle, 2005). The Bantus broke into many tribes each with well-defined territories. In South Africa these constitute the Zulus and amaXhosa. Others moved into Zimbabwe and Namibia.

2.3. Global Prevalence of Male Circumcision (MC)

WHO (2009) estimated that approximately 30% of the world's male population aged 15 years and above are circumcised. Various assumptions were considered in establishing the prevalence of circumcision. The first assumption was that all Muslim and Jewish males aged above 15 years were circumcised. The second established the prevalence of male circumcision among non-circumcising communities by means of the Demographic and Health Survey (DHS) data (WHO, 2009). The results revealed that 69% of the circumcised men are Muslim residing mainly in Asia, the Middle East and North Africa, 0.8% are Jewish and 13% are non-Muslim and non-Jewish men living in the USA (WHO, 2009).

Within North Africa and West Africa, MC is almost universal. However, it is less common in Southern Africa where the prevalence is around 15% in Botswana, Namibia, Swaziland, Zambia and Zimbabwe (DHS, 2006; Drain, 2006; Langeni, 2005; Connolly, 2004 as cited by WHO, 2009). The authors revealed a prevalence of 21% in Malawi, 35% in South Africa, 48% in Lesotho, 20% in Mozambique and more than 80% in Angola and Madagascar. They also noted that the prevalence in East and Central Africa varied from almost 15% in Burundi and Rwanda to 70% in Tanzania and 84% in Kenya and 93% in Ethiopia. This variation is ascribed to differences in ethnic groups, such as Nilotic or Sudanic speakers who are traditionally non-circumcising and within the Bantu speakers who abandoned MC centuries ago for various reasons. For instance, in Botswana, southern Zimbabwe, Malawi and parts of South Africa circumcision was stopped by the European missionaries and colonial administrators. Swazi King Mswati II abandoned MC as it was thought to incapacitate men during war times (Marck, 1997 as cited by WHO, 2009).

2.3.1. Male Circumcision in Tanzania

Male circumcision in Tanzania is mainly performed as a rite of passage into adulthood, religious and hygienic reasons (Mujinja et al., 2009). Muslims are the dominant religious group that practice MC. The 2003/04 DHS data revealed that 96.8% of the Muslim and 60-70% of the Christians and 25% of the men with Indigenous beliefs were circumcised (TACAIDS, 2005). In accordance to the Muslim religion, MC is carried out as a covenant with God, in order to make the Hajj to Mecca (Rizvi et al., 1999). However, there are variations in the prevalence of circumcision among certain sects. For instance, Muslims residing in Mwanza region a traditionally non-circumcising community are uncircumcised (Nnko et al., 2001). On the other hand, traditional circumcision is practised in the most parts of Tanzania with the exception of the West and Southern parts of Lake Victoria, Central Tanzania and South West Tanzania. Like most ethnic groups, MC is an important part in the transition to manhood. It is thought to be linked with masculinity and social cohesion and social desirability, self-identity and spirituality (WHO, 2007). The Kurya and the Gogo cultures in Mara and Dodoma regions respectively, place importance in circumcision practices. The non-circumcising cultures are of Bantu and the Nilotic origin who abandoned the practice centuries ago (Mark, 1997). The prevalence of MC among males aged between 15-49 years was found to be 70%. However, the rates vary per region depending on where it lies; traditionally circumcising or non circumcising belt (TACAIDS, 2005). Regions that lie in traditionally circumcising belts reported prevalence above 80% while traditionally non-circumcising populations revealed a range between 26%-69%. In fact, WHO (2007) reported that 90% of the male inhabitants in the non-circumcising belt are not circumcised.

2.4. Male circumcision Determinants

Historically MC has been identified with religious practice and ethnic identity. It has long been a common practice among many ethnic groups around the world, such as Aborigines, Australasians, Aztecs, Mayans in the Americas (WHO, 2009). It is mainly carried out as an integral part of the rite of passage to manhood. Among Jews and Muslims circumcision depicts a covenant made with God (WHO, 2009). In Rakai, Uganda, circumcision was largely adopted due to Islam; where 99% of the Muslim men are circumcised. In Nigeria, the ethnic groups of Bendel revealed that 43% of their men cited tradition as the motivation of

maintaining circumcision. Similarly, ethnic groups such as Yao in Malawi (Ngalande, Kapondo & Bailey, 2006), Lunda and Luvale in Zambia (Lukobo & Bailey, 2007) and Bogisu in Uganda (Bailey, 1999 as cited by WHO, 2009) and the Xhosa in South Africa still practice MC as part of culture (WHO, 2009).

Today MC is performed for various reasons in addition to religion and ethnicity. These include social, health and hygienic purposes. For instance, in Denver United States of America, circumcision is done after birth with parents citing social reasons (not to look different). In the Philippines, two thirds of the adolescent boys participating in the study chose to be circumcised so as to avoid being uncircumcised while 41% stated that it was part of tradition (WHO, 2009). In North Korea, circumcision was preferred by 61% of the boys and the reason attributed to this choice was to avoid being ridiculed by peers. In Ghana, the Aka ethnic group cited social, hygiene disease prevention, female preference and enhanced sexual enjoyment as determinants of MC (Mensch, 1999 as cited by WHO, 2009).

One major determinant of MC especially among English speaking industrialised world has been the awareness of improved penile hygiene and the reduction in the risk of STIs. In North America, Europe, Australia and New Zealand, MC was mainly adopted for health and hygienic reasons. MC was thought to prevent a variety of diseases and behaviour such as masturbation, syphilis and nocturnal incontinence (Clifford, 1893 as cited by WHO, 2009). Similarly, in Sub-Saharan Africa, MC determinants were found to include penile hygiene and reduced risk of STIs, especially in non-circumcising communities (Westercamp & Bailey, 2007). In a Teaching University Hospital in Lusaka, Zambia, 91% of the clients undergoing circumcision cited a lowered risk of STIs, including HIV infection as a major determinant (Bowa and Lukobo, 2006 as cited by WHO, 2009). Likewise, 96% of the uncircumcised men and 97% of the women in Nyanza Province in Kenya revealed that circumcised men can easily maintain penile hygiene (Mattson, Bailey, Muga, Poulussen, & Onyango, 2005). Likewise, in the United States of America (Dave et al., 2003 as cited by WHO, 2009) and Ghana (Niang, 2006 as cited by WHO, 2009) circumcision was mainly carried out on the perception of improved hygiene. Men attending focus groups in Botswana (Kebaabetswe et al., 2003), Kenya (Mattson et al., 2005) Malawi, the United Republic of Tanzania (Nnko et

al., 2001), Zambia and Zimbabwe (Westercamp and Bailey, 2007) believed that MC enhanced penile hygiene.

Sexual attraction and enhanced sexual pleasure have been cited as determinants of MC. Studies conducted in the Philippines (Lee, 2005 as cited by WHO, 2009) and in the Republic of Korea (Ku et al., 2003 as cited by WHO, 2009) revealed that women preferred circumcised men due to the perception that circumcision enhanced sexual pleasure. In Nyanza Province, 55% of uncircumcised male respondents were of the opinion that women enjoyed sex more with circumcised men and this was a strong predictor of circumcision. Moreover, the majority of women in the study were of the opinion that circumcision enhanced sexual pleasure (Mattson et al., 2005). Countries in Africa such as the United Republic of Tanzania (Nnko et al., 2001), South Africa (Lagarde, Dirk, Puren, Reathe, & Bertran, 2003) and Nigeria (Myers et al., 1985 as cited by WHO, 2009) revealed that both men and women perceived that circumcision enhances sexual pleasure.

2.5. Preferred Age of Male Circumcision

There is a wide degree of variation in the age at which circumcision may be carried out. Van Dam and Anastasi (2000) propose that for an effective protective effect on HIV acquisition, MC should be performed before or soon after the onset of sexual activity. Kelly, Kiwanuka and Wawer (1999) found that men circumcised before puberty had a lower risk of acquiring HIV infection compared to circumcised men and that the reduced risk was found mainly among men aged 13-20 years (RR= 0.46, 95% CI, 0.28-0.77). Bailey et al., (2002) revealed that half of the study participants felt MC should be conducted during infancy or early childhood for various reasons such as pain, less time to heal and an inherent feel of assuming a circumcised penis is natural. Moreover, medical professionals advocated for neonatal or infant circumcision (Bailey et al., 2002). Among the Muslim and Jewish culture, circumcision is mainly carried out at the neonate stage with the exception of male adults converting to either Judaism or Muslim faith (Doyle, 2005). In many African countries, circumcision is mainly practised at the teenage stage (Doyle, 2005) however; this is not completely universal as there are country variations. For example, in Ghana, circumcision is

mainly carried out among neonates while in Burkina Faso the median age is 5-7 years (DHS, 2006 as cited by WHO, 2006), in Zambia, it is 7-10 years (Bowa, 2006 as cited by WHO, 2009) and 8-16 years in Kenya (Agot & Bailey, 2006 as cited by WHO, 2009) and the late teens or twenties in Tanzania (Nnko et al., 2001) and South Africa (Auvert et al., 2001). In the Middle East, Central Asia and in Muslim Asian countries such as Indonesia, Pakistan and Bangladesh, circumcision is carried out at infant stage (Drain, 2006 as cited by WHO, 2009). In the Republic of Korea, MC is routine and typical occurs at adolescence at ages 10-15 years (Kim, Lee, & Pang, 1999 as cited by WHO, 2009). In the Philippines, MC occurs at various stages, one study found that 42% of the boys had the procedure done at an age less than 10 years, 52% of the boys were circumcised at ages 10-14 years and 5% between 15-34 years (Lee, 2005 as cited by WHO, 2009). Neonatal and child circumcision has been widely adopted in North America, Europe Australia and New Zealand. On the contrary, in Central and South America circumcision is uncommon.

2.6. Male Circumcision and HIV Infection

Male circumcision has been hailed as a preventive measure that has the potential to reduce HIV-1 among heterosexual contact. Randomised Control Trials have shown consistent efficacy in reducing the transmission of HIV infection. In 2002, three RCTs provided ground breaking evidence of the potential benefit of MC on HIV transmission. Auvert et al. (2005), Bailey et al. (2007) and Gary et al. (2007) provided results on the effect of MC on delayed versus immediate circumcision. More than 10 000 mostly young men were enrolled for the RCTs. Two groups were formed the control group which constituted of uncircumcised men and the intervention group made up of circumcised men. The authors revealed that circumcision provided significant protection from HIV acquisition among heterosexual couples. Data confirmed a 54% risk reduction of acquiring HIV infection. Similarly, Weiss, Quigley and Hayes (2000) conducted a meta-analysis of 27 observational studies published up to April 1999 that incorporated circumcision as a risk factor for HIV-1 infection among men in Sub-Saharan Africa. Twenty-one of these studies publicized a reduced risk of HIV among circumcised men. A sub-analysis of 15 studies of men at high risk made known that circumcised men were 70% less likely to contract HIV infection (Weiss et al., 2000). The authors revealed a strong link for men at higher risk of HIV (crude RR = 0.27; adjusted

RR=0.29, CI 0.20-0.41) than men in general population (crude RR = 0.93; adjusted RR=0.56, CI 0.44-0.70).

Epidemiological studies (cross sectional and prospective observational data) revealed a consistent clear pattern regarding HIV transmission (Wilson & de Beyer, 2006). Studies in India made known that the HIV prevalence in non-circumcised men was seven-fold higher than in circumcised men (Mehendale et al., 1996 as cited by Wilson & de Beyer, 2006). In Uganda, being circumcised was protective. Zero percent of the circumcised men did not sero-convert while 29% of the uncircumcised men in stable relationships sero-converted (Gary et al., 2000). A strong association was also revealed in Nairobi, Kenya when a group of male STI clients had sex with sero-positive commercial sex workers (Cameron et al., 1989 as cited by Wilson and de Beyer, 2006). Circumcised men with genital ulcer disease (GUD-chancroid and syphilis) revealed an HIV incidence of 2.5% while uncircumcised men with GUD had an incidence of 52.6% (DHS Kenya, 2004 as cited by Wilson & de Beyer, 2006). The survey also revealed that in Nyanza, a traditionally non circumcising community revealed that 21% of uncircumcised men had HIV infection compared to 2 % of circumcised men. In addition, MC was found to reduce other STIs, including chancroid, syphilis, balanitis, phimosis, penile cancer and cervical cancer in women (Weiss et al., 2006 as cited by Wilson and de Beyer, 2006).

Biologic evidence shows that in a natural state, the inner part of the foreskin is exposed to the inner surface of the glans penis and the shaft of the penis thus creating a moist, protected microenvironment for microbial flora (Doyle, Khan, Hosang & Carrol, 2010). Poor hygiene allows for the proliferation of pathogens (Wiswell et al., 1988 as cited by Doyle et al., 2010). Moreover, the inner prepuce mucosa has little or no keratin compared to a highly keratinised outer foreskin (McCoombe and Short, 2006 as cited by Doyle et al., 2010). As a result, the inner surface of the prepuce is highly susceptible to HIV-1 infection.

The primary target cells of the HIV-1 infection include Langerhans cells and the CD4+ T cells and macrophages. The intra-vaginal inoculation of rhesus macaques with HIV infection enables the heterosexual transmission of HIV (Patterson et al., 2002 as cited by Doyle et al., 2010). The cells mentioned above are selectively targeted and infected by the virus. The

Langerhans cells are in abundance in the epithelium of the foreskin and appear to be the main portal of entry into the penis (Patterson et al., 2002 as cited by Doyle et al., 2010). Circumcision removes Langerhans cells and causes keratinisation of the skin thus reducing the likelihood of any sexual infection which in turn reduces the risk of HIV acquisition (Sizabo and Short, 2000).

2.7 Acceptability of Male Circumcision

The acceptability of MC among non circumcising communities is a potential concern around the implementation of the procedure. A number of studies utilising both or either quantitative or qualitative methods have been conducted to assess the acceptability of MC in a number of countries. To begin with, the Women's HIV prevention Track Project (WHiPT) was conducted in five countries namely Kenya, Namibia, South Africa, Swaziland and Uganda (AVAC, 2010). The aim of the project was to "document and analyse women's perspectives and levels of participation in discussions and decisions about Medical Male Circumcision (MMC) for HIV prevention" (AVAC, 2010, p.5). The study utilised both quantitative and qualitative research methods with a sample of 494 women completing questionnaires and 40 focus group discussions. The results revealed that women would accept the implementation of MMC with 87% advocating for the introduction of the procedure. Similarly, a multinational study conducted in Kenya, South Africa, Swaziland, Tanzania and Zimbabwe determined the acceptability of MC made known that 60% of the men interviewed indicated the need to be circumcised (UNAIDS, 2006).

Kebaabetswe et al., (2003) conducted a cross sectional survey in 9 geographically representative locations in Botswana to determine the acceptability of MC, preferred age and setting for MC. Standardised questionnaires were used to collect data both pre and post informational session outline the risk of and benefits of MC. 605 individuals were surveyed and results revealed that the median age was 29 years and 52 % were male. During pre information sessions 68% of the respondents revealed that they would accept and circumcise a male child if MC was offered free of charge in a hospital setting. This number increase post information session to almost 90%. Among 238 uncircumcised men, 61% opted for the circumcision procedure, this number increased post information debriefing to over 80%. The ideal age for circumcision was 6years and 90% of the participants advocated for MC to be carried out in the hospital.

Still in Botswana, Plank et al. (2010) conducted a study among 62 mothers of newborn babies. The response rate was 92%. Prior to data collection women were issued with MC pamphlets outlining and describing the circumcision procedure, a list of the most salient potential risks and benefits of circumcision in general. The results revealed that 92% of the mothers agreed to circumcise their male babies on condition that it was offered in a clinical setting. The main reason (45%) cited was to protect against future HIV infections.

A Dominican Republic study conducted among men and women and health providers revealed that the major facilitator of MC were to correct problems in retracting the foreskin, which can lead to pain during intercourse and improve hygiene (Brito, Luna & Bailey, 2010). About half of the FGD participants thought that MC would be acceptable among men.

In East Africa, Bailey et al. (2002) studied the acceptability of MC in Nyanza, among the Luo tribe, a traditional non circumcising population. Focus group discussions (FGDs) and semi-structured interviews were utilised to collect data. FGDs were carried out with adult men and women separately. Semi-structured interviews were conducted with 9 health professionals. FGDs revealed that participants favoured circumcision mainly for STIs/HIV risk reduction and increased cleanliness (Bailey et al., 2002). In addition, FGD revealed that MC might make the Luo tribe more acceptable to Kenyans, as participants perceived that the Luo have been discriminated against many aspects of the socio-political arena. Moreover, the authors revealed that the acceptability of MC among boys and young Luo men was linked to peer identification.

Westerncamp and Bailey (2006) reviewed studies conducted in Sub-Saharan Africa to assess acceptability of MC in traditionally non circumcising communities. Thirteen studies from 9 countries were reviewed. In Botswana, Kenya, South Africa and Swaziland results revealed that women would prefer circumcision for their sexual partners or male children and men preferred circumcision for both self and son. The authors revealed that 75% of the parents would consider MC for their sons given that it was affordable and protective of STIs and HIV. Overall, the median proportion of uncircumcised men willing to undergo the procedure was 69% (range 29-87%). Furthermore, 69% of the female participants favoured circumcision of their partners and 71% and 81% of men and women respectively were

willing to circumcise their sons. There were however geographical variations, with 51% and 45% of the men in rural and urban dwellings respectively willing to be circumcised. Studies that were both urban and rural in nature revealed an acceptability rate of 77%.

In 2000, Halperin, Fritz, McFarland, and Woelk (2005) determined the acceptability of MC among men at various Harare beer halls. Data was collected from 200 men and FGDs were also conducted on 12 men to develop an in-depth understanding of MC. The authors revealed that 14% of the participants were circumcised. Results on acceptability levels revealed a lower stance on MC than other studies conducted in African countries. However, despite the absence of MC information, education and communication, nearly half of the men expressed willingness to undergo MC. 45% agreed to be circumcised, however, this percentage is lower than in other studies conducted in Africa, for instance, Kenya and Botswana recorded acceptability rates of 60% and over 80% respectively.

2.8. Knowledge, Attitudes and Beliefs of the Benefits of Male Circumcision

Moses et al. (1998) documented a positive biological correlation between MC and STIs (chancroid and syphilis). Lack of circumcision was thought to increase the risk of STIs and HIV infection due to the physiological nature of the prepuce (Fleming & Wasserhei, 1999 as cited by Weiss et al., 2000). Circumcision has been found to protect against HIV transmission as viral entry may occur via micro-traumatic lesions or mini-ulcerations of the foreskin (Moses et al., 1990 as cited by Weiss et al., 2000) or through trauma to the non-keratinised inner mucosal surface of the foreskin (Hussain &, Lehner T, 1995 as cited by Weiss et al., 2000) Furthermore the presence of the foreskin may obscure the presence of genital ulcers which might easily be recognized in a circumcised penis (Aral & Holmes, 1999 as cited by Weiss et al., 2000).

In Zambia, focus group discussions were conducted with urban and rural married and single unmarried men aged 18 to 39 (Lukobo & Bailey, 2007). Thirty-four focus group discussions were conducted; 17 with men and 17 with women in four districts. The study assessed male

circumcision practices, opinions, and acceptability as an intervention to improve male genital hygiene and reduce sexually transmitted infections, including HIV-1. Results revealed different perceptions on male circumcision. Traditional groups practicing male circumcision revealed that uncircumcised men experienced premature ejaculation, decreased penile hygiene and unfit for marriage. Male circumcision was believed to be a developmental milestone for a man. It was also perceived to protect one from sexual disease. Opinions were expressed with regards to enhanced sexual pleasure, circumcised men were thought to “perform” longer, thereby increasing their female partner’s satisfaction (Lukobo & Bailey, 2007). However, men not practicing traditional male circumcision expressed limited interest in the practice although some expressed considering MC because of beliefs that women preferred circumcised men (Lukobo & Bailey, 2007). In addition, non circumcised participants revealed that they would adopt MC for themselves or their sons if it was proven to reduce the risk for HIV and STIs and on condition that it was offered free of charge or at a nominal cost.

Mavhu et al. (2011) conducted a study to explore MC prevalence, knowledge, attitudes among rural Zimbabweans. 2746 individuals participated in the study, 64% of this population were women and only 20% of the men were circumcised. Knowledge of MC and its health benefits was low. However, given the effect of MC on HIV infection, 52% of the men reported that they would undergo MC. Still in Zimbabwe, few participants were aware of the benefits of MC. Sixty-nine percent of the respondents mentioned that MC reduces STIs (Halperin et al., 2005). However, only 39% of the men mentioned the effect of MC on HIV and only 12% indicated that MC promotes hygiene and sexual cleanliness (Halperin et al., 2005).

