



**Knowledge, Attitudes and Perceptions of Medical Male
Circumcision as an HIV Prevention Procedure by
White and Indian Male Students at the University of
KwaZulu Natal's Howard College**

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(CCMS), School of Applied Human Sciences, University of
KwaZulu-Natal, Howard College, Durban, South Africa**

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DECLARATION – PLAGIARISM

COLLEGE OF HUMANITIES

I **Phebbie Sakarombe** declare that:

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Signed:

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DEDICATION

This is for you Mum and Dad, for believing in me.

Also, to my loving husband Nyasha and adorable son Izwi who have encouraged me to work extremely hard.

ACKNOWLEDGEMENTS

I owe a debt of gratitude to various contributors, without whom this thesis would not have been possible. Firstly, I would like to thank the almighty God who helped me pull through. Without Him I most certainly would not have achieved my goals.

My sincere gratitude goes out to my loving parents Mr and Mrs Sakarombe, my siblings, Walter and Patricia, for every little thing they have done for me to be where I am today.

I should not forget my husband who has helped me in various ways during the writing of this dissertation. Thank you for your recommendations, suggestions and feedback that I never took for granted. To you I say: thanks for always being the wind beneath my wings.

Special thanks also go to Prof. Keyan Tomaselli for guiding me into the world of academia, and always encouraging critical thought and hard work. Thank you to all the fellow CCMS students and staff that offered feedback and critique during our Friday morning seminars; your contributions have been deeply appreciated.

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ABSTRACT

This study establishes the knowledge, perceptions and attitudes of white and Indian male students at the University of KwaZulu-Natal's (UKZN) Howard College on Medical Male Circumcision (MMC) as an HIV prevention procedure. The study is informed by data that represents HIV as infecting and affecting larger proportions of black people compared to white and Indian people. This creates a perception that, in South Africa and elsewhere, HIV/AIDS is an exclusively "black" disease or problem. The researcher assessed the level of knowledge and attitudes of White and Indian male students in order to establish acceptability of HIV prevention by these two demographics. MMC was used as an example. This choice was informed by the UKZN's formal adoption and roll out of MMC as its latest HIV prevention strategy for students. By establishing the level of knowledge, perceptions and attitudes of white and Indian male students on MMC and its reported medical benefits (for example, the fact that it reduces the risk of infection by at least 60%), the researcher sought to address two related questions: To what extent do non-black student demographics care about HIV prevention? To what extent do white and Indian students reflect about HIV prevalence amongst themselves? The study is rooted in the Health Belief Model, a model which explains health behaviour change in terms of barriers, benefits and cues to action. The study is also informed by the Social Ecology Model, which recognises the interwoven relationship that exists between individuals and their greater environment, and how one influences the other. The findings suggest that the perception that white and Indian students are not at risk of HIV is relatively widespread. By extension, the perception that strategies such as MMC are meant exclusively for black students is held by many. The attitude towards HIV prevention in general and MMC in particular is indifferent. Ironically, knowledge of HIV prevention in general is high, but has failed to translate into uptake for MMC by white and Indian male students at Howard College. These findings demonstrate that the association of HIV with a specific race is both a sad fact and a sign of enduring prejudices and stigma. The study recommends that such stigma should be dealt with through critical health communication strategies and approaches that i) question the social reproduction of stigma and ii) are race sensitive. Critical sensitivity to (the complexities of) race in public health communication has the potential to radically minimise the reproduction of distorted knowledge, attitudes and perceptions of certain races as natural bearers of deadly viruses.

LIST OF ACRONYMS AND ABBREVIATIONS

AAP	American Academy of Paediatrics
ABC	Abstain, Be faithful and Condomise
AMA	American Medical Association
BUFF	Brothers United for Future Foreskin
DOC	Doctors Opposing Circumcision
HBM	Health Belief Model
HESA	Higher Education of South Africa
HIV	Human Immune Deficiency Syndrome
HSRC	Human Science Research Council
JHHESA	Johns Hopkins Health and Education in South Africa
LSM	Living Standards Measurements
MAP	Muslim Aids Programme
MC	Male Circumcision
MMC	Medical Male Circumcision
NOCIRC	National Organization of Circumcision Information Resource Centres
NOHARRM	National Organization to Halt the Abuse and Routine Mutilation of Males
PMTCT	Prevention of Mother to Child Transmission
R1-40	Respondents One to Respondents Forty
RCT	Random Controlled Trial
RECAP	Recovery of a Penis
SEM	Social Ecology Model
STI	Sexually Transmitted Infection
TAC	Treatment Action Campaign
UKZN	University of KwaZulu Natal
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNGASS	United Nations General Assembly Special Session
VMMC	Voluntary Medical Male Circumcision
WHO	World Health Organisation

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CHAPTER ONE

INTRODUCTION

Global health statistics indicate that sub-Saharan Africa is the region most affected by the Human Immunodeficiency Virus (HIV) and the Acquired Immuno-Deficiency Syndrome (AIDS). Approximately twenty-two million people were reported to be living with the disease in 2008 (WHO/UNAIDS 2010). An estimated two million new infections were reported in 2012 (WHO/UNAIDS 2010; UNAIDS 2011, 2012, 2013). Despite the availability of already known HIV prevention methods, new infections continue to occur. By mid-year 2009 an estimated five million people were infected in South Africa, with the province of KwaZulu-Natal having the highest prevalence of infections, as evidenced by the antenatal clinic attendees' data (WHO/UNAIDS 2010, 2012). The United Nations (UN) estimated that South Africa has the most HIV positive people in the world (McGreal 2002; WHO 2012; UNAIDS 2013).

Due to the high level of HIV infections in South Africa, various preventive strategies have been introduced from time to time. These strategies include condom use, awareness campaigns, prevention of mother to child transmission (PMTCT), the promotion of abstinence, delay of sexual debut, and the reduction of sexual partners. Over the last five years more specific preventive measures have been introduced for both men and women (Caprisa 2014). For women, the introduction of the female condom (femidom) which acts as a barrier to pregnancy and other sexually transmitted diseases and the Tenofovir gel (which is still under trial phase) are cases in point. Tenofovir gel is an antiretroviral drug used to prevent HIV from growing inside human cells and it is in the form of pills (Caprisa 2014). For men, the latest strategy has been medical male circumcision (MMC). MMC falls into this category of the "armamentarium" (Mattson *et al* 2005) of preventive strategies. MMC is defined as the surgical complete removal of the penile foreskin, the skin covering the glans (WHO 2007, 2009, 2012).

MMC was recommended as an HIV prevention procedure by the World Health Organisation (WHO) and the Joint United Nations Programme on HIV/AIDS

(UNAIDS) in 2007 (WHO/UNAIDS 2010, 2012, 2013). This recommendation followed three randomised controlled trials in Kenya, Uganda and South Africa carried out in 2004. The trials are reported to have provided the clearest evidence yet that medical male circumcision could reduce the risk of HIV infection through heterosexual transmission by approximately sixty per cent (WHO/UNAIDS 2010; Auvert *et al* 2005; Bailey *et al* 2002; McGreal *et al* 2007; Gray *et al* 2007). The WHO and UNAIDS stated that medical male circumcision is an efficacious intervention for HIV prevention, albeit one that should always be carried out under clinical conditions, by trained medical professionals, and after obtaining voluntary informed consent.

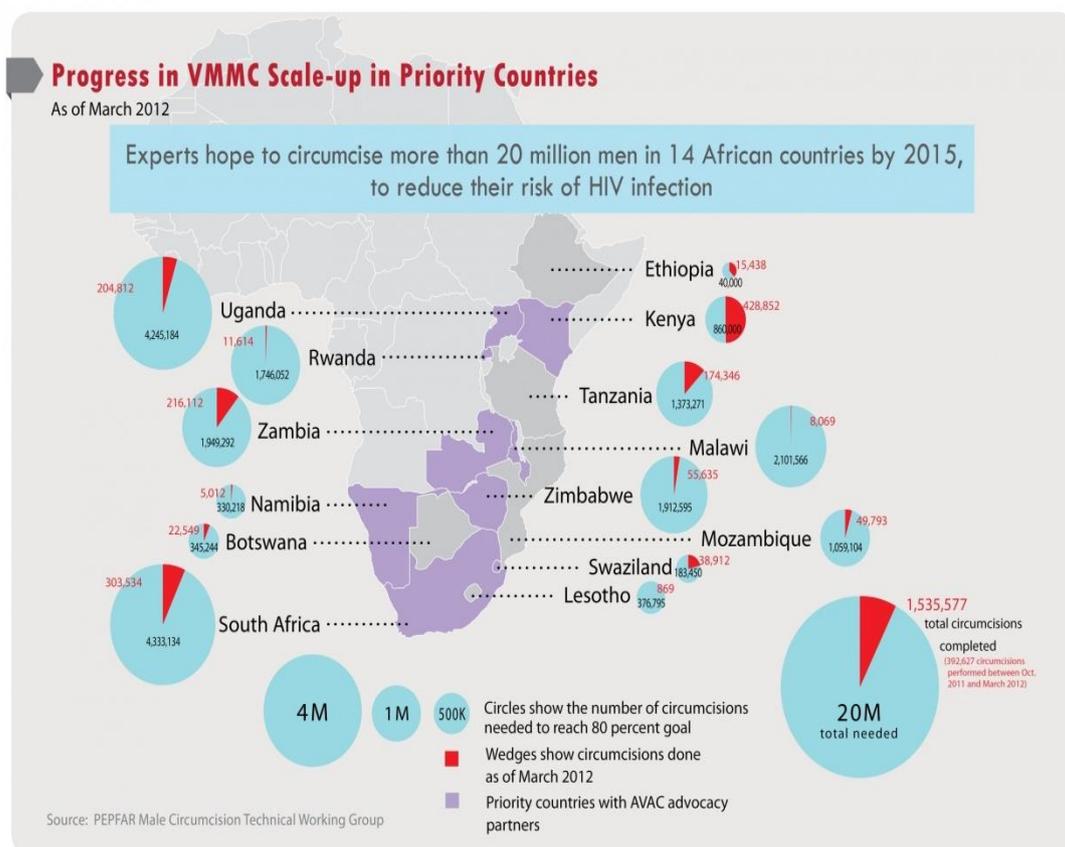


Fig. 1. Progress in VMMC Scale-up in Priority Countries (Source: PEPFAR)

Since 2007, 14 “priority countries” in East and Southern Africa have scaled up MMC (WHO 2013). The aim is to medically circumcise more than 20 million men in these 14 countries by 2015. South Africa is one of the above-named 14 priority countries

with just over three hundred thousand South African men circumcised as of March 2012 (WHO/UNAIDS 2013).

Setting the Scene: Youth Prevalence and HIV prevention

This study is located at a South African institution of higher learning situated in the province of Kwa-Zulu-Natal. Two issues, in particular, set the scene for this study. These are i) HIV prevalence amongst young people in general and university students in particular, and ii) HIV prevention strategies that have been adopted and are currently being adopted in South Africa. HIV prevalence amongst South African youth has been consistently high over the last half decade. For instance, a prevalence rate that peaked at 25.8% was recorded in 2002, 2005, and 2008 (HSRC 2002, 2005, 2008). Moodley (2007) cites a University of Witwatersrand study conducted in 2006 that found that one in every 10 South Africans aged 15 to 24 is HIV-positive. At the same time, however, there have been reported declines in HIV infections in young people in most provinces except for KwaZulu-Natal (KZN) and Mpumalanga (HSRC 2008). In fact, over the years, the province of KwaZulu-Natal has seen a large increase in prevalence. For instance, it was noted that there was an increase in prevalence from 7.2% in 2002 to 15.3% in 2008 (Shisana *et al* 2002, 2005, 2008). These figures made KwaZulu-Natal “the province with the highest prevalence of HIV among youth” (Shisana *et al* 2008: 30; HSRC 2010, 2012 and 2013).

The multi-sectoral *National HIV and AIDS and STI Strategic Plan for South Africa 2007-2011* (NSP) specifically prioritised young people for prevention strategies. University students constitute an important segment of South African youths for obvious reasons. Specifically:

University students make up part of the youth population. Moreover, they constitute a segment of the youth population that is potentially very important both for the development of society and for the determination of future norms. Addressing university students effectively is therefore particularly important (HEAIDS 2010b: 3).

There are 23 universities in South Africa, with a reported 938 201 students enrolled at the end of 2011 (DHET Annual Report 2013: 34). In comparison, the total headcount of students 18 years prior to this date – in 1993 – stood at 473, 000.

These figures show that student numbers at South African universities have – in the ensuing two decades between 1994 and 2014 – more than doubled. In actual fact, the national government has plans to increase university enrolments to 1.62 million by the year 2030 (DHET Annual Report 2013). The exponential growth in numbers of students at South African universities justifies the focus of HIV prevention strategies on universities and other institutions of higher education. The vision for an HIV free generation involves a scaling of prevention interventions amongst youths clusters such as university students. It is in this context that the Department of Higher education and Training (DHET), in its “Strategic Plan 2010 to 2014”, has prioritised HIV/AIDS as one of “seven key imperatives”, along with race, gender, class, disability, age and geographical location (DHET Strategic Plan, 2012: 5).

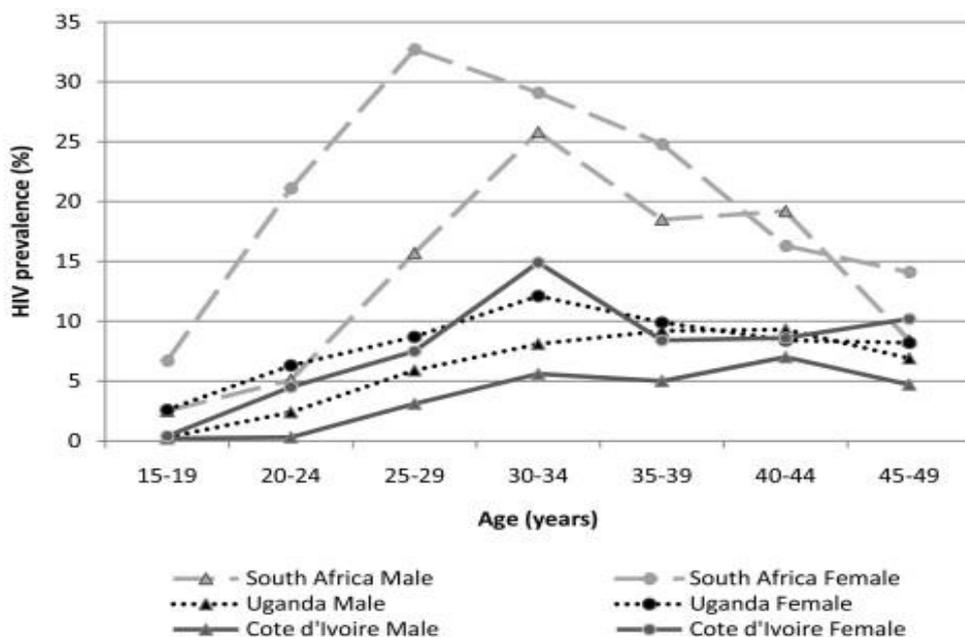
The recognition of the need to incorporate university students in specific HIV prevention programmes led to the formation of the Higher Education HIV/AIDS Programme (HEAIDS). HEAIDS is described as “a nationally co-ordinated initiative to develop and strengthen the capacity of South Africa’s higher education sector to respond comprehensively to the challenges posed HIV/AIDS pandemic” (HESA 2014).¹ HEAIDS director Dr. Ramneek Ahluwalia states that the key focus of HEAIDS is “to ensure that youth and young people passing through our sector within all our 400 campuses countrywide are healthy and competent...” (HEAIDS 2014).² The HEAIDS mission to develop HIV prevention programmes for students led it to carry out and publish baseline research on South African universities, titled The “HIV Prevalence and Related Factors: Higher Education Sector Study 2008-2009” (2010). Other reports on specific universities, such as the report on “Findings of the study on HIV seroprevalence and related factors at the University of KwaZulu-Natal” (HESA 2008), were also commissioned.

The HEAIDS (2010) report into HIV prevalence showed that the mean HIV prevalence for students stood at 3,4%. The highest prevalence of HIV occurred among African students (5.6 %), followed by coloureds (0.8%) and Indians (0.3%). Only 1 case of an HIV positive white student was identified (HEAIDS 2010: xi). The

¹ Higher Education South Africa (HESA) “Overview of HEAIDS” <http://www.hesa.org.za/he aids> Accessed 23 January 2014

² Higher Education and Training HIV/AIDS Programme (HEAIDS) “Introduction to HEAIDS’ Mission” www.he aids.org.za/about/mission-vision/ Accessed 2 March 2014

report on “Findings of the study on HIV seroprevalence and related factors at the University of KwaZulu-Natal” (HESA 2008), on the other hand, established that the prevalence amongst students was estimated at 2,4%, with approximately 675 students living with HIV. The report suggested that “younger students are likely to have their first sex encounter during the period that they are at university” (HESA 2008: 8). It also reported that 51% of the male students had more than one sexual partner in comparison to females (26%), and that HIV prevalence was higher among male and female students who had more than one partner. The overall picture is that UKZN students, despite the general low prevalence in comparison to national averages, are still exposed to risk of infection in large numbers.



^a South African National HIV Prevalence, Incidence, Behaviour and Communication Survey 2008.

^b Uganda Ministry of Health, ORC Macro. Uganda HIV/AIDS sero-behavioural survey 2004-2005. In: Ministry of Health (Uganda) and ORC Macro, editor. Calverton, USA; 2006

^c Demographic and Health Surveys. MEASURE DHS, 2004–present. <http://measuredhs.com> (accessed 12 September, 2010)

Fig. 2. HIV prevalence amongst young people in Africa, including South Africa.

This graph suggests that the prevalence rate in South Africa is highest amongst the selected countries. More importantly, the graph shows that prevalence is also highest in the age group from which the university-attending population is drawn (19-34). Interestingly, the HEAIDS (2010) study reports that, of all its findings, the “most

striking” was that prevalence amongst university students was “substantially lower” than that reported among the general South African population. At the same time, the distribution of HIV tended to “follow national patterns in terms of sex, race, age group and education” (HESA 2010: xviii).

The “Declaration of Commitment” adopted at the United Nations General Assembly Special Session on HIV/AIDS (UNGASS) in 2001 called on all governments to reduce infection rates in young people aged 15 to 24 by 25% globally by 2010. It is in this context that HIV prevalence amongst South African youth, specifically young females, has been identified as a cause of concern:

One of the concerning findings of the 2008 survey is the sustained high levels of HIV infection among young females. For example, among 15–19-year-olds, female prevalence is 2.7 times higher than that of males. In contrast to males, HIV prevalence among females increases even more dramatically in subsequent age cohorts, reaching 21.1% among the 20–24-year-olds, and 32.7% among 25–29-year-olds. (Shisana *et al* 2009: 30).

It can be clearly seen that, as of 2008, the prevalence of young females eclipsed the national estimate of HIV prevalence among South Africans of all age groups which stood at 10.6% (Shisana *et al* 2009). The sexual networks of young females include older males as well as young males. One way of bringing down prevalence amongst young females is to encourage safe sexual practices amongst the male subjects of the sexual networks.

HIV Prevention

The initial HIV prevention strategy at the University of KwaZulu-Natal has focused on the ABC approach (Moodley 2007). This approach emphasises abstinence (A), being faithful (B) and condom use (C). However, Moodley (2007) has observed that there is a gap in research focusing on South African university students’ perception of HIV and AIDS prevention strategies such as ABC. Moodley’s study reports that students did not find the ABC message effective. Instead, it needed to be revised to include ‘accountability’ and ‘responsibility’ as part of the overall HIV and AIDS prevention strategy. The University of KwaZulu-Natal’s adaptation of the new strategies of HIV prevention such as MMC in 2013 (outlined below) needs to be seen as part of general university policy to bring down prevalence and to create a more holistic

approach but also as a response to the ineffectiveness of the previous prevention strategies such as ABC. The adoption of MMC suggests that prevalence is still high and that approaches such as the ABC need to be complimented. The turn to MMC as an HIV prevention strategy fits what Coates, Richter, and Caceres (2008) have called “combination prevention”, where a mix of public health prevention and communication strategies is used. Tatoud (2011) calls this the “HIV prevention buffet”.

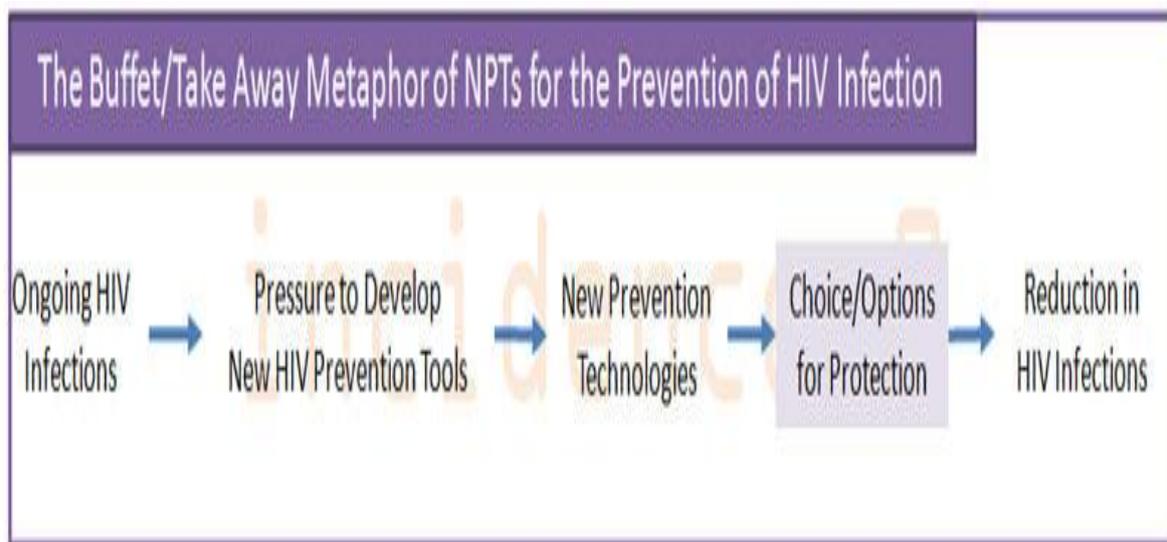


Fig 3. The “HIV prevention buffet” (Source: Tatoud RJ, 2011)

The use of more than one prevention strategy described as “combination prevention” or the “HIV prevention buffet” in order to reduce prevalence amongst young people explains the adoption of MMC around Africa and South Africa in general and at the University of KwaZulu-Natal in particular. Furthermore, it may explain the optimistic figures coming out of recent studies by the HSRC (2012 and 2013) that suggest prevalence amongst the 15-24 age groups may be going down.

Figure 1: HIV prevalence by age and sex, South Africa, 2012

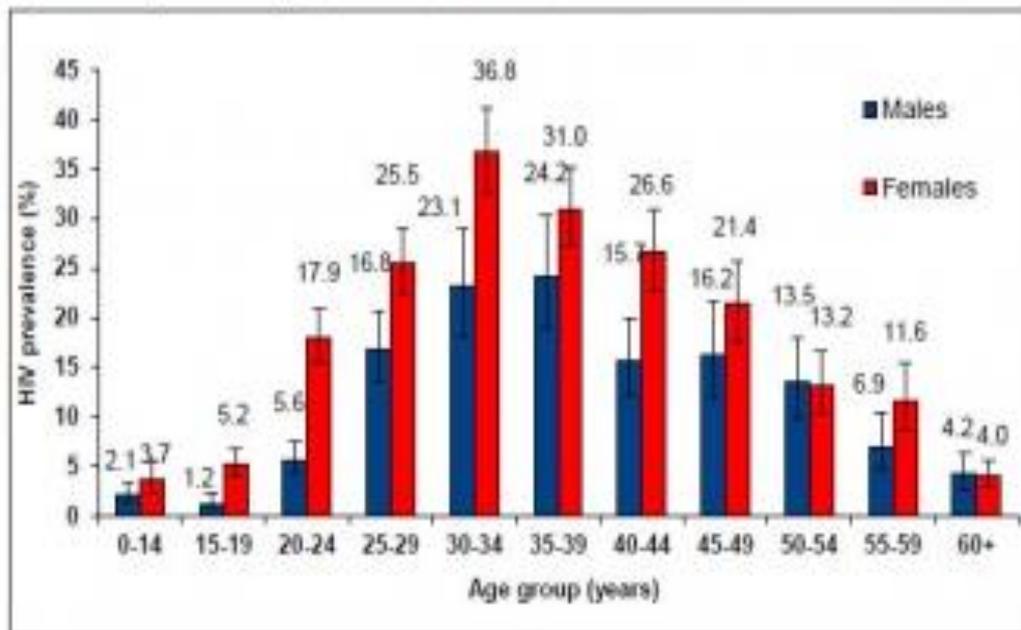


Fig 4. HIV prevalence by age and sex in South Africa in 2012 (HSRC 2013)

These figures suggest that there is optimism that prevalence amongst the 15-24 age group is falling and that current prevention and communication methods may be starting to bear fruit. Nevertheless, the optimistic figures reflect the need for further scaling up of prevention efforts in order to bring infections down to zero.