On the contrary, the results were not the same as a study conducted in Mazowe, Zimbabwe, a mining and farming community (Chikutsa, 2011). Seventy-three individuals participated in the study and 54% were men. The results revealed that 90% of the participants had heard of MC for HIV prevention. Access to radio was significantly associated with knowledge about MC in HIV prevention. Participants expressed high knowledge on awareness of MC not

providing full protective against HIV and that circumcised men still have to use condoms (Chikutsa, 2011).

In Tanzania, a qualitative study utilizing in depth interviews in a cohort of police officers 24 men and 10 women revealed that the participants were knowledgeable about MC as a prevention method for both STIs and HIV infection (Tarimo et al., 2012). The authors revealed that participants were knowledgeable about the effect of circumcision on penile hygiene and its contribution to STI prevention with emphasis being placed on HIV prevention. The participants believed that MC enhanced sexual pleasure.

2.9. Barriers to Male Circumcision

Many challenges stand in the way of implementing a successful MC programme. Several studies have highlighted pain, bleeding and possible cultural tradition as some of the barriers to MC acceptability. Wamai et al (2011) noted that there are potential health care system challenges that might make it unattainable to have a successful MC intervention programme. Issues such as, the politics surrounding policy development, funding and changing socio-cultural perceptions and beliefs about MC might be possible barriers (Potts et al., 2008; Patrick et al., 2009 as cited by Wamai et al., 2011). For instance, in Gambella, Ethiopia, the regional hospital reportedly cannot meet even a small demand of 10 circumcisions per week due to staff shortages and lack of training (Patrick et al., 2009 as cited by Wamai et al., (2011).

Bailey et al., (2002) noted that in Kenya being uncircumcised was regarded as an identity for the Luo culture, this was perceived as a cultural tradition that was regarded as a barrier to acceptability of MC. Participants in this study regarded the absence of MC as a significant component of Luo identity aside from language. MC was thought to erode their distinction from other tribes. The study revealed that pain during and immediately after the procedure and during the healing process was seen as a significant barrier to MC. Participants expressed concern over bleeding in medical, traditional or religious circumstances. Infection and poor

healing process were also seen possible barriers to MC. This was especially expressed in the context of traditional circumstances where non-sterile conditions.

Herman-Roloff, Otieno, Agot, Ndinya-Achola, and Bailey (2011) conducted 12 focus group discussions among uncircumcised men in Nyanza Province. The aim was to assess the revealed, non-hypothetical, facilitators and barriers to the uptake of MC. The results revealed that participants identified time away from work; culture and religion; possible adverse events; and the post-surgical abstinence period as the primary barriers to MC uptake. Other barriers included: long distance to the health facility, a decrease in male and female sexual satisfaction and peer influence against MC.

Brito et al. (2010) revealed that in the Dominican Republic, lack of trained personnel to perform the, procedures; lack of information about MC in the community, lack of surgical equipment, the cost of the procedure lack of continuous electricity or running water in some of the clinics and the lack of physical space for surgical theatres in some of the clinics were some of the potential barriers to MC.

A study conducted in a University Teaching Hospital in Zambia revealed that the main barriers to MC services were related to costs (USD\$3), fear of complications and sexual impotence and socio-cultural reasons (WHO, 2007). Similarly, in South Africa WHO (2007) reported that the cost of circumcision has been identified as a barrier to MC. The asking price ranged from USD\$14 in public hospitals to USD\$68 in private practitioners and between USD\$400-600 by traditional circumcisers. In addition, pain and safety, human resources and public hospital overload are some of the barriers (WHO, 2007).

2.10. Source of Information about Male Circumcision

Male circumcision is a vital intervention that is progressively being integrated into national HIV prevention programmes. Countries that are heavily burdened with the pandemic where

the HIV prevalence is high and the prevalence of circumcision is low should consider adopting MC. Effective communication is an essential element of any community health related scale-up strategy. A variety of communication approaches are traditionally used in supporting the roll out of any developmental or health programmes. Communication approaches may include community mobilization, encouragement, behaviour and social change communication, social marketing, advertising, film and theatre. Communication programmes generally produce the best results when they work at multiple levels. A study conducted in Kenya proposed the following communication channels.

1. **Interpersonal communication** involving interpersonal exchanges of information among peers, professional groups, within the family and other closely linked groups are ideal in aiding the initial stages of awareness creation, and the following stage of stimulating interest in the individual to want to try male circumcision as a new innovation to prevent HIV infection among men. Informal channels like chiefs' barazas, health centre open days, public rallies would be useful.
2. **Communication campaigns;** Audio Visuals including mobile cinema would be an effective medium of communication especially with men who happen to be the most frequent visitors of these cinemas. Being a powerful medium that uses voice, visuals and even text, very effective messages can be designed.
3. **Media advocacy campaigns** through print media newspapers would be effective in areas where literacy levels are high and newspaper reach is relatively good.
4. **Advocacy campaigns** targeting opinion leaders.
5. **Persuasion;** using messages through the radio and television to support the adoption stages the strategy. Vernacular FM radio stations are ideal for this task.
6. **Dialogue:** Among groups, peers, workers, medical staff and their clients etc. The vernacular FM stations have gained immense popularity amongst their target audiences in the various communities. Because they broadcast in languages widely understood by community members, their messages & programmes tend to resonate better with the audiences. Furthermore, radio

listenership in Kenya is quite high as it breaks the education barrier presented by many other media.

7. **Entertainment:** To create interest, stimulate a level of mental engagement as well as giving the campaign momentum, messages should be presented in a form that also entertains. Interactive channels like road shows and community theatre would play a critical role in capturing the attention of the young people.

8. **Education:** Overall goal should be to increase knowledge through a process of education.

9. **Identification, documentation and dissemination** of best practices.

(VMMC, n.d., p. 21-22).

Communication channels and activities to support the approaches should be varied and should depend to a large extent on the targeted groups. A multi-media approach is vital in ensuring optimal reach of audiences.

2.11. Summary of Literature Review

The chapter presented the origin of MC, the global prevalence of MC and its determinants. In essence, this provided information regarding the evolution of MC and the reasons for undertaking the practice. The reasons included hygiene, culture, and religion. MC was practiced at various stages of male life. Review on the MC global prevalence revealed that the majority of the Muslims are circumcised mainly as a religious rite. In the modern day, MC has been mainly adopted as a public health intervention. WHO-UNAIDS recommended the adoption of the practice after three landmark studies revealed the efficacy of MC in reducing the transmission of HIV infection especially among heterosexual contacts. The acceptability of MC as an HIV prevention intervention was also presented. Overall, there is higher MC acceptability rate. In addition, literature showed that many studies have been conducted on knowledge, attitude and practices or behaviour with regard to MC and HIV. The heterogeneity of MC practice and knowledge among countries, mainly in Africa, was made evident. The studies publicized mixed results. These included either high or inadequate knowledge of MC as an HIV preventive intervention. In relation to attitude, literature revealed a positive position on MC practice. The chapter also presented results on barriers to MC intervention uptake. The literature review helped in the conceptualization of and

understanding of concepts such as the relationship between MC and HIV infection, knowledge, attitudes and practices of MC as an HIV prevention intervention. The studies were of both quantitative and qualitative research methods and were obtained from a wide range of places. Most of them were conducted in Africa including Tanzania. On the other hand, none of the literature reviewed or consulted were conducted on the knowledge, attitudes, beliefs and practice of MC the Geita District of Tanzania. This rationalizes the choice of the study with and expectation that the study will contribute to the true reflection of the knowledge, attitudes, beliefs and practice of MC the Geita District of Tanzania.

CHAPTER THREE

METHODOLOGY

3.1. Introduction

This chapter presents the methodology used to conduct the study. It lays out the study setting, design, and population. The chapter also presents the sampling approach for the study population and the method used to collect and analyse the data.

3.2. Research Setting

Geita is one of eight districts in the Mwanza region situated in the northwest of Tanzania and has a total population of 712, 195 inhabitants (United Republic of Tanzania, 2003). Once a tiny community, Geita has grown in population and importance largely due to the gold mining industry. It is on the main road from Mwanza to Bukoba, which is the main port and entryway into Uganda and Rwanda. Geita Gold Mine (GGM) has brought economic prosperity to Tanzania and in particular Geita Town. On the project inception in 2000, Geita Town had a population of 10 000 people. Ten years later the population is almost tenfold. Currently, GGM employs around 1700 employees and with that, the community has seen an influx people into the town. In Geita town, the burden of diseases is high, with communicable diseases still prevailing. HIV and AIDS are among the most dominating diseases. Statistics from the mine reveal that the risk of becoming HIV infected is high (AMREF, 2006). The Geita district has an estimated 8% HIV prevalence, 2.4% above the national average (TACAIDS, 2008). To expand access to HIV/AIDS prevention, care and treatment for the workforce of the mine, GGM contracted the African Medical Research Foundation (AMREF) to provide comprehensive HIV and AIDS programme and technical support (AngloGold Ashanti, 2009). The clinic adheres to the National Health Guidelines on the rights of PLWHA. It offers two key services with respect to HIV/AIDS; the first service includes raising awareness, both within the community and the workplace. The second includes voluntary counselling and testing is provided for self referred clients. Clients testing HIV positive are referred to Geita District Hospital were most of the HIV/AIDS patients from

other facilities in the district are referred for further treatment, care and rehabilitation. On national level, the government of Tanzania engaged on an HIV/AIDS prevention campaign that embraces male circumcision. This prevention strategy was adopted as per WHO/UNAIDS recommendations (Mujinja et al., 2009). The Tanzania Demographic and health survey (DHS) 2003/04 data revealed that the prevalence of circumcision among males aged between 15-49 years was 70%. The rates varied significantly among regions (TACAIDS, 2004 as cited by Wambura et al., 2009). Some regions had an MC prevalence of above 80% while other regions that do not traditionally circumcise recorded prevalence between 26% and 69% (Wambura et al., 2009). The TGeita town is situated in a traditional non-circumcising region comprising mostly of the Sukuma tribe.

3.3. Research Method and Study Design

3.3.1. Research Method

The researcher utilised a quantitative research method. Christensen, Johnson and Turner (2011) noted that quantitative methods are a systematic way of collecting numerical information and analysing it using statistical procedures. Quantitative research “deals with quantities and relationships between attributes; it involves the collection and analysis of highly structured data in the positivist tradition” (Bowling, 1997, p.173). It is therefore an inquiry into an identified problem, measured with numbers, at times tests theory and analyses data using statistical techniques. In essence, the social phenomenon is expressed numerically, measured and quantified (Blanche, Durrheim & Painter, 2006). Therefore, to quantify and measure knowledge, acceptability, attitudes and beliefs of males towards MC, a quantitative method was used.

3.3.2. Study design

A study design is defined as a planned approach adopted by researchers in answering research questions (Joubert, & Ehrlich, 2007). The authors have related a study design to architecture of the study due to the fact that the selection of a design determines how one samples a population, amass measurements and analyse information. Descriptive studies do not make an attempt to analyse the links between exposure and effect, they are limited to the description of an occurrence under investigation (Beaglehole, Bonita & Kjelleström, 2006). It therefore, describes the phenomenon under study based on routinely available data or data collected from research participants. A cross-sectional descriptive survey was adopted, as it

collected data from the research participants in a single and relative period. This allowed the researcher to elicit information about a given phenomenon from the participants' perspective regardless of follow-up. The researcher was able to determine individuals' knowledge, attitudes, opinions and beliefs about male circumcision (Christensen et al., 2011).

3.4. Study Population

The study population comprised of all men aged 18 years and above working for GGM and reporting for Occupational Health Screening at Geita Gold Mine Clinic. On average 35 to 40 male clients report for occupational screening at the clinic per week. Thus on a monthly basis the clinic attends to about 150 clients.

3.5. Sampling method and sample size

3.5.1. Sampling Method

A sample is the number of units of the population under study and represents the characteristics of the population being studied (Uys and Basson, 1991). Sampling is the process of selecting a segment of the population to represent the entire population. The study utilised and random sampling as it allowed the researcher to select subjects from a population using random procedures (Christensen et al., 2011). Systematic sampling was used to select participants.

3.5.2 Sample size

To ensure that the sample size was representative and statistically significant of the general population, a calculation was made in order to determine the sample size. Saunders, Thornhill and Lewis (2009, p.581-582) proposed the following formula which encompasses the important elements for determining the sample size was used:

$$n = p\% \times q\% \times [z/e\%]^2$$

Where:

n = the minimum sample size required

p% = the proportion belonging to the specified category

q% = the proportion not belonging to the specified category

z = the *z* value corresponding to the confidence level required

e% = the margin of error

n' = adjusted sample size

P = study population

The adjusted sample size was 169.

169 males were therefore systematically selected from the study population. The following inclusion criteria were used:

- males should be working for GGM.
- males should be attending the GGM Occupational Health Clinic
- males should be above 18 years of age

The researcher then determined the sampling interval. This was achieved through determining the population size which was divided by the desired sample size. With a study population of 300 and a sample size of 169 (Christensen et al., 2011), the researcher applied the random sampling frame of choosing every 2nd client.

GGM employees attend scheduled occupational health screening once a year. However, the following measures were put in place to ensure participants were interviewed only once during the period of the study:

- The collection of data was done over two months to avoid the same participants being recruited on subsequent days.
- Prospective participants were asked if they had already been issued with a questionnaire before.
- The researcher briefed prospective participants on the procedure and that they were supposed to complete the questionnaire only once.

3.6. Data Collection Procedure

Data collection refers to how a researcher obtains empirical data to answer the research inquiry (Christensen et al., 2011). Data was collected between September and October 2013. A predetermined questionnaire (Appendix 1) was used to collect data from the research participants. Therefore, a closed-ended questionnaire was issued to the participants to collect data through self-report. In this method, there was no manipulation of variables or an attempt

to establish causality. Moreover, self-administration circumvented the risk of researcher/interviewer bias and provided participant anonymity. This type of method is supported and allows for the collection of standardized information from participants from a larger population (Christensen et al., 2011). The questionnaire was translated from English to KiSwahili (Appendix 2). Each questionnaire was accompanied by a participant information sheet explaining the purpose of the study to the prospective participants. General instructions on completing the questionnaire were also included.

Prior to data collection, to ensure credibility of the research instrument, my Thesis Supervisor examined the content of the questionnaire and some amendments were made to a number of questions that did not have clear cut answers. For instance, more options were provide for a statement like “Circumcised men enjoy sex more than uncircumcised men.” Instead of participants having to choose from three options “Agree, Disagree and Don’t know”, a 5 point Likert response option was then adopted as a more plausible format. Options now included “Strongly agree, Agree, No opinion, Disagree, Strongly Disagree”. Overall six statements were shifted to the 5 point Likert response option.

The researcher then contacted the relevant authorities at Geita Gold Mine and informed them about the study and provided the necessary details of the study: the purpose and process and requested their permission to conduct the study. After obtaining permission, the researcher contacted the Nursing Services Manager to facilitate the selection of suitable participants. The researcher positioned herself at a strategic point, in this case the nurses’ administration office where prospective participants had to obtain their patients medical records and report to the Occupational Health Department. Since a predetermined appointment sheet was already available, the researcher was able to systematically identify clients for the study.

The closed-ended questionnaire collected data on knowledge, attitudes, beliefs and practices with regard to MC. In developing the questionnaire, the researcher adapted some items in the questionnaire from various studies such as the Situational Analysis for MC in Tanzania (Wambura et al., 2009) and Kenya/Uganda (AVAC, 2010). The final questionnaire was a 45 item instrument with 7 items on demographic data, 9 items on knowledge, 23 items on attitudes, beliefs and acceptability and 5 items on circumcision status. The questionnaire was divided into four sections:

- Section A covered demographic information
- Section B with measured knowledge
- Section C with measured attitude, beliefs and acceptability
- Section D with measured circumcision status

Section A obtained information from the participants regarding age, language, religion, marital status, and media available at home and level of education.

Section B aimed to determine the participants' level of knowledge regarding male circumcision, STIs and HIV prevention.

Section C determined the participants' attitudes, beliefs and acceptability of male circumcision.

Section D determined the circumcision status of participants. The purpose was to identify the proportion of circumcised participants.

3.7. Data Analysis

The researcher started the process by systematically organising the raw material encountered during data collection (Patton, 1990). Raw data is unordered, contains errors and missing data, these were transformed into an ordered error free data before analysis (Blanche et al., 2006). Thus, the data was prepared in three tasks of: coding, entering and cleaning. The data was analysed using the Statistical Package for the Social Sciences (SPSS) software version 20. To begin with, the researcher defined some variables. The dependent variables measured were related to knowledge, attitude beliefs and acceptability related MC and HIV. The independent variables included demographic characteristics such as age, sex, and education. Variables were transformed into meaningful data that can be decipherable by SPSS software.

Coding of data then ensued by transforming information on a questionnaire into meaningful numerical format. Five items (Q8-Q12) measuring knowledge had the following options: "1= True", "2= False" and "3= Not sure". Therefore, for in this section, each question had a clear cut answer. Respondents who chose the correct answer were awarded a score of 1 and no score for an incorrect response. Respondents choosing "Not sure" were not awarded with any point as the answer was considered incorrect. For instance, the following response "True" was considered correct for Q8, Q9, Q11 and Q12, thus a point was awarded. For Q10, the following response "False" was considered correct. The next four items (Q13-Q16) on

knowledge had the following response options: “1=Circumcised”, “2= Uncircumcised”, “3= No difference” and “88= Don’t know”. The following were the correct response in relation to the knowledge of MC: Q13, Q14, and Q16 the correct response was “Uncircumcised” while Q15 the correct response was “Circumcised”, thus individuals were given a score of one if the selected the appropriate response

To obtain individual aggregate scores, the researcher recoded the variables and counted the occurrences of values within cases in the following manner: for Q8, Q9, Q11, Q12 the following codes were developed “1=1- Correct”, “2=0- Incorrect” and “3=0- Incorrect”. Question 10 had the following code “1=0- Incorrect”, “2=1- Correct” and “3=0- Incorrect”. Similarly, for Q13, Q14, and Q16, the following codes were developed “1=1- Correct”, “2=0- Incorrect”, “3=0- Incorrect” and 88= 0- Incorrect” while Q15 had the following code “1=0- Incorrect”, “2=1- Correct”, “3=0- Incorrect” and 88= 0- Incorrect”. As a result, individual aggregate scores were obtained

To measure attitudes and beliefs on MC and HIV prevention, respondents were to elicit responses: “1= Strongly agree”, “2= Agree”, “3= No opinion”, “4= Disagree” and “5= Strongly disagree”. Acceptability and barriers to access was measured by selecting the appropriate response which were coded to elicit the respondent’s answers. “1=Yes”, “2= Maybe”, “3= No” and “88= Don’t how”. Multiple response questions were coded per response option, for instance, Q26 had 9 response options.

- Prevent HIV..... 1
- Hygiene..... 2
- Cultural norms..... 3
- Religion..... 4
- Prevent STIs..... 5
- Sexual pleasure..... 6
- Partner’s desire..... 7
- Others specify..... 8

Each option was analysed separately. Hence each option was code as “1= Yes” for selecting the option and “2= No” for not selecting the option.

Cleaning of data was done to check for errors. After the data was cleaned, the researcher statistically analysed data. The researcher utilised descriptive and inferential statistics to analyse the data. Tables and figures were used to visually communicate data. These were generated using Microsoft Office Excel 2007. Descriptive statistics included frequency distributions, measures of central tendency and measure of dispersion. Inferential statistics comprised of the Chi-square which measured the strength of association between some dependent and independent variables. To assess the significance of these a t-test was used with a cut off p-value of 0.05.

3.8. Validity and Reliability

3.8.1. Validity

Validity is an indication of the extent to which an instrument measures what we think it is supposed to be measuring (Sarantakos, 1998). It therefore measures the truth or accuracy of a research instrument; “there should be no systematic error and the random error should be as small as possible” (Beaglehole et al., 2006, p. 57). Internal validity reflects the extent at which the result of an observation is a true reflection of reality rather than intervening, extraneous or confounding variables (Beaglehole et al., 2006). To ensure internal validity, the questionnaire was translated from English to KiSwahili, the language that all participants were familiar with. In addition, the questionnaire was pretested to address any ambiguities prior to the data collection process. The researcher determined validity by posing a series of standardised questions.

External validity is concerned with the application of the study findings to the real world (Rossi, Lipsey & Freeman, 2004). It is in fact, an issue of generalisability. The findings of this study can only be generalized to adult males from mining communities. Because the study sample represents those who work in mines, it may not be reflective of the knowledge, attitudes and behaviours of the general population of male adults. Moreover, Geita is situated in the north-western part of Tanzania with communities that do not traditionally or religiously circumcise. The findings may not be generalised to communities that practice circumcision.

It may however, give an impression of the knowledge, attitudes and behaviours of the population so far met by HIV interventions.

3.9. Pilot Study

To ensure reliability and validity, a pilot study was conducted in order to pre-test the research instrument, identify its appropriateness and measure its intended purpose. Pretesting the questionnaire provided a channel to discover whether the questionnaire was adequately prepared. Moreover, it presented a platform for refining the structure and order of the questions, rephrasing questions as well as eliminating vague areas and repetitions (Blanche et al., 2006). Ten men attending GGM clinic were conveniently selected and briefed about the nature of study and the purpose of the pilot study. However, due to the nature of the study, prospective participants were reluctant to admit they were uncircumcised. Moreover, the researcher found it difficult to identify the circumcision status of clients since this was not included in the medical records. Thus, the researcher incorporated Section D (Appendix 1) of the questionnaire which allowed participants to reveal their circumcision status. This meant that circumcised clients were also included in the study, hence diverting from the initial plan of only selecting uncircumcised men.

Section C of the questionnaire was initially for uncircumcised men, the research therefore had to incorporate this instruction, “If circumcised go to question 29”. The responses to Q23, Q24, Q25 and Q32 limited the participants to either choosing yes or no to the questions posed. The researcher then incorporated the “Maybe” option to the list of responses. After the necessary changes, the questionnaires were sent out to the field.

3.10. Ethical Consideration

The following considerations were observed:

- An application for ethical approval was submitted to the Research Ethics Committee of the Stellenbosch University.
- Further permission was sought from the Geita Gold Mine in Geita, Tanzania (Appendix 3).

- A participant information sheet was issued to the participants highlighting the scope of the study including the aim, purpose and importance of the study (Appendix 4). Participation in this study was entirely voluntary and participants were informed that their refusal to participate in the study will not result in a penalty or withdrawal of any employee benefits.
- To reinforce voluntary participation, participants were required to complete a consent form (Appendix 5). Issues of confidentiality, respect and anonymity were explained and emphasised.
- Participant's identity was kept confidential since the questionnaire did not request participants to reveal their identity. Records of the survey and the consent forms were kept in a safe and private place under lock.

3.11. Conclusion

This chapter focused on the research methodology. The researcher utilised a quantitative research paradigm. Self administered questionnaires were used to collect data. The findings of the study are presented in the next chapter.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Introduction

This chapter lays out the results of the study. The results are presented in relation to demographic characteristics of respondents, knowledge of MC in HIV prevention, attitudes and beliefs, barriers to access and acceptability of MC. In reporting the results the researcher adapted some descriptive indicators utilised by Bailey et al. (2002, p. 29): ‘all’ (100%); ‘nearly all’ (80% or more); ‘the majority’ (more than 50%); ‘about half’ (around 50%); ‘fewer than half’ (around 25–45%); ‘minority’ (10–25%); and ‘a few’ (less than 10%). Descriptive statistics were utilised to present the study findings. Then, further inferential statistical analyses were presented so as to pursue the strength of the association between selected variables where deemed relevant. This was done through bivariate analysis (specifically cross tabulations and/or Chi-square testing) in order to determine how much of a relationship exists between the selected variables. Moreover, the chapter discusses the study results.

4.2. Demographic information

Question 1-7 elicited demographic information. A total of 169 questionnaires were handed out. One hundred and sixty-four respondents completed and returned the questionnaires and this gave a response rate of 97%. The respondents in the study were all males. The mean and the median age of the study sample were 29.9 years and 29 years respectively (Table 1). The age range was 28 years with a minimum of 18 years and a maximum of 46 years.

Table 1: Age in Years

| N | Mean | Median | Mode |
|-----|------|--------|------|
| 164 | 29.9 | 29 | 35 |

All respondents spoke KiSwahili as their home language. Table 2 shows the socio-demographic characteristics of the respondents. Fewer than half respondents were either

single (48.8%) or married (45.1%). Nine respondents were divorced or separated while only 1 was cohabitating. Results on the level of education revealed that nearly all (82.9%) of the respondents had secondary education. Only a few respondents (3%) had tertiary education. With respect to religious affiliation, the majority of the respondents were Christians (71.9%) while 34.1% were Muslims and 1.8% of the belonged to another religion. Nearly all of the respondents 136 (82.9%) and 121 (73.38%) indicated that they have a television and radio respectively.

Table 2: Demographic Characteristics

| Variable | Variable Options | Frequency | Percentage (%) |
|--------------------|-----------------------------|-----------|----------------|
| Language | Swahili | 164 | 100% |
| | English | 0 | 0.0% |
| | Sukuma | 0 | 0.0% |
| | Other | 0 | 0.0% |
| Marital Status | Single never married | 80 | 48.8 |
| | Married | 74 | 45.1 |
| | Living together not married | 1 | 0.6 |
| | Divorced or separated | 9 | 5.5 |
| Level of Education | Primary | 8 | 4.9 |
| | Secondary | 136 | 82.9 |
| | Advanced Level | 15 | 9.1 |
| | Tertiary Level | 5 | 3 |
| Religion | Christians | 118 | 71.9 |
| | Muslim | 40 | 24.4 |
| | Traditional | 2 | 1.2 |
| | None | 1 | 0.6 |
| | Other | 3 | 1.8 |

4.3. Prevalence of male circumcision

This information was drawn out from Q41-45 of the questionnaire.

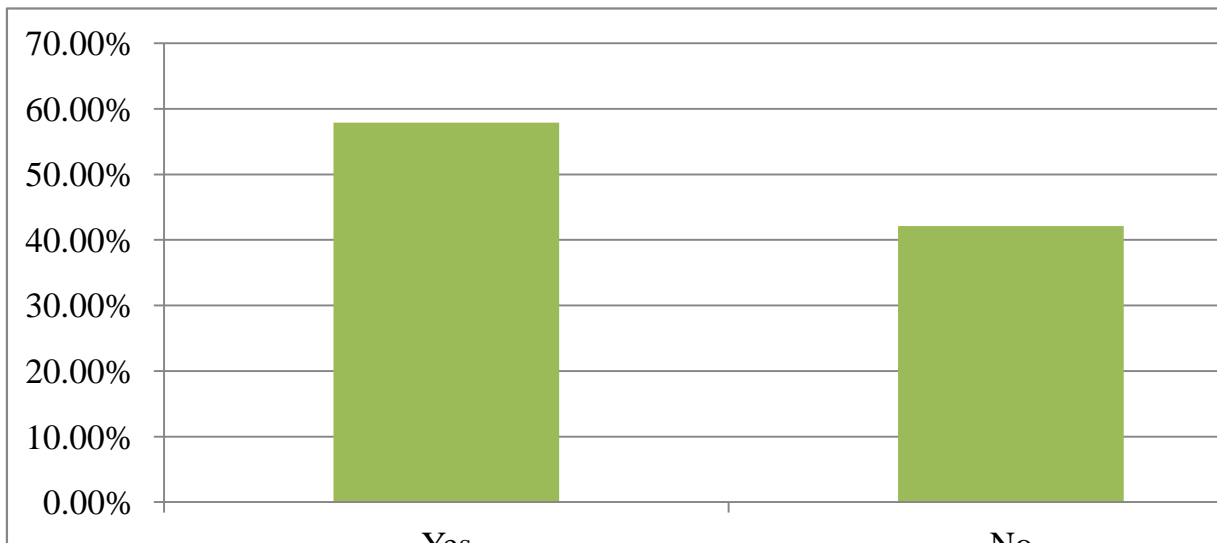


Fig 1: Circumcision Status

Out of 164 respondents, 95 (57.9%) were circumcised while 69 (42.1%) were not circumcised.

4.3.1 Age of circumcision

Table 3: Age of Circumcision

| Age of Circumcision | Frequency | Percentage (%) | Cumulative Percentage (%) |
|---------------------|-----------|----------------|---------------------------|
| Infant | 19 | 20.0 | 20.0 |
| Child | 56 | 58.9 | 78.9 |
| Adolescent | 16 | 16.8 | 95.8 |
| Adult | 4 | 4.2 | 100.0 |
| Total | 95 | 100.0 | |

The majority of the circumcised respondents 59.0% had the circumcision procedure carried out during childhood (1-12 years). Only 4% of the respondents (Table 3) were circumcised during adulthood (above 18 years).

4.3.2. Circumcision Performer

Table 4: Circumcision Performer

| | Frequency | Percentage (%) | Cumulative Percentage (%) |
|-------------------------|-----------|----------------|---------------------------|
| Health worker | 48 | 50.5 | 50.5 |
| Traditional Circumciser | 47 | 49.5 | 100.0 |
| Total | 95 | 100.0 | |

Respondents were asked to identify the person who performed the circumcision procedure. Out of 95 respondents, 48 (50.5%) revealed that they were circumcised by a health worker while 47 (49.5%) were circumcised by a traditional circumciser.

4.3.3 Place of Circumcision

Table 5: Place of Circumcision

| | Frequency | Percentage (%) | Cumulative Percentage (%) |
|-----------------|-----------|----------------|---------------------------|
| Health facility | 42 | 44.2 | 44.2 |
| Home | 53 | 55.8 | 100.0 |
| Total | 95 | 100.0 | |

The majority of the respondents 55.8% were circumcised at home while 44.2% of the respondents were circumcised at a health facility.

The place of circumcision was cross tabulated against the age at which circumcision was performed.

Table 6: Age of Circumcision* Place of Circumcision Cross-tabulation

| Age of Circumcision | Place of Circumcision | | Total |
|---------------------|-----------------------|------------|------------|
| | Health Facility | Home | |
| Infant | 7 (16.7%) | 12(22.6%) | 19(20.0%) |
| Child | 17(40.5%) | 39(73.6%) | 56(58.9%) |
| Adolescent | 14(33.3%) | 2(3.8%) | 16(16.8%) |
| Adult | 4(9.5%) | 0(0.0%) | 4(4.2%) |
| Total | 42(100.0%) | 53(100.0%) | 95(100.0%) |

Overall, 73.6% of the circumcision procedures were conducted at home during childhood. Only 9.5% respondents were circumcised at a health facility during the adulthood stage.

4.3.4. Reason for Circumcision

Table 7: Reason for Male Circumcision

| Reason for MC | Yes | No |
|----------------|------------|-------------|
| Religious | 17 (17.9%) | 78 (82.1%) |
| Cultural norms | 12 (12.6%) | 83 (87.4%) |
| Health Reasons | 39 (41.1%) | 56 (58.9%) |
| Hygiene | 48 (50.5%) | 47 (49.5%) |
| Other | 0 (0.0%) | 95 (100.0%) |

Hygiene was noted as the major reason for circumcision among the circumcised respondents 48 (50.5%). A few respondents 12.6% cited culture as the reason for circumcision (Table 7).

4.4. Knowledge of the benefits of male circumcision

Respondent’s general knowledge of male circumcision and its effects on HIV, cancer and STIs was assessed. A total of 9 items on knowledge were included in the questionnaire. Questions 8-12 required respondents to indicate their level of knowledge by choosing the options presented “1=True”, “2=False” and “3= Not Sure”.

Q8: Circumcision of a man who does not have HIV reduces his chance of getting HIV

Table 8: Circumcision of an HIV negative man reduces HIV risk

| Response | Frequency | Percentage (%) | Cumulative Percentage (%) |
|----------|-----------|----------------|---------------------------|
| True | 144 | 87.8 | 87.8 |
| False | 19 | 11.6 | 99.4 |
| Not sure | 1 | 0.6 | 100.0 |
| Total | 164 | 100.0 | |

Nearly all the respondents (87.8%) agreed with the statement while only 1 respondent was not sure.

Q9. Circumcision of a man who does not have HIV does not completely remove his chance of getting HIV

Table 9: MC does not completely reduce HIV risk

| Response | Frequency | Percentage (%) | Cumulative Percentage (%) |
|----------|-----------|----------------|---------------------------|
| True | 119 | 72.6 | 72.6 |
| False | 45 | 27.4 | 100.0 |
| Total | 164 | 100.0 | |

The majority of the respondents (72.6%) concurred with the statement whereas 27.4% disagreed.

Q10. There is NO chance for a circumcised man to get HIV

Table10: Circumcised men cannot get HIV

| Response | Frequency | Percentage (%) | Cumulative Percentage (%) |
|----------|-----------|----------------|---------------------------|
| True | 11 | 6.7 | 6.7 |
| False | 143 | 87.2 | 93.9 |
| Not Sure | 10 | 6.1 | 100.0 |
| Total | 164 | 100.0 | |

The majority of the respondents (87.2%) did not agree with the statement whilst 6.1% were not sure.

Q11. Circumcision of a man with HIV does not protect his partner from getting HIV

Table 11: MC does not protect partner

| Response | Frequency | Percentage (%) | Cumulative Percentage (%) |
|----------|-----------|----------------|---------------------------|
| True | 99 | 60.4 | 60.4 |
| False | 47 | 28.7 | 89.0 |
| Not Sure | 18 | 11.0 | 100.0 |
| Total | 164 | 100.0 | |

The majority of the respondents (60.4%) concurred with the statement whilst 28.7% were not in agreement.

Q12. Circumcision reduces the risks of STIs

Table 12: MC reduces STIs

| Response | Frequency | Percentage (%) | Cumulative Percentage (%) |
|----------|-----------|----------------|---------------------------|
| True | 107 | 65.2 | 65.2 |
| False | 55 | 33.5 | 98.8 |
| Not Sure | 2 | 1.2 | 100.0 |
| Total | 164 | 100.0 | |

The majority of the respondents (65.2%) concurred with the statement whilst 33.5% were not in agreement.

Risk related knowledge of MC and HIV, STIs and Penile Hygiene and Cancer was further assessed through Q13-16. Respondents were required to select the appropriate response from the options provided; “1=Circumcised”, “2= Uncircumcised”, “3= No difference” and “88= don’t know” to the statement posed.

Q13. It is easier to get HIV when a male is?

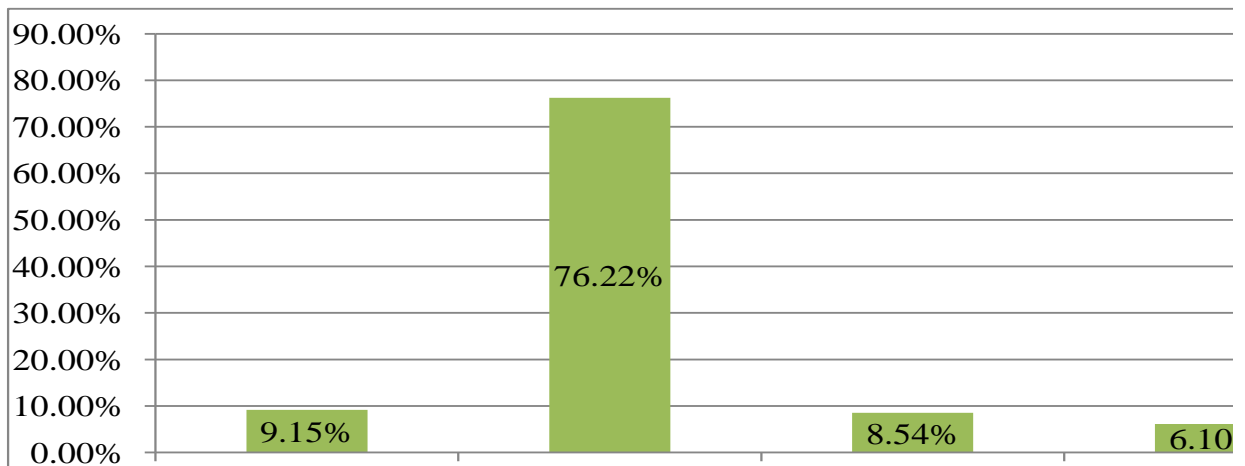


Fig 2: Knowledge on MC and HIV infection

Results revealed that the majority 76.2 % (125) of the respondents reported that “it is easier to acquire HIV if uncircumcised”. Only 6.1% of the respondents did not know the appropriate response to the question.

Q14. It is easier to get an STD if a male is?

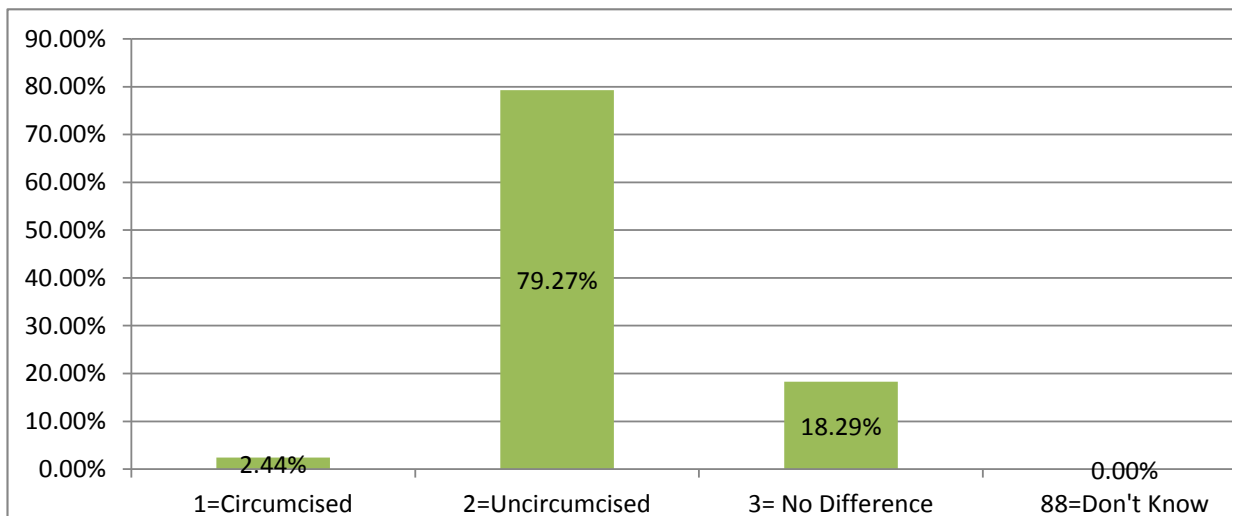


Fig 3: Knowledge on MC and STDs

Moreover, 79.3% (130) of the respondents revealed that “It is easier to get an STD if a male is uncircumcised”. The minority of the respondents 2.44% indicated that “It is easier to get an STD if a male is uncircumcised”

Q15. It is easier to maintain penile hygiene when a male is?

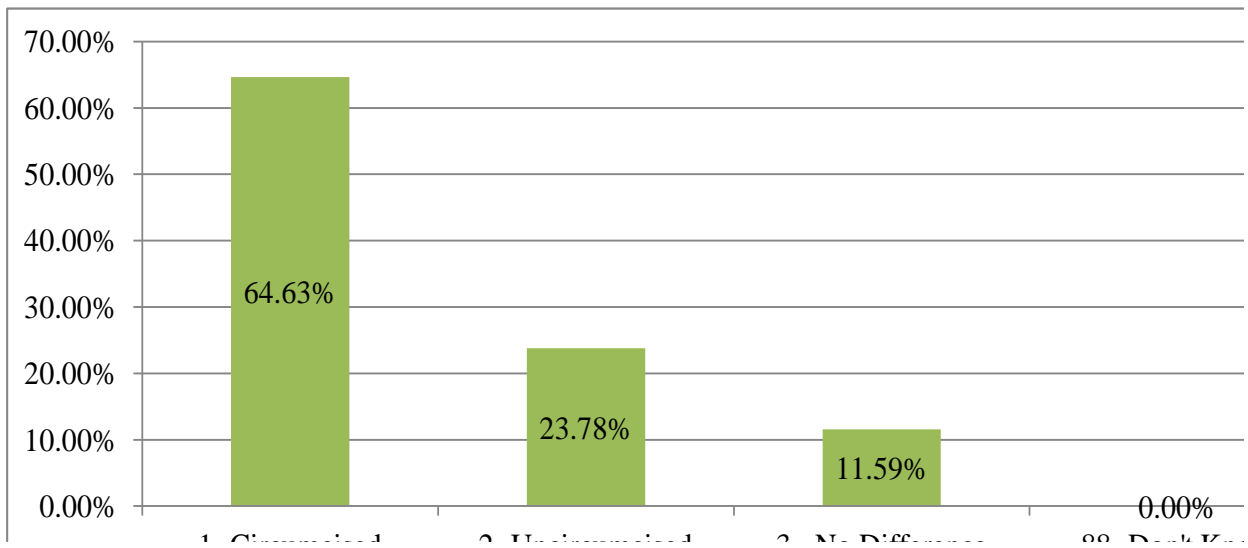


Fig 4: Knowledge on MC and Penile Hygiene

Only 64.6% (106) of the respondents noted that “it is easier to maintain penile hygiene when a male is circumcised”. On the other hand, 11.6% of the respondents revealed that there is no difference.