Rationale

Many studies have been carried out to find out what black South Africans think and know about HIV prevention (Shisana *et al* 2005, 2008, 2009; Saib and Samuels 2008; Sibanda 2010; Tarimo *et al* 2012; Kolawole 2003; Mathew 2012; Shisana & Simbai 2009; Mulwo 2009). In comparison, other demographics such as whites and Indians are under-researched (HEAIDS 2010b). Very little has been published, for instance, on the attitudes, perceptions and knowledge of whites and Indians to HIV prevention. The general view is that blacks in sub-Saharan Africa are “typical high HIV prevalence populations” (White *et al* 2008). The HESA (2008) study, for instance, reports that “HIV infection is confined almost exclusively to the African population” (HESA 2008: 58). The deduction, which is easily supported by statistics, is that non-black demographics such as Whites and Indians are typically low

prevalence populations. However, this current study rationalises that *low prevalence* is not the same as *zero prevalence*. Borrowing from the HEAIDS (2010b), I argue that any practice of “HIV/AIDS prevention good practice” requires that this distinction be observed. I define “prevention good practice” narrowly as typifying the recognition that HIV necessarily affects *everyone* and that prevention strategies must target *all* South African citizens regardless of gender, class, age or race.

Shireen Mukadam (2013), in a newspaper article titled “Aids does affect Muslims” considers the question of HIV amongst the Muslim Indian communities of South Africa. Mukadam quotes Ashraf Kagee, Professor and chair of the Psychology department at Stellenbosch University, as stating that HIV exists in the Muslim Indian community – as evidenced in a study that Kagee headed in Cape Town that found a 3% HIV prevalence in a random sample. Kagee stated that a significant challenge in dealing with HIV amongst the Muslim Indian community was the stigma attached to being HIV-positive. Such stigma caused sufferers not to disclose. The problems with disclosure suggest that there is more to low prevalence than meets the eye.

As we shall also see in the example of Justine Sacco below, it is easy to use statistics to confuse *low prevalence* with *absolute zero prevalence*. In other words, a belief that whites – for instance – are not susceptible to HIV is likely to be held by some, despite and in spite of the facts. The confusion of *low prevalence* with *absolute zero prevalence* constitutes “HIV/AIDS prevention bad practice”. The facts show that *any human being* can catch HIV, and by extension that every single South African is susceptible to HIV – albeit not at the same rate. For this study, therefore, a single infection amongst white and Indian students at the University of KwaZulu-Natal is not only enough evidence that white and Indian students are susceptible to HIV infection, but that they should be consciously included in studies of HIV prevention. This is what would constitute “HIV/AIDS prevention good practice”.

A case in point illustrating the need for “HIV/AIDS prevention good practice” is the HESA study of 2008. Despite reporting that “HIV infection is confined almost exclusively to the African population” (HESA 2008: 58), the same study shows that out of the total of 675 students that were found to be HIV+, 56 of these were from the White, Indian and Coloured demographic. This represents 8.2% of all infections on

campus. Although this number is comparatively low, it is large and significant enough for a qualitative study. HEAIDS (2010: xxi) recommends the taking up for what it calls the “no new infections” strategy at university campuses all over South Africa. I argue that white and Indian students *should* be part of such a strategy. At least, there is no basis for excluding them. This study is therefore motivated by the gaps in knowledge existing about the knowledge, attitudes and perceptions of South African whites and Indians to HIV prevention.

As earlier noted, perceptions about HIV infection and prevention can also, controversially, take a racial dimension. This was demonstrated in December 2013 when a woman named Justine Sacco tweeted, just before boarding a plane to South Africa that she would be in danger of getting HIV since she was going to Africa.



Fig. 5. The Controversial Tweet by Justine Sacco (Source: Twitter 2013)

In the same tweet, Sacco then clarified that she was *not in any danger* of getting HIV because she was white. In this tweet, she appeared not only to be associating HIV infection with the black race, but also intimating that whites did not need to act on HIV prevention by virtue of their race. A question arises: how widespread is this attitude that HIV infection and prevention are a problem for (black) Africans? A study of this nature may provide baseline answers.

Knowledge, perception and attitudes of HIV and AIDS “are important precursors of behavioural responses to the disease” (Shisana *et al* 2005: 86). Knowledge, for instance, is important because it “allows for appropriate actions to be taken in relation to prevention, among other aspects” (Shisana *et al* 2009: 51).

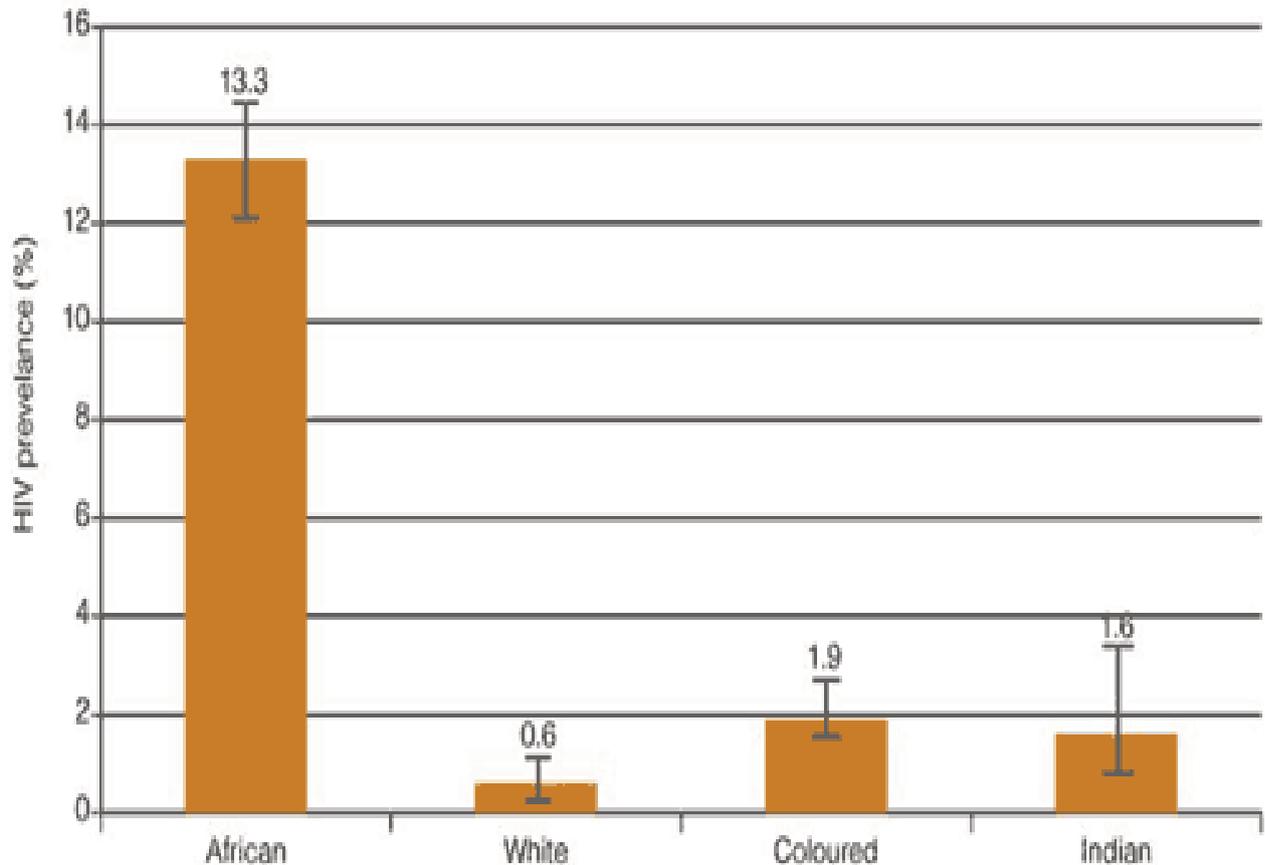


Fig 6. HIV prevalence in South Africa by race (HSRC 2005)

It is possible to deduce from the graph (Fig 6) that there is a plausible link between figures that show low prevalence (Fig 6) and the perception of zero risk (Fig 5). It is not difficult to see why one would make the leap from the figures and statistics (Fig. 6) to a hardened perception (Fig 5). Nevertheless, such a deductive leap flies in the face of the fact that 0.6 prevalence is still prevalence. More importantly, such a low prevalence may and could rise. The HEAIDS study (2010: xxi) warns that “low

prevalence institutions” are at risk of eroding the “no new infections” goal due to “perceptions of low HIV-risk”.

The gaps in research have been hinted in at least one study. The report “Public Attitudes in Contemporary South Africa” (HSRC 2002: 88) asked a question about the perceived risk of South Africans getting HIV. The researchers wanted to know if Africans, Indians, coloureds and whites thought “people like themselves” could get HIV and AIDS. Results indicated that 73.3 % of whites showed significantly less perception risk compared to coloureds (52.3%), Africans (46.1%) and Indians (52%), (HSRC 2002: 85). Whites, of all the demographics represented, ‘showed the least concern’ about HIV, at 73.3% (HSRC 2002: 75). Ironically, whites had the highest percentage of (95.2%) in terms of knowledge of HIV symptoms, transmission and prevention, followed by coloureds (88.4%), Indians (85.3%) and Africans (82, 9%). From the above, it can be surmised that high levels of knowledge on HIV symptoms, transmission and prevention do not translate to improved perceptions of risk. One may know a lot about HIV but still not connect it to themselves. This suggests that the nature of such knowledge is abstract. A study by Sakarombe (2012) concluded that “the perception that white male students are not risk of HIV is relatively widespread while, by extension, the perception that strategies such as MMC are meant for black men (since HIV/AIDS “is a black issue”) is generally held, probably unconsciously” (Sakarombe 2012: 24).

The HSRC (2002) study further suggested that race was a significant variable, along with others such as age and living standard measurements (LSM). In this regard, the study recommended the need for additional studies to explore how “gender and racial identities” shape and impact attitudes on HIV (HSRC 2002: 89). This angle, the report argued, would “offer even greater insight into how to develop new and useful programmes” to more effectively combat HIV (HSRC 2002: 89). The HSRC report is important for this study for two reasons. Firstly, it recommends the need to identify and study gender, social and racial identities, instead of ignoring them. To an extent, this is the rationale that this study has applied. Secondly, the HSRC study helps demonstrate that the perception that HIV is a disease restricted to a certain demographic grouping is a real one. This current study finds in the HSRC study an important point of departure.

Acceptability of medical male circumcision (MMC) in South Africa is reported to be high (Peltzer and Mlambo 2012). However, existing literature reviews strongly suggest that this high acceptability has often been measured predominantly amongst black males (Peltzer and Mlambo 2012; Nexus 2014; Shisana *et al* 2008). The attitudes, perceptions and knowledge of MMC from other South African population demographics such as Whites and Indians are not known. This study therefore intends to invert the general trend of exclusively asking black males about MMC. The study will ask Whites and Indians³ about their attitudes, perceptions and knowledge of MMC. The reason for doing this is to find out what these generally under-researched groups think about HIV prevention in general and MMC in particular. Such exploratory and baseline data would help improve our understanding of how all the composite segments of South Africa's society (and not just blacks) perceive HIV prevention strategies. Such data not only makes for potentially complex and richer knowledge of the phenomenon of HIV prevention, but is also useful for the design of future public health communication strategies. The study's point of departure is that MMC research in South Africa has been conducted using a complex set of variables that include gender and age, even ethnicity. Not once, however, has MMC research (Nexus 2014) been based on race.

Research Aims and Objectives

HIV prevention is a major focus of health communication strategies, interventions and initiatives in South Africa. MMC, not surprisingly, is one of the prevention strategies targeted by public health communication (cf. Brothers for Life campaign). At the beginning of 2013, the University of Kwa-Zulu Natal AIDS Programme initiated a campaign to advocate for the provision of MMC facilities to the entire University community. To this end, it put in place a campus-wide MMC campaign beginning in April 2013. The existence and roll-out of this campaign is sufficient proof that MMC is considered integral to the campaign to reduce HIV and AIDS transmission within the general university community. The kind of qualitative data that this study intends to mine would be beneficial to the roll-out of the UKZN MMC campaign as it draws attention to the target community's knowledge, attitudes and perceptions towards

³ Coloureds were excluded because they were considered statistically insignificant (see Chapter 4 for a detailed breakdown of student populations at Howard College).

MMC. Such baseline data, however, exists only in the case of what black students think and know about MMC (Naidoo 2011). The knowledge, attitudes and perceptions towards MMC amongst white and Indian male students are non-existent. This research aims to fill this gap.

By establishing the level of MMC knowledge, perceptions and attitudes of white and Indian male students, the researcher seeks to address the lack of qualitative, baseline and exploratory data on this topic. Research of this nature is intended to assist interventions such as the UKZN's MMC Campaign of 2013 to target its health communication methods about MMC in ways that appreciate, reflect, modify and improve the health beliefs of each of the three main demographics: Blacks, Indians and Whites.

Research Questions

1. What do white and Indian male UKZN students know about MMC?
2. How do white and Indian male students perceive MMC?
3. What is the attitude of white and Indian male students to MMC?

Limitations

Firstly, the lack of prior studies on this topic is a limitation. The identification of blacks as belonging to a "high HIV prevalence" demography has made it more convenient for researchers in South Africa (and other locations in Africa) to limit their samples to Africans. This has resulted in a Nexus search returning no results for MMC studies that focus on whites or Indians. While a few studies, such as the HESA (2008) and HEAIDS (2010) studies, have included race as a significant variable in questionnaires, the reporting of the results has only described what the findings say for "Africans" and "Others" (cf. HESA 2008: 29). In any case, such studies are not specifically about medical male circumcision. This limitation, however, is an important opportunity for this study to possibly draw the outlines of a new research agenda in HIV prevention and to describe the necessity for further research.

Secondly, time is a logistical problem as this project is not a longitudinal study carried out for purposes of assessing knowledge, attitudes and perceptions over a

period of time and how and if they change. This limits the generalisability of the findings to 2013-14, when the data was collected and analysed. Such a limitation, however, is not detrimental to the study because the research questions that the study addresses are not of a continuous nature. Rather, they necessarily aim at eliciting “snapshots” of data that fit within a specific framework and scope. The attempt to generate data about the evolution or non-evolution of knowledge, perceptions and attitudes of white and Indian students towards MMC over time falls outside the scope of this study. The limited scope of the study is also manageable in the context of a one-person, low-cost research.

Thirdly, response rates from whites and Indians in HIV studies in South Africa “have been disappointingly low” (Nelson Mandela Foundation/HSRC 2002: 36, 41; HSRC 2005, 2008). In relation to HIV studies, whites and Indians are what would be called “hard-to-get” or “non-contact” respondents (Nelson Mandela Foundation/HSRC 2002: 40, 50). In the Nelson Mandela Foundation/HSRC study, for instance, 32% of white and 17% of Indians households refused to be interviewed or be tested, compared to 9% African. There is an expectation, therefore, that data collection may be attended by difficulties related to non-response or to a small sample size. Thankfully, studies such as the HESA (2008) and HEAIDS (2010) study report that – in contrast to national household surveys – white and Indian students in the campus setting are not as “hard-to-get” or non-responsive as whites and Indians at home. This fact should hopefully minimise this limitation.

Finally, this study deals mainly with male students and, given the nature that the research is sensitive and personal in nature, it is expected that some male students might be reluctant to participate, particularly since the interviewer is a female researcher.

Structure of the Dissertation

Chapter One provides an overview of what this study is about, outlining broad and key questions to be addressed.

Chapter Two is the literature review chapter. It reviews related studies on medical male circumcision as i) an HIV prevention procedure and ii) as a focus for public health communication initiatives targeted at knowledge, attitudes and perceptions.

Chapter Three is the theoretical chapter. It discusses and interrogates the two main theories – the social ecology and health belief models – that inform this study.

Chapter Four is the methodology chapter which describes the research paradigm within which this study is located, the research design that is employed, its suitability for this study, the steps taken to collect data and data analysis. Research techniques and ethical considerations are also taken into account.

Chapter Five is the data analysis chapter. In this chapter data from the structured open ended questionnaires and semi-structured interviews is analysed and findings drawn. This chapter examines the data in direct response to the research questions and as framed by theory.

Chapter Six outlines the findings and conclusions of the study. A brief summary of the key findings of the study is given.

CHAPTER 2

LITERATURE REVIEW

Introduction

The aim of this chapter is to assess, firstly, what has been written about medical male circumcision (MMC) and, secondly, to explore the knowledge, attitudes and perceptions of MMC as an HIV prevention procedure by white and Indian male students at the University of KwaZulu Natal's Howard College. The purpose of such an assessment is to ensure that the current study is adequately grounded in previous scholarship. There are arguments for and against MMC (Alanis and Lucidi 2004). The controversies touch on areas of "health benefits and risks of the procedure, ethical issues, legal considerations and human rights principles to the practice" (Alanis and Lucidi 2004: 379-95). To show the extent of current debates, the chapter will divide literature according to schools of thought that are in favour of and those that are against MMC. A third school advocates a "middle ground". The chapter will round off with an examination of relevant literature on attitudes, knowledge and perceptions of MMC.

History of Male Circumcision

The term circumcision comes from the Latin word "circumcidere", which means "to cut around". The term refers to the removal of the foreskin from the penile organ. Doyle (2005) identifies four different types of circumcision. These are as follows: complete removal of foreskin (prepuce) leading to the exposing of the glans; snipping the frenum but leaving the foreskin intact; cutting off part of the foreskin and leaving a remnant of one or two lateral flaps of loose skin; and, finally, "sub-incision". About 30% males are circumcised globally (Wilcken, Keil and Dick 2010). In fact, male circumcision is "arguably the most widely practiced surgical procedure in the world", with rates ranging from 3% to 4% in the UK and Scandinavia to 77% in the United States (Doyle 2005: 279).

Male circumcision, however, is by no means a new practice. Doyle (2005) suggests that circumcision is arguably the oldest surgical procedure of all. Evidence exists that

shows that people have practiced MC throughout history (Cichocki 2008; Alanis and Lucidi 2004). South Sea Islanders, Australian Aborigines, Sumatrans, Incas, Mayans, Aztecs and Ancient Egyptians, among others, practiced circumcision in ancient times (Doyle 2005). Egyptian mummies from as early as 2300 BCE, for example, bear marks that appear to suggest circumcision, while wall paintings in Egypt show that this practice went back several thousand years earlier (Mhangara 2012). Recent archaeological, anthropological and DNA data also supports the view that male circumcision is of ancient origin (Doyle 2005).

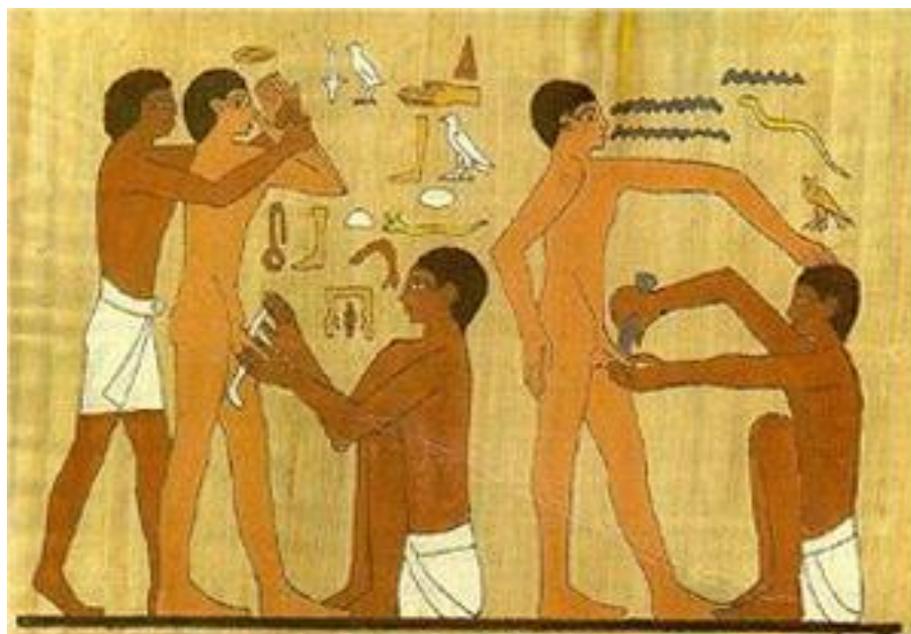


Fig 7. Drawing of a wall painting from Ankhmahor, Saqqarah, Egypt (2345-2182 BCE) showing adult circumcision. (Source: Doyle 2005)

In contemporary times, most men who are circumcised do so for religious reasons (Wilcken, Keil and Dick 2010; Rizvi *et al* 1999; Mhangara 2012). These include Jews and Muslims. For Muslims, circumcision is considered to be *Sunnah* – a reference to a practice taught directly by Prophet Muhammad. Jewish males are circumcised because of the belief that a covenant was made between Abraham and God (Rizvi *et al* 1999; Doyle 2005; Mhangara 2012). The source of this belief has been traced to Genesis 17 in the Old Testament. The verse states that, “circumcision is a covenant with God; all boys should be circumcised on the eighth day of life”. Religions such as

Christianity, Hinduism and Buddhism, on the other hand, tend to have neutral attitude towards circumcision (Rizvi *et al* 1999).

In Africa circumcision is done, among other things, for cultural and ritual reasons (Marck 1997; Doyle 2005; Aggleton 2007; Wilcken, Keil and Dick 2010). Circumcision is carried out for ritual purposes as a rite of passage necessary for the achievement of manhood. Not all groups in Africa practice circumcision, however. In fact, those who do circumcise do not do so in the same way or at the same rate. For instance, prevalence of circumcision in Uganda, South Africa and Zimbabwe is 20%, but over 80% in Kenya (Drain *et al* 2006). Studies suggest that male circumcision “was an ancient practice amongst the Bantu and those non-circumcising Bantu groups has abandoned the practice” (Marck 1997: 356).

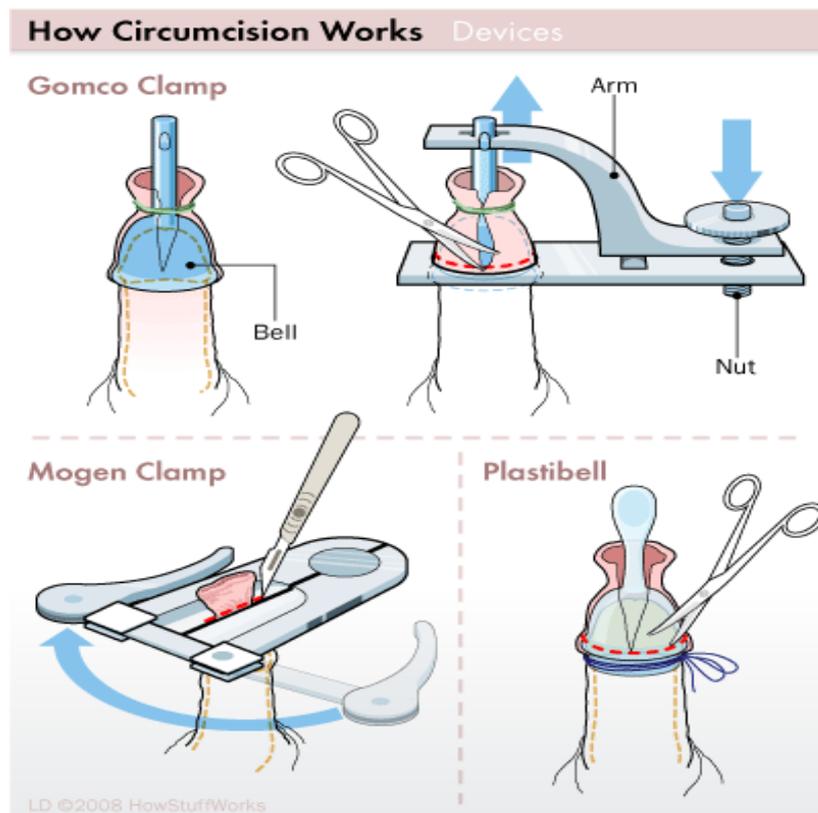


Fig. 8. Three examples of medical circumcision devices: the Gomco Clamp, Mogen Clamp, and Plastibell (Source: Scheve, 2009)

Medical Male Circumcision

Medical male circumcision (MMC) was recommended as an HIV prevention procedure by WHO/UNAIDS in 2007 (WHO/UNAIDS 2010). This recommendation was determined by results of three randomised controlled trials carried out in Kenya, Uganda and South Africa in 2004. These trials showed evidence that MMC reduces the risk of HIV infection through heterosexual transmission by approximately sixty per cent (Auvert *et al* 2005; WHO/UNAIDS 2010; Bailey *et al* 2007; McGreal *et al* 2007; Gray *et al* 2007; Siegfried *et al* 2009; Wamai *et al* 2011; Mathew 2012). In other words, findings indicated that circumcised men were approximately sixty percent less likely to acquire HIV compared to uncircumcised men. These findings were evidenced in initial trials of three thousand men aged between 18 and 24 who were enrolled into the trial at Orange Farm in South Africa (Auvert *et al* 2005).

The second Random Controlled Trials (RCT) in Uganda's Rakai District studied four thousand nine hundred and ninety-six men aged between 15 and 49. Here, circumcision managed to reduce risk of infection by approximately 51 percent (Gray *et al* 2007). Finally, HIV infection was observed to have been reduced by approximately 59 percent among those who had been circumcised in Kisumu, Kenya, in a group of two thousand seven hundred eighty-four men aged between 18 and 24 (Bailey *et al* 2007). A follow-up study is reported to have found a sustained protective effect over a period of 42 months. This meant that the men's chances of becoming infected with HIV were reduced by 64 percent (Bailey *et al* 2008). Notably, the World Health Organisation (WHO) continuously stresses – despite these optimistic results – that MMC is not a 'magic bullet'. That is, MMC should not replace any of the established methods of HIV prevention (WHO 2007, 2008, 2010, 2012, 2013). MMC does not provide complete protection against HIV; rather, it only reduces chances of acquiring the virus by sixty (60) percent (MacLeod, Edwards and Bouchier 2007, Bailey *et al* 2010, Mathew 2012, WHO/UNAIDS 2010; 2012 and 2013).



Fig. 9. Top: The ShangRing (collar clamp) and bottom: the PrePex (elastic collar compression) device (Source: WHO 2013: 12).⁴

⁴ The ShangRing is described as “a collar clamp circumcision type of device” and consists of “two concentric plastic rings that sandwich the foreskin of the penis” and initiates “a rapid, tight compression of the foreskin between the hard surfaces to achieve haemostasis”. The PrePex, on the other hand, is “an elastic collar compression type of device” that consists of “an inner ring placed under the foreskin and an elastic O-ring that is aligned and released over the groove of the inner ring using an applicator”. It works by restricting blood flow to the foreskin through “compression of the elastic ring on the inner ring, resulting in ischemia and necrosis of the foreskin” (WHO 2013: 12).

http://www.malecircumcision.org/documents/WHO_MC%20TAG_Jan13%20Mt%20Rpt.pdf

Existing research, therefore, substantively concludes that MMC provides partial protection of males acquiring the HIV infection (WHO 2007, 2009, 2012; MacLeod, Edwards and Bouchier 2007). According to Bailey (2010) men “should not feel totally protected” but instead must continue to exercise safe sexual behaviour and use condoms alongside other prevention methods when having sex. In fact, condoms are the first choice for preventing the sexual transmission of HIV (Bailey *et al* 2010). The consistent and correct use of condoms has proved to be optimally effective in preventing the transmission of HIV through sexual intercourse. Circumcision and condom use can therefore make an effective combination of prevention methods of HIV transmission (MacLeod, Edwards and Bouchier 2007, Bailey *et al* 2010, WHO 2010, 2012; Mathew 2012). This constitutes “combination prevention”. It could be plausibly disputed, however, that if one has been correctly and consistently using a condom, there is no real point in getting circumcised for HIV prevention. Though a condom can be used effectively on its own, MMC cannot.

Arguments in Favour of Medical Male Circumcision

Nearly fifty epidemiological studies have been carried out to investigate the link thought to exist between HIV and medical male circumcision (Szabo & Short 2000). Research and debates in favour of medical male circumcision have tended to emphasise the link between not-being-circumcised and HIV infection. Interest in the link between “uncircumcision” and HIV infection has a history as long as HIV itself. For instance, Halperin and Bailey (1999) examined ten years of research linking the fact of not being circumcised with HIV infection. The state of being “uncircumcised” was regarded as a factor in increased transmission of HIV from as early as 1987 (Cameron *et al* 1988, 1989). Others such as Bongaarts *et al* (1989) and Moses *et al* (1990) carried out research that appeared to show a clear link between high HIV prevalence and low rates of male circumcision. Since the outbreak of HIV in the 1980s, researchers have continuously explored the relationship between MMC and a lowered risk of HIV infection (Rennie, Muula & Westreich 2007).

Fink (1986) in a paper in the *New England Journal of Medicine* speculated that a definite relationship existed between MMC and low HIV prevalence. Approximately 40 observational epidemiology studies have since reported significant associations

between MMC and HIV-1 infection (Bailey, Plummer & Moses 2001; Bongaarts, Reining, Way & Conant 1989; Moses *et al* 1990). Two meta-analyses of observational studies published in 1999 and 2000 reported a reduced risk of HIV infection among circumcised men, as high as half that of uncircumcised men (Van Howe 1999; Weiss *et al* 2000). Following the meta-analysis by Weiss *et al* (2000), Bailey *et al* (2001) noted that in Sub-Saharan Africa HIV is transmitted through heterosexual intercourse in about 90% of the cases.

A significant conclusion was that in Sub-Saharan countries where MMC prevalence was lower than 20%, HIV prevalence was significantly higher than in countries where MMC prevalence was more than 80%. Doyle (2005) noted at least 27 papers at the 11th International Conference on AIDS in Vancouver in 2002 probing the real or assumed link between HIV and medical male circumcision. Aggleton (2007) tracked seven years, starting from 2000, of “growing advocacy” towards regarding male circumcision as an HIV prevention procedure. He cites the 2007 International Aids Society conference on HIV Pathogenesis, Treatment and Prevention held in Sidney as promoting “Biomedical Prevention”, a category into which he fits “current advocacy for male circumcision”.

Pro-Circumcision School / For-Circumcision Camp

The foremost proponents of the pro-circumcision school are WHO and UNAIDS. WHO and UNAIDS (2010, 2012, 2013) have continuously stated that medical male circumcision is an efficacious intervention for HIV prevention that should be carried out by trained medical professionals under conditions of informed consent. Their collective position is stated clearly at the “Male Circumcision Clearinghouse” (MCC 2014).⁵ This is a “collaborative project of WHO, UNAIDS, AVAC, FHI 360 and many other stakeholders”.⁶ The Clearinghouse states that “Conclusive research shows that medical male circumcision substantially reduces men’s risk of acquiring HIV infection through vaginal sex”. The Clearinghouse further states that “the efficacy of male circumcision in reducing female-to-male HIV transmission has been proven beyond reasonable doubt” and that the three randomised trials provided “definitive evidence” of this. The words that stand out are “conclusive research”, “substantially reduces”,

⁵ www.malecircumcision.org

⁶ *Ibid*

“beyond reasonable doubt” and “definitive evidence”⁷. These terms suggest that there are no doubts anymore about MMC’s efficaciousness. The terms further suggest that adequate research and testing have been more or less been completed. This belief characterises the position of the for-circumcision camp. This position of assurance, as we will see in the section below, is however contested by those in the anti-circumcision camp.

Research in the pro-medical circumcision school has tended to point to biological and epidemiological evidence that shows that the presence of the foreskin increases the “biological susceptibility” of men to HIV (Morris 2007; Weiss 2007). Specifically, as “the increased presence of inflammatory conditions, which results in mucosal discontinuity and/or increased local lymphocyte recruitment, increases the chances of HIV acquisition” (MacLeod, Edwards & Bouchier 2007: 65). Susceptibility is further compounded by the occurrence of “scratches”, “tears” and “abrasions” during sexual intercourse that provides doorways for the virus. Furthermore, the micro-environment in the preputial sac between the “unrestricted foreskin” and the penile glands is believed to be conducive to the survival of the HIV virus (Szabo & Short 2000; MacLeod, Edwards & Bouchier 2007; Morris 2007; Weiss 2007). The conclusion is that MMC reduces the risk of HIV infection due to the fact that the removal of the foreskin reduces the ability of HIV to penetrate the skin of the penis (Patterson et al 2002; Szabo & Short 2000; MacLeod, Edwards & Bouchier 2007; Morris 2007).

Research in the for-medical-circumcision school has suggested the existence of major differences in HIV incidence in certain African and Asian countries that seemed to be associated with levels of MC in the community (Laporte & Aggleton 1998; Leclerc-Madlala 2004; Weiss et al 2000). Weiss et al (2000), for instance, state that:

Male circumcision is associated with a significantly reduced risk of HIV infection among men in sub-Saharan Africa, particularly those at high risk of HIV. These results suggest that consideration should be given to the acceptability and feasibility of providing safe services for male circumcision as an additional HIV prevention strategy in areas of Africa where men are not traditionally circumcised. (Weiss et al 2000: 2631).

⁷ ibid

In regions where circumcision is frequent, HIV prevalence tends to be lower; on the other hand, areas of higher HIV prevalence overlapped with region where male circumcision is not commonly practiced (NIAD/NH 2006). Countries in West Africa where male circumcision is common have HIV prevalence levels well below those of countries in Eastern and Southern Africa. This is despite the presence of similar risk factors. For example, according to UNAIDS (2007, 2008, 2012 & 2013) in 2005, Benin had a HIV prevalence of 1.8% while Cameroon had 5.4%. In Southern and Eastern African countries with the highest HIV prevalence, male circumcision rates are generally under 20%. Most countries in Southern Africa have low levels of male circumcision and coincidentally have the highest burden of HIV/AIDS in the world (WHO/UNAIDS 2010, 2013, 2014). South Africa is one of these countries. The public health dimension of the pro-MMC camp has tended to emphasise high MMC acceptability trends in countries like South Africa (Milford et al 2012; Morris 2007; Westercamp & Bailey 2007; Scott, Weiss & Viljoen 2005).

Anti-Circumcision Camp

Some researchers and organisations have opposed MMC despite the best and well-funded efforts of WHO, UNAIDS, PEPFAR, Global Fund for HIV and other major organisations to scale up the adoption of MMC and to sensitise whole countries over the use of MMC as an HIV prevention procedure. A varied collection of anti-circumcision movements have risen up and intensified opposition to the general pro-circumcision drive (Kirsten 2005). These oppositional forces do not generally offer solutions except opposing medical circumcision and highlighting that it must be stopped. Some of the organisations, such as National Organization to Halt the Abuse and Routine Mutilation of Males (NOHARRM), the National Organization of Circumcision Information Resource Centres (NOCIRC) and DOC (Doctors Opposing Circumcision), appear to have serious, sound concerns. Others such as the Brothers United for Future Foreskin (BUFF) and Recovery of a Penis (RECAP) seem to have less serious goals.

Scholars in the oppositional camp argue that the health benefits of MMC are questionable and may cause more harm than good (Van Howe 2011, Ncayiyana 2011, Van Howe and Storms 2011). Not all medical professionals seem to agree about the benefits of MMC, for example. In March 1999, the American Academy of

Paediatrics' (AAP) produced a policy statement that declined to recommend male circumcision for infants to be done routinely. Rather, the procedure could only be performed only when medically indicated. The same opinion was made by other medical professional bodies such as the Canadian Paediatrics' Society in 1996, by the American Medical Association (AMA) 2000 and by the American Academy of Family Physicians in 2002.



Fig. 10. A typical anti-circumcision protest (Source: Elvert Barnes 2012)

Others such as Van Howe (1999) and Garenne (2006), in contrast to Bailey who had argued that in Sub-Saharan countries where MMC prevalence was lower than 20% HIV prevalence was significantly higher than in countries where MMC prevalence was more than 80%, concluded that MMC had no correlation with HIV prevalence. Van Howe argued that:

Thirty-five articles and a number of abstracts have been published in the medical literature looking at the relationship between male circumcision and HIV infection. Study designs have included geographical analysis, studies of high-risk patients, partner studies and random population surveys. Most of the studies have been conducted in Africa. A meta-analysis was performed on the 29 published articles where data were available. When the raw data are combined, a man with a circumcised penis is at greater risk of acquiring and transmitting HIV than a man with a non-circumcised penis (odds ratio (OR) = 1.06, 95% confidence interval (CI) =1.01-1.12). Based on the studies published to date, recommending routine circumcision as a prophylactic measure to prevent HIV infection in Africa, or elsewhere, is scientifically unfounded (Van Howe 1999: 8).

Van Howe's study did not just focus on male risk alone but also included females. His position was that circumcised men were significantly more likely to be infected by HIV compared to uncircumcised men. This was the complete opposite of the pro-circumcision school. Van Howe's study, however, was criticised by O'Farrell and Egger (2000) for what seemed to be statistical shortcomings, thus disputing his findings. Interestingly, O'Farrell and Egger's (2000) and Weiss et al's (2000) meta-analysis also had its own limitations such as the failure to control for confounding factors such as religion, ethnicity and other socio-economic factors that could have influenced the correlation between MMC and HIV prevalence.

Other researchers such as Laurence Greene et al (2010), Marie Fox and Michael Thomson (2010), Wawer et al (2009), Jozkowski et al (2010), McDaid, Weiss and Hart (2010) and Wei et al (2010) have cast doubts on the efficacy of MMC. One argument that these scholars have made is that the three randomised clinical trials held in Kenya, South Africa and Uganda do not provide sufficient evidence for the effectiveness of circumcision as an HIV prevention procedure and that it is premature to endorse circumcision as an efficacious method for combating the spread of HIV (Green *et al* 2010). Furthermore, it is suggested that medical ethics and human rights have potentially been violated in the scaling up MMC programmes in Africa (Fox & Thomson 2010; DeLaet 2009). Wawer *et al* (2009) were able to demonstrate, in their study in Uganda, that MMC does not protect women. Jozkowski *et al* (2010), McDaid, Weiss and Hart (2010) and Wei *et al* (2010) found, in their surveys of men who have sex with men (MSM), that circumcision has little or no effect in reducing the risk of HIV transmission among MSM. One significant conclusion that some of these scholars make is that sponsoring organisations such

as WHO and UNAIDS, buttressed by the media, have tended to exaggerate the protective effect of circumcision.

Social History of Male Circumcision

Aggleton (2007), who has conducted what he calls a social history of male circumcision, argues that male circumcision ought to be seen as a practice that “has its roots deep in the structure of society” (Aggleton 2007: 15). He argues that even when carried out in medical settings, male circumcision is not simply a “technical act” but a practice which carries with it a “whole host of social meanings” (Aggleton 2007: 15). That is, the public health argument about preventing infection also has a “social character” (Aggleton 2007: 15). Darby (2003), David Gollaher (2000), Rene Spitz (1952), RM Hare (1962), and Mabel Huschka (1938) have suggested that circumcision in the West could be traced, at least in part, to traditional prohibition of and phobia for childhood masturbation. Gollaher (2000), in fact, calls circumcision the world’s most controversial surgery.

Aggleton’s (2007) conclusion is that medical male circumcision is not just a mere snip. Rather, he compares it to female genital mutilation. He makes this comparison in order to argue that medical male circumcision is “nearly always a strongly political act, enacted upon others by those with power, in the broader interests of a public good but with profound individual and social consequences” (2007: 18). Thus, apart from seeing MMC as a “bio-medical” solution, “there are other forces at work”. Hence:

Some of these have their origins in the needs of national authorities and community groups to find answers to the seemingly relentless growth of HIV. Others have their origins in the willingness of these same groups to embrace solutions which attract funds – in this case from USAID and the Bill and Melinda Gates Foundation – major funders of HIV prevention which have publicly endorsed male circumcision as an HIV prevention strategy. Other donors have been more cautious. Perhaps more deeply seated, sources of impetus have their origins in the “joined up” approach to HIV prevention that male circumcision appears to offer. Not only does circumcision appear to offer a modern day public health solution, but it also carries with it a moral authority that seems difficult to deny (Aggleton 2007: 18).

Aggleton can be seen as criticising HIV organisations which treat male circumcision as a mere medical, scientific procedure for HIV prevention without looking at its

wider social, cultural and individual contexts and consequences. Aggleton (2007: 20) argues that advocates of medical male circumcision are impatient to “roll-out” this procedure without an adequate “evidence base for the acceptability and prophylactic effectiveness of male circumcision”. The effectiveness of MMC, in Aggleton’s view, “remains to be tested through scale-up” (2007: 20). But instead of waiting for this testing through scale-up, the advocates are taking evidence from recent trials and trumpeting it as “truth” without further consideration for “scientific scrutiny”. Aggleton’s position that critics of MMC are being “silenced”, however, can be seen by some as conspiracy theory, paranoia, denialism or dissident thinking.

Arguments that Advocate a Middle Ground

A third school can be categorised as taking the middle-ground. This school of thought is more measured in its adoption and criticism of MMC. Unlike those who are completely for MMC, it recognises the risks that MMC carries and strives to improve the procedure through continuous testing and scaling up, and through scientific and policy checks and balances (Mills & Siegfried 2006). On the other hand, unlike those who are completely against MMC, this middle-ground school recommends cautious adoption of MMC instead of rejection. The position taken by O’Farrell and Egger is typical of this middle-of-the-road approach:

The results from this re-analysis thus support the contention that medical male circumcision may offer protection against HIV infection, particularly in high-risk groups where genital ulcers and other STDs “drive” the HIV epidemic. A systematic review is required to clarify this issue. Such a review should be based on an extensive search for relevant studies, published and unpublished, and should include a careful assessment of the design and methodological quality of studies. Much emphasis should be given to the exploration of possible sources of heterogeneity. In view of the continued high prevalence and incidence of HIV in many countries in sub-Saharan Africa, the question of whether circumcision could contribute to prevent infections is of great importance, and a sound systematic review of the available evidence should be performed without delay (O’Farrell & Egger 2000:137).

O’Farrell and Egger (2000) have done a “re-analysis” of the evidence of Van Howe and Weiss et al (2000). Their conclusion does not reject MMC but it also does not blindly endorse it. Rather, it calls for more exhaustive research with more rigour to be carried out.

Some middle-of-ground researchers, instead of blindly advocating the uptake of MMC by any means necessary, appear to take seriously the fact that MMC does in fact pose significant health risks (Largade *et al* 2009; Muula 2007; Rennie *et al* 2007). That is, they treat MMC like any medical procedure that can go wrong and that is not 100% effective or safe. For instance, surgery can lead to “excessive bleeding, haematoma and other complications in initial months after the procedure” (Auvert *et al* 2003: 315). In addition adverse reactions to the anaesthetic used during the circumcision may occur. However, trained personnel and correct tools and aseptic conditions can greatly reduce the incidence of post-operative risks (Auvert *et al* 2003: 315-327).

A study that investigated the “high rate of adverse events following circumcision of young male adults with the Tara Klamp” was conducted by Largade *et al* (2009). Nosihle Shelembe (2012)⁸, in a report titled “Call for circumcision device probe”, outlines how the Treatment Action Campaign (TAC) – despite being pro-circumcision – asked the “Public Protector to investigate the procurement and ongoing use of a device used to perform medical male circumcisions in KwaZulu-Natal (Shelembe 2012). The device in question is the Tara Klamp. The TAC described the Tara Klamp as “a dangerous device” that had “specifically not been approved by the World Health Organisation because it failed in the only clinical trial conducted to test its safety (Shelembe 2012)

Many recent news reports in the South African media have focussed on deaths during ritual circumcision of boys.⁹ The nature of the coverage has seemed to associate traditional male circumcision with backwardness and lack of hygiene, and medical male circumcision with modernity, efficiency and sanitary standards. Some commentators have even gone on to suggest that initiation schools be closed and

⁸ Shelembe 2012 ‘Call for circumcision probe’ <http://www.iol.co.za/news/south-africa/kwazulu-natal/call-for-circumcision-device-probe-1.1368725#.UeaLPHkaLIV>

⁹ Alphapharm (2013-05-07) ‘The Difference Between Traditional Male Circumcision and Medical Male Circumcision’ <http://www.alphapharm.co.za/the-difference-between-traditional-male-circumcision-and-medical-male-circumcision/>

the “barbaric” practice of traditional circumcision be banned. Wilcken, Keil and Dick (2010), however, dispute the view that dismisses traditional circumcision outright. Rather, they see traditional providers as an important source of circumcision. These traditional practitioners will not be easily replaced by MMC done in clinical environments. Wilcken, Keil and Dick (2010) suggest that the reasons traditional circumcision practitioners will be around for a long time are to do with culture and health service capacity.

Complications, sometimes leading to deaths, have been reported in traditional circumcision (Sidley 1996; Ncayiyana 2003). Some of the complications include removal of too much (or too little) skin, bleeding and infection of wounds. Wilcken, Keil and Dick (2010) suggest that the problem is not necessarily circumcision per se, but likely poor post-circumcision wound care. They cite the statistic that 93% of the 45 subjects they studied did not sustain penile injury from the circumcision procedure itself but from what happened afterwards. A study by Bailey, Egesah and Rosenberg (2008) showed that infection was equally likely to happen in traditional as well as medical settings. In the study, Bailey, Egesah and Rosenberg (2008) directly observed complications in 11 out of 12 boys who were medically circumcised compared to 10 out of 12 boys circumcised using traditional means. Hence it is not a question of rejecting or dismissing one procedure outright without considering its value but instead taking a cautious approach that does not blindly criticise MMC without recognising its benefits or blindly advocate for its uptake without checks and balances. Public health communication for MMC in South Africa, characterised by awareness campaigns by organisations such as Brother-for-Life and on university campuses such as the current UKZN MMC campaign being examined in this study, generally conforms to this middling category.

Knowledge, Attitudes and Perceptions to HIV Prevention

Significant research has been carried out on the knowledge, perceptions and attitudes of black South Africans to HIV and AIDS (Shisana *et al* 2008; Kincaid & Parker 2008; Saib & Samuels 2008; Sibanda 2010). In comparison, whites and Indians are under-researched on this subject. The gaps in existing knowledge, perceptions and attitudes of South African whites and Indians to HIV prevention have motivated this study’s specific focus on knowledge, attitudes and perception.

Knowledge, perception and attitudes of HIV AIDS “are important precursors of behavioural responses to the disease” (Shisana *et al* 2005: 86). Knowledge, for instance, is an important factor in the sense that having an awareness of various aspects of HIV/AIDS “allows for appropriate actions to be taken in relation to prevention, among other aspects” (Shisana *et al* 2009: 51).

The report *Public Attitudes in Contemporary South Africa* (HSRC 2002) asks a question about the perceived risk of getting HIV to all demographics in South Africa. The study sought out information on how Africans, Indians, coloureds and whites in South Africa responded to whether they thought “people like themselves could get HIV/AIDS?” (HSRC 2002: 88). Whites (46.1%) showed significantly less perception to risk compared to coloureds (70.3%), Africans (62%) and Indians (50%), (HSRC 2002: 85). Of all the demographics represented whites and Indians, “showed the least concern” about being infected HIV, at 70.3% and 50% respectively (HSRC 2002: 75). Ironically, whites had the highest percentage (95.2%) in terms of knowledge of HIV symptoms, transmission and prevention, followed by coloureds (88.4%), Indians (85.3%) and African (82, 9%). It is clear, however, that they tend to view HIV as less of their problem.

The HSRC study suggests that “race is a significant variable, along with others such as age and LSM” (HSRC 2002:89). The study recommends the need for additional studies to explore how gender and racial identities shape and impacted attitudes on HIV (HSRC 2002). This angle, the report argued, would offer new ways into how to develop new and useful programmes to more efficient to fight HIV. The HSRC report is important for this study for two reasons. Firstly, it recommends the need to study social and racial identities, instead of ignoring them. Secondly, it further demonstrates that the perception that HIV is a disease of a certain group is a real one. This current study finds in the HSRC study an important point of departure.

In a question-and-answer session at the July 2012 School of Applied Human Sciences Postgraduate Conference, Joanne Phyfer, a UKZN student then based at Pietermaritzburg and doing her research on “The Role of Gender in Preventing Safe Sex among White Female Heterosexual university students” reported that some white female students did not practice safe sex because they were not afraid of

catching HIV from their white male counterparts. They would only practice safe sex if they were “doing interracial”. Phyfer’s study suggested that white students know about HIV but “are still not sexually responsible” (Phyfer 2012). They do not fear HIV as long as they stayed in white-white sexual relations. It is possible that they did not feel that the perceived risk of HIV or the perceived benefits of safe sex were adequate to cause them to initiate behaviour change. Phyfer’s study is important because it considers race an important factor in the construction of knowledge, attitudes and perceptions about HIV prevention.

Other South African studies of knowledge, attitudes and perception seem to gloss over race as a variable. Kincaid and Parker for instance, discuss the data from respondents who believed that they were not at risk of catching HIV. It is reported that:

Among the 64% of respondents who believe they are not at risk, almost all gave a rational justification. The answers were unaided, hence they were not a response to a direct question about a specific behaviour: 36% said they were faithful and/or trusted their partner, 14% said that they always used a condom, 14% said that they were abstaining from sex, 4% said they avoided sex with sex workers, and 3% said that they did not share needles. In response to a separate question, 18% said that they used a condom the first time that they had sex. The six responses were combined into a single dichotomous variable referred to below as HIV prevention behaviour (Kincaid and Parker 2008: 7).

It can be noticed from the above quotation that none of Kincaid and Parker’s reported respondents mentioned their race as one of the reasons why they probably felt not at risk. Kincaid & Parker do not cite any respondent who considers race a significant variable in constructing the belief that they are not at risk of catching HIV. This is uncharacteristic, considering that South Africa is considered by some to be a race-obsessed country (Holborn 2010). This study regards race to be an important factor in the formation of attitudes and perceptions to HIV prevention.