Q16. It is easier to get penile cancer if a male is?

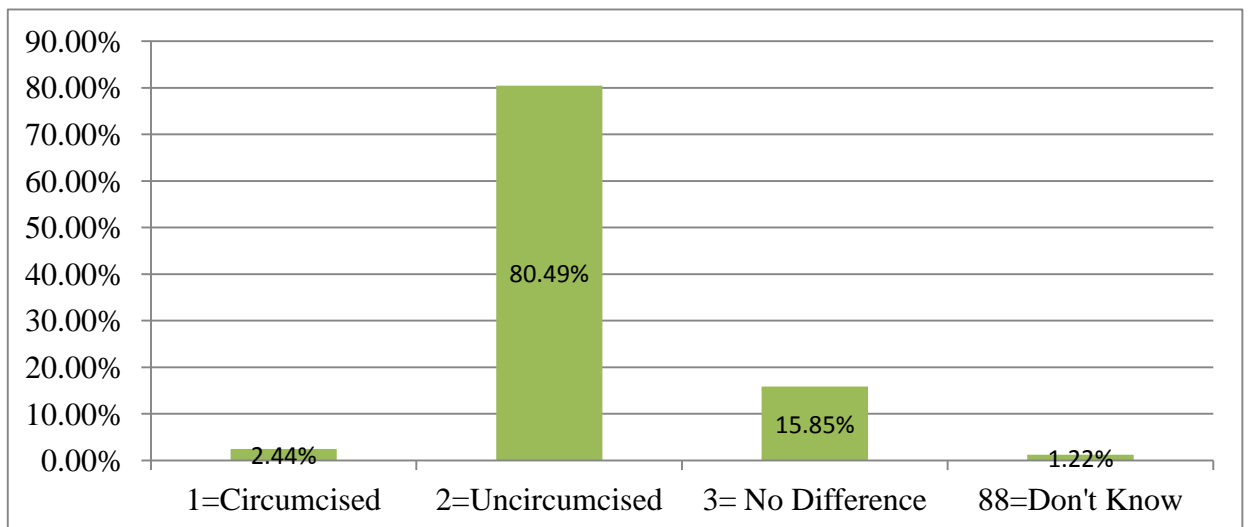


Fig 5: Knowledge on MC and Penile Cancer

A higher proportion of respondents 80.5% (132) reported that “it is easier to get penile cancer if a man is uncircumcised” while the minority of the respondents 1.22% revealed that they do not know.

Further analysis of data on knowledge of MC on HIV prevention, STI prevention and cancer was conducted. The researcher then graded the composite scores of each individual .For each correct answer a score of 1 was allocated. Table 13 shows the respondents correct responses.

Table 13: Respondents Knowledge on MC and HIV prevention, cancer and STIs

| Aggregated responses | Individual | Frequency | Percentage (%) | Cumulative Percent |
|----------------------|------------|-----------|----------------|--------------------|
| 2.00 | | 11 | 6.7 | 6.7 |
| 3.00 | | 11 | 6.7 | 13.4 |
| 4.00 | | 6 | 3.7 | 17.1 |
| 5.00 | | 14 | 8.5 | 25.6 |
| 6.00 | | 4 | 2.4 | 28.0 |
| 7.00 | | 45 | 27.4 | 55.5 |
| 8.00 | | 40 | 24.4 | 79.9 |
| 9.00 | | 33 | 20.1 | 100.0 |
| Total | | 164 | 100.0 | |

Eleven (6.7%) respondents only got two correct response while, 33 (20.1%) respondents provided correct responses.

4.5. Beliefs and attitudes of male circumcision

Attitude and beliefs towards MC and HIV prevention were determined from respondents. Statements Q17-21 required respondents to indicate their attitudes, beliefs with regards to MC choosing the options presented; “Strongly agree”, “Agree”, “No opinion”, “Disagree” and “Strongly disagree”.

Q17. Circumcised men enjoy sex more than uncircumcised men

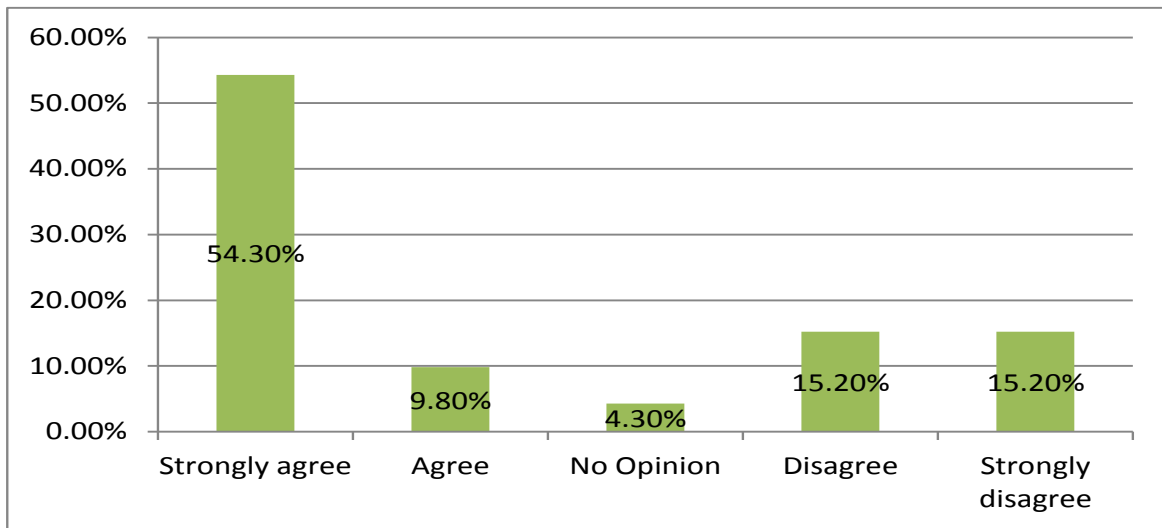


Fig 6: MC and Sexual pleasure

More than half of the respondents 86 (54.3%) strongly agreed with the statement that “circumcised men enjoy sex more than uncircumcised men”. Conversely, 15.2% of the respondents strongly disagreed with the statement.

Q18. Circumcised men have more sexual feelings than uncircumcised men

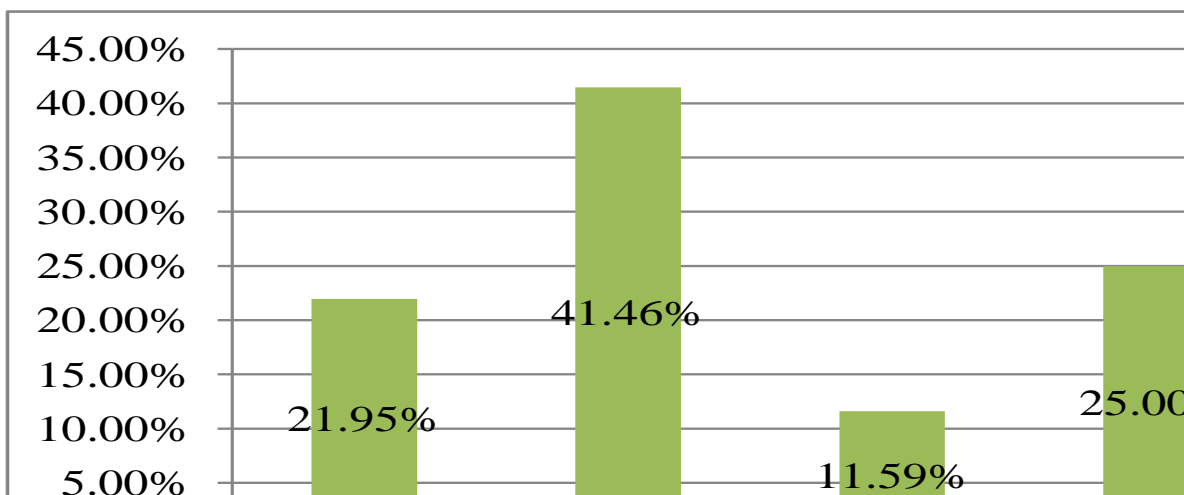


Fig 7: MC and Sexual feelings

Fewer than half, 41.5% (68) of the respondents agreed that “circumcised men have more sexual feelings than uncircumcised men”. Only 25.0% of the respondents disagreed with the statement.

Q19. Circumcised men can safely have sex without using a condom and don't get infected with HIV as compared to uncircumcised men.

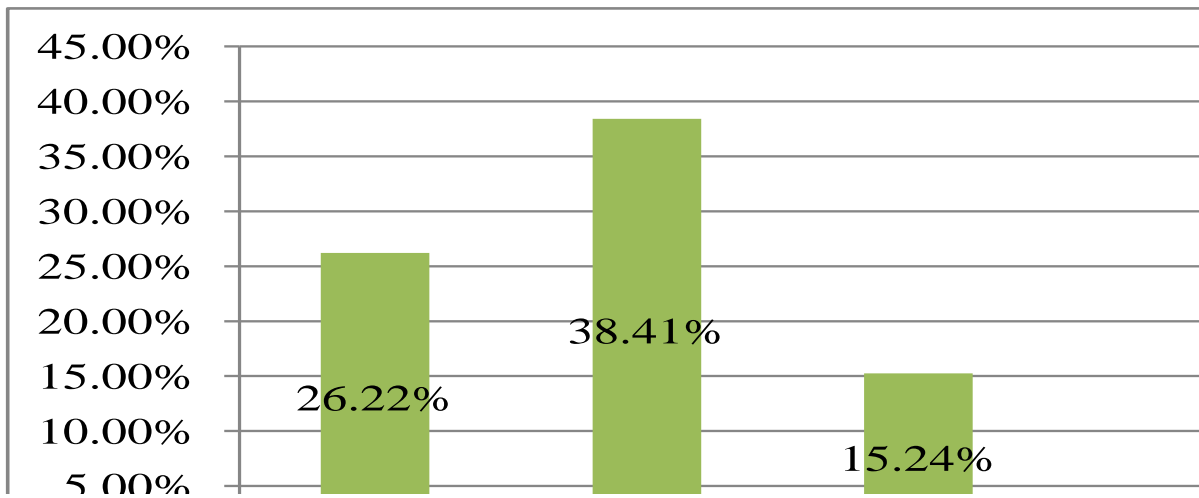


Fig 8: MC and HIV infection

No more than 40% of the respondents agreed that “Circumcised men can safely have sex without using a condom and don't get infected with HIV as compared to uncircumcised men”. Only 16.5% of the respondents strongly disagreed with the statement.

Q20. It is important for all males irrespective of their age to be circumcised

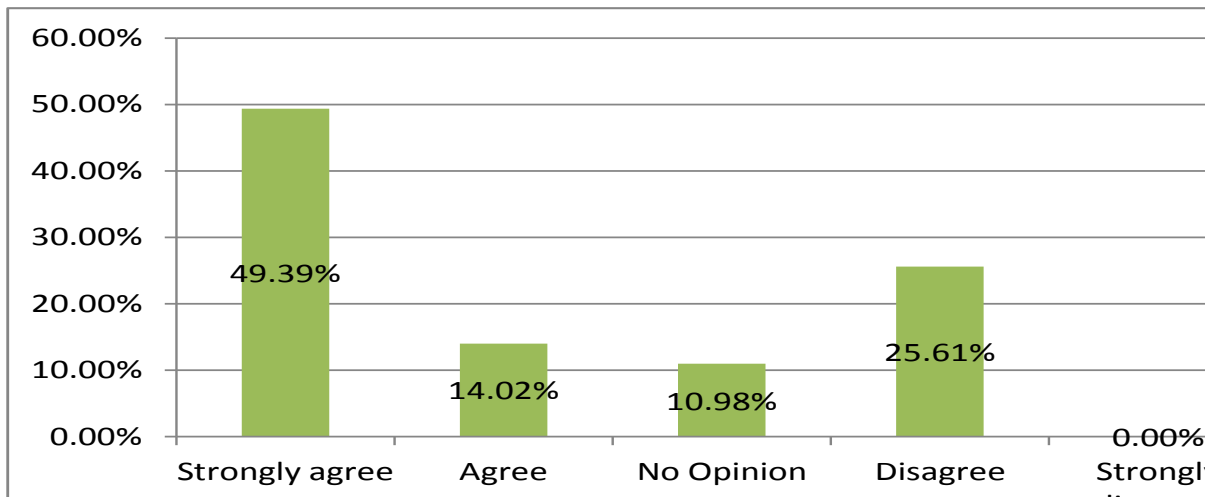


Fig 9: MC and Age of Circumcision

Forty-nine percent of the respondents strongly agreed that “It is important for all males irrespective of their age to be circumcised”. Only 11.0% of the respondents had no opinion on the matter.

Q21. MC proves manhood

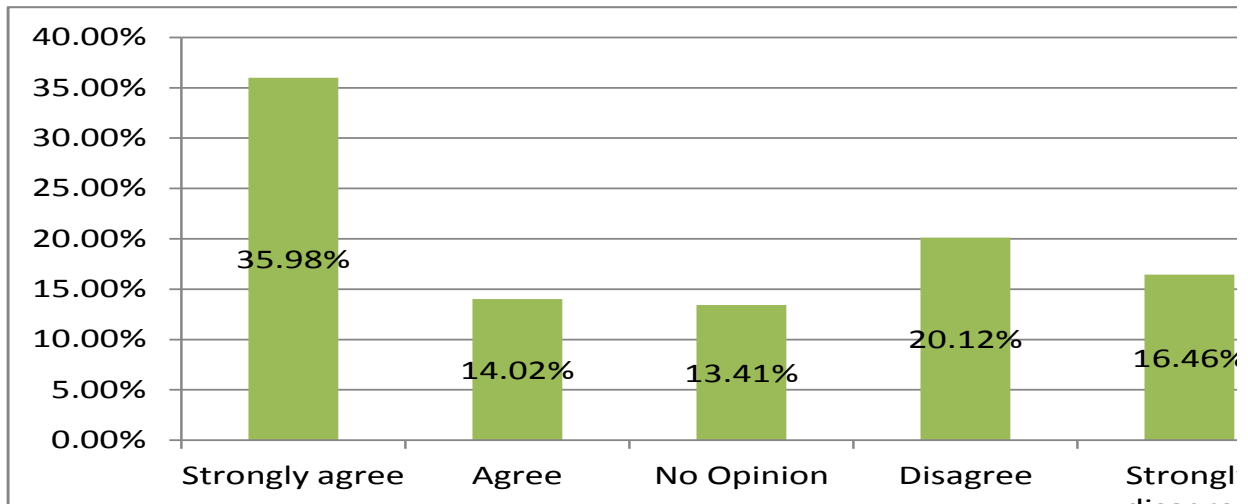


Fig 10: MC and Manhood

Fewer than half 36.0% (59) respondents strongly agreed that “MC proves manhood”.

Q22. MC is an old practices in our community and don't need to be re-introduced

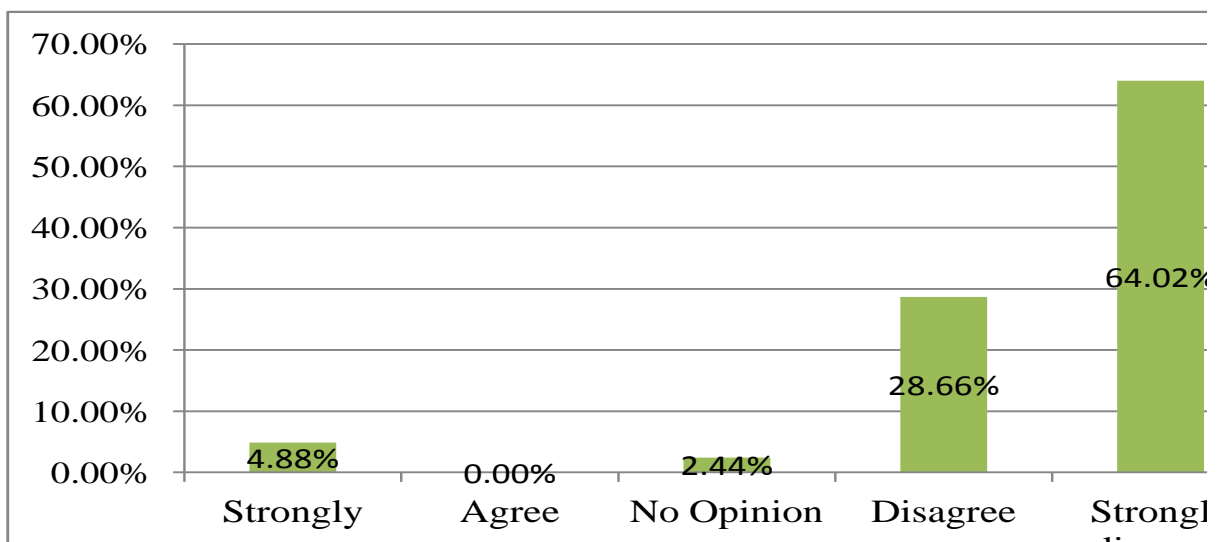


Fig 11: MC and Reintroduction of the Practice

The majority of 64% (105) strongly disagreed that “MC is an old practices in our community and don’t need to be re-introduced” while 4.88% of the respondents strongly agreed.

4.6. ACCEPTABILITY OF MALE CIRCUMCISION

4.6.1. Willingness to undergo the circumcision procedure is addressed in Q23-26. Therefore the section only presents results from the uncircumcised respondents.

Table 14: Acceptability of MC among Uncircumcised Respondents

| Response | Frequency | Percentage (%) |
|----------|-----------|----------------|
| Yes | 66 | 95.6 |
| Maybe | 2 | 2.9 |
| No | 1 | 1.5 |
| Total | 69 | 100.0 |

Overall, Table 14 shows that nearly all participants, (95.6%) of the uncircumcised respondents were willing to be circumcised. Only 1 respondent was not willing to be circumcised.

The researcher then analysed the relationship between acceptability of circumcision among uncircumcised respondents and the demographic characteristics. Results revealed that respondents who had secondary and advanced level of education were willing to be circumcised- 100.0% and 88.9% respectively. Only 1 respondent did not prefer to be circumcised.

4.6.1.1. Male circumcision offered free of charge (Q24)

Table 15: Acceptability of MC if offered free of charge

| Response | Frequency | Percentage (%) | Cumulative Percentage (%) |
|----------|-----------|----------------|---------------------------|
| Yes | 68 | 98.6 | 98.6 |
| No | 1 | 1.4 | 100.0 |
| Total | 69 | 100.0 | |

Nearly all respondents 98.6% (68) revealed that they would agree to circumcision if it was offered free of charge. Only 1 respondent was not willing to be circumcised.

4.6.1.2. Minimal or no complications (Q25)

Table 16: Acceptability of MC if offered free of charge

| Response | Frequency | Percentage (%) | Cumulative Percentage (%) |
|----------|-----------|----------------|---------------------------|
| Yes | 66 | 95.7 | 95.7 |
| Maybe | 2 | 2.9 | 98.6 |
| No | 1 | 1.4 | 100.0 |
| Total | 69 | 100.0 | |

Given that there are either minimal or no complications, 95.7% of the respondents preferred to be circumcised. Two respondents (2.9%) indicated that maybe they would accept the procedure while 1 respondent did not prefer to be circumcised.

4.6.2. Reasons for willingness to be circumcised (Q26)

Of the 69 uncircumcised respondents, the following reasons (Fig 11) were provided for preferring circumcision.