Shireen Mukadam (2013), in an article titled “Aids does affect Muslims” considers the question of HIV amongst the Muslim Indian communities of South Africa. Mukadam quotes Ashraf Kagee, Professor and chair of the Psychology department at Stellenbosch University, as stating that HIV exists in the Muslim community – as evidenced in a study that Kagee headed in Cape Town that found a 3% HIV

prevalence in a random sample. Kagee stated that a significant challenge in dealing with HIV amongst the Muslim Indian community was the stigma attached to being HIV-positive. Such stigma caused sufferers not to disclose. Mukadam argues that Indian women like Faghmeeda Miller, the first Muslim woman to disclose her status in 1996, are exceptions to the norm. Organisations such as Positive Muslims, founded in 2000 by Miller, Kayum Ahmed and Farid Essack closed down due in large part to lack of support and stigma attached to disclosure. Mukadam notes that the Muslim Aids Programme (MAP), started in 1997, is still running but, like Positive Muslims, lacks general community support and buy-in. Mukadam indicates that the prevalent stigma is correlated to the view that HIV is not “our” disease and cannot happen to “us”.

Further indication that race is an important variable intertwined with issues of knowledge, attitudes and perceptions of HIV was provided by the infamous case of Justine Sacco’s infamous December 2013 tweet. An important point reflected in Sacco’s tweet may be that just because people do not come out in the open to say that they regard HIV to be a “black disease” does not mean that such an opinion has never crossed their mind or that they do harbour such stereotypical attitudes or thoughts at one point or another. The difference in the Sacco incident is that she “voiced” her attitude where the expected action would have been to remain silent and pretend to have no opinion on the subject of HIV and Africans.



Fig 11. The Controversial Justine Sacco tweet. (Source: Twitter 2013)

Although Sacco later deleted the tweet that caused controversy to the public and then apologised for the controversial message, the incident throws light on unexamined attitudes and perceptions of HIV as “their disease”, as a disease affecting “them” and not “us” and, finally, of HIV as an exclusively a black epidemic. The importance of including race in a study of knowledge, attitudes and perceptions of HIV is underscored by these isolated but nevertheless salient “tips of the iceberg” which seem to point to larger currents and unspoken issues.

Acceptability, Knowledge, Attitudes and Perceptions to MMC

Acceptability of medical male circumcision (MMC) in South Africa and elsewhere is reported to be high (Peltzer & Mlambo 2012; Milford *et al* 2012; Westercamp & Bailey 2007; Scott, Weiss & Viljoen 2005). Existing literature reviews strongly suggest that this high acceptability has often been measured predominantly amongst black males and, to some extent, black females. The attitudes, perceptions and knowledge of MMC from other South African population demographics such as Whites and Indians, for instance, are not known.

Scott, Weiss and Viljoen (2005) studied the “the acceptability of medical male circumcision as an HIV intervention among a rural Zulu population, KwaZulu-Natal, South Africa”. Their research explored the acceptability of medical male circumcision amongst the rural Zulu of Hlabisa and Mtubatuba through a cross-sectional convenience sample of 100 men and 44 women. Two male focus groups were conducted to establish people’s circumcision preferences. Four in-depth interviews were also conducted with service providers assessing the feasibility of promoting circumcision. It was concluded that sixty-eight per cent of women favoured medical male circumcision for their partners and fifty-one per cent of uncircumcised men favoured medical male circumcision for themselves. Fifty per cent men and seventy-three per cent women said that they would circumcise their sons. In this study, Scott, Weiss and Viljoen (2005) found that the main predictors of circumcision preference for men pertained to beliefs about pain and pleasure during sex. For women, on the other hand, the link between medical male circumcision and STI infection was a key indicator for whether or not they preferred MMC. Both men and women saw the fear of pain death as the main barrier to circumcision. A major logistical barrier to MMC was that the technique, at present, can only be carried out by trained medical doctors in hospital settings.

Mattson *et al* (2005) studied the acceptability of medical male circumcision and predictors of circumcision preference among men and women in Nyanza Province of Kenya a traditionally non-circumcising area. The cross-sectional survey of 107 men and 110 women evaluated the attitudes, beliefs and predictors of circumcision preference among men and women. Sixty per cent of uncircumcised men were in favour MMC. Sixty-nine per cent of women who had uncircumcised partners said that they were in favour of MMC for their partners. Also, women with nine or more years of education tended to prefer their partners to be circumcised. This study concluded that men’s preferences of circumcision were linked to the fear of penile cancer, STIs, and HIV. Preferences were also linked to the perception that circumcised men enjoyed sex more. Men who were not in favour of circumcision cited pain and cost. The women in Nyanza, unlike those in the Scott, Weiss and Viljoen (2005), cited pain as a deterrent for mothers to agree to circumcise their sons. Affordability and lessened pain were suggested as factors that could improve perceptions and acceptability of MMC.

Gasasira *et al* (2012) explored the “determinants of circumcision and willingness to be circumcised” by one thousand and ninety-eight Rwandan men from 29 districts between January and March 2010. Like Nyanza in Kenya and KZN in South Africa, Rwanda is a traditionally non-circumcising area. However, like Kenya and South Africa, it has adopted medical male circumcision. The study assessed the knowledge and perception of male circumcision by men as well as established the factors affecting people’s willingness to be circumcised or to have their sons circumcised. The cross-sectional study collected data among men from the 15 to 59 age group using a structured questionnaire. 72% could define MMC, although thirty-seven could not do so. Of the one thousand and ninety-eight participants, 17% of the respondents reported already being circumcised while half were willing to get circumcised. 79% of men said they would accept to have their sons circumcised. For 69% of the respondents, the main determinants for getting circumcised were the perception of its benefits in preventing STIS and HIV. Hygiene was also a motivator for 49%. Interestingly, 32% of men said that they were too old to get circumcised. Younger men (42%), mostly under 19 years of age, were afraid of pain. The conclusion was that adolescents and young adults were more willing to be circumcised than older males. Again, like in the Mattson study, the availability of facilities that reduced pain was seen as important for scale up.

A study conducted by the Third South African National Communication Survey (3rd SANHCS), found that there is an enormous increase in the knowledge that the risk of HIV infection is reduced by MMC as evidenced by 47% of men and women who are now aware that MMC reduces the risk of HIV infection, compared to just 8% in 2009 (3rd SANHCS 2012). There has also been an increase in the prevalence of MMC from 32.7% in 2009 to 48.1% in 2012. During the 2012 campaign, three hundred and fifty thousand (350 000) men got circumcised, of which 64% were medical circumcisions. In addition, close to one million uncircumcised men report that “they definitely intend to get circumcised in the next 12 months” (SANHCS 2012: 4).

Joanne *et al* (2012) carried out a study of “Medical male circumcision and HIV risk: perceptions of women in a higher learning institution in KwaZulu-Natal, South Africa”. Their aim was to explore young women’s perceptions on MMC, with the intention of

developing “clear messages about the limitations of MMC in reducing women’s HIV risk”. They sampled thirty (30) female students from tertiary institutions whose perceptions they studied through four focus groups. Results indicated that women had a “thorough understanding” of the partial efficacy of MMC and that it afforded no direct benefit to women. In fact, most thought that medical male circumcision would put more women at risk of being infected by HIV. The reason given for the perception that MMC increased females’ risk of contracting HIV was that circumcised men would stop practicing safe sex, believing that they were now protected by circumcision. It was feared that condom use would decrease while some men would increase their sexual partners due to circumcision. The conclusion of this study was that there is need to include women in MMC communication strategies in order to emphasise the link between MMC and HIV risk for women.

A cross-sectional survey study was conducted in 2000 with six hundred men and women aged 18 years and above in various geographic and ethnically representative locations throughout Botswana (Shapiro 2001). The survey consisted of a baseline questionnaire followed by an informational session on the perceptions, potential risks and benefits of medical male circumcision. A second set of questions was administered following the informational session. The survey showed that participants had different perceptions towards MMC. For instance, some of the participants stated that, they would not like circumcision for themselves or for their children. Some of these participants were not even aware of the medical benefits of MMC. However, other members’ perceptions were changed after an informational session on the advantages of MMC was conducted (Shapiro 2001).

Another study on perceptions was carried out in South Africa at the University of KwaZulu-Natal utilising nursing and pharmacy students as respondents (Naidoo et al 2011). This study shows that MMC would increase risky sexual behaviours and undermine existing preventive strategies because circumcised men may have the impression that they are protected from contracting HIV (Naidoo *et al* 2011). Bailey *et al* (2010) similarly notes that some studies have established that circumcised men engage in higher risk behaviours as some men would not use condoms anymore after having the MMC procedure.

In a 2010 study carried out in Tanzania, pain was regarded as the main barrier to respondents not wanting to be circumcised, though some believed circumcision would not be effective if it is not perceived as a 'stand-alone clinical procedure' but as one section and should be delivered as part of a recommended package of HIV prevention and reproductive health services (Tanzanian commission for AIDS 2010 Report). Another study on perceptions was conducted in Kwaluseni, Swaziland, with twelve (12) circumcised and uncircumcised men aged 15-42 (Adams *et al* 2012). The data collected during the research pointed out that 'fear of loss of sexual pleasure' was the most important barrier for men to undergo MMC. For instance A 25 year old uncircumcised man said:

I hear them say that it reduces the chances of getting HIV and other disease but I do not think the penis head remains as sensitive as it was before, because it gets dry. The penis rubs against your underwear and even jeans and does this not affect the penis head or hurt it? (25 year old uncircumcised man).

According to Adams *et al* (2012), this finding came out from the first focus group discussion and was constant throughout the entire research.

Wilcken *et al* (2010) carried out a cross-sectional study of awareness of male circumcision among young people and adults in rural Uganda. The assumption underlying this study was that awareness of the protective and preventive nature of MC led to high acceptability of the procedure. The research hence sought to identify factors that determined awareness of male circumcision for HIV prevention. In three rural districts in Uganda 452 participants living there were interviewed in 2008 using a standardised questionnaire to assess socio-demographic parameters, awareness of medical circumcision and beliefs and attitudes to the procedure. It was found that, in adults, awareness increased with increased education. On the other hand, younger age and male gender were further determinants of increased awareness. Interestingly, marital status, religion, district of origin, ethnicity, employment status and circumcision status were not important. The conclusion was that Ugandans with low education, as well as youths and women should be increasingly targeted with information campaigns about the preventive effect of MMC.

A 2004 survey was carried out in a Harare beer hall Zimbabwe, to assess the attitudes and perceptions regarding the potential introduction of medical male circumcision with two hundred randomly selected men (Dube *et al* 2006). Eighty nine men offered various health-related factors associated with circumcision. Twenty three mentioned that medical male circumcision is considered hygienic or smarter than un-circumcised; while sixty-six said that MMC reduces the likelihood of infections, including STIs. Only six mentioned possibilities of MMC being linked to HIV such as male circumcision helps prevent STIs/HIV infection, or that male circumcision can spread HIV through the sharing of blades. This highlights that very few men in this study had knowledge of the protective effect of male circumcision against HIV. All six men did not have knowledge of the protective effect of male circumcision against HIV. This could be one reason why some people would not accept to be circumcised (Fritz *et al* 2000).

Conclusion

Literature on MMC reveals that there are deep divisions on the value of MMC. The mainstream view, however, is that MMC works and that it is necessary for sub-Saharan Africa. This is the view taken by WHO, UNAIDS, PEPFAR, JHHESA, HSRC and other organisations involved in managing the HIV/AIDS industry in Africa. This mainstream view is also the view taken by this study. Literature also reveals that knowledge, attitudes, perceptions about MMC are varied. These factors vary according to country and even within countries. At the same time, there are also a range of striking similarities, such as the view that MMC is painful or that it is effective for preventing HIV. This literature review has set the scene to this particular study in that it shows that a predominant number of studies and monographs have already presented what Africans know and say about medical male circumcision as a preventive procedure. Few studies, however, have used race as a variable to study attitudes towards HIV prevention in general and MMC as an HIV prevention procedure in particular. Whites and Indians, in particular, remain largely under-researched. In this way, this chapter indicates the gaps that exist in researching knowledge, attitudes and perceptions of non-black demographics.

CHAPTER THREE

THEORETICAL FRAMEWORK

Introduction

The purpose of this chapter is to present the theoretical framework of the study. Two concepts, namely “social ecology” and “health belief”, will be introduced, defined and described. This will be done through drawing attention to two specific models, the Social Ecology Model (SEM) and the Health Belief Model (HBM), which respectively underpin the social ecology perspective and the health belief perspective. These two approaches have been preferred because of their appropriateness, simplicity of application and explanatory power. The two theories address the theme of what, how and why knowledge, attitudes and perceptions towards a public health issue such as medical male circumcision are formed. It is assumed at the outset that a subject such as medical circumcision for HIV prevention is likely to reflect, on one hand, a respondent’s internal beliefs more so than external forces such as a campus-wide campaign. On the other hand, attitudes to MMC are likely to also reflect the larger social environment within which white and Indian students move, live and socialise. The chapter shall also address pertinent theoretical aspects of attitude and perception.

Theories and analytic models are intended to guide the search for insight and answers. In this regard, the SEM has been drawn upon in this study in an attempt to understand the social and environmental factors that influence white and Indian male students at the University of KwaZulu-Natal’s Howard College in their attitudes and perceptions about medical male circumcision as an HIV prevention procedure. The health belief model, on the other hand, has been considered appropriate for purposes of explaining and understanding specific health beliefs and behaviours of white and Indian male students at the University of KwaZulu-Natal. Not only do these two frameworks overlap, but it also seems suitable to use them in combination since health behaviours cannot be fully explained through just a single theory (Tomaselli & Chasi 2011; Eccles *et al* 2012).

Taken together, these two theories complement each other. In effect, the Social Ecology Model provides the broader frame to understand specific social health beliefs in relation to medical male circumcision. These two explanatory models are the basis for the research design of this study (Chapter 4) as well as the data analysis sections (Chapter 5 and conclusion Chapter 6) as they were used to frame out what questions to ask the sample of students during data collection and what codes and themes to look for in the mass of collected data during the analysis and discussion phase.

The Social Ecological Perspective

The ecological perspective is that perspective that looks at the “big picture” or “context” as opposed to seeing personal, behavioural, social and environmental aspects in isolation from each other. McLaren & Hawe (2005) defined the ecological perspective as:

...a conceptual framework designed to draw attention to individual and environmental determinants of behavior. The visual metaphor is a series of concentric or nested circles which represents a level of influence on behavior (McLaren & Hawe 2005: 9).

The metaphor of the “Chinese box”, or boxes within boxes, or the matryoshka (Russian wooden doll) has been used to illustrate the multilevel, concentric and integrated features of the ecological model (Susser & Susser 1996: 676). The Chinese box is only a box if looked at from one perspective. Looked at from several other angles, however, one sees that the Chinese box is actually not a single box but a set of nested boxes of different, graduated sizes. Each box is designed so that it fits inside the next larger box, which fits into the next box, and so on.

The Chinese box provides an illustrative example that demonstrates how the ecological model functions:

The outer box may be thought of as representing the overall physical environment which, in turn, contains societies and populations (the epidemiological terrain), single individuals, and individual physiological systems, tissues, and cells, and finally (in biology) molecules (Susser & Susser 1996: 676).

Like the Chinese box, the ecological model describes situations of conceptually interrelated, nested or recursive relationships. The ecological model is important for the way it illustrates the range of variables that can and should be included in a study of a particular social problem and for the way it underscores the aspect that all or most of these variables are interrelated.



Figure 12. An open “Chinese Box” (Source: Susser & Susser 1996)

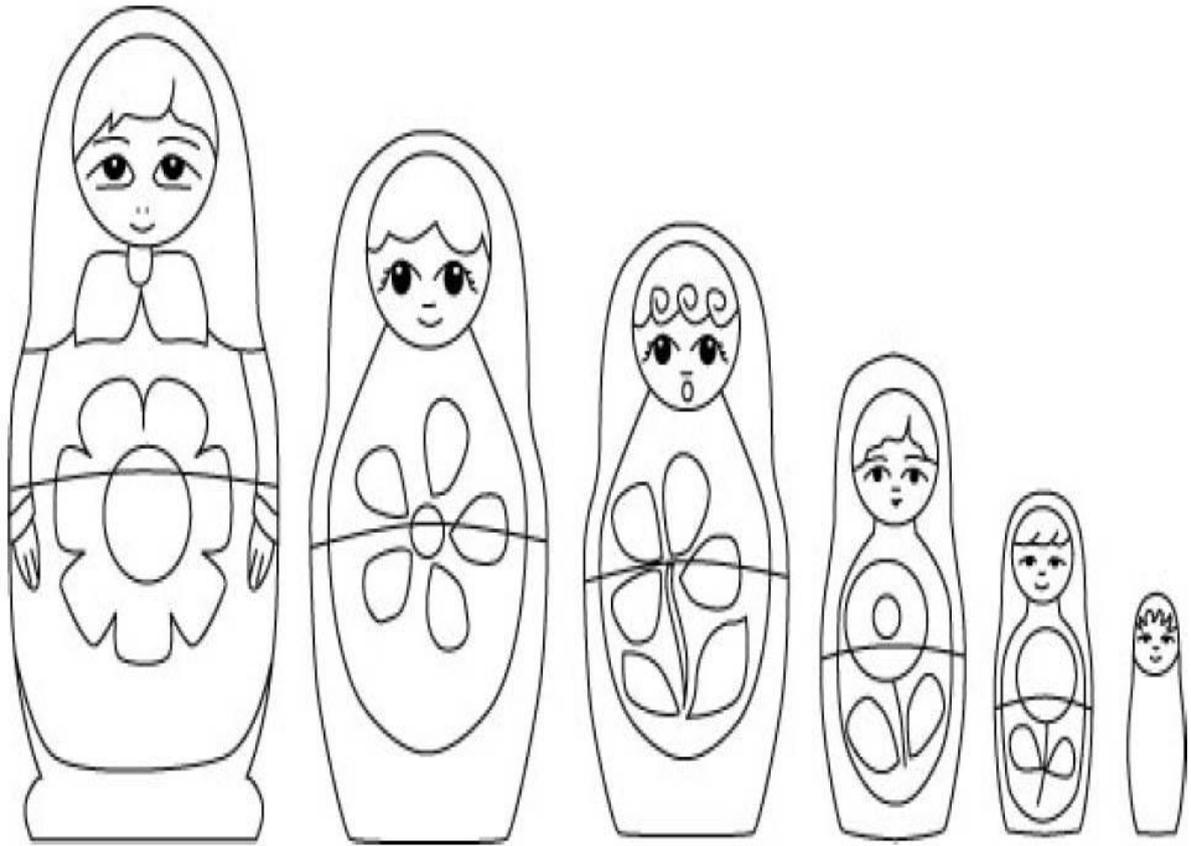


Figure 13. A Russian matryoshka doll

A matryoshka is a Russian wooden doll that is actually a set of wooden dolls of decreasing size designed in such a way that they are placed one doll inside the other. The fact that one box leads to the next box in the case of the Chinese box, or the doll that nests in the next doll in the case of the matryoshka, makes these two examples useful metaphors for explaining how the ecological model works. The social ecology model is an appropriate model for investigating the interrelationships between complex phenomena such as knowledge, attitudes and perceptions. This study assumes that knowledge, attitudes and perceptions occur at both the personal level as well as the wider, community level. These personal and the community levels influenced by institutional and policy influences.

The Social Ecological Model

The notion of “ecology” refers to the interrelations between organisms and their environments. Ecological models developed from the ecological perspective that was being reflected in the social, educational, biologic, behavioural and health sciences (Bronfenbrenner 1979; McLeroy, Bibeau, Steckler, & Glanz 1988; Sallis & Owen 1997; Green & Kreuter 2004). Reviewing the use of ecological models in health promotion over the course of two decades, Richard, Gauvin and Raine state:

Since the 1980s, ecological models of health promotion have generated a great deal of enthusiasm among researchers and interventionists. These models emerged from conceptual developments in other fields, and only selected elements of the ecological approach have been integrated into them (Richard, Gauvin & Raine 2011: 307).

Richard, Gauvin and Raine (2011) conclude that the health-promotion community is the one best positioned “to develop, conduct, and advance this research agenda” within the field of ecological thinking (2011: 322).

Within the ecological perspective, health behaviour is specifically regarded as influencing and being influenced by a combination of equally important factors ranging from personal to environmental. This lies at the heart of the idea of reciprocal causation – that individual behaviours shape, and are shaped by, the social environment. Subsequently, five factors or levels of influence have been identified: intrapersonal (individual); interpersonal; institutional, or organisational; community; and public policy (McLeroy *et al* 1988). These levels are set out in the table below:

CONCEPT (FACTORS)	DEFINITION/DESCRIPTION
Intrapersonal	Individual traits and characteristics, such as knowledge, attitudes, beliefs, and personality traits, that influence behaviour
Interpersonal	Interpersonal processes, and primary groups including family, friends, peers, that provide social identity, support, and role definition
Institutional	These would be rules, regulations, policies including informal structures such as Universities, schools and colleges.
Community	Social networks and norms, or standards, which exist as formal or informal among individuals, groups, and organisations. This level also combines the institutional and public policy levels since these are part of “social structure”.
Public Policy	Local, provincial, national policies and laws that regulate or support healthy actions and practices for HIV prevention

Table 1: The Ecological Perspective: Multiple Levels of Influence (McLeroy et al 1988)

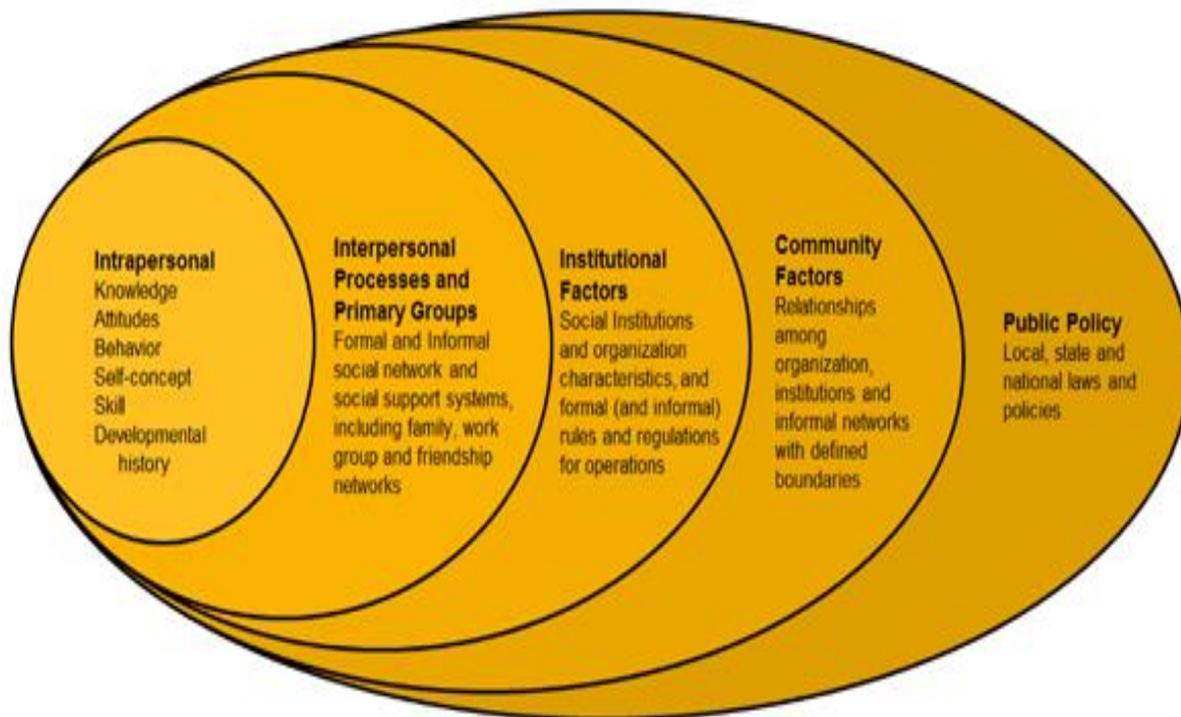


Figure 14. The Social Ecology Model in diagrammatic form (McLeroy et al 1988)

The social ecological model allows for a type of investigation or analysis of phenomena that one can call “infinite recursion” which not only takes into account the fact that reality is complex but also that meanings and reasons have a basis in multiple causes (McLeroy *et al* 1988; Sallies, Owen & Fisher 2008). The recursive nature of the ecological model is crucial in explaining the interrelationship (or lack of one) between attitudes and perceptions towards MMC at UKZN’s Howard College and a demographic variable such as race.

Limitations of the social ecological perspective

The main criticism levelled at the ecological model is that, in using it, one always runs the risk of committing the so-called “ecologic fallacy”. This fallacy relates to the problem of generalising and attributing, often in a flawed way, from associations and meanings found at the level of the population to associations and meanings found at the level of the individual. Furthermore, the ecological approach to health promotion

“means far more than integrating multiple levels of determinants or interventions” (Richard, Gauvin & Raine 2011: 321). Rather, there is need to develop more robust methodologies for making sense of gathered data as well as to develop more sophisticated operational models that lead to testable hypotheses and useful guidance for interventions.

It is argued that, “more research is needed to expand the knowledge base on the ecological approach” (Richard, Gauvin & Raine 2011: 321). Not enough information exists about how the broader levels of influence operate or how variables interact across levels. The need for a more solid base of evidence is crucial given “the number and types of variables in question, the complexity of the interrelationships among them, and the time needed to observe an impact at the population level” (Richard, Gauvin & Raine 2011: 322).

Finally, Stanger (2011) is critical of the term “socio-ecological model”, arguing that the term does not fully represent the model’s ecological etymology and may have become a moral-political term with more metaphorical value than utility. Stanger (2011) feels that there is a missing element in the “ecological” analogy within socioecological models and the adoption of ecological terms within public human spaces (2011: 167). In Stanger’s critical view, the socio-ecological models “are not entirely representative of the complexity of the overall system in which humans are a part” (Stanger 2011: 167). It is in this context of the SEM’s real or perceived shortcomings that the appropriation of the HBM as a complimentary model which can be situated in the in the first level –individual/ behavioural/ intrapersonal of the SEM comes in handy and becomes emphasised. In a sense, the HBM – as a key model within the SEM – exemplifies, and therefore complements, the SEM.

Applying the Social Ecology Model to the Study

The importance of the social ecology model to this study is found at several levels. Firstly, the model assumes that age, gender, race, ethnicity, and socioeconomic differences are not only important but are interrelated and nested. In this way, this study is enabled to make inferences about how knowledge, attitudes and perceptions (or the lack of them) are picked up from multiple levels ranging from intrapersonal, interpersonal, and institutional to community and public policy.

Secondly, the model assumes that variables such as age, gender and race actually do shape the contexts in which individuals live and function. The implication of this assumption is that such variables as race therefore directly and indirectly influence health behaviours (McLeroy *et al* 1988; Owen & Fisher 2005). From a theoretical framework perspective – and importantly for this study – the view that variables such as race do influence health behaviour makes the health belief model ideal for a combination with the social ecological model as it fits into one of the layers of SEM as shall be discussed below.

Finally, the ecological model not only allows for the inclusion of several points of views on the same issue of HIV prevention but the model also serves as a blueprint for evaluating interrelationship between knowledge, attitudes and perceptions, on the one hand, and race (McLeroy *et al* 1988; Owen & Fisher 2005, HSRC 2002, 2008, 2012). In turn, this interrelationship is determined by a mix of factors ranging from highly individualised reasons for wanting or not wanting to be medically circumcised to reasons based on peer group influences, and so on. Hence race as a variable is being adapted only as a starting point for investigation of complex attitudes and perceptions, not because the researcher is blaming or targeting race in isolation from other factors.

An interesting instance where the SEM was used was the “100% condom” programme in Thailand in the early 1990s (Hananberg *et al* 1994; Hanenberg & Rojanapithayakorn 1996; Rojanapithayakorn 2006; Beyrer *et al* 2007). The programme aimed to promote “the use of condoms 100% of the time in 100% of risky sexual relations, and in 100% of the sex entertainment establishments in a large geographic area, whether a town, district, province or whole country” (Rojanapithayakorn 2006: 42). The nested, tiered nature of the “100% condom use programme” was reflected in the collaborative nature of the programme. For the programme to succeed, it cut across “local authorities (health services, police, public security, local governor or government office) and all sex entertainment establishments (owners, managers and sex workers) that aims to reduce the sexual transmission of HIV and STIs by assuring high condom use among sex workers and clients (Rojanapithayakorn 2006: 58).

This meant that the programme was not merely put in place in a vacuum. Rather, it was structured in such a way that the entire existing infrastructure could support it. Each part was necessary to the functioning of the whole. The whole could not function without any of its parts. To this day the “Thai 100% Condom Programme” is one of the few Sexually Transmitted Infection (STI) health programmes to have unqualified success (Hananberg *et al* 1994; Hanenberg & Rojanapithayakorn 1996; Rojanapithayakorn 2006). Within 5 years of the roll out of the programme condom use in Thailand’s urban centres reportedly increased from 15% to over 90% while the number of STDs decreased enormously to a point where the HIV epidemic was largely brought under control.

The Health Belief Model

The HBM was originally introduced in the 1950s by U.S. psychologists working in the Public Health Service (Glanz, Rimer & Lewis 2002). These psychologists, who included figures such as Godfrey Hochbaum (1958), Irwin Rosenstock (1966), Howard Leventhal (1968) and Stephen Kegeles (1966) intended to increase people’s acceptance and uptake of preventive measures such as flu immunisations and chest x-rays for tuberculosis screening. The assumption which formed the basis of the model was that people in general feared diseases. Health actions were then assumed to be motivated in relation to the degree of fear (perceived threat) and expected fear-reducing potential of actions. As long as the fear-reducing potential of actions outweighed practical and psychological obstacles to taking action (net benefits), readiness to act was assumed to exist.

Broadly, the HBM is based on the assertion that “health behaviour is determined by personal beliefs or perceptions about a disease and the strategies available to decrease its occurrence” (Hochbaum 1958: 31). Underpinned by value expectancy theory, the model assumes that behaviour is a result of an individual’s expectations and is performed in response to beliefs and values held (Armitage & Conner 2000; Champion & Skinner 2008). Initially, the model had just four constructs: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers which will be discussed later in detail. Basically, these four constructs reflected the emphasis on perceived threat versus net benefits. When faced by behaviour change initiatives, it is assumed that individuals carry out cognitive assessments within these

four critical circles to determine the risks and benefits associated with the recommended behaviour's adoption (Janz & Becker 1984).

Irwin Rosenstock modified the model in 1974 (Becker & Rosenstock 1974) and 1988 (Rosenstock *et al* 1988). The concept of cues to action was later added to suggest readiness to act and the stimulation of overt behaviour. The sixth, most recent addition to the HBM is self-efficacy. Self-efficacy describes- one's belief in the self's ability to successfully and satisfactorily perform an action. The importance of the HBM seems to lie in its effectiveness in helping to explain why people behave the way they do. In this sense, the model is a helpful guide for both the search for 'why' and for designing change strategies.

The HBM has gradually grown into a well-known theory in health communication in general, and is used in studies of HIV prevention where "its value as a predictor of long- and short-term health behaviours, including sexual risk behaviours and the transmission of HIV and AIDS" has been demonstrated (Hayden 2009: 31). In the context of this study, the HBM will be taken to be the basis for showing that a UKZN white or Indian male student will take a health-related action like MMC if he feels that a negative health condition like HIV infection cannot be avoided (perceived susceptibility); has a positive expectation that by taking the recommended action (MMC), he will avoid the negative health condition (perceived severity); and believes that he can successfully take the recommended health action (perceived benefits). Therefore, an individual's values and beliefs towards health conditions or campaigns such as MMC influence their behaviour and decision making. Below is an account of each construct of the HBM.

CONCEPT	DEFINITION	APPLICATION
Perceived Susceptibility	One's opinion of chances of getting a condition	Define population(s) at risk, risk levels; personalise risk based on a person's features or behaviour; heighten perceived susceptibility if too low.
Perceived Severity	One's opinion of how serious a condition is	Specify consequences of the risk and the condition
Perceived Benefits	One's opinion of the efficacy of the advised action to reduce risk or seriousness of impact	Define action to take; how, where, when; clarify the positive effects to be expected.
Perceived Barriers	One's opinion of the tangible and psychological costs of the advised action	Identify and reduce barriers through reassurance, incentives, assistance.
Cues to Action	Strategies to activate 'readiness'	Provide how-to information, promote awareness, reminders.
Self-Efficacy	Confidence in one's ability to take action	Provide training, guidance in performing action.

Table 2: Six constructs of the Health Belief Model (Janz and Becker 1984)

Perceived susceptibility

Perceived susceptibility refers to an individual's "perception of the risk of getting a condition" (Janz & Becker 1984: 2). Such a risk can often be perceived "discordantly" amongst a collective group of individuals (Janz & Becker 1984: 2). This might suggest that perceived susceptibility is increased or decreased by what one can loosely call 'peer pressure'. Anyhow, perceived susceptibility has been identified as the most influential perceptual factor in encouraging individuals to adopt healthier behaviours (Glanz, Rimer & Lewis 2002). For instance, one will assume that white and Indian male students must, at the very minimum, first believe that they are at risk of HIV for them undergo MMC. Similarly students who believe that they are not at risk of contracting HIV will not undergo MMC. Uptake of health behaviour is also

influenced by personal beliefs, where MMC is believed to be unnecessary, male students are at risk of HIV.

Where perceived risk is low, harmful behaviour manifests and this may result in the development of diseases or death (Hayden 2009). Interestingly, even where perceived risk is high, studies appear to show that there is a level of disregard for the perceived risk (Courtenay 1998). For instance, there may be cases where non-black male students at UKZN may perceive themselves to be at some risk of HIV, yet will still not employ proper preventative measures. Interestingly, one of the shortcomings of the HBM is observed where perception of susceptibility is not always explained by affirming behaviour. By exploring white and Indian male students' knowledge, attitudes and perceptions towards medical male circumcision, this present study will be able to explore their (lack of) perceived susceptibility to MMC as an HIV preventive procedure, and the factors that constrain this perception or (lack of perception) of risk.

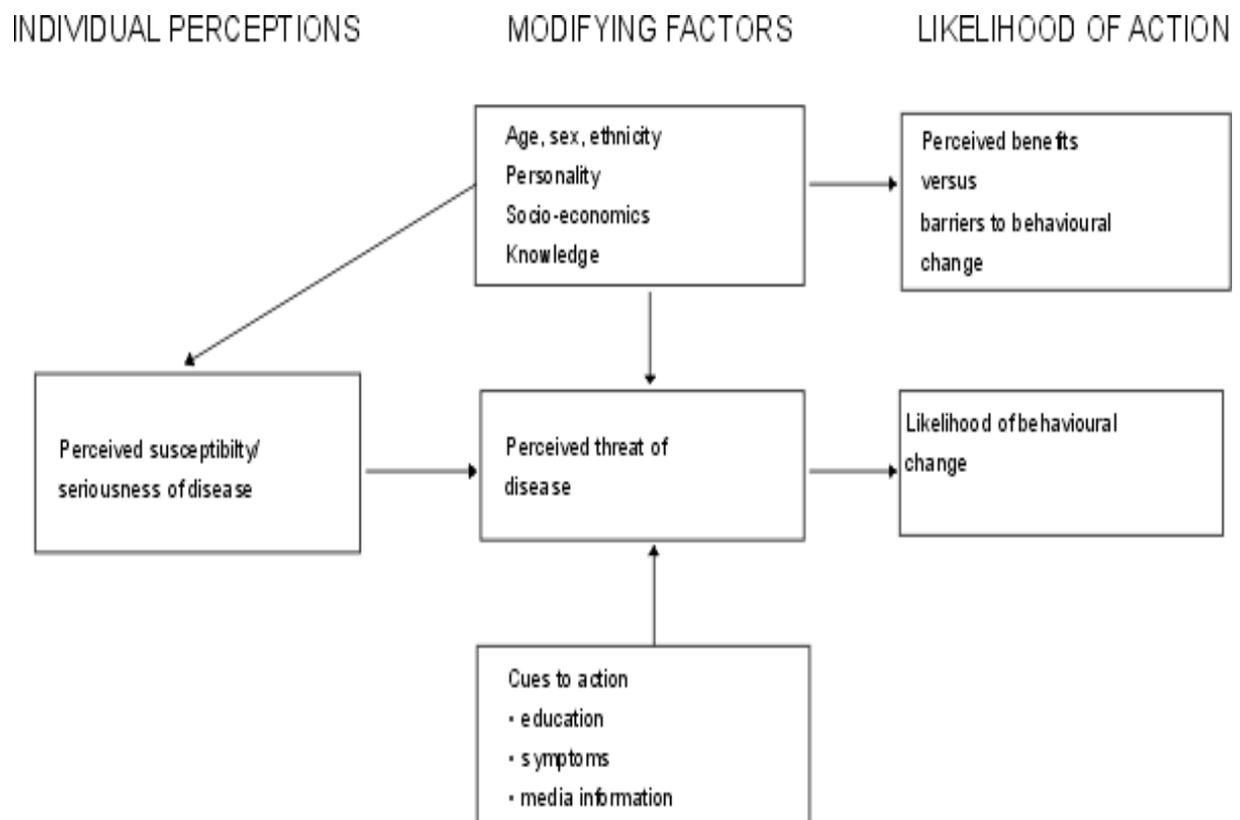


Fig. 15. Conceptual Health Belief Model (Source: Glanz et al 2002)

Perceived severity

The second construct within HBM is *perceived severity*. This construct refers to a level of seriousness that an individual associates with a given threat (Hochbaum 1958, Champion & Skinner 2008). This can include medical consequences, such as death or illness, or social consequences, such as stigma and loss of employment, that an individual feels will accompany the condition (Janz & Becker 1984). According to the HBM, acknowledging possible risk of a disease is a fundamental cognitive process in adopting healthy behaviour that aids in avoiding contracting a condition (Hayden 2009). Individuals with low perceived severity are less likely to take preventative measures while an individual may be more likely to take action if they believe that the negative physical, social and psychological effects of a condition pose serious consequences such as altered relationships, pain, and disability, loss of employment, exclusion or even death (Champion & Skinner 2008; Mathew 2012).

The two elements discussed above are related to the threat faced by an individual. The third and fourth elements suggested by the HBM, however, relate to the intervention recommended to help the individual to get rid of this threat. This study will assess white and Indian male students' perceived severity of MMC in order to evaluate whether or not it is a factor in their lack of use of MMC facilities provided on campus.

Perceived benefits

Perceived benefits are steps an individual takes to prevent effects of certain conditions (Rosenstock 1974). This variable is a critical agent in adopting healthy behaviour. These 'benefits' relate broadly to the individual's opinions of the "value or usefulness" a new behaviour will be in decreasing the risk of acquiring a disease (Hayden 2009: 32; Mathew 2012). Perceived benefits are influenced, among other things, by the accessibility of information regarding a particular health condition (Hall 2011). Interestingly, information about MMC is widely available at Howard College through posters, and via the UKZN website and regular alerts through the campus email service. However, most of it appears disused and neglected by non-black students. A visit to the campus HIV Unit, where I interviewed the healthcare worker

in charge, proved this. It was reported that not a single non-black student had walked in, whether for information or for medical circumcision. In this study the researcher will assess whether white and Indian at Howard Campus, University of KwaZulu Natal, believe that by being medically circumcised they are also protecting themselves from contracting HIV or not at all.

Perceived barriers

The element of perceived barriers explains an individual's own evaluation of obstacles that lie in the way of adopting a new behaviour. These obstacles may include physical barriers such as expense and inconvenience, as well as personal barriers such as pain or anxiety over negative outcomes. Expressed differently, perceived barriers describe any negative associations that may limit the adoption of a recommended course of action (Rosenstock 1966; Champion & Skinner 2008). Interestingly, MMC facilities on campus are free, highly accessible and within a stone's throw distance of the library and cafeteria.

Supposedly, the HBM's worth is represented when individuals evaluate the positive and negative aspects that go along with behaviour (Ogden 2004; Janz & Becker 1984). For instance, among college students, fear of pain and embarrassment are usually cited as barriers standing in the way of most individuals undergoing MMC (Naidoo 2005; Bailey *et al* 2009). Similarly these barriers are usually greatest among students who have never had HIV testing. Also individuals may believe that condom use is effective in reducing perceived susceptibility to HIV infection, but still consider the condom as a barrier to 'pleasurable' sex (Rosenstock 1974; Sharma & Romas 2008).

Pain and fear of death during the circumcision procedure have been identified as barriers to MMC adoption among young people (Rosenberg & Waugh 2008; Bailey *et al* 2008; Mathew 2012; Mhangara 2012). Research has also suggested that some men regard MMC as interfering with pleasure, the argument being that the foreskin brings pleasure during sexual intercourse (Janz & Becker 1984; Rasch *et al* 2000; Jewkes *et al* 2001; Manzini 2001; Dunkle *et al* 2007; Mfono 2008; Bailey *et al* 2010). The study will assess whether barriers such as pain and death and potential loss of

pleasure among others are barriers to MMC amongst white and Indian male students at UKZN.

Cues to action

Cues to action are specific stimuli necessary to influence certain individuals to adopt new behaviours. For instance, “illness of a family member might be a drive to behaviour change” (Janz & Becker 1984: 33; Graham 2002; Hall 2011). Cues to action represent the “internal or external prompts that create awareness and aid in facilitating action” (Mattson 1999: 243). Internal cues to action stimuli include pain or anxiety. External cues, on the other hand, refer to communication strategies advocating a certain intervention or behaviour. Cues to action have a causal relationship with perceived susceptibility. Where perceived susceptibility is low, there is a need for intense cues to action in order to stimulate interest in pursuing new behaviour (Janz & Becker 1984; McLeroy *et al* 1988). The cues to action that this study will investigate are represented in the research design through specific questions that targeting external cues to action linked to the UKZN MMC campaign which begun in April 2013.

Self efficacy

Self-efficacy is the sixth and last concept of the HBM. Derived from Albert Bandura’s (1977) Social Cognitive Theory, *self-efficacy* refers an individual’s confidence in the possibility of successfully carrying out certain behaviours or actions (Rosenstock *et al* 1988; Hayden 1989). Research suggests that it is difficult for individuals to try out new behaviours unless they believe they can successfully do it (Glanz *et al* 2002). For instance, if an individual believes that a new behaviour is important (perceived benefit) but does not think that he or she is capable of doing it (perceived barrier), chances may be high that the behaviours will not be adopted or tried (Glanz *et al* 2002).

Self-efficacy is not only enhanced by setting an individual’s goals as well as monitoring and reinforcing behaviour (Bandura 2004; 1977), but is also important for the adoption of a new behaviour. For example, a male student who believes that MMC is useful (perceived benefits), but does not believe he is able to undergo the procedure because of costs, pain or death (perceived barriers), will most certainly

not adopt the new behaviour because of low self- efficacy. The possibility exist, then, that individuals' attitudes and perceptions towards a health behaviour change as an HIV prevention procedure as a result of low self-efficacy (Mathew 2012). In this regard, this study will explore "self-efficacy" as a vital component of future change strategies and behaviour change amongst UKZN's male student demographics.

Some Criticisms of the Health Belief Model

The HBM is not without its limitations or critics. Munro *et al* (2007) openly state that further studies are needed to assess the validity of the HBM as its current validity is in doubt. Some critics state that most HBM-based research to date has incorporated only selected components of the HBM, thereby not testing the practicality of the model as a whole (Rosenstock *et al* 1994). At any rate, as a psychological model, it appears that the HBM does not take into account other factors such as environmental or economic factors that may influence health behaviours. The model fails to include the influence of social norms and peer influences on people's decisions regarding their health behaviours (Airhihenbuwa & Obregon 2006). Seeming to disregard environment, the theory sorely focuses on cognitive variables as part of behaviour change, and shares the assumption that attitudes and beliefs as well as expectations of future events and outcomes are major determinants of health related behaviour (Gebhardt & Maes 2001).

The HBM has been criticised for assuming that variables affect health behaviour directly and remain unmediated by behavioural intentions (Rosenstock 1990). Airhihenbuwa and Obregon (2000) contend that the HBM does not include important determinants of health behaviour such as the positive effects of negative behaviours and social influence. They see it, rather, as focusing more on cognitive influences on behaviour even where some behaviour such as smoking is based on habits rather than decisions. Further, the HBM gives little attention to the origin of beliefs and how such beliefs may influence other behaviours (Janz 2002). In addition, it has been argued that it ignores other factors that may impact on adherence behaviour such as power relationships and social reputations and the possibility that risky behaviour may involve more than one person (Rosenstock 1990).

Other criticisms levelled at HBM theory are that the relationships between its sets of variables are not always clear (Stroebe & de Wit 1996), and that the model seems to assume that its six sets of variables affect health behaviour uniformly and directly without being diluted by behavioural intentions (Stroebe 2000). Janz and Backer's critical review of the HBM, for instance, suggested that though both 'perceived susceptibility' and 'perceived benefits' were important, over-all 'perceived susceptibility' was a stronger predictor of preventive behaviour (Janz & Becker 1984). Finally, the researcher doubts that the HBM gives enough attention to the question of the 'unspoken' but 'strongly felt beliefs' such as the perception that HIV is a predominantly black problem, among others. In a race-sensitive country like South Africa, such attention is potentially racially insensitive and also not politically correct. However, the origin of these beliefs is important as these beliefs may influence other behaviours.

Despite its limitations, the HBM – in combination with the social ecology model – is still the best suited model to use for this study, as evidenced by previous research conducted on public health communication and sexual health behaviour (Bailey et al 2010; Mathew 2012; Pettit 2012; Marrah 2012). This study will use the SEM to account for the reciprocal relationship between the individual and the environment. Reciprocal causation, a variable that is noticeably absent in HBM, is important for accounting for certain non-individual factors that influence behaviour change.

Applying the HBM to the Current Study

The objective of this study is to gain insight into the attitudes, knowledge and perceptions of white, Indian, male students based at the University of KwaZulu Natal's Howard Campus towards Medical Male Circumcision (MMC) as an HIV prevention procedure. HBM theory offers that the motivating factors for individuals to subscribe to a recommended health intervention are dependent on six key factors discussed above. The HBM is significant to this study as a guiding framework in particular because, as an explanatory model, it specifically attempts to explain and account for health beliefs, attitudes and behaviour. In this case, it provides the researcher with constructs that are useful for posing the study's guiding research questions.

Ross *et al* (2010) used the HBM to study attitudes to wearing bicycle helmets amongst undergraduate students. One reason for undertaking the study was to attempt to understand the factors that predicted helmet so as to use this information to develop effective helmet promotion strategies to decrease cycling injuries. It was clear to the researchers at the outset that most bicyclists did not wear helmets despite the obvious protection that helmets provide. The researchers noted that potential helmet use barriers included physical discomfort, inconvenience, lack of knowledge regarding helmet efficacy, concerns about ridicule, negative peer pressure and environmental barriers, including availability and cost. There were also positive correlates of undergraduates' helmet use that included past personal injury or hospitalisation due to bicycling accidents, long distances, "helmet ownership, being Caucasian, a history of a cycling-related injury to a close friend, perceived vulnerability to injury, perceived ability of helmets to prevent head injury, and having peers who routinely wear bicycle helmets" (2010: 30). Ross *et al*'s (2010: 34) findings showed that helmet wearers reported "more Perceived Vulnerability, Benefits, and Cues to Action, higher regard for Severity of Consequences, and fewer Barriers than non-wearers".

A central focus of my study is assessing the nature of students' *perceived benefits*, or their beliefs regarding "the value or usefulness", of MMC in decreasing their exposure to HIV (Hayden 2009: 33). Through this line of questioning, the researcher will be able to assess, among other things, whether perceptions are instrumental in facilitating risky behaviour. As noted in Phyfer (2012), white students who do not do 'interracial' (sex) are not constrained to use condoms. The controversial Twitter storm torched of by Justine Sacco's statement that she did not fear catching HIV since she was white is a case in point. As noted in Chapter 1 and 2, Sacco's tweet reflects the reality that just because people do not come out in the open to say that they regard HIV to be a "black disease" does not mean that the opinion has never crossed their mind or that they do harbour such stereotypical attitudes or thoughts. Sacco has done the unthinkable not just by "voicing" her attitude but doing so publicly. By contrasting participant's perceptions, attitudes and knowledge, the researcher intends to explore the ways in which the concept of *perceived benefits* of participants is actually influencing their actions towards MMC as a preventive procedure against HIV.

The researcher also hopes to be able to explore the ways in which the concepts of perceived barriers contribute to white and Indian male students' willingness to adopt 'recommended' behaviours. Through applying the concept of *perceived barriers*, the researcher will also assess the degree to which physical barriers such as expense and inconvenience, as well as personal barriers, such as pain, anxiety or death, have anything at all to do with the participants' perceptions, attitudes and knowledge towards MMC as an HIV prevention procedure. The issue of "low" or "high" self-efficacy also plays a significant role in this study in the sense that the researcher will be in a position to evaluate the extent to which *perceived benefits* and *perceived barriers* affect the possibilities or chances of white and Indian male students to adopt new behaviours. Using the Health Belief Model, the study therefore drew the following hypotheses:

1. Would white and Indian students report significant Perceived Vulnerability, Benefits, and Cues to Action?
2. Would white and Indian students report significant regard for Severity of Consequences?
3. Would white and Indian students report more or fewer Barriers to MMC?

Some Theoretical Aspects of Attitude and Perception

Attitudes are "a mindset or a tendency to act in a particular way due to both an individual's experience and temperament" (Pickens 2005: 44). Ultimately attitudes are a combination of "personality, beliefs, values, behaviours, and motivations". Attitudes are important because they indicate a person's point of view since to speak of one's attitude is to refer to that person's emotions and behaviours. Hence:

A person's attitude toward preventive medicine encompasses his or her point of view about the topic (e.g., thought); how he or she feels about this topic (e.g., emotion), as well as the actions (e.g., behaviours) he or she engages in as a result of attitude to preventing health problems (Pickens 2005:44).

Attitudes themselves cannot be seen visually, but one's behaviour can reflect or betray their attitude. As illustrated in the diagram below, an attitude has three components: an affect (a feeling), cognition (a thought or belief), and behaviour (an action).