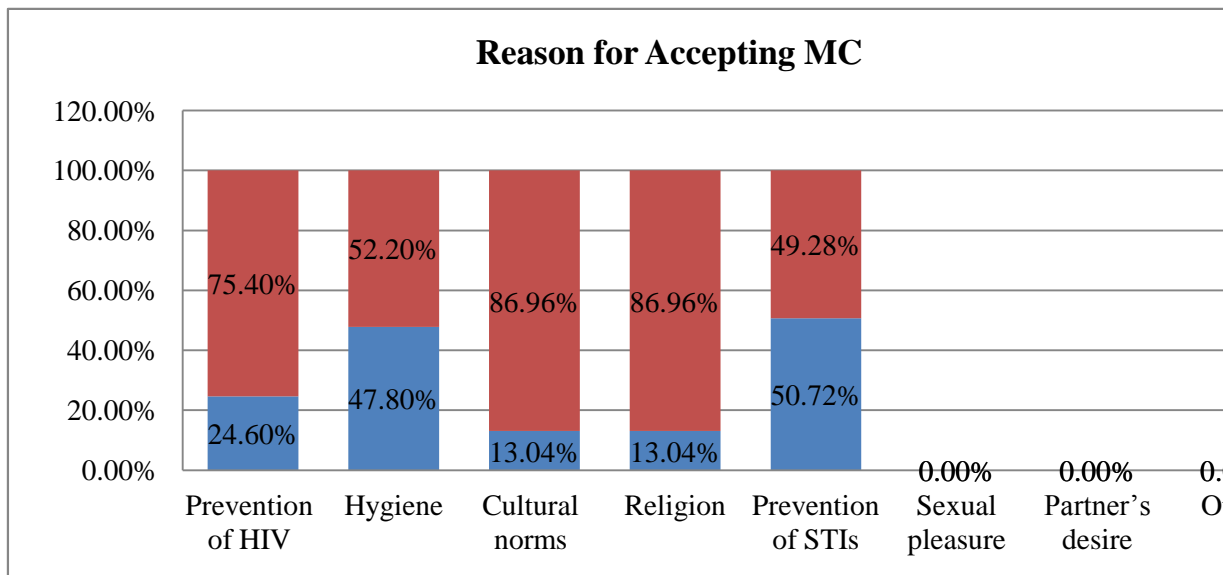


Fig 12: Reason for the possible adoption of Circumcision

Only 24.6% respondents cited HIV prevention as the reason for adopting circumcision. About half of the respondents (50.7%) indicated that they would adopt circumcision to prevent STIs. No responses were offered for sexual pleasure and partner's desire and other reasons.

4.6.3. Recommending Male Circumcision to Son (Q29)

This question was posed to all respondents.

Table 17: Recommendation of MC to male child

| Response | Frequency | Percentage (%) | Cumulative Percentage (%) |
|----------|-----------|----------------|---------------------------|
| Yes | 147 | 89.6 | 89.6 |
| Maybe | 14 | 8.5 | 98.2 |
| No | 3 | 1.8 | 100.0 |
| Total | 164 | 100.0 | |

Results revealed that the nearly all 147 (89.6%) respondents preferred to circumcise their sons while 14 (8.5%) indicated that they would maybe circumcise their male children. Only 1(1.8%) respondent did not prefer to circumcise his sons.

The respondent’s circumcision status was cross tabulated against the option to recommend the circumcision procedure to own son.

Table 18: Circumcision Status * MC Recommendation to own son Crosstabulation

| | | MC Recommendation to own son | | | Total | |
|---------------------|---------------------------------------|---------------------------------------|--------|--------|--------|-------|
| | | Yes | Maybe | No | | |
| Circumcision Status | Yes | Count | 81 | 14 | 0 | 95 |
| | | Expected Count | 85.2 | 8.1 | 1.7 | 95.0 |
| | | % within MC Recommendation to own son | 55.1% | 100.0% | 0.0% | 57.9% |
| | No | Count | 66 | 0 | 3 | 69 |
| | | Expected Count | 61.8 | 5.9 | 1.3 | 69.0 |
| | | % within MC Recommendation to own son | 44.9% | 0.0% | 100.0% | 42.1% |
| Total | Count | 147 | 14 | 3 | 164 | |
| | Expected Count | 147.0 | 14.0 | 3.0 | 164.0 | |
| | % within MC Recommendation to own son | 100.0% | 100.0% | 100.0% | 100.0% | |

Results revealed that the majority of the circumcised respondents, 55.1% indicated that they would adopt the male circumcision procedure for their own sons. On the other hand, only 44.9% of the uncircumcised respondents indicated that they would adopt the procedure.

A chi-square test was done to look significant relationship between circumcision status and preference to circumcise a male child. The Pearson Chi Square result revealed that there was a significant relationship between circumcision status and preference to circumcise a male child. Circumcised respondents were highly likely to prefer to circumcise their sons; $p=0.001$. However, the chi-square test assumptions were not fully satisfied as they were 2 cells (33.3%) had an expected count less than 5. Similarly, a Fischer exact test could not be done since this was a 2 x 3 table. On the contrary, the cross tabulation results revealed that circumcised males were likely to recommend circumcision to their male children.

4.6.4. Ideal age of Male Circumcision (Q30)

Fig 5 shows that more than half of the respondents 88 (53.7%) revealed that the ideal age of circumcision would be during infancy. Only a few, 10 (6.1%) respondents had no preference of the ideal age of MC. However, the about half of the circumcised men 48 (50.5%) preferred their sons to be circumcised during childhood while the majority of uncircumcised respondents 44 (63.8%) opted for infancy.

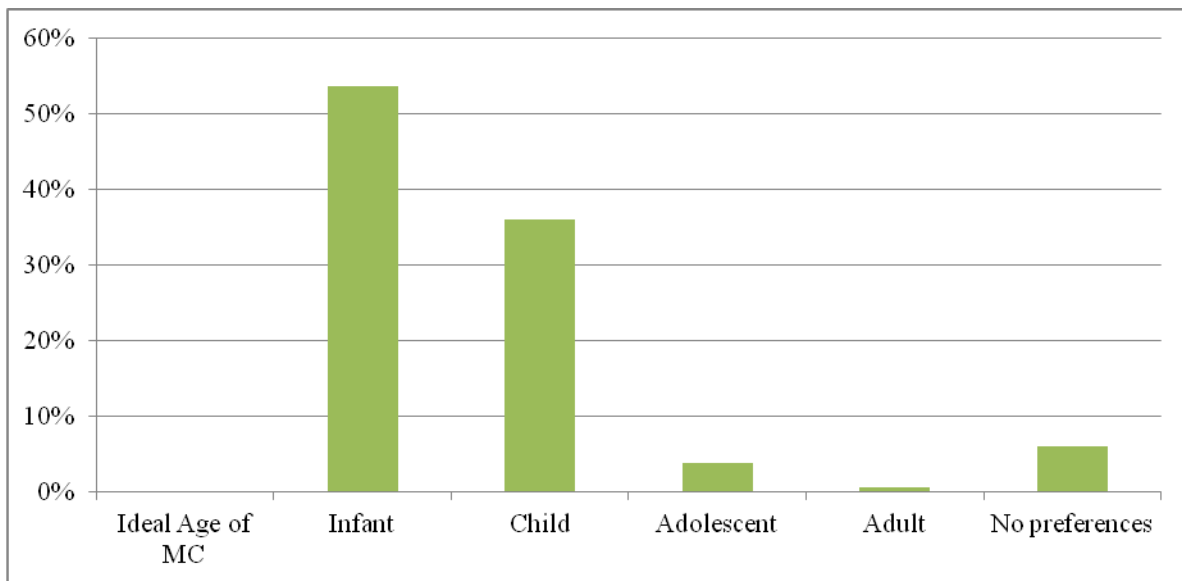


Fig 13: Ideal age of Circumcision

4.6.5. Ideal person to perform Male Circumcision (Q31)

Table 19: Ideal Circumcision Performer

| Response | Frequency | Percentage (%) | Cumulative Percentage (%) |
|-------------------------|-----------|----------------|---------------------------|
| Medical Doctors | 132 | 80.5 | 80.5 |
| Nurses | 3 | 1.8 | 82.3 |
| Traditional circumciser | 19 | 11.6 | 93.9 |
| No preference | 0 | 0.0 | 93.9 |
| Other | 0 | 0.0 | 93.9 |
| Don't Know | 10 | 6.1 | 100.0 |
| Total | 164 | 100.0 | |

Nearly all respondents 80.5% (132) preferred that the circumcision procedure be conducted by a medical doctor. Only 1.8% (3) respondents preferred nurses, 11.6% (19) preferred traditional circumcisers while 6.1% (10) indicated that they don't know.

4.6.6. Ideal place to perform Male Circumcision (Q32)

All the respondents 100% identified the health facility as an ideal place to perform circumcision. Only 7.3% (13) respondents preferred circumcision to be carried-out both at home and at a health facility.

4.6.7. Health facilities offering Male Circumcision (Q39)

Table 20: Health facilities offering MC

| Response | Frequency | Percentage (%) | Cumulative Percentage (%) |
|----------|-----------|----------------|---------------------------|
| Yes | 104 | 63.4 | 63.4 |
| No | 60 | 36.6 | 100.0 |
| Total | 164 | 100.0 | |

More than 60% of the respondents revealed that they knew of facilities providing male circumcision.

4.6.8. Type of Health facilities offering MC (Q40)

Nearly all, 93.3% respondents revealed that male circumcision is available at government facilities. Only 26.9% and 23.1% were aware that private facilities and missionary health facilities offered male circumcision respectively.

4.7. BARRIERS TO ACCESSING MALE CIRCUMCISION SERVICES.

Uncircumcised respondents were required to identify barriers to MC access. Questions 27 and 28 addressed issues related to barriers to accessing MC services.

Q27. What factors have prevented you from getting circumcised?

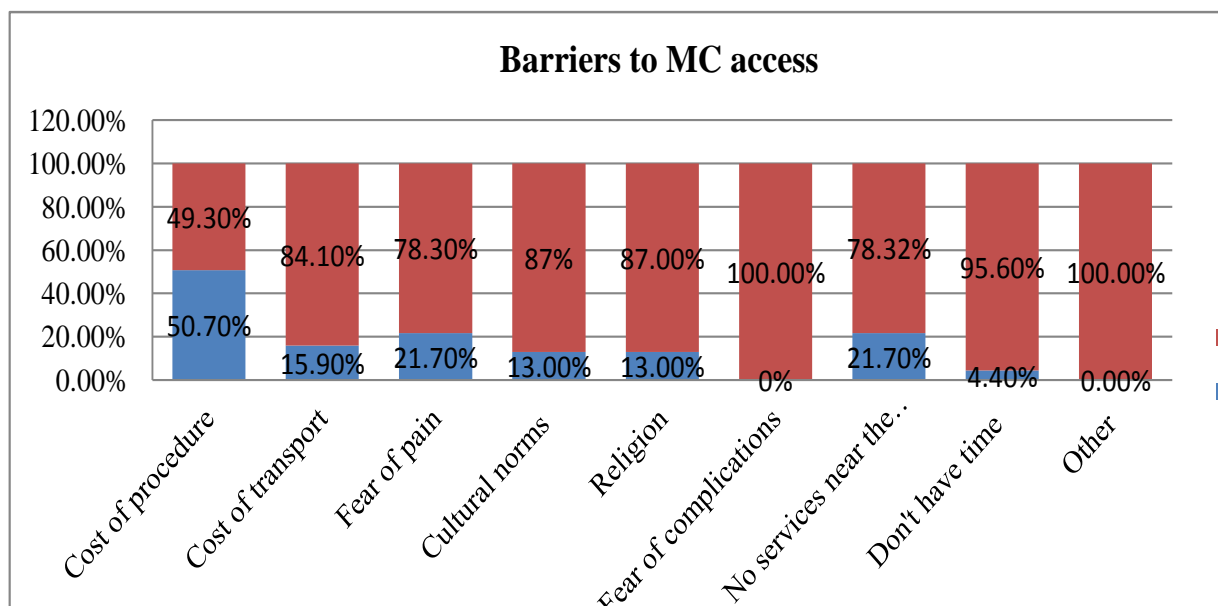


Fig 14: Barriers to accessing MC

Results revealed that the about half of the respondents 35 (50.7%) cited the cost of MC as the major barrier. Figure 6 shows that fear of pain (21.7%) and poor access to health service (21.7%) were second most cited reasons for not accessing circumcision services.

Q28. Why do you not want to get circumcised?

Only one participant did not want to be circumcised and the reason cited for this was lack of time.

4.8. SOURCE OF INFORMATION

Questions 33 to 38 discussed issue related to access to MC information.

4.8.1. Information about Male Circumcision (Q33)

Table 21: Acquiring information from any source in the last 12months

| Response | Frequency | Percent | Cumulative Percent |
|----------|-----------|---------|--------------------|
| Yes | 87 | 53.0 | 53.0 |
| No | 77 | 47.0 | 100.0 |
| Total | 164 | 100.0 | |

More than half, 53.1% (87) of the respondents confirmed that they have heard about male circumcision in the last 12 months while 46. 9% revealed that they have not heard any.

4.8.2 What have you heard about MC in the last 12 months?

Question34 required respondents to fill in their responses. The majority of the respondents revealed that they have heard that MC reduces the chances of acquiring both HIV infection and STIs.

4.8.3. Have you heard that MC can reduce the chances of getting HIV (Q35)?

Table 22: Information about MC reducing chances of HIV acquisition

| Response | Frequency | Percentage (%) | Cumulative Percent (%) |
|----------|-----------|----------------|------------------------|
| Yes | 144 | 87.8 | 87.8 |
| No | 20 | 12.2 | 100.0 |
| Total | 164 | 100.0 | |

Nearly all respondents 144 (87.8%) reported that they have heard that MC can reduce their chances of acquiring HIV infection.

4.8.4. Source of Information

Q 37 required respondents to identify various sources of MC information

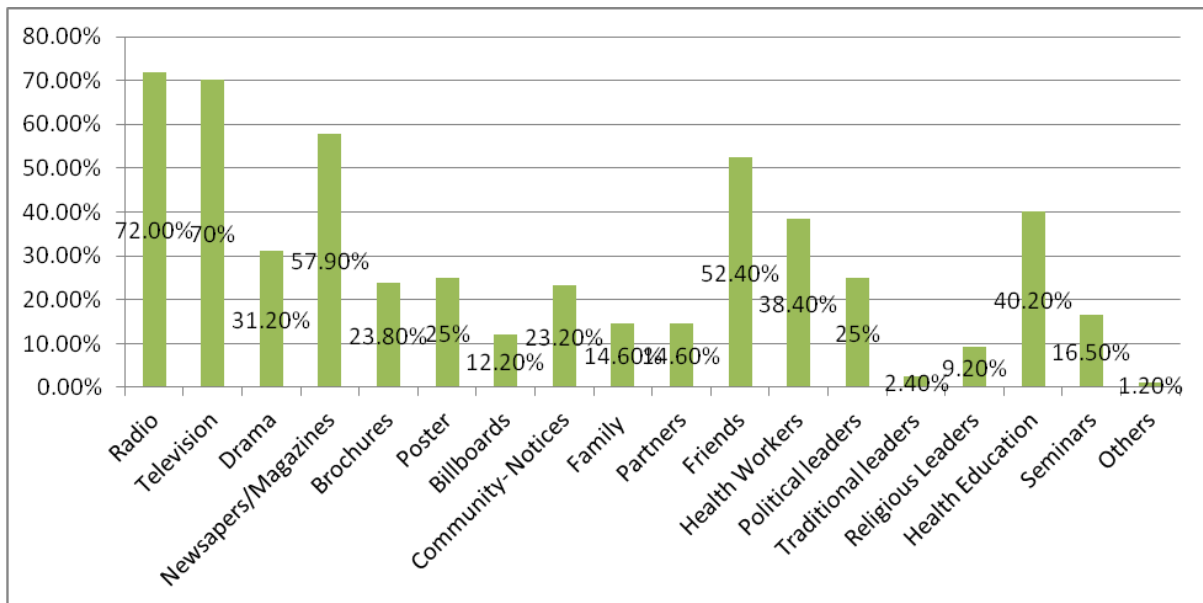


Fig 15: Source of Information

Radio and television were the most common cited sources of information about MC as an HIV prevention intervention; 72% and 70% respectively. In addition, newspapers or magazines, friends and health education were mentioned by respondents as their main sources of information (Fig 13). Traditional leaders and other sources were identified as the least source of information; 2.4 % and 1.2% respectively.

4.9. Conclusion

This first section provided the results of the study. The findings of the study were presented through tables and figures. More than half of the respondents were circumcised. The majority of the respondents were knowledgeable about male circumcision as an HIV prevention method. Circumcised participants showed a higher level of MC as an HIV prevention method as compared to uncircumcised respondents. The acceptability of MC was high among uncircumcised respondents as well as their willingness to circumcise their sons.

DISCUSSION

4.10. Discussion of Results

In this section, the findings of the study are discussed in relation to the literature and the aims and objective of the study.

4.10.1. Demographic Characteristics

The study was conducted on the male population and results revealed that the age of the participants ranged from 18 to 46 years with a median of 29 years. Similarly, Halperin et al. (2005) conducted a study among males and revealed that the median age was 29 years. However, the downside of this age limit is that it excluded males who are less than 18 years who are also affected by the HIV epidemic, thereby missing out on their views. Moreover, the current study did not solicit the women's views which are also vital in the MC decision making process as they are equally affected. The majority of studies conducted included both males and females (Bailey et al., 2002; Kebaabestwe et al., 2003; Brito et al., 2010; Mahvu et al., 2011).

Education provides people with the knowledge and skills that can lead to a better quality of life. More than 80% of the respondents had secondary education suggesting that the literacy levels might be high. This finding revealed that the educational status of the respondents was 2 folds higher than the Tanzanian national average of men completing secondary education which was estimated at 36.6% (DHS, 2010). The fact that the level of education was high among respondents suggests that MC implementers should utilise this vantage stance and focus on health educational campaigns to promote MC uptake.

The majority of the respondents were either single or married; 48.8% and 45.1% respectively. Like the Tanzania Demographic and Health Survey (2010), the proportion of married and single men was almost at par with 48.6% and 41.1% males being married and single respectively. However, the study suggests that there were more single men due to the nature of the mining environment (unstable rosters) that is highly favoured by single men.

With respect to religious affiliation, the majority of the respondents (71.9%) were Christians. These findings are consistent with those obtained by Forbes et al. (2012) who noted that 80.7% of the study participants were Christians. This demographic composition may be explained by the fact that Tanzania mainland is composed of 40% Christians, 33% Muslims and 27% Traditionalists. Islam is the dominant religion in the Island of Zanzibar (with almost 100% Muslim) but only accounts for about one third of the population (Levinson, 1998). Moreover, Geita District is situated in the North-west part of Tanzania composed mainly of the Bantu Tribes who have a strong influence of Christianity (Levinson, 1998).

4.10.2. Prevalence of Circumcision

To estimate the prevalence of circumcision among men in Geita Gold Mine, the study relied on self-reporting of circumcision status. Fifty-eight percent of men reported that they had been circumcised. Circumcision was most common before puberty; 59% of the men were circumcised between the ages 1-12. More Muslims were circumcised than Christians; 62.5% and 55.9% respectively. This does not come as a surprise since in many parts of Africa being Muslim is a major contributing factor towards being circumcised. The male circumcision prevalence in this study is lower than the national average of male circumcision of 70% (TACAIDS, 2005). This may be attributed to the fact that Geita District lies in a Region that does not traditionally circumcise and this study occurred before the health benefits promotion of circumcision in the region (Forbes et al., 2012). Despite being lower than the national average, the circumcision prevalence is higher than the world's estimated prevalence of 30% (WHO, 2009). This might be indicative of the influence of circumcising ethnic communities and the Islamic religion within the Town.

There is a wide degree of variation at the age at which circumcision is performed. As mentioned above, the majority of the respondents were circumcised during childhood indicating an earlier age of circumcision. Various studies revealed that participants preferred to be circumcised at childhood (DHS, 2006 as cited by WHO, 2006; Bowa, 2006 as cited by WHO, 2009). Similarly, Bailey et al. (2002) noted that participants in his study preferred to be circumcised at ages between 1 and 12, mainly to avoid pain and reduce the healing process time. This finding is indicative of parental role in circumcision decisions. However, in Kenya

and Tanzania, the preferred age of circumcision is slowly rising, with the majority of the participants preferring to be circumcised in the late teens or twenties (Nnko et al., 2001; WHO, 2009).

Circumcision may be conducted at health facilities by trained personnel or by religious or traditional circumcisers whose methods and experience differ (Van Dam and Anastasi, 2000). The study revealed that half of the respondents were circumcised by health workers and other half by traditional circumcisers. Similarly, Wambura et al. (2009) revealed that 51% of the males in his study were circumcised by traditional circumciser as a mark of cultural identity. Traditional circumcisions were said to be taking place outside formal clinical structures and the circumciser had informal training. The results therefore demonstrate that traditional circumcisers cannot be alienated in the rollout of male circumcision. The government should establish working relationships and promote linkages between conventional practitioners and traditional circumcisers so as to promote safe practices in order to minimise HIV transmission while at the same time promoting cultural heritage within communities (Kilima et al., 2012).