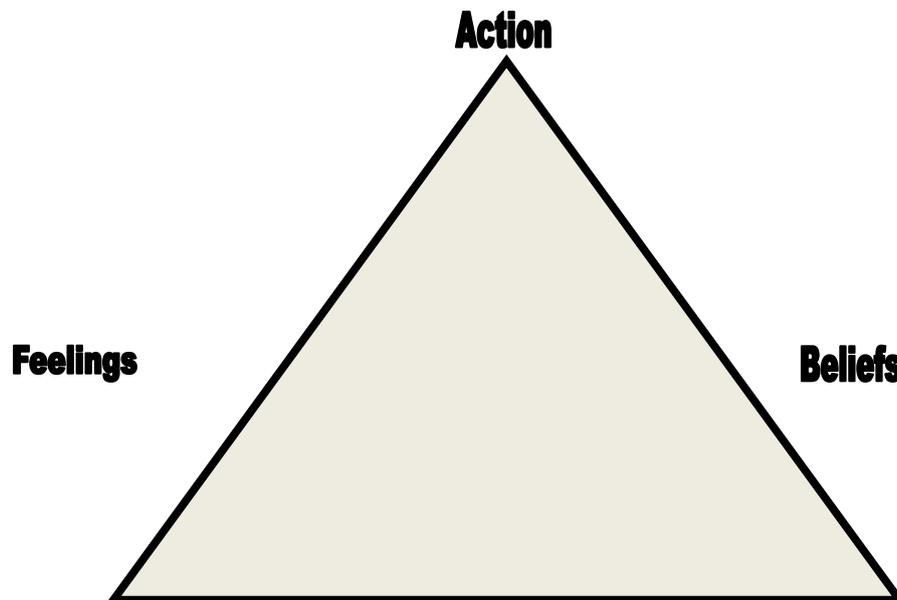


Figure 17. The tri-component model of attitudes (adapted from Pickens 2005: 44)

As reflected in the tri-component model of attitudes, feelings, beliefs and actions are interlinked. The directions of influence flow in every direction. As Pickens has succinctly put it, “our attitudes are influenced by the social world and our social world is influenced by our attitudes” (Pickens 2005: 45). It can be noted that attitudes develop through experience, which can either be direct or indirect, and can be influenced by the environment around the individual (de Jong & Ferguson 1999). Social norms, the media, friends, family and culture all play a role in the creation and reinforcement of specific attitudes. The relationship between attitudes and behaviour change, however, remains inherently complex, even though understanding how attitudes influence behaviour can be explained, simplified and mapped by the use of a theoretical framework. The connectedness of attitudes and behaviour can also be represented visually as in the diagram below:

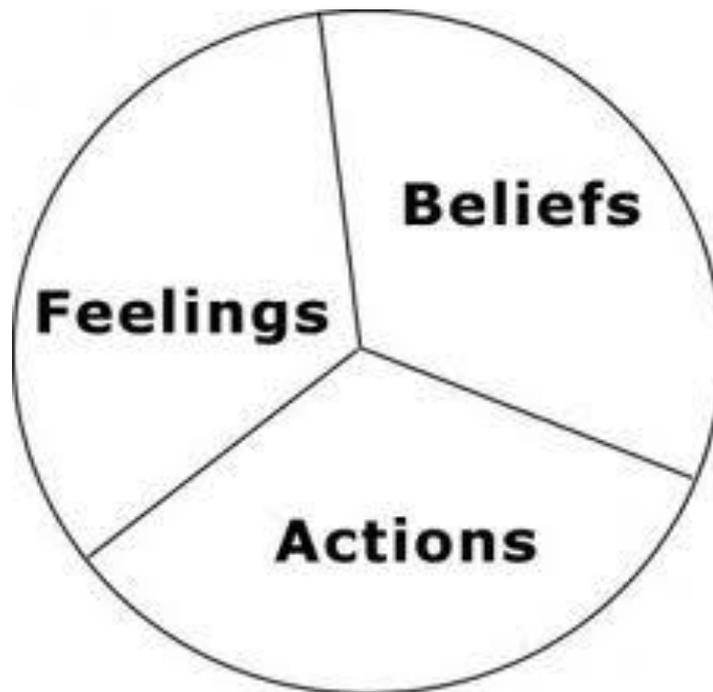


Figure18. The interaction between attitudes and behaviour flows in both directions.

In this study, the attitudes of white and Indian male students towards HIV prevention in general and MMC in particular will be assessed. The goal is to investigate the relationship between the students' attitude towards HIV prevention and the action of going or not going to be circumcised for HIV prevention at the Campus HIV Aids Unit. The organising assumption, as noted earlier, is that attitudes influence behaviour and guide decision-making. The researcher will, however, recognise that the relationship between attitudes and behaviour is not straightforward but is affected and restricted by many extraneous factors. McGuire (1969) and Miller (1967) have argued, for instance, that there is a minimal positive relationship between verbal indicators of attitude and subsequent courses of action. Talk is cheap and there is nothing to stop the students that will be interviewed from saying whatever they feel like saying.

Attitudes are closely related to perception. In this study perception does not refer to physical visual perception but, rather, to an element of social perception. This is perception affected by the social environment. Hence:

Social perception is how an individual “sees” others and how others perceive an individual. This is accomplished through various means such as classifying an individual based on a single characteristic (*halo effect*), evaluating a person’s characteristics by comparison to others (*contrast effect*), perceiving others in ways that really reflect a perceiver’s own attitudes and beliefs (*projection*), judging someone on the basis of one’s perception of the group to which that person belongs (*stereotyping*), causing a person to act erroneously based on another person’s perception (*pygmalion effect*), or controlling another person’s perception of oneself (*impression management*), Pickens 2005: 60).

Social perception is a function of several factors such as past history (Segall, Campbell & Herskovitz 1966), culture (Tajfel 1969) habituation (Treisman 1964), cognition and awareness (Allport 1955). Allport (1955) suggests that for an individual to perceive something, they have to be aware of it first. Thus perception “has something to do with our awareness of objects or conditions about us” (Allport 1955: 14). This suggests that awareness of the presence of something is an important factor in the definition of perception.

Of particular interest to this study is the view of perception as a process of interpreting sensation to produce meaning or meaningful experience of the world (Lindsay and Norman 1977), Assael (1995) argue that a person’s receptiveness stimuli is selective but is also limited by that person’s existing beliefs, attitudes, motivation and personality. Seeing perception as a constrained interpretive activity means that what individuals “see” is not necessarily objective reality and, more importantly, might not be the same thing that the next individual sees. In the context of this study, it is critical to apply the test of “awareness” and “interpretation” to white and Indian male students to see if they notice MMC facilities on campus at all, what they notice or may not notice and the reasons behind this.

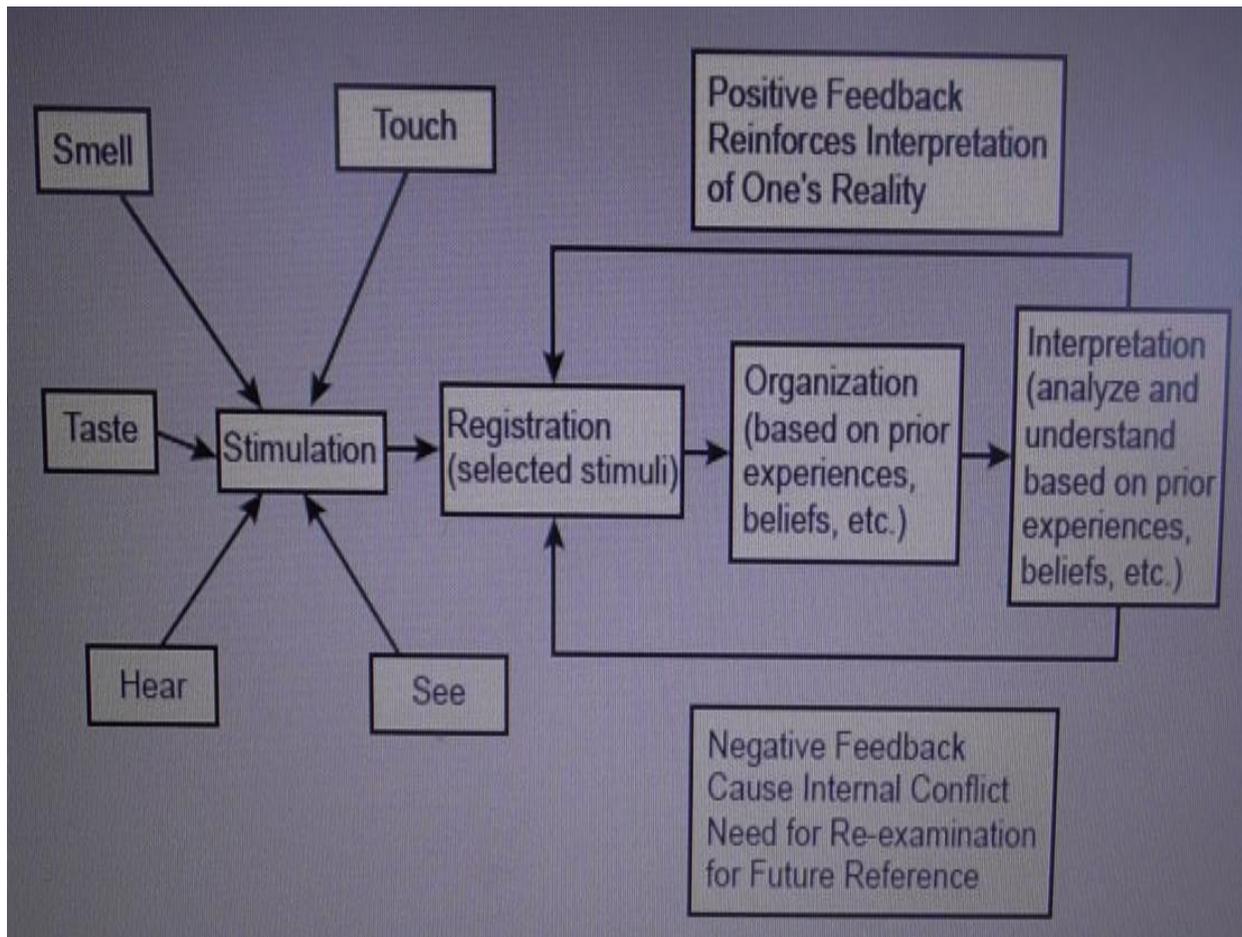


Figure 19. The Perception Processing System (Source: Perkins 2005: 57)

The representation of the perception processing system in the diagram above reflects the relationship between a person's receptiveness to stimuli and their existing beliefs, attitudes, motivation, and personality. This is the same relationship, in the context of perceptions, which the data analysis chapter (Chapter 5) of this study will probe. Obviously, such a relationship is complex and not reducible to finite answers. Reality and the beliefs that anchor it and flow in ways that goes beyond models.

Conclusion

This purpose of this chapter was to present the theoretical framework of the study. Two concepts, namely "social ecology" and "health belief", were introduced, defined

and described. This was done through drawing attention to two specific models, the Social Ecology Model (SEM) and the Health Belief Model (HBM). These two broad models can be used to explore a range of questions in public health communication. While knowledge can be broadly defined and measured, attitudes and perceptions are more difficult to isolate and pin-point. There is no obvious relationship between attitude and behaviour. Furthermore, attitude is not a reliable predictor of what a person actually does when confronted with an actual situation. Nevertheless, these facts do not preclude the fact that less obvious relationships may exist. This theoretical framework has sought to use SEM and HBM to explain and seek out this “less obvious” relationship. The researcher preferred the two models because of their appropriateness, simplicity of application and explanatory power in terms of helping to address the theme of what, how and why knowledge, attitudes and perceptions towards a public health issue such as medical male circumcision are formed.

CHAPTER FOUR

METHODOLOGY

Introduction

This chapter lays out the methodology used in the study. The study investigates the knowledge, attitudes and perceptions of male White and Indian students towards the HIV prevention procedure of medical male circumcision. The sample is drawn from the University of KwaZulu-Natal's Howard College. The chapter therefore describes the research design that was used, and the reasons for preferring such an approach. It also describes the size and nature of the sample, the data collection methods used, and ethical considerations. Finally, the chapter explains how data was coded and analysed. The methodology clarifies, on the one hand, aspects of the HBM and the SEM and, on the other hand, coding and data analysis considerations.

Research Design

The research design is the plan about how best to investigate and draw attention to a study's research questions. This study poses three key research questions, which are:

1. What do White and Indian male UKZN students *know* about MMC?
2. How do White and Indian male students *perceive* MMC?
3. What is the *attitude* of White and Indian male students to MMC?

The study's research questions given above are all qualitative, given that they stand to generate words rather than numbers. Particularly, the questions restrict the investigation to only three specific parameters: *knowledge*, *attitude* and *perception*. The two controlling variables are race (Whites and Indians only) and gender (males only). The appropriate research design for the study, therefore, had to be one that addressed the 'what' and 'how' exploratory questions as unambiguously as possible in order to understand knowledge, attitude and perception.

Knowledge, attitude and perception are not easy to measure quantitatively because they are intangible, uncountable and personal. It is also not possible to control knowledge, attitude and perception in a clinical laboratory setting. The ideal approach to assessing knowledge, attitude and perception is qualitative and interpretive (Denzin and Lincoln 2005). It has also been noted that qualitative and interpretive methods are ideal in situations where not much is known about a problem (Terre Blanche and Durrheim 1999; Denzin and Lincoln 2005). Little is known about the knowledge, attitudes and perceptions of male White and Indian students towards the HIV prevention procedure of medical male circumcision. These factors together make the qualitative and interpretive research paradigm the most appropriate for this study.

Since little is as yet known about the study problem, the research design is exploratory in nature. Exploratory studies typically “employ an open, flexible and inductive approach to research as they attempt to look for new insights into phenomena” (Terre Blanche and Durrheim 1999: 39). The main concern of exploratory research designs is to discover a deeper understanding about a particular research problem (Philips and Pugh 1987; Webb 1992; Ghauri et al 1995). As illustrated in the literature review chapter, medical male circumcision (MMC) has been the focus of many previous studies. However, a predominant majority of these studies exclusively sought to understand knowledge, attitudes and perceptions of Blacks. There are currently no studies, according to a Nexus (2013) study, which investigate what non-black demographics say about MMC. The systematic exploration of the knowledge and viewpoints of White and Indian students is carried out according to the tenets of the qualitative and interpretive research paradigm. In the following section, the general features of the qualitative and interpretive research paradigm are defined and their suitability to addressing this study’s research questions evaluated.

Qualitative Research Methodology

Due to its stated focus on knowledge and viewpoints, this study is grounded in the qualitative and interpretive research paradigm. Denzin and Lincoln (2005) provide the following definition of qualitative research:

Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that makes the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them. (Denzin and Lincoln 2005: 3).

The qualitative method, hence, uses “an interpretive, natural approach to its subject matter” (Denzin and Lincoln 2005: 3). The term interpretive suggests an activity of trying to make sense of something through interpretation of its meaning.

The purpose of employing an interpretive approach is to allow researchers “to make sense of, or to interpret, phenomena in terms of the meaning people bring to them” (Denzin and Lincoln 2005: 3; Denzin and Lincoln 1994: 104). While natural scientists working in controlled settings have no interest in interpretation, opinions or meanings that cannot be measured or proved empirically (Britten and Fisher 1993; Creswell 1994), social scientists investigating data from social life routinely employ qualitative methods to find answers to questions that ask *why* and *how* and *in what way*. Inversely, questions that begin with *how much* and *how many* do not produce the most ideal qualitative data. The opinions, experiences and feelings of students towards MMC, for example, are expected to produce data of a subjective kind that needs interpretation.

Qualitative research can also be defined not just by opposition to quantitative research but by the type of research data it generates and makes use of. Qualitative research is defined as research that “involves any research that uses data that do not indicate ordinal values” (Nkwi, Nyamongo, and Ryan 2001: 1). This definition indicates that qualitative research should not merely be opposed to quantitative research but, rather, be defined as openly as possible to include as many conceptual and data collection tools as possible. Data collected for this study utilises transcribed text from questionnaires and an interview and hence, in keeping with Nkwi, Nyamongo, and Ryan’s (2001: 1) definition, does “not indicate ordinal values”. Data that does not indicate ordinal values fits Ryan and Bernard’s (2000) typology of data types that are found in qualitative research. The typology divides qualitative

data into its three main forms: text, images, and sounds. This study of MMC uses text.

The importance of qualitative research is that it allows the researcher time, space and the tools to “describe, analyse, interpret and clarify experience as it is lived and constituted in awareness as well as to assist researchers to understand participants’ perspectives, complex and under researched areas” (Wolcott 1994: 9). The task of evaluating knowledge, attitudes and perceptions of students towards MMC, for instance, seems to demand such inductive, flexible and open-ended methods that allow the researcher time, space and tools to interact with participants. Such flexibility and open-endedness also allows access to multiple realities and information that make it easier to understand exactly what is going on (Brink 1996). The researcher, in this particular instance, is interested in finding out exactly what the students’ health beliefs – in terms of perceived susceptibility to contracting HIV – are. To give a holistic picture of where current baseline knowledge and opinion stand, the ‘why’ of students’ health beliefs, along with the ‘what’ and ‘how’, will also be questioned.

The interpretive paradigm, which stresses the importance of “context” and “subjective experiences” of individuals (Reeves & Hedberg 2003: 32; Klein and Myers 1999: 69), is appropriate for a framework based on the SEMq. This link between the interpretive approach and SEM is clear in the following quote by Burrell and Morgan (1979):

The interpretivist asserts that reality, as well as our knowledge thereof, are social products and hence incapable of being understood independently of the social actors (including the researchers) that construct and make sense of that reality. The world is not conceived of as a fixed constitution of objects, but rather as an emergent social process - as an extension of human consciousness and subjective experience (Burrell and Morgan 1979: 253).

An interpretive approach not only provides deep insight into “the complex world of lived experience from the point of view of those who live it” (Schwandt 1994: 118) but also assumes that reality is socially constructed. In such an account, the researcher is the lens through which the reality being researched is made known (Cavana, Delahaye, and Sekaran 2001; Walsham 1995, Guba and Lincoln 1994, Schutz

1973). The researcher's interpretations are vital in bringing "such subjectivity to the fore" (Garcia and Quek 1997: 459). Such subjectivity, however, is backed by nuanced interpretations of qualitative data instead of statistical exactness.

The interpretivist position is based on the fact that there is no one objective reality. Walsham (1993) argues that:

...interpretive methods of research start from the position that our knowledge of reality, including the domain of human action, is a social construction by human actors and that this applies equally to researchers. Thus there is no objective reality which can be discovered by researchers and replicated by others, in contrast to the assumptions of positivist science. (Walsham 1993: 5).

Hence, there is a need for the researcher to always be open to responses that do not fit expectations. In order "to understand how members of a social group, through their participation in social processes, enact their particular realities and endow them with meaning" (Olikowski and Baroudi 1989: 18), flexibility is important.

In the interpretive approach, "objective reality is impossible to capture" (Denzin 2010: 271). What is sought, instead, is "in depth understanding, the use of multiple validities, not a single validity, a commitment to dialogue is sought in any interpretive study" (Denzin 2010: 271). Denzin (1983) also notes that "man is caught in webs of significance, feeling, influence and power that he has woven" (Denzin 1983: 132). The interpretive task is hence one of "unravelling and revealing the meanings persons give to their webs" (Denzin *ibid*). Such a paradigm is ideal for the current study in as far as it allows the researcher to dig deeper beyond surface answers given by the participants. The "social context" (Cantrell 1993:14) of the participants will be understood to mean both the UKZN environment and the home environments from where the students come from and where they have their friends, family and neighbours.

Sampling

Sampling is the selection of a sub-set of a population for purposes of study. The sampling strategy for this study grew from four considerations, namely the three research questions, the overall research design, research method and a consideration of research ethics. The sample population was drawn from the

University of KwaZulu Natal, Howard Campus. The sampling frame at Howard College (as of 2013) is four hundred and ninety-six (496) White male students and one thousand two hundred and eight-five (1285) Indian male students.¹⁰ An important issue regarding the sampling frame was to balance the recognition that the sample needed to accurately reflect the population with the knowledge that in qualitative research statistical inference is not a core objective. As will be noted below, this balance was achieved through purposive, theoretical sampling. Finally, the sample population was stratified according to the key demographic variables of gender (i.e. males only) and race (i.e. Whites and Indians only).

The reason for stratifying the sample according to gender is that MMC at UKZN and elsewhere is intended strictly for males only. It made sense, in the absence of any baseline data of any sort, to start with males only. The reason for stratifying the sample according to race is provided by the study rationale. The study rationale observed a gap in a majority of HIV prevention research. Research tended to target Blacks exclusively. This demonstrated that HIV prevention research in South Africa was partly stratified according to race. The researcher hence proposed to reverse this trend by focusing on the previously un-researched or previously under-researched demographics. This explains why the sample consisted of only Whites and Indians. Finally, students were selected instead of staff for purposes of convenience but also because HIV on some campuses affects students more than it affects staff (HESA 2009).

The study comprised of forty (40) purposively sampled respondents, roughly divided between white and Indian male students based at Howard College. The total number of respondents was arrived at purposively and conveniently, the researcher using her advance knowledge (Sakarombe 2012) of the white and Indian male population at Howard Colleges to constrain her selection. For instance, there are roughly equal numbers of white and Indian students to be found lounging at the coffee shop and on the benches outside TB Davis lecture rooms at any given time. Furthermore, both whites and Indians are hard-to-get sample as evidenced by research done by the

¹⁰ <http://ii.ukzn.ac.za/Report/StudentHeadCounts> . There are also 86 Coloured male students

HSRC (2002, 2008 and 2010) as well as research done by Sakarombe (2012). The two demographics at most refuse to answer to questions pertaining to HIV and AIDS. According to the HSRC study, when researchers conducted door-to-door surveys, most of the respondents refused to open their doors or to answer the questionnaire. This prior knowledge meant that the total number of respondents interviewed was not, in itself, important. What was more crucial was the criteria used to select the sample. In this case, theoretical sampling (Glasser and Strauss 1967) was used, which involved continual sampling, collection and analysis of data up to theoretical saturation. The criteria prioritised was, therefore, based on demographic characteristics (for instance, greater numbers of whites and Indians are more likely to be found in one place by the Howard College coffee shop) and behaviours and attitudes (for instance, hard-to-get sample).

Forty represents a relatively small sample size which, however, cannot be described as being too small. The sample size was also restricted by budgetary constraints and, to a lesser extent, time available for handing out and collecting questionnaires. In the end, the size of the sample, whether small or large, did not seem an issue in the context of qualitative and interpretive investigation. Statistical representativeness, that is, was not a core aim. As Anderson (1998: 45) argues, “sample size in qualitative research has no rules and should be governed by the purpose of the study”. While Anderson may be exaggerating to say that sample size in qualitative research has no rules, he is correct to state that qualitative studies like the present one should not be necessarily bogged down by sample size stratification matters. Still, the researcher utilised three arbitrary ‘rules’ of qualitative sample size stratification.

Forty as a total sample size is still a definite number, and there are reasons the researcher arrived at that number. Ellsberg and Heise (2005: 35) point out that “a sample population of fifteen (15) units is a good average for short term qualitative studies”. Ritchie and Lewis (2003), on the other hand, regard twenty (20) to fifty (50) one-to-one interviews to be standard. The recommendations by Ellsberg and Heise (2005) and Ritchie and Lewis (2003) constituted the first arbitrary rule the researcher utilised in choosing the number of respondents for her study. The second rule was that the smaller the sample, “the better the quality of the interaction with the research

participants” (Mathew 2012: 58; Crouch and McKenzie 2006: 483). Sampling, usually defined as “the selection of a part to represent the whole” (Peil 1995: 23), does not necessarily yield better data by including everyone. The third and final rule utilised was that sample sizes are typically smaller anyway in qualitative research (Huberman et al 1994, Mathew 2012).

The reason for assuming that sample sizes should be small for qualitative is based on the fact that acquiring more data does not necessarily lead to more information. As Huberman et al (1994) argue, one occurrence of a piece of data or code is all that is necessary to ensure that it becomes part of the data analysis. Hence, a phenomenon necessarily needed only to appear once in order for it to already be of value to the study. Nevertheless, the sample sizes could not be too small since sample sizes that are too small may not be valid. On the other hand, sample sizes that are too big go against the requirements for inductive analysis that is at the heart of qualitative inquiry. Ultimately, the researcher determined a satisfactory sample size by evaluating the quality of the information collected against the research questions. Once the researcher deemed that the data had begun to “speak for itself”, there seemed no need to continue collecting additional data. In effect, the researcher continued interviewing until saturation point – the point when no new themes were coming up – was reached.

The sampling technique used in this study is non-probability sampling. Non-probability sampling is a technique based on the researcher’s subjective judgment (Given 2008). The technique is not dependent on producing statistically representative samples or drawing statistical inferences from gathered data. Even where a piece of data, code or theme may appear only once, there is room for it in non-probability sampling. It contrasts with probability sampling which selects participants randomly and in their true proportions because the participants already have a known probability of being selected. Probability sampling generates statistically representative samples that are deemed suitable for hypothesis testing. There are five types of non-probability sampling, namely: purposive, convenience, snowball, self-selection and quota. The non-probability sampling type used in this study was, as noted earlier, a mix of purposive and convenience sampling.