4.10.3. Knowledge, Attitudes and Beliefs of Male Circumcision

The study revealed that the respondents possessed good knowledge on MC as an HIV, STI and cancer prevention method. Eight-seven percent of the respondents revealed that circumcision of an HIV negative man reduces HIV risk. Moreover, 72.6% of the respondents revealed that MC does not completely reduce HIV risk and 87. % of the respondents did not agree with the statement that circumcised men cannot get HIV. Furthermore, 60.4% of the respondents revealed that MC does not protect partner. More than 65.0% of the respondents revealed that MC reduces STIs possessed good knowledge. Moreover, 76.2 % of the respondents reported that it is easier to acquire HIV if uncircumcised. Seventy-nine percent of the respondents revealed that it is easier to get STIs if a male is uncircumcised. Furthermore, 64.6% of the respondents noted that it is easier to maintain penile hygiene when a male is circumcised. A higher proportion of respondents 80.5% reported that it is easier to get penile cancer if a man is uncircumcised. Overall the respondents exhibited good knowledge. The findings presented above are supported by Chikutsa (2011) who noted that

the knowledge of MC as an HIV prevention intervention was high. Similarly, Tarimo et al. (2012) revealed that the participants were knowledgeable about the benefits of circumcision on penile hygiene and its contribution to STI prevention and emphasis was placed on HIV prevention. This suggests that increasing awareness of the benefits of circumcision for HIV prevention was associated with a significant increase in knowledge of MC as an HIV prevention method.

Respondents revealed good knowledge on the benefits of MC on HIV infection, STI and cancer prevention and penile hygiene. The percentage of the respondents who answered affirmatively concerning the benefits of circumcision was high. The association between circumcision and HIV, STIs, cancer and penile in this study are in line with results from other studies in Africa. Various studies have highlighted the effects of male circumcision on sexual transmitted diseases, including HIV and penile hygiene (Weiss et al., 2000; Doyle et al., 2012; Wilson and de Beyer, 2006). The high level of knowledge indicates that MC necessitates more rigorous circumcision interventions. However, in Nigeria there was low level of awareness of the role of male circumcision in reducing HIV transmission among heterosexual couples (Iliyasu et al., 2012). Overall, the results of the current study revealed that respondents were knowledgeable about the health benefits of male circumcision. However, only a few respondents were not fully aware of the health benefits of male circumcision. This suggest that although the respondents are knowledgeable about the benefits of MC on HIV infection, STI and cancer prevention and penile hygiene, intensive information education and communication efforts are essential so as to promote a universal understanding of the health benefits of MC.

4.10.4. Acceptability of Male Circumcision

Halperin and Bailey (1999) revealed that the majority of the studies in the East and Southern Africa where circumcision is being practiced; willingness to be circumcised was on the increase. Male circumcision appears to be highly acceptable among the respondents. The current study revealed a high acceptability rate of 95.6%. This finding is similar to what was found in Kenya, Swaziland, Tanzania and Zimbabwe (UNAIDS, 2006). Similarly, a multinational study conducted on women revealed that women favoured MC for their male

partners (AVAC, 2010). Willingness to be circumcised suggests that men are aware of the health benefits of MC. To enhance MC uptake among willing males, educational campaigns and intervention measures should be easily accessible. Feasibility studies; in terms of trained personnel, health infrastructure, commodities as well as costs associated with implementing the intervention should be considered.

Like most of the studies conducted in Botswana (Kebaabetswe et al., 2003), Kenya (Bailey et al., 2002), the Dominican Republic (Brito et al., 2010) and India (Madhivanan et al., 2008) the current study revealed that 98.6% of the respondents would definitely be circumcised if the procedure was carried out at a health facility and free of charge. This finding suggests that for the effective adoption of MC among non-circumcising communities, the Government should consider offering the procedure free of charge or at minimal costs.

A large proportion of the respondents revealed that they would definitely circumcise their male children only if it was performed at a health facility by trained personnel. These findings corresponds with studies conducted in India (Madhivanan et al., 2008), Botswana (Kebaabetswe et al., 2003) and South Africa (Scott et al., 2005). According to Forbes et al. (2012, p.7) individuals “circumcised before sexual debut had a 50% lower odds of having HIV, compared to non-circumcised men, comparable with the risk reduction of 50–60% found in circumcision trials”. This therefore suggests that national policies and interventions measures should be prepared to scale-up interventions for this age group. In essence, circumcising male children before sexual debut will ensure lowered risk of acquiring HIV thus reducing the transmission rates (Kelly et al., 1999).

The study revealed that the respondents who attained secondary and advanced level had higher acceptability levels. Westercamp and Bailey (2007) reported that the rapid increase in secondary education in most of rural Tanzania which occurred after 2001/2 might have influenced the observed increase in circumcision rates, because educational level higher than primary education has been linked with greater circumcision. Similarly, Forbes et al. (2012) noted that circumcision in North-Western Tanzania was associated with higher levels of

education. Likewise, Halperin et al (2005) and Nnko et al. (2001) reported that educational level was associated with higher rates of circumcision especially among non-circumcising communities. This might be explained by the fact that circumcision is becoming more publicised and acceptable and through the widespread interaction of various ethnic groups practicing male circumcision, there might be an attitude/ perception transformation especially among societies possessing higher levels of education. In addition, the results suggest that appropriate IEC material should be disseminated to those with a lower level of education. The inability to reach such populations will endorse ignorance.

4.10.5. Reasons for Considering Male circumcision

The current study revealed that STI prevention and hygiene were the major contributing factors for decisions concerning male circumcision among the uncircumcised respondents. The majority of the respondents did not select HIV prevention as one of the deciding factors. Iliyasu et al. (2012) revealed that participants in his study attributed the practice of male circumcision to fulfilling religious obligations, STIs and HIV infection. Moreover, a Kenyan study revealed that the two principal reasons favouring male circumcision were reduced risk of STD/HIV infection (Bailey et al., 2002). This indicates that participants in this study were either unaware that HIV is in fact a sexual transmitted infection or perceived themselves not to be at risk of HIV infection. A number of studies have highlighted that the perceived effect of circumcision is over emphasised in some communities with some individuals likely to engage in riskier sex practices ‘risk compensation’ in a misguided belief that circumcision provides total protection (UNAIDS, 2006; Westercamp and Bailey, 2007). As a result, it would be vital for information, education and communication interventions to communicate these deficiencies and emphasise the role of MC as an HIV prevention method and the need to integrate other prevention measures as MC does not provide absolute immunity to HIV infection.

The perceptions of religious and cultural factors as reasons for circumcision were less cited by respondents. In addition to religion and ethnicity, male circumcision was not performed for its social desirability- sexual pleasure and partner’s desire. These finding contradicts

reports from Iliyasu et al. (2012), Bailey et al. (2002) and Rizvi et al. (1999) who noted that some participants believed that circumcision will increase their sexual power and virility.

4.10.6. Barriers to Acceptability of Male Circumcision

Sixty percent of the respondents revealed that they were aware that some of the health facilities offer male circumcision services. More than 90% of the respondents revealed that some government sponsored health facilities offered MC. However, despite being conscious respondents revealed that there are factors that hinder them to access male circumcision services. These included not having time away from work, cultural and religious values, fear of pain, the cost of procedure and transport and unavailability of services. This finding is in line with previous studies conducted by Bailey et al. (2002), Kebaabetswe et al. (2003), Nnko et al. (2001) and Mattson et al. (2005). The cost related to MC and fear of pain is among the most cited barriers to MC. This study suggests that regardless of the setting, the high MC cost will discourage prospective clients from accessing the services. The government should consider offering MC free of charge or at negligible costs.

4.10.7. Source of Male Circumcision Information

Various countries have adopted medical male circumcision as part of a comprehensive approach to HIV prevention. An increased awareness of the protective effect of male circumcision has led increased acceptability of the practice especially among non-circumcising communities. However, a challenge still remains in which the information is circulated to the public. The results of the study revealed that Radio and television were the major sources of information regarding male circumcision. The results revealed that 87% of the participants had heard of MC for HIV prevention. Access to radio was significantly associated with knowledge about MC in HIV prevention (Chikutsa, 2011). In addition, health workers, friends, newspapers and health education were cited as sources of information. Moreover, the results revealed that family and partners were among the least cited sources of information suggesting that circumcision is a subject that is not easily discussed within family units. These findings are supported by AVAC (2010) who revealed that only 36% of the women perceived themselves as potentially involved in the decision-making process

around MMC. Similarly, a number of studies have indicated that women would like to communicate and encourage their partners to be circumcised however, they feel left out in the decision making process (Kebaabetswe et al., 2003; AVAC, 2010). This gap in communication might hinder the effective uptake of MC. Moreover, billboards, traditional leaders and religious leaders were less effective as sources of information among the current study participants. Bearing in mind that religious leaders and traditional leaders have been identified as vital circumcision service providers, there is need to involve these leaders in rolling out the MC programmes in a bid to fight the HIV/AIDS infection.

4.11. Summary

This chapter presented the study results and the discussion. Chapter 5 concludes the study and presents the proposed recommendations.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

The chapter presents the conclusion and a set of recommendations for the study.

5.2. Conclusion

The study set out to establish the knowledge, attitudes, beliefs, and acceptability of MC as an HIV prevention strategy among males in Geita Gold Mine. This research was expected to provide valuable information that will enhance understanding the knowledge, attitudes and beliefs and the dynamics of acceptability and uptake of MC. In addition, given national variations in cultural and religious attitudes towards circumcision, country-specific information was needed. It was therefore imperative that plans for large-scale roll-out of male circumcision be informed by thorough knowledge of factors which may impact uptake of this intervention.

In summary, the study revealed that the majority of the respondents were circumcised. The main facilitators of circumcision among this group were hygiene and health reasons. Like various studies conducted in Africa, uncircumcised respondents in this study were willing to be circumcised. These findings are encouraging considering that non-circumcising communities are accepting the practise and or willing to be circumcised. This can be attributed to the migration and integration of diverse ethnic groups, exposure to other cultures and religions. As a result, this blend of cultures and religions are favourable to higher acceptability of circumcision in traditionally non-circumcising ethnic groups (Westercamp and Bailey, 2007). Though in the current study, culture might not be a significant reason for the adoption of MC, it is important that individual choices be respected. However, there is need for an open dialogue and mobilisation of communities that practice male circumcision on a cultural basis so as to provide and continuously improve male circumcision service.

The majority of the uncircumcised men favoured health facility based circumcision. Moreover, doctors were mentioned as the ideal persons to perform the circumcision procedure. Similarly, the respondents made known that they opted to have their sons circumcised at health facilities. The results imply that there is a shift in the preference of male circumcisions, from traditional or religious to medical based circumcisions. If safe and effective circumcision interventions are implemented at an early age, they could potential avert numerous HIV incidences. As a result, health facilities should be logistically prepared for the roll-out of MC for both children and adults.

Based on the study result, there was considerable evidence that the knowledge around MC for HIV prevention was moderately high. Respondents displayed good knowledge on the health benefits of MC. They were aware of effects of MC on penile hygiene, HIV, STIs and cancer. This knowledge maybe attributed to various information sources. The use of media to air MC issues has ensured that a wider population accesses this information. In the process this has facilitated the relaying of information to peers and friends. However, it is worrying that MC issues are rarely discussed with partners. Women, as mothers and as partners, are most likely to have a substantial influence over circumcision practices, even if it may not be evident (Westercamp and Bailey, 2007). Any attempt to endorse MC will be more flourishing if it appeals to women as well as men. Moreover, traditional and religious leaders were the least cited sources of information. It is vital that these leaders be involved in MC planning, implementation and advocacy since in Africa the majority of circumcisions are either conducted as a rite of passage into manhood or for religious reasons.

While the perceived health benefit of MC as a prevention strategy to STIs, HIV and cancer was relatively high, there is concern over the rationale for undertaking male circumcision. Only few respondents indicated that they would opt to be circumcised so as to prevent acquiring HIV infection. There is concern that the majority of the respondents may view themselves at a low risk of HIV infection. The expansion of circumcision services must be embedded within comprehensive HIV prevention programmes, including informed consent and risk-reduction education (WHO, 2009). The absence of comprehensive MC educational efforts may have serious consequences whereby male engage in risk compensation behaviour.

Therefore MC services should be integrated with HIV/STIs prevention services, including VCT, STIs diagnosis and treatment, behavioural counselling, condom promotion and anti-retroviral therapies.

Although circumcision seems to present copious lifetime medical benefits, it is not without risk. Like most studies the current study revealed that the pain and complications associated with the procedure, cost of the procedure, inaccessible services, cultural and religious norms may deter clients from accessing MC services. Within traditionally non-circumcising communities, circumcision is regarded as a voluntary procedure that may be unlikely to take precedence over competing needs. Instituting cost related to the procedure may not go well within these populations. Specific focus needs to be given to these issues; the guarantee of safe and affordable procedures should be afforded to communities.

In conclusion, male circumcision has compelling evidence and the potential to avert new infections as an HIV prevention strategy. The fact that the acceptability levels are high calls for preparedness among health facilities taking into account that this is the most preferred setting. Circumcision should always be considered as part of comprehensive HIV prevention package that is offered in a safe environment and also affordable.

5.3. Recommendations

Taking the study findings into consideration, the following recommendations are proposed:

1. There is need to acknowledge the need for adequate education and awareness-raising campaigns on MC for HIV prevention,
 - It is essential to ensure the dissemination of accurate and factual information, highlighting the MC health benefits in STI and HIV prevention particularly in communities with lower levels of education. Information communication should emphasize that MC does not provide absolute protection of HIV infection.
 - The workplace should design specific on MC information and communication messages, as well as education and awareness campaigns as part of the HIV prevention strategy.
 - Non- circumcising communities should be provided with male circumcision IEC materials.
2. Advocates, implementers and local governments and the GGM through national policies should articulate and provide understandable and accurate information to men highlighting risks and benefits of MC for HIV prevention.
3. The Ministry of Health should consider:
 - Expanding MC services to underserved areas seeing that the inability to access MC services is one of the major barriers.
 - Male circumcision should be offered free of charge or at a nominal free.
 - Health facilities should be prepared and be able to accommodate and scale upo circumcision on male children.
4. A multi stakeholder approach in the rolling out of MC should be adopted seeing that individuals opt to be circumcised by various service providers. Thus traditional and religious circumciser should be consulted and concerns should address a potential conflict between conventional and traditional practices.
5. Communication campaigns should encourage dialogues between various circumcision providers.

6. With respect to religion and culture, the involvement of traditional and religious leaders should ensure the adoption of the procedure. Planning, communication and information dissemination should take into account the involvement of various stakeholders so as to ensure the acceptability of the procedure. Equipping these stakeholders with appropriate logistics will not only ensure their buy-in but will also guarantee that MC is conducted in a safe and hygienic environment.

7. The use of various as a communication approach should be enhanced. Media communication channels should dispel myths about MC and promote its health benefits.

5.4. Study Limitation

The study had some limitations. To begin with, data collected was mine based which is not representative of the overall population of male adults above 18years of age in Geita Town. Therefore the findings could not be generalisable.

Secondly, the study did not elicit the views of women who are also crucial in health decision making processes.

Furthermore, the study utilised self administered questionnaires to obtain data. Participants would not have time to clarify any ambiguous questions. Thus information given might not be a true reflection of their views.

REFERENCES

AMREF. (2006). *Geita Mine Community Health Project*. Retrieved November 23, 2012, from <http://www.amref.org/.../geita-mine-community-health-project-tanzania>

AngloGold Ashanti (2009). Tanzania Country Report 2008. Retrieved December 7, 2012, from http://www.anglogold.com/NR/rdonlyres/DDF9E29F-F49A-4A9C-87EC-91C3757B55CB/0/tanzania_2008.pdf

Atashili, J. (2006). Adult Male Circumcision to Prevent HIV. *International Journal of Infectious Diseases*, 10 (3): 202-205.

Auvert, B., Taljaard, D., Lagarde, E., Sobngwi-Tambekou, J., Sitta, R., & Puren, A. (2005). Randomized Controlled Intervention Trial of Male Circumcision for Reduction of HIV Infection Risk: The ANRS 1265 Trial. *PLoS Medicine*, 2 (11): 1112-1122.

Auvert, B., Ballard, R., Campbell, C., Caraël, M., Carton, M., Fehler, G., Gouws, E., MacPhail, C., Taljaard, D., Van Dam, J., & Williams, B. (2001). HIV Infection among Youth in a South African Mining Town is Associated with Herpes Simplex Virus-2 Seropositivity and Sexual Behaviour. *AIDS*, 15(7): 885–898.

AVAC. (2010). *Making Medical Male Circumcision work for Women*. Retrieved October 10, 2012, from <http://www.avac.org/ht/a/GetDocumentAction/i/31646>

Bailey, R. C., Plummer, F. A., & Moses, S. (2001). Male circumcision and HIV Prevention: Current Knowledge and Future Research Directions. *The Lancet Infectious Diseases*, 1 (4): 223-232. Retrieved November 23, 2012 from <http://www.hawaii.edu/hivandaids/Male%20Circumcision%20and%20HIV%20Prevention%20%20%20Current%20Knowledge%20and%20Future%20Research%20Directions.pdf>

Bailey, R.C., Muga, R., Poulussen, R., & Abicht, H. (2002). The Acceptability of Male Circumcision to Reduce HIV Infections in Nyanza Province, Kenya. *AIDS Care*, 14(1): 27–40.

Bailey, R. C., & Egesah, O. (2006) *Assessment of Clinical and Traditional Male Circumcision Services in Bungoma District, Kenya: Complications Rates and Operational Needs*. Special Report.

Bailey, R. C., Moses, S., Parker, C. B., Agot, K., Maclean, I., Krieger, J. N., Williams, C. F., Campbell, R. T., & Ndinya-Achola, J. O. (2007). Male Circumcision for HIV Prevention in Young Men in Kisumu, Kenya: A Randomised Controlled Trial. *Lancet*, 369 (9562)6:643-56.

Beaglehole, R., Bonita, R. & Kjellström (2006). *Basic Epidemiology 2nd Edition*. Geneva: WHO Publications.

Blanche, M.T, Durrheim, K., & Painter, D. (2006). *Research in Practise: Applied Methods for the Social Sciences (2nd Ed)*. South Africa: Lebone Publishing Services.

Bonner, K. (2001). Male Circumcision as an HIV Control Strategy: Not a “Natural Condom”. *Reproductive Health Matters*, 9 (18): 143-155.

Bowling, A. (1997). Ch8- Quantitative Research: Surveys. *In Research Methods in Health: Investigating Health and health Services*. Oxford: Open University Press: 172-180.

Brito, M. O., Luna, M., and Bailey, R. C. (2010). The Feasibility and Acceptability of Male Circumcision among Men, Women, and Health Providers of the Altagracia Province, Dominican Republic. *AIDS Care*, 22(12):1530-1535.

Christensen, L. B. Johnson, R. B., & Turner, L. A. (Eds). (2011). *Research Methods, Design and Analysis (11th ed)*. Boston: Pearson Education.

Chikutsa, A. (2011). *Contextualizing the adoption of MC as an HIV prevention strategy in Zimbabwe*. Retrieved December 17, 2012, from <http://uaps2011princeton.edu/papers/110446>

De Vincenzi, I., & Mertens, T. (1994). Male Circumcision: A Role in HIV Prevention. *AIDS*, 8(2):153-60.

DHS. (2010). *Tanzania Demographic Health Survey: 2010*. Retrieved December 27, 2012, from [http://www.measuredhs.com/pubs/pdf/FR243/FR243\[24June2011\].pdf](http://www.measuredhs.com/pubs/pdf/FR243/FR243[24June2011].pdf)

Doyle, D. (2005). Ritual Male Circumcision: A Brief History. *Journal of Royal College of Physicians of Edinburgh*, 35(3): 279-285.

Doyle, S. M., Kahn, J. G., Hosang, N., & Carroll, P. R. (2010). The Impact of Male Circumcision on HIV Transmission. *The Journal of Urology*, 183 (1): 21-26.

Forbes, H.J., Doyle, A. M., Maganja, K., Changalucha, J., Weiss, H. W., Ross, D. A., & Hayes, R. J. (2012). Rapid Increase in Prevalence of Male Circumcision in Rural Tanzania in the Absence of a Promotional Campaign. *PLoS ONE*, 7(7) Retrieved December 12, 2012, from <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0040507>

Gray, R., Kiwanuka, N., Quinn, T., Sewankambo, N., Serwadda, D., Mangen, F., Lutalo, T., Nalugoda, F., Kelly, R., Meehan, M., Chen, M., Li, C., & Wawer M (2000). Male Circumcision and HIV Acquisition and Transmission: Cohort Studies in Rakai, Uganda. Rakai Project Team. *AIDS*, 14 (15):2371-2381.

Gray, R.H., Kigozi, G., Serwadda, D., Makumbi, F., Watya, S., Nalugoda, F., Kiwanuka, N., Moulton, L.H., Chaudhary, M. A., Chen, M.Z., Sewankambo, N.K., Wabwire-Mangen, F., Bacon, M.C., Williams, C.F.M., Opendi, P., Reynolds, S.J., Laeyendecker, O., Quinn, T.C., & Wawer, M.J. (2007). Male circumcision for HIV prevention in men in Rakai, Uganda: a randomised trial. *Lancet*, 369 (9562): 657-666.