The convenience sample describes the sample that is easiest to access. The sample is hence “restricted to a part of the population that is readily accessible” (Singh and Mangat 1996: 7; Fisher *et al* 2002). Few rules govern how the sample should be collected. Convenience sampling typically permits the selection of subjects for reasons of availability (Bowling 1997, Moodley 2009). Availability is also a function of time and budgetary constraints. Although the researcher had enough time on her hands, she did not have a research budget to sample participants at UKZN’s other four campuses: Pietermaritzburg, Medical School, Edgewood and Westville. Due to choosing this particular sampling frame, the researcher was able to achieve the sample size required in a relatively fast and inexpensive way.

By and large, convenience sampling meant that the researcher was able to interview participants who are based at UKZN’s Howard Campus, and could have access to them within the vicinity of the campus grounds, coffee shops, common sitting and rest areas and so on. This method was particularly successful during my previous honours research (Sakarombe 2012) on the same subject but with a much smaller sample of ten participants, who were all white and male. Nevertheless, convenience sampling – like any technique – has its disadvantages.

The first disadvantage is ‘number’ bias. As already noted, UKZN is found at multiple sites totalling five campuses, including Howard College. A convenience sample comes with the risk of under-coverage or over-coverage of particular groups within the same sample. Covering Howard College means that the researcher missed views from the other four campuses. The second disadvantage is that convenience sampling – being a non-probability technique – may mean that findings cannot be generalised and transferred to the population at large (Mathew 2012).

The researcher also employed a limited version of snowball sampling. Snowball or chain sampling, in particular, facilitates the identification of hard-to-find cases. Whites and Indians, in the context of HIV research, are typical hard-to-find cases. In the initial stages, the researcher faced challenges finding white and Indian male participants who were willing to be part of the research, as outlined in the data collection section below. Interestingly, the researcher had even been cautioned during one seminar presentation of her research topic. She was warned that she

would not find, in particular, any 'whites' willing to be interviewed about HIV. Before the week had ended, however, snowball sampling was (partly) useful to the study because it allowed the researcher to make initial contact with a small group of white and Indian students sitting outside Malherbe Library and TB Davis rest areas. The researcher was then able to use this group to establish contact with others (as outlined by Bryman 2008: 184) that week and in the following weeks. Generally, subjects first contacted were asked to suggest acquaintances who were in a few cases approached, given questionnaires and asked for additional suggestions of respondents. As will be clear in the data collection section below, this snowball sampling was a far from a perfect method. Nevertheless, a sufficient number of subjects were accumulated to give the study adequate sample strength (Patton 2002).

Ethical considerations

To ensure that data collection was ethically sound, and that the dignity, rights, safety and well-being of all actual or potential research participants was safeguarded, formal ethical approval was obtained from the School of Applied Human Sciences Higher Degree Committee. Gatekeeper approval to conduct research at Howard Campus was obtained from the UKZN Registrar before the data collection process commenced. A consent form was distributed to the participants upon participation (see Appendices). Participants were given all the necessary information pertaining to their participation in the research process. This information included their level of confidentiality, how much of their time was to be used for research purposes, what they could expect from the research, data storage and how the results were to be used (Kumar 1999; Mack *et al* 2005). The participants were informed that they were allowed to participate or limit their participation at any time during the interview with no repercussions. They were also not forced to answer any question that they thought was sensitive or questions that may have caused stress, undue pain or sadness. Additionally, most of the participants chose to withhold their real names opting for pseudonyms out of fear that identities could be traced.

The researcher was cognisant of the principles of ethical research throughout the research process, especially consent and confidentiality. Tom Beauchamp and Jim Childress (1983) add four more ethical principles to consider when carrying out

research, besides consent and confidentiality. These are autonomy (respect the rights of the individual); beneficence (promoting good); non-maleficence (not doing harm); and justice (promoting equity). Due to all these factors, the researcher therefore considered carefully the context in which she was doing research (a multi-racial university campus) as well as the potential sensitivity of the topic (race, gender, circumcision, HIV). A key question considered before hand was whether or not the subject could be potentially traumatising to the respondents. This was found not to be the case basing on the researcher's prior experience on a similar project (Sakarombe 2012). No distress or anxiety was noted during the interview process.

In sum, all the participants to the study freely consented to participation, without being pushed, coerced or unfairly pressurised. They were all fully informed about what their participation in the research entailed. Because written consent tended in some situations to unsettle some respondents, the researcher personally reassured everyone that refusing to participate in the research would not in any way affect relations at the university or anywhere.

In such cases, verbal consent was obtained. There was, however, no need to protect the identity of the respondents since no names or identities were collected. The researcher was careful not to leave the filled-in questionnaires lying around carelessly at home or in the library. The electronic copies of the research were kept in a secure folder on a password protected personal computer.

Data Collection

Data was collected between October 2013 and January 2014. Gate-keeper approval was obtained in late October, signalling that field research could begin. The researcher went out on selected days to sites at Howard College where students normally congregate such as park benches, coffee shop, campus cafe, and main library. After introductions, obtaining consent, explaining what her research was about, she handed out standardised open-ended questionnaires to participants for them to fill. The units of observation used in the data collection were individual and group. Two main demographic groups were observed: Whites; Indians. Coloured students fell outside of the purview of the study's research question for two reasons. Firstly, and mainly, Coloureds are not considered a "hard-to-get" sample in HIV

prevention research in South Africa. Secondly, there are too few Coloureds at Howard College to merit, on the one hand, a purposive baseline sample and, on the other hand, comparative analysis alongside data for Whites and Indians.¹¹ The absence of the Coloured sample is a study limitation that needs to be indexed as a target for a future study on knowledge, attitudes and perceptions to HIV prevention at Howard College. In any case, the demographic parameters noted above led the researcher to construct a sampling grid made up of two columns for each demographic. Supposing that twenty participants were interviewed in each column, the ideal total study sample would be forty.

Semi-Structured, Open-Ended, Exploratory Questionnaire Design

The research instrument employed by the researcher was selected on the basis of its ability furnish quality exploratory data, to render participants' points of views as unambiguously as possible, as well as to render maximum validity and reliability. The study used a two-page self-administered semi-structured, open-ended, exploratory questionnaire – which consisted of open-ended questions – as its chief research instrument. The semi-structured questionnaire was preferred primarily for its ability to elicit and generate data of an exploratory nature on knowledge, attitudes and perceptions. By employing the questionnaire one could elicit maximum data and a wide variety of behavioural and attitudinal responses from minimum questions. The questionnaire also has an advantage over the interview in that it allows one to sample more units, at lower or no cost. It would have been difficult for the researcher as an individual woman to interview each of the forty units in the sample population.

Unlike interviews, questionnaires generally allow for greater reliability (Robson 2002). This is because the same standard questions can be asked without variations. There is also no interviewer or evaluator bias. There are no visual or

¹¹ The population for male students at Howard College (as of 2013) is 3593 Black, 496 White, 1285 Indian and 86 Coloured (<http://ii.ukzn.ac.za/Report/StudentHeadCounts>). As noted in the introduction to the study, the majority of students at Howard College are from the White, Indian and Black population. Out of 43 156 students at UKZN in 2013, only 946 were Coloured, a percentage of less than 1%. This makes Coloureds not only an atypical part of the sample but also prone to non-response error. Non-response error is the difference between data gathered using students who responded (Whites and Indian) and the data that would have been gathered if every sampled student had responded.

verbal clues given about which answers the interviewer expects. Additionally, the semi-structured questionnaire, through mixing open-ended and standardised questions, allowed respondents to write down answers in their own words. There was no right or wrong answer, and respondents were free to write negative, positive or non-committal answers. Furthermore, the researcher had no intention to analyse the data statistically – hence it could be as open as possible to allow for interpretive analysis. The questionnaire which was standardised in terms of wording and order of questions, was exploratory in nature hence the questions contributed to the qualitative data rather than quantitative. Every respondent received the same questionnaire with the same set of numbered questions, whether Indian or white. There was also no problem with respondent literacy since these were university students.

While there are no hard and fast rules about designing questionnaires, a well designed questionnaire generates better data compared to a poorly constructed one (Fink 2003). For this reason, a lot of effort went into designing this particular questionnaire, while a specific protocol was observed. The most important point noted in the design was to ensure that all the questions addressed and elicited knowledge, attitude and perceptions. In this way, the questions asked and the data generated could meet the study's research objectives. Linked to this point was a concern with making the questionnaire as clear as possible so that respondents would not conceal their knowledge, attitudes and perceptions. Finally, an eye was kept on constructing questions with data analysis and interpretation in mind. The researcher made sure to anticipate how she intended to use the collected data when preparing the questionnaire.

Questions were arranged to flow in a logical, meaningful order – with questions on the same subject grouped together. The questionnaire started with demographic questions both to help respondents settle and to record important statistical data on race. Obviously, it would not have been useful not to be able to distinguish responses by Indian students to those from Whites. Opening with this 'redundant' demographic question was important in enabling the respondents to feel comfortable – for without feeling comfortable answers about attitudes and perceptions could not have been easy to get. The demographic question was immediately followed by a

question about knowledge of HIV prevention in general. This general question about HIV prevention was followed by one on knowledge about MMC. The purpose of having this particular question follow the general one was to enable later comparative interpretation.

A statistical question – asking whether or not the respondent was circumcised and whether they knew about the ongoing campus MMC campaign – was followed by perception and attitude questions focusing on MMC. Potentially sensitive questions about HIV and race were left to the end – so that respondents would not break off from answering questions at the beginning of the questionnaire or in the middle. In general, this variety of questions was designed to ensure that respondents did not get bored. The 2-page length of the questionnaire was also a deliberate consideration to prevent boredom and potential interruption by fellow students or lectures.

The design of questions was such that the use of leading questions was avoided. Only a single topic per question was asked in order to avoid ambiguous, double-barrelled questions. Not only was unimportant information not requested, but conscious effort was made to keep questions as simple as possible. Finally, open-ended questions were mixed with standardised questions. As Polit and Hungler (2004: 349) argue, open-ended questions “allow participants to respond in their own words”. It was important that respondents *think* about their answers and *recall* what their attitudes and perceptions to MMC were. Standardised, closed questions, on the other hand, restrict responses to certain consistent answers that can be easily classified and coded. Potential implications for coding, aggregation, comparison and interpretation during the data analysis stage later on were important considerations at this stage. Finally, though this was a 2-page questionnaire, ample writing space was given to allow for moderately lengthy open-ended answers.

The questionnaire was pre-tested on a small number of people. The researcher handed it out to five UKZN male students (three Indian and two white). The purpose of the pre-test was to test the effectiveness of the semi-structured interview questionnaire as a data collection method. The pre-test confirmed that the semi-structured questionnaire was a viable means of collecting data though some of the

questions needed to be re-phrased properly to reduce ambiguity. The pre-test also impacted on questionnaire length and timing issues. It was noted during the pilot that each respondent would spend about fifteen to twenty minutes on a questionnaire, depending on how fast they read, understood and wrote down their answers. Such a time frame was also thought to be reasonable in order not to inconvenience and delay students too much from other commitments. Timing was such that students were asked first about how much time they had to avoid non-completion due to time constraints.

The method of contact and delivery – self-administering of questionnaires – was decided on after the pre-test. Using this method allowed the researcher to use eye-contact, elicitation and physical presence to create rapport and trust with the respondents. Being there allowed the researcher to show sincerity instead of the impersonality of, say, email self-completion surveys. Without a level of trust, sensitive and overly personal questions about attitudes and perception could have been difficult to make and answers could have been evasive. The researcher was always careful to leave the respondents to answer the questionnaire after this initial introduction. She only returned to collect the completed item after a prescribed deadline, usually twenty minutes. This minimised the ‘response effect’ where respondents would have tried to please the researcher or been embarrassed by her constant presence. Finally, although electronic distribution of questionnaires was a practical option and would have been comparably faster, the researcher had ample time on her hands to administer questions in person.

Data Analysis

Thematic, exploratory analysis was used in this study (Braun &Clarke 2006). Common and main themes that recurred across the data were identified. The units of analysis used in the study were the individual and the group. Two demographic groups were analysed: Whites and Indians. The key demographic variables used were gender and race. These parameters led the researcher to construct a sampling grid made up of two columns for each demographic. Coding rows for Health Belief Model and Social Ecology Model themes would be added during the actual coding process in the next chapter. The study applied three operational definitions that define ‘knowledge’ as knowledge of MMC, ‘perception’ as perception of MMC and

'attitude' as attitude to MMC. Using the exploratory research design, into which is incorporated the HBM and SEM frameworks, the study intended to analyse as much baseline data on the phenomenon under study as possible.

Analysing qualitative data is arguably the most difficult part of qualitative research process (Patton 2002). Data collected using the semi-structured, open-ended questionnaire tended to be verbatim. For this reason, it came with coding, categorising and classifying issues. Coding verbatim comments was not only time-consuming but one also had to be careful about importing errors into the data due to transcribing mistakes. Finally, the researcher's interpretation of the answers may not always be what the respondents intended. However, it would not be qualitative research without the researcher's freedom to interpret words as she saw them.

The researcher followed five stages in the data analysis process. Firstly, data was analysed from the questionnaires. This took two weeks. Secondly, the researcher identified and listed themes in the data. Thirdly, the researcher constructed a coding scheme. This is a template of where the themes and codes were to be slotted, ranging from broad codes to sub-codes. Fourthly, data was coded according to the coding scheme. Finally, data was interpreted in order to come up with sets of findings. The stage for thematic analysis – defined as a “form of pattern recognition within the data where emerging themes become categories for analysis” (Fereday & Muir-Cochrane 2006: 4) – entailed reading the data and recognising the themes on MMC and HIV prevention that arose and then grouping them together for further examination.

The data analysis is also the stage where validation techniques were applied to the data. To maximise validity, conclusions were based on supporting evidence. Context was given to allow readers to assess the researcher's interpretations. To maximise reliability, data between and within cases was compared, and the whole data set analysed. The aim of qualitative data analysis was to find patterns among the data (Babbie 2004). These patterns aided in the development of a theoretical understanding of white and Indian males' perceptions of MMC as an HIV prevention procedure. Data obtained from the interviews was transcribed and analysed based on thematic grids.

The researcher focused on themes on MMC and HIV prevention as units of analysis and used open coding by assigning initial codes or labels. Codes are “tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study” (Fereday and Muir-Cochrane 2006). The researcher used three categories of themes which are Perceptions, Knowledge and Attitudes and used the HBM and SEM constructs as codes to assign meaning to each. Codes are usually attached to chunks of varying sizes of words, phrases, sentences or whole paragraphs, connected or unconnected to a specific setting (Miles & Huberman 1994, in Neuman 1997) in an attempt to shorten the mass of data on perceptions, attitude and knowledge of MMC into categories (Berg 1995).

Data Collection Trail & Limitations

Forty-five (45) questionnaires were distributed to white and Indian male students at Howard campus over a period of eight weeks. The researcher took the questionnaires to the respondents on campus in person, especially during lunch time or break. The data collection took eight weeks because each time the researcher had to wait for responses from participants. The time-frame for returning completed questionnaires took from twenty minutes to a week. Sometimes participants took more than one week to return the completed questionnaire. The researcher also chose to self-administer all questionnaires after an incident of data tampering and proxy responding that happened when she was doing her Honours research on the same topic (though with a sample limited just to the white students) a year earlier (Sakarombe 2012).¹²

¹² During the administration of research questionnaires, the researcher requested a white female colleague to distribute four questionnaires to her white male friends. The reasoning was that she would be a more convenient courier as she had many white male friends on campus. The female colleague however went home with the questionnaires, forgot to distribute them and hurriedly filled in all four questionnaires herself three days later when the researcher called on her to collect them. Evidence of this data manipulation and tampering was provided when the researcher analysed the returned questionnaires. All four questionnaires had the same hand-writing with slight poorly-concealed variations (some were written in caps while others used different inks). All four not only had surprisingly similar handwriting but had suspiciously uniform answers, suggesting that someone had rushed them. The final and most important clue was that all four questionnaires were only answered on the first page, with page 2 on the back left unanswered. It was somewhat illogical that all four respondents forgot to answer the back of the page. It seems the willing but unhelpful friend did not see, as she was filling in the first page on the front, that there was printed matter at the back.

A general limitation observed in studies similar to this one concerns response rates from whites and Indians in HIV studies in South Africa. Response rates have generally been disappointingly low (HSRC 2008; Nelson Mandela Foundation/HSRC 2002: 36, 41). They are what would be called hard-to-get or non-contact respondents (Nelson Mandela Foundation/HSRC 2002: 40, 50). In the Nelson Mandela Foundation/HSCR study, for instance, 32% of white households refused to be interviewed or be tested as well as 17% of Indians as compared to 9% Africans. White and Indian male students at UKZN are also a hard-to-get sample when it comes to issues that have to deal with HIV and AIDS. While the response rate was 100% for both white and Indian students (the researcher sought twenty respondents each and got twenty), there were several instances when some students simply politely declined to be part of the research without giving any reasons. In one slightly bizarre case, a group of students simply got and left when the researcher arrived at the place where they were sitting. A fellow white male student carrying out research on MMC ironically declined to be interviewed and also cautioned the researcher that she might not find anyone willing to assist her with responses. Nonetheless, despite this scepticism, enough willing participants were found.

The data collection phase of the study faced at least three limitations. Firstly, time was a logistical problem as this project was not planned as a longitudinal study which assesses knowledge, attitudes and perceptions over time and how and if they change. This study was, in a way, constrained by the “due date” of the dissertation which fell roughly within two years between registration and the handing in of the “intention to submit” form. A longitudinal study of the knowledge, attitudes and perceptions of white and Indian male students to MMC as an HIV prevention procedure is a worthwhile topic for future research. Secondly, the research dealt mainly with male students and given the nature of the research some male students were reluctant or uncomfortable to take part in the research process. This reluctance was overcome by a limited version of snowballing where willing respondents helped identify other willing colleagues. Lastly the fact that the researcher is a female dealing with manly issues posed initial problems as some students would decline openly to discuss MMC issues with a woman. There was nothing the researcher could do to prevent the discomfort except reiterating that the study would follow the highest ethical standards in handling data, particularly issues of confidentiality.

Conclusion

This chapter outlined the methodology used in the study. The chapter described the research design that was used and the reasons for preferring such an approach. It also described the size and nature of the sample, the data collection methods used, and ethical considerations. The methods used to maximise validity and reliability were outlined. Finally, the chapter explained how data was coded and analysed and what the limitations were.

CHAPTER FIVE

DATA ANALYSIS AND PRESENTATION

Introduction

This chapter analyses data collected on medical male circumcision (MMC) at UKZN and presents some of the key findings along with the discussion. The analysis has three goals. Firstly, the intention is to establish what white and Indian male students at the University of KwaZulu-Natal's Howard College *know* about MMC as an HIV preventive procedure. Secondly, the analysis is targeted at establishing *perceptions* and *attitudes* of these respondents towards MMC. Finally, the chapter evaluates the significance of the data in relation to the study's research questions, objectives, literature and the two conceptual models that were used to frame the inquiry.

Data analysis is necessarily a "practice" (Sandelowski 1995; Froggatt 2001; Jennings 2007). The main process of data analysis applied in order to deal with the mass of data involved finding thematic patterns in the data set. The method is known as thematic analysis, which is defined as a method for "identifying, analysing and reporting patterns within data" (Braun & Clarke 2006: 79). A theme is defined as a unifying, central, recurring idea. Ideally, a theme captures "something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set" (Braun & Clarke 2006: 82). The iterative nature of qualitative data makes thematic analysis an important analytical method. In this chapter, the identified themes were drawn on in order to qualitatively address the study's three core research questions on knowledge, attitudes and perceptions.

Briefly, the researcher followed five stages in the qualitative data analysis process. Firstly, data gathered on knowledge, attitudes and perceptions was transcribed from the questionnaires to create a data corpus. Secondly, the data corpus was manually inspected and tagged for codes, using highlighter pens and markers. This was the data retrieval staged which produced a data set. Thirdly, the researcher constructed

an open coding scheme (Corbin & Strauss 2007) which included going through the data set several times in order to create tentative labels for chunks of data based on the three general factors of knowledge, attitudes and perceptions. The coding scheme ranged from broad codes to sub-codes falling under knowledge, attitudes and perceptions. A total of nine (9) visuals in the form of tables were used for the purpose of sorting codes. Codes are simply “words or chunks of words and phrases” (Carpenter & Suto 2008: 116) used by respondents to a study. Again, this was done manually.¹³ The codes identified in stage two were then coded (related to each other) according to a specific coding (or naming) scheme to find different themes. The tables acted as thematic maps, helping the researcher to visualise the relationship between themes identified. Finally, data was interpreted in order to come up with sets of findings.

The five stages of data analysis were interwoven with data reduction. Data reduction, which is an aspect of coding, refers to the process of “selecting, focusing, simplifying, abstracting, and transforming” the data from transcriptions (Miles & Huberman 1994) in order to make it manageable. An important aspect of data reduction is reflected in the arranging and display of the data through the nine diagrammatic visuals. The visual displays enabled the researcher to extrapolate from the data in ways that allowed systematic patterns and relationships to emerge and to be discerned. Validation techniques, such as triangulation and comparison, were further applied to the “reduced” data. The organising pre-occupation in this chapter was, on the one hand, to let the data “speak for itself” as far as possible (emic coding) and, on the other hand, to balance this by applying the researcher’s own objective criteria (etic coding). Rather than just list segmented themes and sub-themes, the emphasis was on the quality of interpretations. This helped draw the full potential of the data corpus and the data set. This chapter is the write-up resulting from the five stages outlined above. There are two main sections in the chapter, presented sequentially. First is the findings section, which will be followed by the section carrying the discussion. Findings are the summary of the data analysis process. The discussion is the knitting together of the findings in a meaningful way. Findings will be presented first, followed by discussion and interpretation.

¹³ In fact, at no point in the data analysis was coding software, such as NVivo or Atlas ti, relied on.

There were forty respondents to the study. The respondents from the sample have been labelled as respondent 1 (R1) to respondent 40 (R40). Respondent 1-20 (R1-R20) are Whites and respondent 21-40 (R21-R40) are Indians. This organisation of the data actually gave us two semi-discrete data sets, one for whites (R1-R20) and the other for Indians (R21-R40). The units of analysis do not change. They remain the individual (e.g. R1, R5 and R11) and the group (e.g. R1-R20). In the discussion, data from R1-R20 is presented first, followed by R21-R40. The analysis, however, combined insights from both data sets. In the R1-R20 group, one respondent had nothing to say. The questionnaire return rate, however, was 100%. All the respondents in the R21-R40 group responded to the questionnaire, with a 100% response rate.

Three broad factors were examined. These are Knowledge (K), Attitudes (A) and Perceptions (P). Knowledge, attitudes and perceptions are classified as “intrapersonal” factors in the social ecology model (SEM). Importantly, these three intrapersonal factors are intertwined with four other factors: interpersonal, institutional, community and public policy. The influence of all these five factors that form the basis of the social ecology model were described and examined. A further five constructs drawn from the Health Belief Model (HBM) were used to test for knowledge, attitudes and perceptions. These constructs are: cues to action; perceived susceptibility to HIV; perceived severity of HIV; perceived barriers to MMC; and, perceived benefits of MMC. The data analysis is therefore organised to reflect the importance of the ten constructs from the SEM and HBM models interpretive anchors.

Together, the constructs from the HBM and the SEM underpinned the study’s findings. As emphasised in the theoretical framework chapter, the social ecology perspective and the health belief perspective were preferred because of their appropriateness, simplicity of application and combined explanatory power in helping to address the *what*, *how* and *why* knowledge, attitudes and perceptions towards a public health issue such as medical male circumcision are formed. The social ecology model was drawn upon in this study in order to attempt to understand the social and environmental factors that influence what white and Indian male students

at the University of KwaZulu-Natal's Howard College know and feel about medical male circumcision as an HIV prevention procedure. The health belief model, on the other hand, was considered appropriate for purposes of explaining and understanding specific health beliefs and behaviours of white and Indian male students at the University of KwaZulu-Natal. Not only did these two frameworks overlap, but it also seemed suitable to use them in combination since health behaviours cannot be fully explained through just a single theory. Taken together, these two models assist to deal with the study's research questions. The research questions, as noted, assume that people's actions in different environments are influenced by various factors. These diverse factors make health behaviour and health behaviour change difficult to determine due to the fact that human nature is not always predictable.

Core Findings

A general observation is that the questionnaires showed a complex range of responses about the three intrapersonal factors of knowledge, attitudes and perceptions. All the core findings are necessarily linked to the study's three research questions. As Wolcott (1990: 30) recommends, one must constantly "Keep in mind what you have set out to do". As such, the core findings in the study are arranged below in three sections for knowledge, attitudes and perceptions. The themes presented in the three sections also overlap. Each section is organised in such a way that it starts with detailed description and reporting of the data from the questionnaires, followed by interpretation of the data using constructs drawn from the SEM and HBM. The interpretation is the stage where I shall address the question: what does it all mean? Each of the three themes is anchored by two tables each, presenting data from R1-R20 and R21-R40 respectively. There are, therefore, six tables that describe the whole data set. All forty respondents are represented and their responses about knowledge, attitudes and perceptions described. These findings are described and presented without following any order of importance.