Halperin, D.T., & Bailey, R. C. (1999). Male Circumcision and HIV Infection: 10 years and Counting. *Lancet*, 354(9192):1813-1815.

Halperin, D.T., Fritz, K., McFarland, W. & Woelk, G. (2005). Acceptability of Adult Male Circumcision for Sexually Transmitted Disease and HIV Prevention in Zimbabwe. *Sexually Transmitted Diseases*, 32(4):238–239.

Herman-Roloff, A., Otieno, N., Agot, K., Ndinya-Achola, J., & Bailey, R. C. (2011). Acceptability of Medical Male Circumcision among Uncircumcised Men in Kenya One Year after the Launch of the National Male Circumcision Program. *PLOS ONE*, 6(5):1-6. Retrieved December 12, 2012 from PLOS ONE.

Iiyasu, Z., Abubakar, I. S., Sani, I. H., Jibo, A. M., Karaye, I. M., Salihu, H. M., & Aliyu, M. H. (2012). Male Circumcision and HIV Risk Behavior among University Students in Northern Nigeria. *American Journal of Men's Health*, 1-8.

ILO. (2006). *HIV/AIDS and Work: Global Estimates, Impact on children and Youth Response*. Retrieved September 16, 2012, from http://www.ilo.org/wcmsp5/groups/public---ed_protect---protrav/---ilo_aids/documents/publications/wcms-116378.pdf

Joubert, G., & Ehrlich, R. (2007). *Epidemiology in South Africa: A Research Manual for South Africa*. Cape Town: Oxford University Press Southern Africa.

Kebaabetswe, P., Lockman, S., Mogwe, S., Mandevu, R., Thior, I., Assex, M., & Shapiro, R.L. (2003). Male Circumcision: An Acceptable Strategy for HIV Prevention in Botswana. *Sexual Transmitted Infections*, 79(3): 214-19.

Kelly, R., Kiwanuka, N., & Wawer, M. J. (1999). Age of Male Circumcision and Risk of the Prevalent HIV infection in Rural Uganda. *AIDS*, 13: 399-405.

Kilima, S. P., Shayo, E. H., Msovela, J., Senkoro, K. P., Mayala, B. K., Mboera, L.E.G., & Massaga, J. J. (2012). The Potential of Involving Traditional Practitioners in the Scaling up of Male Circumcision in the Context of HIV Prevention in Tanzania. *Tanzania Journal of Health Research*, 14 (1):1-18.

Lagarde, E., Dirk, T., Puren, A., Reathe, R. T., & Bertran, A. (2003). Acceptability of Male Circumcision as a Tool for Preventing HIV Infection in a Highly Infected Community in South Africa. *AIDS*, 17(1):89-95.

Levinson, D. (1998). *Ethnic Groups Worldwide: A Ready Reference Group*. Canada: The Oryx Press.

Lukobo, M., & Bailey, R. C. (2007) Acceptability of Male Circumcision for Prevention of HIV Infection in Zambia. *AIDS Care*, 19(4):471-477.

Madhivanana, P., Krupp, K., Chandrasekaran, V., Karat, S. C., Reingold, A. L., & Klausner, J. D. (2008). Acceptability of Male Circumcision among Mothers with Male Children in Mysore, India. *AIDS Care*, 22(8):983-988.

Marck, J. (1997). Aspects of male circumcision in sub-equatorial African culture history. *Health Transition Review*.7:337-359.

Mattson, C. L., Bailey, R. C., Muga, R., Poulussen, R., & Onyango, T. (2005). Acceptability of Male Circumcision and Predictors of Circumcision Preference among Men and Women in Nyanza Province, Kenya. *AIDS Care*, 17(2):182–194.

Mavhu, W., Buzdugan, R., Langhaug, L. F., Benedikt, C., Sherman, J., Laver, S. M., Mundida, O., Woelk, G., & Cowan, F. M., (2011). Prevalence and factors associated in knowledge of the willingness for MC in rural Zimbabwe. *Tropical Med Int Health* 16(5): 589-597.

Moses, S., Bailey, R. C., & Ronald, A. R. (1998). Male Circumcision: Assessment of Health Benefits and Risks. *Sexual Transmitted Infections*, 74 (5): 368-373.

Mujinja, P., Kirungi, W., Furnivall, M., Rusimbi, M., Charle, P., Kahwa, A., Muchuruza, P., Kakoko, D., Kalinga, N., Ndawalla, A., Chanila, D., & Reuben, W. (2009). *HIV Prevention Strategy for Tanzania Mainland*. Retrieved September 27, 2012, from http://www.tz.undp.org/docs/HIV_Prevention_Strategy.doc

Ngalande, R. C., Kapondo, L. J., & Bailey, R. C. (2006). Acceptability of Male Circumcision for Prevention of HIV Infection in Malawi. *AIDS Behav*, 10(4):377–385.

Nnko, S., Washija, R., Urassa, M., & Boerma, J. T. (2001). Dynamics of Male Circumcision Practices in Northwest Tanzania. *Sexual Transmitted Diseases*, 28(4):214–218.

Patton, M.Q. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.). Sage Publications: Newbury Park.

Pappas-DeLuca, K. A., Simeon, F., & Kustaa, F. (2008). *Preliminary Results of the Report on Findings from Qualitative Research on Male Circumcision in Namibia: Unpolished report*. Windhoek: Ministry of Health and Social Services.

Parfitt, T. (2002). *The Lost Tribes of Israel: The History of a Myth*. London: Weidenfield and Nicolson.

Plank, R. M., Makhema, J., Kebaabetswe, P., Hussein, F., Lesetedi, C., Halperin, D., Bassil, B., Shapiro, R., & Lockman, S. (2010) Acceptability of Infant Male Circumcision as Part of HIV Prevention and Male Reproductive Health Efforts in Gaborone, Botswana, and Surrounding Areas. *AIDS Behav*, 14 (5):1198–1202.

Rasool, R., Sameer, A. S., & Saddiqi, M. U. (2011). Male Circumcision: It's Role in HIV Prevention. *Journal of Institute of Integrative Omics and Applied Biotechnology*, 2(5):19-24.

Rennie, S., Muula, S.A. & Westreich, D. (2007). Male Circumcision and HIV Prevention: Ethical, Medical and Public Health Tradeoffs in Low-Income Countries. *Journal of Medical Ethics*, 33(10): 357-61.

Rizvi, S. A., Naqvi, S. A., Hussain, M., & Hasan. A. S. (1999). Religious circumcision: a Muslim view. *British Journal of Urology International*, 83(1):13-6.

Rossi, P.H., Lipsey, M.W., and Freeman, H. E. (2004). *Evaluation: A Systemic Approach 7th Edition*. United States of America: Sage Publications.

Saunders, M., Thornhill, A., & Lewis, P. (2009). *Research Methods for Business Students 5th Edition*. Harlow: Pearson Education.

Sarantakos, S. (1998). *Social Research- 2nd Edition*. New York: Palgrave Macmillan.

Scott, B. E., Weiss, H. A., & Viljoen, J. I. (2005). The Acceptability of Male Circumcision as an HIV Intervention among a Rural Zulu Population, Kwazulu-Natal, South Africa. *AIDS Care*, 17(3): 304-313.

Sizabo, R., and Short, R. V. (2000). How does Male Circumcision Protect against HIV Infection. *British Medical Journal*, 320 (7249): 1592-1594.

TACAIDS. (2005). *Tanzania HIV/AIDS Indicator Survey 2003-2004*. Retrieved September 20, 2012, from http://www.tgpsh.or.tz/uploads/media/2006-4-12-7-15-46_tanzania_hiv_aids_indicator_survey_2003-04.pdf

TACAIDS. (2008). *UNGASS Country Progress Report Tanzania Mainland*. Retrieved November 30, 2012, from http://data.unaids.org/.../tanzania_2008_country_progress_report_en.pdf

Tarimo, E. A. M., Francis, J.M., Kakoko, D., Munseri, P., Bakari, M., & Sandstrom, E. (2012). The Perceptions on Male Circumcision as a Preventive Measure against HIV

Infection and Considerations in Scaling up of the Services: A Qualitative Study among Police Officers in Dar Es Salaam, Tanzania. *BMC Public Health*, 12:529.

UNAIDS, (2006). *Male Circumcision: Africa's Unprecedented Opportunity*. Retrieved September 30, 2012, from http://www.unaidsrstesa.or/site/default/files/malecircumcision/mc_africa-opp-en.pdf

UNAIDS. (2008). *Uniting the World against AIDS*. Retrieved September 19, 2012, from <http://www.unaids.org/en/CountryResponses/Regions/default.asp>

UNAIDS. (2009). *AIDS Epidemic Update*. Retrieved September 19, 2012, from http://www.unaids.org/en/media/unaids/contentassets/dataimport/pu/report/2009/jc1700_ep_update_2009_en.pdf

UNAIDS. (2010). *HIV and AIDS Estimates*. Retrieved September 19, 2012, from <http://www.unaids.org/en/rehionscountries/countries/unitedrepublicoftanzania/>

UNAIDS. (2011). *Global HIV/AIDS Response: Epidemic Update and Health Sector Progress towards Universal Access*. Retrieved September 9, 2012, from http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2011/20111130_UA_Report_en.pdf

United Republic of Tanzania. (2003). *United Republic of Tanzania, 2002 Population and Housing Census*. November 30, 2012, from <http://www.tanzania.go.tz/2002census.PDF>

Uys, H., H., M., & Basson, A., A. (1991). *Research Methodology in Nursing*. Pretoria: Kagiso Tertiary.

Van Dam, J., & Anastasi, M.C. (2000). *Male Circumcision and HIV Prevention: Direction for Future Research*. Retrieved September 23, 2012, from <http://www.popcouncil.org/pdfs/circumcision.pdf>

VMMC (n.d.). *Communication Strategy for Voluntary Medical Male Circumcision in Kenya*. Retrieved November 14, 2012, from

http://www.malecircumcision.org/programs/documents/Kenya_VMMC_Communication_Strategy.pdf

Wambura, M., Mwanga, J., Mosha, J., Mshana, G., Mosha, F., & Changalucha, J. (2009). *Situation Analysis for Male Circumcision in Tanzania*. Retrieved March 21, 2012, from http://www.malecircumcision.org/programs/documents/TanzaniaMaleCircumcisionSituationAnalysis_September_09.pdf

Weiss, H. A., Quigley, M. A., & Hayes, R. J. (2000). Male Circumcision and Risk of HIV Infection in Sub-Saharan Africa: A Systematic Review and Meta-analysis. *AIDS*, 14 (15): 2361-2370.

Westercamp, N., & Bailey, R. C. (2007). Acceptability of Male Circumcision for Prevention of HIV/AIDS in Sub-Saharan Africa: A Review. *AIDS Behav*, 11(3): 341-355.

Wilson, D., & de Beyer, J. (2006). Male Circumcision: Evidence and Implications. Retrieved September 23, 2012, from http://siteresources.worldbank.org/INTHIVAIDS/Resources/375798-1132695455908/M&EGR_MaleCircumcision_Mar31.pdf

WHO. 2007. *Strategies and Approaches for Male Circumcision Programming*. Retrieved September 23, 2012, from http://whqlibdoc.who.int/publications/2007/9789241595865_eng.pdf

WHO. (2009). *Male Circumcision: Global Trends and Determinants of Prevalence, Safety and Acceptability*. Retrieved September 23, 2012, from http://apps.who.int/iris/bitstream/10665/43749/1/9789241596169_eng.pdf

WHO. (2012). *WHO-UNAIDS HIV Vaccine Initiative*. Retrieved September 6, 2012, from http://www.who.int/vaccine_research/diseases/hiv/en/

APPENDIX 1: English Questionnaire

QUESTIONNAIRE

Title: Knowledge, Attitudes and Perceptions of Male Medical Circumcision as an HIV Prevention Method among Males in Non-Circumcising Communities: Geita, Tanzania

Interview Number:

Date of interview:

You have been chosen to be part of the study and your contribution in filling in this questionnaire is very important. The information provided will be treated with confidence and your consent is a paramount. Please do not write your name on the questionnaire. Select one or more responses by circling the appropriate choice.

SECTION A: DEMOGRAPHIC CHARACTERISTICS

| DEMOGRAPHIC INFORMATION | | | |
|--------------------------------|---|---|--------------------------|
| No | Questions and filters | Coding Categories | Enter answer code |
| Q1 | How old are you? | Age in complete years Don't know.....88 | |
| Q2 | What is the main language spoken in your home | Swahili.....1 English.....2 Sukuma.....3 Other(Specify).....4 | |
| Q3 | What is your marital? | Single, never married.....1 Married.....2 Living together, not married.....3 Divorced or Separated.....4 Widowed5 | |
| Q4 | Highest level of Education? | None.....1 Primary.....2 Secondary3 Advanced Level.....4 Tertiary.....5 Other.....88 | |
| Q5 | What is your religion? | Catholic.....1 Anglican/ Protestant.....2 Moslem.....3 Traditional.....4 None.....5 Other.....88 | |

| | | | |
|----|-----------------------------------|-----------------------|--|
| Q6 | Do you have a television at home? | Yes.....1 No.....2 | |
| Q7 | Do you have a radio at home? | Yes.....1 No.....2 | |

SECTION B: KNOWLEDGE

| | Questions | True | False | Not Sure |
|------|--|------|--|----------|
| Code | | 1 | 2 | 3 |
| Q8 | Circumcision of a man who does not have HIV reduces his chance of getting HIV | | | |
| Q9 | Circumcision of a man who does not have HIV does not completely remove his chance of getting HIV | | | |
| Q10 | There is NO chance for a circumcised man to get HIV | | | |
| Q11 | Circumcision of a man with HIV does not protect his partner from getting HIV | | | |
| Q12 | Circumcision reduces the risks of STIs? | | | |
| | Now, tell me what you think about circumcised and uncircumcised men based on the following statements | | | |
| Q13 | It is easier to get HIV when a male is | | Circumcised.....1 Uncircumcised.....2 No difference.....3 Don't know.....88 | |
| Q14 | It is easier to get an STD if a male is | | Circumcised.....1 Uncircumcised.....2 No difference.....3 Don't know.....88 | |

| | | |
|-----|--|--|
| Q15 | It is easier to maintain penile hygiene when a male is | Circumcised.....1 Uncircumcised.....2 No difference.....3 Don't know.....88 |
| Q16 | It is easier to get penile cancer if a male is | Circumcised.....1 Uncircumcised.....2 No difference.....3 Don't know.....88 |

SECTION C: ATTITUDES, BELIEFS, AND ACCEPTABILITY

For each statement, indicate your response by ticking the appropriate box.

| | Question | Strongly agree | Agree | No opinion | Disagree | Strongly disagree |
|-------------|--|----------------|----------|------------|----------|-------------------|
| Code | | 1 | 2 | 3 | 4 | 5 |
| Q17 | Circumcised men enjoy sex more than uncircumcised men | | | | | |
| Q18 | Circumcised men have more sexual feelings than uncircumcised men | | | | | |
| Q19 | Circumcised men can safely have sex without using a condom and don't get infected with HIV as compared to uncircumcised men. | | | | | |
| Q20 | It is important for all males irrespective of their age to be circumcised | | | | | |
| Q21 | MC proves manhood | | | | | |
| Q22 | MC is an old practices in our community and don't need to be re-introduced | | | | | |

IF CIRCUMCISED GO TO Q29

Please read the following statement:

Currently, the government of Tanzania is considering recommending that males be offered circumcision to reduce the chances of the men becoming infected with HIV and other STIs. Now I would like you to express your views and beliefs regarding male circumcision

| | | |
|-----|---|--------------------------------------|
| Q23 | Based on the statement above, would you choose to be circumcised, if it said to be reducing the risk of HIV infection? <i>(Read a statement and a possible answer and</i> | Yes.....1 Maybe.....2 No.....3 |
|-----|---|--------------------------------------|

| | | |
|-----|---|--|
| | <i>choose one)</i> | Don't how.....88 |
| Q24 | What if it is offered free of charge, will you choose to be circumcised? | Yes.....1 Maybe.....2 No.....3 Don't how.....88 |
| Q25 | Given that, there is no or minimal complications, will you choose to be circumcised | Yes.....1 Maybe.....2 No.....3 Don't how.....88 |
| Q26 | What are the reasons why you would want to get circumcised? (ONLY ANSWER 25 IS YES) | Prevent HIV.....1 Hygiene.....2 Cultural norms.....3 Religion.....4 Prevent STIs.....5 Sexual pleasure.....6 Partner's desire.....7 Others specify.....8 |
| Q27 | What factors have prevented you from getting circumcised? | Cost of procedure..1 Cost of transport...2 Fear of pain.....3 Cultural norms.....4 Religion.....5 Fear of complications.....6 No service at near health facility.....7 Don't have time....8 Other specify.....9 |
| Q28 | Why do you not want to get circumcised? (ONLY ANSWER IF 25 IS NO) | Cost of procedure..1 Cost of transport...2 Fear of pain.....3 Cultural norms.....4 Religion.....5 Fear of complications.....6 No service at near health facility.....7 Don't have time....8 Other specify.....9 |
| Q29 | Would you recommend circumcision for your son or any young male you know? | Yes.....1 Maybe.....2 No.....3 Don't how.....88 |

| | | |
|-----|---|---|
| Q30 | In your opinion what is the ideal age of performing MC | Infant.....1 Child.....2 Adolescent.....3 Adult.....4 No preferences.....5 Don't know.....88 |
| Q31 | In your opinion at who is the ideal person to perform MC | Medical doctors...1 Nurses.....2 Traditional circumciser.....3 No preferences....4 Other (Specify)....5 Don't know.....88 |
| Q32 | In your opinion at what is the ideal place of performing MC | Health facilities.....1 At home.....2 No preferences.....3 Other(Specify).....4 Don't know.....88 |
| Q33 | Have you heard from any source or from someone about male circumcision in last 12 months? | YES.....1 NO.....2 |
| Q34 | If yes, what have you heard about male circumcision in the last 12 months? | |
| Q35 | Have you ever heard that circumcising men can reduce their chances of getting HIV? | YES.....1 NO.....2 |
| Q36 | When did you first learn this information above? [<i>best estimate of the month& year</i>] | |
| Q37 | (ONLY ANSWER IF QUESTION 35 IS YES) How did you learn about this information? <i>Mark all that apply,</i> | Radio.....01 Television.....02 Drama.....03 Newspapers/ Magazines.....04 Brochure.....05 Posters.....06 Billboards.....07 Community- Notices.08 Family.....09 My Partner.....10 Friends.....11 Health Workers.....12 Political Leaders.....13 Traditional Leaders.....14 Religious Leaders.....15 Health Education.....16 Seminars.....17 Others..... |

| | | |
|---------------------------------------|--|--|
| Q38 | Have you ever discussed male circumcision as a way to help prevent passing HIV? | YES.....1 NO.....2 |
| Q39 | Do you know any health Facility near your home where male circumcision can be performed? | YES.....1 NO.....2 |
| Q40 | What is the type of this health unit? | Government.....1 Private.....2 Missionary.....3 Don't Know.....88 |
| SECTION D: CIRCUMCISION STATUS | | |
| Q41 | Are you circumcised? IF YES PROCEED WITH THE QUESTIONS/ IF NO END OF INTERVIEW | YES.....1 NO.....2 |
| Q42 | At what age were you circumcised? | Infant (1-12 months).....1 Child (1-12 yrs).....2 Adolescent (13-18 yrs).....3 Adult (above 18 yrs).....4 |
| Q43 | Who conducted the circumcision procedure? | Health worker.....1 Traditional circumciser.....2 Other.....3 |
| Q44 | Where was the circumcision procedure carried out? | Health facility.....1 Home.....2 Initiation ceremony.....3 Other.....4 |
| Q45 | What was the reason for the circumcision? | Religious.....1 Cultural norm.....2 Health reasons.....3 Hygiene.....4 Other.....5 |

THANK YOU FOR YOUR TIME

APPENDIX 2: KiSwahili Questionnaire**DODOSO**

Kichwa: Maarifa, Mitazamo na dhana ya tohara ya kitabibu kwa wanaume kama njia ya kuzuia maambukizi ya VVU katika jamii isiyofanya tohara: Geita, Tanzania

Namba ya usaili

Tarehe ya usaili

Wewe umechaguliwa kuwa sehemu ya utafiti huu na mchango wako katika kujaza dodoso hili ni muhimu sana. Taarifa utakazo toa zitakuwa siri na ridhaa yako ni muhimu. Tafadhali usiandike jina lako kwenye dodoso. Chagua jibu moja au zaidi kwa kuzungushia mduara kwenye chaguo lako

SEHEMU A: TABIA ZA KIDEMOGRAFIA

| TAARIFA ZA KUDEMOGRAFIA | | | |
|-------------------------|---------------------------------------|---|----------------------|
| Na. | Maswali | Aina ya Mpangilio | Ingiza namba ya jibu |
| Swali Na. 1 | Una umri gani? | Umri katika miaka kamili Sijui88 | |
| Swali Na.2 | Lugha kuu inayotumika nyumbani kwako. | Kiswahili.....1 Kiingereza.....2 Kisukuma.....3 Nyinginezo(taja).....4 | |
| Swali Na.3 | Nini hali yako ya ndoa? | Sija wahi oa/olewa.....1 Nimeoa/Nimeolewa.....2 Tunaishi pamoja, hatuna ndoa.....3 Mtalaka au tumetengana.....4 Mjane.....5 | |
| Swali Na.4 | Kiwango cha juu cha elimu yako | Hakuna.....1 Elimu ya msingi.....2 Elimu ya sekondari.....3 Elimu ya chuo (cheti/diploma).....4 Chuo kikuu.....5 Nyinginezo.....88 | |
| Swali Na.5 | Dini yako? | Mkatoliki.....1 Muanglikana/Mprotestanti.....2 Muislam.....3 Dini ya asili.....4 Hakuna.....5 Nyinginezo.....88 | |
| Swali Na. 6 | Je, una runinga nyumbani? | Ndiyo.....1 Hapana.....2 | |

| | | | |
|-------------|-------------------------|-----------------------------|--|
| Swali Na. 7 | Je, una redio nyumbani? | Ndiyo.....1 Hapana.....2 | |
|-------------|-------------------------|-----------------------------|--|

SEHEMU B: MAARIFA

| | Maswali | Kweli | Si kweli | Sina uhakika |
|------------------|---|----------|---|--------------|
| Mpangilio | | 1 | 2 | 3 |
| Swali Na. 8 | Tohara kwa mwanaume ambaye hana maambukizi ya VVU hupunguza uwezekano wa kupata maambukizi ya VVU | | | |
| Swali Na.9 | Tohara kwa mwanaume ambaye hana maambukizi ya VVU haimzuii moja kwa moja kupata maambukizi ya VVU. | | | |
| Swali Na.10 | Hakuna uwezekano kwa mwaume aliyefanyiwa tohara kupata maambukizi ya VVU | | | |
| Swali Na.11 | Tohara kwa mwanaume mwenye maambukizi ya VVU haimzuii mwezi wake kupata maambukizi ya VVU | | | |
| Swali Na.12 | Je, tohara hupunguza hatari ya magonjwa ya zinaa? | | | |
| | Sasa , niambie unafikiri nini kuhusu mwanaume aliye tahiriwa na asiye tahiriwa kwa kuzingatia kauli zifuatazo. | | | |
| Swali Na.13 | Ni rahisi kupata VVU iwapo mwanaume | | Ametahiriwa.....1 hajatahiriwa.....2 Hakuna tofauti.....3 Sijui.....88 | |
| Swali Na.14 | Ni rahisi kupata magonjwa ya zinaa ikiwa mwanaume | | Ametahiriwa.....1 hajatahiriwa.....2 Hakuna tofauti.....3 Sijui.....88 | |
| Swali Na.15 | Ni rahisi kudumisha usafi wa uume iwapo mwanaume | | Ametahiriwa.....1 hajatahiriwa.....2 Hakuna tofauti.....3 Sijui.....88 | |
| Swali Na.16 | Ni rahisi kupata kansa ya uume ikiwa mwamaume | | Ametahiriwa.....1 hajatahiriwa.....2 Hakuna tofauti.....3 Sijui.....88 | |

SEHEMU C: MTAZAMO , IMANI NA KUKUBALIKA**Kwa kila kauli , oneshia jibu lako kwa kuweka alama ya vema katika kisanduku sahihi.**

| | Swali | Nakubalia na kabisa | Nakubal iana | Sina maoni | Sikubali ani | Sikubaliani kabisa |
|------------------|---|------------------------|-----------------|---------------|-----------------|-----------------------|
| Mpangilio | | 1 | 2 | 3 | 4 | 5 |
| Swali Na.17 | Wanaume waliotahiriwa hufurahia ngono zaidi kuliko wanaume wasiotahiriwa. | | | | | |
| Swali Na.18 | Wanaume waliotahiriwa hupata hisia zaidi wakati wa kujamiiana kuliko wanaume wasiotahiriwa. | | | | | |
| Swali Na.19 | Wanaume waliotahiriwa wanaweza kufanya mapenzi kwa usalama bila kutumia kondom ikilinganishwa na wanaume wasiotahiriwa. | | | | | |
| Swali Na.20 | Ni muhimu kwa wanaume wote bila kujali umri wao kutahiriwa. | | | | | |
| Swali Na.21 | Tohara kwa mwanaume inathibitisha uanaume. | | | | | |
| Swali Na.22 | Tohara kwa wanaume ni mambo ya kizamani katika jamii yetu na hakuna haja ya kuletwa tena | | | | | |

KAMA UMETAIRI JIBU SWALI NAMBA 29**Tafahdali soma maelezo yafuatayo:**

Hivi sasa, serikali ya Tanzania inafikiria kupendekeza kwamba wanaume kutolewa tohara ili kupunguza uwezekano wa watu kuambukizwa na VVU na magonjwa ya zinaa mengine. Sasa napenda wewe utoe maoni yako na imani kuhusu tohara kwa wanaume

| | | |
|----------------|---|--|
| Swali Na.23 | Kulingana na maelezo ya hapo juu, unaweza kuchagua kutahiriwa , iwapo itasemekana tohara inapunguza hatari ya maambukizi ya VVU? (Soma taarifa na jibu iwezekanavyo kwa kuchagua jibu moja) | Ndiyo.....1 Labda.....2 Hapana.....3 Sijui.....88 |
| Swali | Iwapo itatolewa bure bila malipo , utachagua kutahiriwa? | Ndiyo.....1 |

| | | |
|-------------|--|--|
| Na.24 | | Labda.....2 Hapana.....3 Sijui..... 88 |
| Swali Na.25 | Kutokana na kwamba hakuna matatizo au kuna matatizo madogo , utachagua kutahiriwa? | Ndiyo.....1 Labda.....2 Hapana.....3 Sijui..... 88 |
| Swali Na.26 | Ni sababu zipi zinazokufanya upende kutahiriwa? (KAMA SWALI NAMBA 25 NI NDIYO) | Kuzuia VVU1 Usafi2 Utamaduni.....3 Dini4 Kuzuia magonjwa ya zinaa.....5 Hamu ya kingono.....6 Shauku ya mwenz.....7 Nyingine (taja).....8 |
| Swali Na.27 | Ni sababu gani zimekuzuia wewe kutahiriwa? | Gharama za utaratibu....1 Gharama za usafiri.....2 Hofu ya maumivu.....3 Utamaduni.....4 Dini.....5 Hofu ya matatizo.....6 Hakuna huduma katika kituo cha afya cha karibu7 Sina muda8 Nyingine (taja).....9 |
| Swali Na.28 | Kwanin hutaki kutahiriwa? (JIBU TU KAMA NAMBA 25 NI HAPANA) | Gharama za utaratibu....1 Gharama za usafiri.....2 Hofu ya maumivu.....3 Utamaduni.....4 Dini.....5 Hofu ya matatizo.....6 Hakuna huduma katika kituo cha afya cha karibu7 Sina muda8 Nyingine (taja).....9 |
| Swali Na.29 | Je, unapendekeza tohara kwa mwanao wa kiume au kijana yeyote wa kiume unaye mjua? | Ndiyo.....1 Labda.....2 Hapana.....3 Sijui..... 88 |
| Swali Na.30 | Kwa maoni yako , umri bora wa kufanya tohara ni upi? | Watoto wachanga.....1 Watoto.....2 Vijana.....3 Watu wazima.....4 |

| | | |
|-------------|---|--|
| | | Hakuna uchaguzi.....5 Sijui.....88 |
| Swali Na.31 | Kwa maoni yako nani anatakiwa kufafanyia tohara? | Maaktari.....1 Wauguzi.....2 Jadi/ngariba.....3 Hakuna uchaguzi.....4 Wengine (Taja).....5 Sijui.....88 |
| Swali Na.32 | Kwa maoni yako ni wapi mahali bora pa kufanyia tohara? | Kwenye huduma za afya.....1 Nyumbani.....2 Hakuna uchaguzi.....3 Nyingine(eleza).....4 Sijui.....88 |
| Swali Na.33 | Je, umewahi sikia kutoka chanzo au mtu yeyote kuhusu tohara kwa wanaume katika kipindi cha miezi 12 iliyopita? | Ndiyo.....1 Hapana.....2 |
| Swali Na.34 | Kama ni ndiyo, ni nini umesikia kuhusu tohara kwa wanaume katika kipindi cha miezi 12 iliyopita? | |
| Swali Na.35 | Je, umewahi sikia kwamba wanaume waliotahiriwa wanapunguza uwezekano wa kupata maambukizi ya VVU? | Ndiyo.....1 Hapana.....2 |
| Swali Na.36 | Wakati gani ulijifunza au kusikia kwa mara ya kwanza habari hiyo hapo juu? <i>[kisia mwezi au mwaka]</i> | |
| Swali Na.37 | (KAMA SWALI NAMBA 35 NI NDIYO) Jinsi gani ulijifunza/sikia kuhusu habari hii? <i>Chagua njia zote zilizotumika,</i> | Redio.....01 Runinga.....02 Drama.....03 Magazeti/Majarida.....04 Kijitabu.....05 Mabango.....06 Mbao za matangazo.....07 Taarifa za kijumuia.....08 Familia.....09 Mwenza wangu.....10 Marafiki.....11 Wafanyakazi wa afya.....12 Viongozi wa siasa.....13 Viongozi wa jadi.....14 Viongozi wa dini.....15 Elimu ya Afya.....16 Semina.....17 Wengine..... |
| Swali Na.38 | Umeshawahi kujadili tohara kwa wanaume kama njia ya kupunguza maambukizi ya VVU? | Ndiyo.....1 Hapana.....2 |
| Swali Na.39 | Unakifahamu kituo chochote cha afya kilicho karibu nawe ambapo tohara ya wanaume inafanyika? | Ndiyo.....1 Hapana.....2 |

| | | |
|-------------|---|--|
| Swali Na.40 | Je, ni aina gani ya kitengo hiki cha afya? | Serikali.....1 Binafsi.....2 Misionari.....3 Sijui.....88 |
| | SEHEMU D: : UMETAIRI AU LA | |
| Swali Na.41 | Je umetairi? KAMA NDIO ENDELEA KUJIBU MASWALI/ KAMA LA USIJIBU MASWALI. | Ndiyo.....1 Hapana.....2 |
| Swali Na.42 | Ulitairi ukiwa na umri gani? | Mtoto mchanga(kuzaliwa hadi mwaka..... 1 Mtoto (mwaka1-12).....2 Barobaro (miaka 13-18)....3 Mtu mzima (zaidi ya miaka 18).....4 |
| Swali Na.43 | Nani alikutairi? | Mhudumu wa afya.....1 Jadi/ngariba2 Mwingine.....3 |
| Swali Na.44 | Ulitahiriwa wapi? | Kituo cha afya.....1 Nyumbani.....2 Jandoni.....3 Mwingine.....4 |
| Swali Na.45 | Ulitahiri kwasababu gani? | Dini.....1 Mila.....2 Sababu za ki afya.....3 Usafi.....4 Mwingine.....5 |

ASANTE

APPENDIX 3: Geita Gold Mine Authorisation Letter



ANGLOGOLD ASHANTI
GEITA GOLD MINING LIMITED

PO Box 532 \ Geita \ Tanzania \ Tel: +255 282 520 500 \ Fax: +255 282 520 502
Dar es Salaam Office: 5th Floor \ Nyerere Towers \ Plot 1249 \ 11 Bibi Titi \ Morogoro Road \ Dar es Salaam
PO Box 75803 \ Dar es Salaam \ Tanzania \ Tel: +255 222 121 038 \ Fax: +255 222 121 050

15 June 2012

Ms Constance Mubekapi
Geita Gold Mine
P.O. Box 532
Geita
Tanzania

Dear Madam,

RE: PERMISSION TO CONDUCT ACADEMIC RESEARCH STUDY AT GEITA GOLD MINE

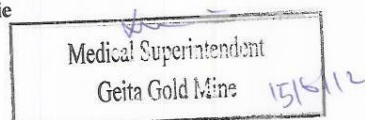
This is to certify that permission has been granted to you to conduct academic research study: Knowledge, Attitudes and Perceptions of Male Medical Circumcision as an HIV Prevention Method among Males in Non-Circumcising Communities: Geita, Tanzania.

My office would like to get the following:

1. Progress report
2. A copy of the final publication

Wishing you success.

Dr Kiva Mvungi
Medical First Line Manager
Geita Gold Mine



APPENDIX 4: Participant Information Sheet

Participant information sheet

Thank you for agreeing to participate in the study.

Interviewer's details

My name is Constance Mubekapi, a Registered General Nurse by profession. I am currently studying at the Stellenbosch University for a degree in Master of Philosophy in HIV/AIDS Management. Conducting a research assignment is one of the requirements that entitle one to the degree aforementioned. Please feel free to contact me if you have any questions and need clarity on certain issues. My contact details and those of my supervisor are found at the end of this memo.

Research Title: Knowledge, Attitudes and Perceptions of Male Medical Circumcision as an HIV Prevention Method among Males in Geita, Tanzania

Significance of the study

Little research has been done on males to elicit their knowledge, attitudes and perceptions on MC as an HIV preventive measure. In Tanzania, there is scarcity of research on this area. The aim of the present study is to address a gap in the field by exploring the knowledge, attitudes and practices of MC as an HIV prevention strategy. This research is expected to provide valuable information that will enhance our understanding of the dynamics of acceptability and uptake of MC.

Data Collection Process

I will give you a questionnaire which I would require you to complete. It will take approximately 20 minutes. On completion please put the questionnaire in the envelope I have handed you and seal it and hand it over to the Matron.

Confidentiality

Your identity will be kept confidential. All issues on the questionnaire will be treated with respect and confidentiality therefore feel free to respond as accurate as possible to the questions. Records of the questionnaire and the consent form, if you choose to participate will be kept under lock at all times. These will be destroyed 3 months after the research process has been completed.

Participation in the study

Participation in this study is entirely voluntary. Refusal to participate in the study will not result in a penalty or withdrawal of any benefits that you entitled to. If you choose to participate and should you at any stage feel uncomfortable and wish to terminate the process please do not hesitate to do so.

Benefits from the study

You shall not receive any direct benefits from the study. However the information gathered will enable policymakers to advocate for better or improved HIV/AIDS interventions and prevention services. In essence, this information will necessitate appropriate measure to be taken so as to respond effectively on the HIV/AIDS prevention interventions.

Interviewee's agreement.

Attached to this information sheet is a consent form. I will need you to sign it to acknowledge your voluntary participation before we proceed with answering the questionnaire. You can review it and decide whether you would like to participate.

Any questions can be directed to me on the following contact details:

Constance Mubekapi

Student Number: 16742834

Cell phone: +255 76 551 5344

Email address: cmubekapi@classicmail.co.za

I am accountable to my supervisor Burt Davis. His contact details are as follows:

Burt Davis

Lecturer

C/o The Africa Centre for HIV / AIDS Management in the Faculty of Economic and
Management Sciences

Stellenbosch University

Work: +27 21 808 3707

Cell: +27 832 582 802

E-mail: burt@sun.ac.za

APPENDIX 5: Consent Form



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY
jou kennisvenoot • your knowledge partner

STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

Knowledge, Attitudes and Practices of Male Medical Circumcision as an HIV Prevention Method among Males in Geita, Tanzania

You are asked to participate in a research study conducted by **Constance Mubekapi** from **The Africa Centre for HIV / AIDS Management in the Faculty of Economic and Management Sciences** at Stellenbosch University. I am currently studying for a degree in Master of Philosophy in HIV and AIDS Management. Conducting a research assignment is one of the requirements that entitle one to the degree aforementioned. I therefore select you as a possible participant in this study because you are male and working in the mine and I do hope that the results of the study will enable the Ministry of Health and Policy makers to understand the dynamics and acceptability of male circumcision (MC). Furthermore, the results will therefore contribute to a dissertation.

1. PURPOSE OF THE STUDY

The aim of the present study is to address a gap in the field by exploring the knowledge, attitudes and practices of male circumcision as an HIV prevention strategy. This research is expected to provide valuable information that will enhance our understanding of the dynamics of acceptability and uptake of male circumcision. The findings of this research are expected to not only inform interventions, but also to impact on information communication and dissemination, training programmes and policy formulation.

2. PROCEDURES

If you volunteer to participate in this study, I would ask you to do the following things:

- Participation in this study is entirely voluntary. Refusal to participate in the study will not result in a penalty or withdrawal of any benefits that you are entitled to. If you choose to participate and should you at any stage feel uncomfortable and wish to terminate the process please do not hesitate to do so.
- You will be provided with a questionnaire and you will be required to complete it. Circle the appropriate response and please try and answer honestly.
- Take your time to answer questions
- After completion return it to the relevant office.

3. POTENTIAL RISKS AND DISCOMFORTS

- Given the nature of the study, no risks are foreseeable during the questionnaire phase. Due to the nature of questions that tackle issues of sexuality, the participants might feel embarrassed and uncomfortable. Every effort will be made to ensure the physical and emotional safety of participants during the data collection process. Should there be any unforeseeable severe reaction to the interview; a local professional counsellor from African Medical and Research Foundation (AMREF-a non-governmental organisation collaborating with Geita Gold Mine to combat the spread of HIV) will be available to assist any of the participants requiring emotional counselling.
- Participants might express fear of deception whereby they doubt the investigator's motives. They might feel that the investigator is not revealing the whole truth about the purpose of the study or questionnaire. As a result, they might feel that the employer is indirectly assessing them. The investigator will therefore, address this by providing an Ethical Clearance from the University and the contact details for the Supervisor if the participants want to confirm.

- Participants may feel uncomfortable due to the nature of the questions. The participants might feel that the more they reveal information about the subject; they might actually be viewed as unknowledgeable resulting in a feeling of inferiority complex. The investigator will emphasize that the study and has nothing to do performance assessment. Participants will be informed that there is no wrong or right answer. Thus the aim of the study will be explained to the participants; “To gather baseline information on the knowledge on medical benefits of male circumcision, their attitudes on male circumcision and the acceptability of the procedure”.

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The study seeks to establish the knowledge, attitudes and perceptions of medical male circumcision as an HIV prevention strategy among males in non circumcising communities. It is envisaged that information gathered will assist the development of effective male circumcision health promotion programmes within the country in an effort to increase male circumcision uptake and thus reducing the transmission of HIV. The benefits will be operationalized so as to meet the following objectives:

- To establish the level of knowledge regarding MC among males in GGM.
- To describe the attitudes of males about MC.
- To establish the beliefs of males towards MC.
- To identify barriers to MC practices.
- To provide recommendations based on study findings on the effective roll-out of MC.

5. PAYMENT FOR PARTICIPATION

You shall not receive any payment for participation.

6. CONFIDENTIALITY

Any information that is obtained in connection with this study will not be identified with the participants. Moreover, the data is confidential and will not be disclosed without with the participant’s permission or as required by law. Participant’s identity will be kept confidential thus participants will not be required to put their names on the questionnaire. Confidentiality

will be maintained, records of the data and the consent form, if you choose to participate will be kept under safe and lock at all times. Only the investigator will have access to the data. The Information can only be released to the Supervisor or the Research Department of the University if need arise. If the results of the study are published, no names of the subjects will be published.

7. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so. Participation may be terminated if the participant starts to feel that the questionnaire is a direct attack to him and hence making it impossible to continue with the investigation. If the participant reacts with intense emotions or being defensive in such a manner that it leads to failing to respond rationally, no questions will be asked to justify the withdrawal.

8. IDENTIFICATION OF INVESTIGATORS

Principal Investigator: Constance Mubekapi

Department: Economic and Management Science

Telephone: +255 76 551 5344

Email: cmubekapi@classicmail.co.za

Supervisor: Burt Davis

Department: Economic and Management Science

Telephone: +27 21 808 3707

Email: burt@sun.ac.za

9. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms

SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE

Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

The information above was described to ----- by Constance Mubekapi in English and I the participant is in command of this language. I the participant was given the opportunity to ask questions and these questions were answered to my satisfaction.

I hereby consent that the participant may participate in this study. I have been given a copy of this form.

Name of Subject/Participant

Name of Legal Representative (if applicable)

Signature of Subject/Participant or Legal Representative

Date

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____ and/or his/her representative _____. He was encouraged and given ample time to ask me any questions. This conversation was conducted in English and no translator was used.

Signature of Investigator

Date