Knowledge

RESPONDENTS	KNOWLEDGE OF MMC AS AN HIV PREVENTION PROCEDURE ("Have You Heard about MMC?" Describe Briefly what you Know about MMC")	KNOWLEDGE OF UKZN MMC CAMPAIGN ("Do you Know about the UKZN campaign?")
R1	NO, "Not much really except the cutting part"	NO
R2	YES	NO
R3	YES, "Removal of the male foreskin"	NO
R4	YES, "Removal of foreskin completely"	YES
R5	YES, "Surgical removal of the foreskin"	YES
R6	YES, "It prevents STI and HIV/AIDS"	NO
R7	YES, "It reduces chances of being HIV +"	YES
R8	NO, "Not much really"	NO
R9	NO, "It's dangerous and painful"	NO
R10	YES, "Removal of penis foreskin"	NO
R11	NO, "I know about it from the Bible"	NO
R12	NO, "Heard that it prevents spread of virus"	NO
R13	YES, "It reduces infection by 66%"	YES
R14	YES, "Reduces HIV and STI infection"	YES
R15	NOT MUCH	NO
R16	YES, "It reduces HIV infection by 60%"	NO
R17	YES, "The surgical removal of the foreskin"	NO
R18	YES, "The removal of foreskin"	NO
R19	No comment	NO
R20	YES, "The cutting of foreskin"	NO

Table 3: R1-R20 White students' Knowledge of MMC as an HIV prevention procedure

The two key questions about “knowledge” were “Have you heard about MMC?” and “Describe briefly what you know about MMC?” An additional question, intended to draw attention to cues for action, was “Where have you heard about MMC?” Knowledge of MMC as an HIV prevention procedure in the case of the R1-R20 group is relatively high, with 13 of the 20 respondents reporting “yes” to the question requiring them to state if they had ever heard of, or knew about, MMC. These 13 respondents had all been exposed to a range of media such as TV, billboards and print that mentioned MMC as an HIV prevention procedure. The use of media specifically TV as a source of information about MMC suggests that TV, along with family and friends, was an important “cue to action”. Having said this, the findings here show the “development occurring within South Africa’s mediated landscape; although internet access is on the rise thanks to the use of smart phones, traditional formats still dominate public media consumption within the country” (SAARF 2011; Mathew 2012: 90). Media, family and friends as sources of information about HIV prevention acted as “cues” that activate or stimulate readiness to adopt specific health behaviours. All 13 respondents reported that they had at some point discussed MMC with friends or family. These interpersonal and community processes helped to drive knowledge of MMC as an HIV prevention procedure.

Four respondents reported that they had not heard about MMC or did not know what it was. Interestingly, only one (R16) of the 13 respondents who reported knowing something or other about MMC knew of the statistic that MMC prevented infection by 60%. The only other respondent in this group to mention the percentage of prevention efficacy of MMC (66%) was R13. The other eleven respondents knew about MMC to be an HIV prevention procedure that involved some form of “surgical removal” or “cutting” of the foreskin but did not seem willing or able to elaborate about its reported medical effectiveness. There was also a further distinction in knowledge with five respondents defining MMC as simply the “removal of the foreskin” against two who went further to define MMC as the ‘surgical” or “medical” removal of the foreskin. The majority of responses, therefore, seemed to suggest that the prevailing knowledge of MMC was of a general, limited nature. Indeed, respondents such as R1 reported that they did not know much really “except the cutting part”. These inconsistent answers cast doubt on the precise nature of the

knowledge that the respondents have about MMC. Is this knowledge of MMC specifically or just male circumcision? The responses fail to shed more light on this question.

Some answers given in response to some of the “knowledge” questions seemed unreliable. This is the case with, for instance, R12, R11, R9 and R1. When asked if he had heard about MMC, R12 initially reported that he had not heard about MMC at all. When asked to “Describe briefly” what he knew about MMC, however, he reports that he had “Jus’ heard that it helps in preventing the spread of the virus”. R12 also reports that he had previously discussed MMC with his friends. While the former response suggests that R12 had not heard anything about MMC at all, the latter responses indicate that he had in fact heard about MMC. R11 reports that he had never heard about MMC. Later, however, he admits that he thinks MMC is not 100% effective in preventing HIV. R9 responds “No” to the question about whether he had heard about MMC, but argues that MMC is “dangerous and painful”.

Finally, R1’s response of “not much really except the cutting part” shows he has some knowledge. Such ambiguities in the responses might have resulted from a failure to understand or interpret the questions correctly, or from plainly giving false information in response to some of the questions. This might be as a result that MMC is a sensitive issue that is not supposed to be discussed in public. It seems likely, however, that the question “Have you heard about MMC?” may have been ambiguous. Follow up questions helped clarify things and showed that, actually, those who had earlier said they had not heard about MMC actually had a general opinion about it. It is possible, but highly unlikely, that some respondents may not have known what the abbreviation MMC stood for. The questionnaire carried both the term ‘Medical male circumcision’ and the abbreviation MMC in bold letters. The researcher also explained fully to each respondent that she was referring to medical male circumcision as an HIV preventive procedure. Nevertheless, such responses had to be carefully and rigorously screened for reliability and validity.

Only five of the twenty respondents reported having ever heard of the UKZN MMC campaign launched at Howard College in April of 2013. Such a low knowledge of a specific MMC campaigns translated, significantly, into a low uptake of MMC facilities

on campus. This conclusion was backed up by information availed to the researcher in an interview with the Co-ordinator of the Campus HIV Unit who confirmed that only one white student had visited the clinic since the beginning of the campaign (Interview with Noxolo Bathembu: 16 January 2014). The one white student had, in any case, visited the clinic for an HIV test. The clinic staffers had, however, used the opportunity to talk to him about the campaign. Since the beginning of the campaign, 43 students had been circumcised. All 43 students were black (interview with Noxolo Bathembu 16-01-2014).

RESPONDENT	KNOWLEDGE OF MMC AS AN HIV PREVENTION PROCEDURE	KNOWLEDGE OF UKZN MMC CAMPAIGN
R21	NO.	NO
R22	YES, "That it is a necessity"	YES
R23	NO.	NO
R24	YES, "Decreases risk of infection"	NO
R25	YES, "It is a preventive method against HIV"	NO
R26	YES, "Surgical removal of foreskin"	NO
R27	YES, "It prevents 100% against HIV +"	YES
R28	YES, "It is hygienic, so they say"	NO
R29	YES, "Removal of the foreskin"	NO
R30	YES, "Removal of the foreskin"	YES
R31	YES, "Removal of the foreskin medically"	YES
R32	YES, "Removal of the foreskin"	YES
R33	NO	NO
R34	YES, "Removal of foreskin"	YES
R35	NO	NO
R36	YES, "It is surgical removal of foreskin"	NO
R37	YES, "It is the removal of the foreskin"	NO
R38	YES, "It prevents against infection"	NO
R39	YES, "For genital hygiene"	NO
R40	YES, "Have heard that it ensures better sex"	NO

Table 4: R21-R40 Knowledge of MMC as an HIV prevention procedure

The knowledge of MMC as an HIV prevention procedure in the R21-R40 demography was high (Table 4). Sixteen respondents out of twenty reported that they knew what MMC was and had heard about it prior to the interview. However, only six of the sixteen had heard about the MMC campaign at Howard College. Four respondents reported never to have heard of MMC. Only one (R31) of the twenty respondents elaborated on the effectiveness of MMC, specifically its ability to prevent infection by 60%. Five respondents defined MMC simply as “the removal of the foreskin”, compared to three who defined MMC as the surgical or medical removal of the foreskin. Two respondents referred to the importance of MMC for purposes of “hygiene” whilst one stated that MMC ensured “better sex”.

The most frequently cited source of knowledge about MMC is “the media”. One respondent (R27), however, reports that he had learnt about MMC from a campaign he heard about whilst riding on the Tugela ferry at Msinga. Furthermore, the sixteen respondents who had knowledge of MMC had spoken about MMC with friends and family, suggesting a range of interpersonal and community networks within which ideas about MMC circulated. Knowledge of MMC came in various kinds. Whilst some saw MMC as an HIV prevention procedure, there were also some who appeared not to accept that MMC was primarily an HIV prevention procedure. They saw it, rather, as a tool for, on the one hand, genital hygiene and, on the other hand, better sex. R16, for instance, reports that his friends say that MMC “elongates their time when making love”. There is further evidence that knowledge of MMC was not uniform across the data set. R5, for instance, did not think MMC would work for him as he was not HIV positive. This belief conflicted with the view held by R4 who reasons that MMC is useless for HIV positive people. In R4’s words “Those abstaining and those who are already HIV+” would gain little from MMC. This diversity of knowledge about MMC characterises both demographic units.

Discussion

Most of the respondents who participated in the research study have some knowledge on what ‘MMC is about’ as most of them were able to briefly describe it. For instance some respondents said “It is the surgical removal of the foreskin of the

male organ” (R17, R26, R36) while others said, “it has to do with the cutting of the foreskin of the male organ” (R1, R20), and so on. These respondents reported that they acquired the knowledge of MMC from schools, family, friends, local clinics, UKZN publicity, and through media. Most of these respondents, however, do not possess specific knowledge on the percentage of effectiveness of MMC. Most have information on MMC as an HIV prevention procedure, although this information does not appear to be adequate. In fact, a high number of respondents who participated in the research study do not have any knowledge on MMC and its associated benefits. In essence, the general knowledge of MMC as an HIV prevention procedure has not translated into uptake of MMC. According to the coordinator of the campus HIV Unit at Howard College, Indian and white students are yet to be circumcised at UKZN (Interview with Noxolo Bathembu: 16 January 2014).

MMC facilities on campus are free, highly accessible and within a stone’s throw distance from the library and cafeteria. The low uptake of MMC services may, however, point to the inadequate publicity surrounding the campaign launched in 2013. In the context of the metaphor of the “Chinese box” – boxes within boxes – or the matryoshka (Russian wooden doll) used to illustrate the multilevel, concentric and integrated features of the ecological model (Susser & Susser, 1996: 676) in Chapter 3, it appears that there may be a break in the “concentricity” of how some whites and Indians at Howard College interacted with certain types of information shared on campus. It would not be appropriate for this researcher to generalise and say that whites and Indians do not “listen” to information about HIV prevention on campus. However, there are indications that of the three main demographic groups on campus, whites and Indians are the least represented in terms of uptake of HIV prevention information. The obvious limitation of this study in this regard is that it did not carry out a comparison of knowledge of MMC between whites, Indians and black students during and after the launch of the Howard College campaign. Such a comparison would have allowed a correlation to be made between knowledge and uptake. Nevertheless, studies (cf. Naidoo 2005) prior to the launch suggest that black male students at UKZN were already exposed for several years (nearly a decade) to messaging about MMC as an HIV prevention procedure.

It is not clear, at this point, which sets of personal, behavioural, social and environmental aspects amongst whites and Indians are behind, on the one hand, the comparatively high knowledge of HIV prevention in general and the low knowledge of MMC and, on the other hand, what appears to be the seriously low uptake of MMC facilities at Howard College. Religion (Jewish, Muslim) and race (white and Indian) seem to be the only clear factors that are easily associable with knowledge or lack of knowledge of MMC. On the one hand, Jews and Muslims know about medical circumcision in relation to their religion, but not in relation to HIV. Those whites and Indians who are neither Jews nor Muslims, on the other hand, do not see the point of being circumcised. The fact that whites and Indians do not see the point of being circumcised for HIV prevention explains why both racial demographics generally have a low knowledge and low uptake of MMC. As we will see, understanding what underlies this low knowledge and low uptake calls for a combination of The Social Ecology Model (SEM) and the Health Belief Model (HBM).

A perspective informed by the SEM would suggest that a combination of personal, behavioural, social and environmental aspects is behind this state of affairs. Looked at from several angles, one sees that the phenomenon is actually not a single phenomenon, but a set of nested phenomena of different, graduated levels of influence. While it is not possible to quantitatively measure the “size” of each level of reciprocal causation, it seems that each level of influence from intrapersonal (individual) to interpersonal (peers), institutional (DHET, HEAIDS, UKZN), community (Durban; Howard College) and (DHET, HEAIDS, UKZN HIV prevention, WHO, UNAIDS) policy, fits inside (and overlaps with) the next larger level, which fits into (and overlaps with) the next level, and so on. Interestingly, one observes more than just a Chinese box (Fig 12) with little boxes inside or one Matryoshka doll (Fig 13) with other smaller dolls inside. Rather, each box in a box is itself a self-contained discrete universe of other invisible boxes, such that we should begin speaking not of the intrapersonal level but intrapersonal levels, to interpersonal levels instead of the interpersonal level, community levels instead of a single community level, institutional levels instead of institutional level, and policy levels instead of one policy level. That is, each SEM level is best spoken of in the plural instead of in the singular.

To demonstrate this notion of a pluralistic discrete box of boxes, we will take the institutional level as an example. It seems quite clear that MMC is initiated at the institutional level. However, there is no single institutional level. Rather, we must speak of institutional levels. Here, WHO/UNAIDS are at the very centre or apex of the intervention. MMC moves from one institution to another, from WHO/UNAIDS to DHET (the government department), to HEAIDS (a department nested in the larger government department) to UKZN and, finally, the Campus HIV/AIDS unit in charge of dissemination information about MMC and for the actual circumcisions. As such, there are a number of institutions that are “receiving” a WHO-originated idea and taking it up and adopting it.

However, these institutions do not just receive the idea of MMC innocently. Rather, they modify WHO discourse to suit, firstly, national imperatives. This is why the Department of Higher education and Training (DHET), in its “Strategic Plan 2010 to 2014”, has prioritised HIV/AIDS as one of “seven key imperatives”, along with race, gender, class, disability, age and geographical location (DHET Strategic Plan, 2012: 5). This choice to adopt HIV as one of its seven key imperatives is likely to be as informed by WHO/UNAIDS imperatives as much as it is informed by national discourses surrounding HIV in South Africa such as the need to redress the recent governmental past of so-called HIV “denialism” under President Thabo Mbeki or the present concerns around the impact of HIV on the workforce productivity and national economic performance, among other issues.

The UKZN in turn, does not merely passively receive the DHET discourse of MMC. Rather, it sifts it through its own imperatives such as those discussed in the HESA (2008: 52) study which showed that the UKZN’s adoption and uptake of an HIV prevention strategy is directly informed by its own “institutional risk management”. Thus the institutional risk assessment that the UKZN carries out focuses “primarily” on the nature of the risks that HIV and AIDS pose to its own “mandate and functions”. As such the UKZN Vice Chancellor does not set aside funding for the Campus HIV/AIDS unit’s MMC strategy merely because he is obediently pandering to WHO/UNAIDS slogans about HIV prevention, or pressure from Minister Blade Nzimande at DHET, but because he has his own localised, situated agendas. At the same time, the Vice-Chancellor is not immune to the globalised agendas set by

WHO/UNAIDS or by the national government. Rather, what we see are the three institutions (global, national, local) in dialogue with one another, but not always in complete agreement or always in complete conflict.

The dialogue of levels within levels can turn into a monologue if one more powerful institution in the hierarchy (say WHO/UNAIDS or DHET) exerts undue pressure on a less powerful institution, but the UKZN can choose to listen or to pretend to listen to its paymasters (DHET) while the DHET pretends to listen to WHO/UNAIDS, and so on. By the time MMC reaches UKZN students at Howard College, it is no longer just the idea that was recommended by WHO/UNAIDS in 2007. Rather, it has become overloaded with complex agendas and vested interests. The same MMC “idea” is overloaded with clashing interests from such influences as religion (Judaism, Islam), media (TV, film, social media), parents and community. In addition, a level such as the interpersonal level is itself a small universe of competing stimuli, as shown in Fig 17 and in Fig 18 where “feelings” interact with “beliefs” and “actions” whether as a circle or a pyramid. Additionally, in Fig 19 knowledge interactions with perception within the “Perception Processing System” (Perkins 2005: 57) – a system that reflects the interaction of negative and positive feedback and where “stimulation”, “registration”, “organisation” and “interpretation” lead to and from one another. In the end, it is difficult, if not impossible, to pin down any one source, influence or destination of the knowledge we share in every day interactions. As such, each level (and each level within than that discrete level) is defined more by its own sets of interests and agendas than by its nested-ness with the next level. At the same time, no one level can ignore the pressure or influence that the next level exerts.

What I have found out is that the SEM levels not only contain levels within levels, and more levels within even more levels, but that the flow of influence between each level is not unidirectional. Rather, there is flow from and in every direction, sometimes simultaneously. But this relationship of flows is only the beginning. Beyond this flow I observed that one level is not necessarily subordinate to or fully coordinated with the next level. Indeed, some levels may not even have a functional relationship. That is, I observed that the SEM does not need to perfectly nested and functional flows between levels to function. In fact, the flow between levels can be clogged and blocked, as each level modifies and alters the flow of influence between

levels such that what people experience at one level is not what they experience at the next level. The simple drawing of the SEM below (Fig 20) is problematic because it does not fully capture the conflicts and breaks between levels. It merely shows that the levels are necessarily nested. I argue, however, that the nests are neither as harmonious nor homogenous nor do they function predictably. The diagram presents a homogenous shape of interactions that is difficult to achieve in the chaos real life and competing agendas. What this diagram lacks, therefore, is an account of these competing interests. It fails to show that these five levels may compete, contest and conflict instead of connecting or interacting. In real life, there is as much competition as interaction.

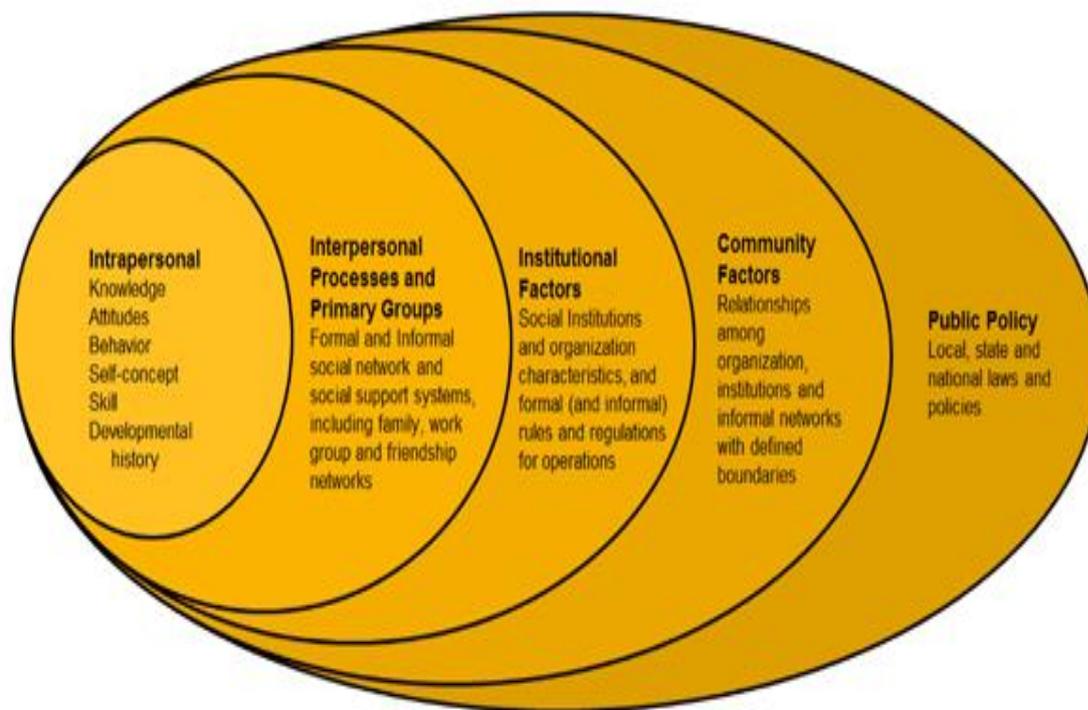


Figure 20. The Social Ecology Model after McLeroy et al (1988)

As such, the SEM in diagrammatic form (McLeroy et al 1988) is problematic because its assumption that there is an “ecology” at work implies flow-like, interactive, symmetrical relations from level to level. The “ecology” metaphor ignores the fact that what in fact happens in real life is asymmetrical, chaotic and disruptive. The knowledge that students get on MMC is not coming from the smooth flow-like

interaction of WHO/UNAIDS, DHET and UKZN but rather from the clash of interests and agendas of all three institutions. To this clash is added the influences from the intrapersonal, interpersonal, and community levels. It is impossible to avoid asymmetrical, lop-sided relations in any model where such complex influences converge. While the SEM is critical to assessing the level of knowledge of whites and Indians at Howard College, I suggest that the “ecology” of how knowledge is gained is not symmetrical but increasingly chaotic and lopsided.

The HBM, on the other hand, suggests that low knowledge and low uptake are closely linked to low perceived threat. Such a point is better illustrated in the study, given below, of attitudes and perceptions towards MMC.

The key question on “attitudes” was the follow up to the question about whether or not the respondent was circumcised. The follow up question required the respondent to give reasons explaining why they were circumcised or not circumcised. Further questions supporting this anchoring question were:

- “Should people be medically circumcised to prevent HIV/AIDS?”
- “Are any of your friends medically circumcised? _____. Why do you think this is so?”
- Would you encourage male students to be medically circumcised?
- Would you approve if your friend or brother went for MMC?
- Do you think MMC as an HIV prevention procedure would work for you personally?

Taken together, all these questions were intended to elicit rich data about attitudes towards MMC as an HIV prevention procedure. The first data set to be looked at was the R1-R20 demography, followed by the R21-R40 demography. The findings were then combined in the discussion.

Attitudes

RESPONDENT	ARE YOU MEDICALLY CIRCUMCISED	ATTITUDES TOWARDS MMC AS AN HIV PREVENTION PROCEDURE
R1	NO	"MMC is not necessary"
R2	NO	"I fear MMC"; "I'm not sure it would work for me personally"
R3	NO	"I do not like the procedure"; "I do not believe what has been said about it"
R4	NO	"My religion, culture and family have no need for MMC"
R5	YES	"I'm circumcised because I'm Jewish"; "MMC would not work for me personally as I'm not HIV positive"
R6	YES	"I chose MMC so as not to get STDs and HIV/AIDS"
R7	YES	"I went for MMC 'coz I heard it reduces chances of being HIV +"
R8	NO	"I do not see the reason for MMC"; "I don't care for MMC"
R9	NO	"I was not circumcised at birth – why now?"
R10	NO	"Abstinence is the best"
R11	NO	"There is no point - MMC is not 100% effective against HIV"; "It also reduces pleasure and sensitivity of penis"
R12	NO	"I would be willing to try MMC as I do not like using condoms"
R13	YES	"MMC prevents STIs"
R14	NO	"I am scared; so I abstain"
R15	NO	"I don't see the point" "I'm not really sure why it is done anyway"
R16	NO	"I am not up for it"
R17	NO	"I like my foreskin and I don't want it removed"
R18	NO	"It's a waste of time"
R19	No comment	No comment
R20	NO	"I don't see the benefit"

Table 5: R1-R20 White students' attitudes to MMC as an HIV prevention procedure

The R1-R20 data set shows that only four out of twenty respondents have been circumcised. A single respondent returned a questionnaire with "No comment". Of the four medically circumcised respondents, one (R5) was circumcised because of his religion. The other three were circumcised because they saw MMC as an HIV and STI prevention measure. Fifteen respondents were not circumcised at all. A variety of reasons were given for this. Some, such as R1, R2, R3, R8, R11, R15,

R17, R18 and R20 are skeptical of the efficacy of MMC as an HIV prevention procedure. Nine out of twenty respondents, therefore, are dismissive of MMC.

While R1, R3 and R18 think that MMC is “pointless” or “a waste of time”, R17 is opposed to MMC simply because “I like my foreskin and I don’t want it removed”. Others such as R12 are, however, more optimistic about MMC, declaring their willingness “to try MMC”. R12’s reasons for wanting to try MMC, however, are not entirely motivated by health benefits. Rather, he would like to try MMC “as I do not like using condoms”. R12’s preference for MMC over condoms goes against the principle of combination prevention where MMC is used in combination with condoms. Furthermore, the principle suggests, firstly, a lack of full knowledge about MMC and, secondly, that some people prefer prevention methods such as MMC only by default.

The number of respondents who reported that they were medically circumcised is higher in the R21-R40 group. A total of twelve respondents were circumcised as opposed to eight who were not. The reasons given for being circumcised, however, vary greatly. Ten out of 12 respondents were circumcised for religious or cultural reasons. It would seem that the fact that half this group is circumcised bears no correlation with a corresponding positive attitude towards MMC as an HIV prevention procedure. It is impossible to know with any certainty, firstly, whether the source of the health beliefs of these ten respondents is religion or HIV prevention and, secondly, the nature of the belief in efficacy of MMC.

The other two circumcised respondents had different reasons. R31 was medically circumcised to prevent against STIs. R27, on the other hand, was circumcised in order to prevent against STIs as well as to get “a strong penis” for sexual potency. R27 reports also that he went to get circumcised together with his friends. R31 is one of the few respondents in the R21-R40 demography to report voluntarily going to get circumcised for personal reasons. In his words, “I initiated this as an individual”. R31 also comments positively on the benefits of MMC as an HIV prevention procedure. He is also the only in this demography to mention that MMC reduces the possibility for infection by approximately 60%. The eight respondents who were not medically circumcised gave a variety of reasons ranging from a sense of perceived efficacy of

safe sex (R35, R25 and R39), fear of pain (R40), privacy concerns (R34), doubt (R28), and indifference (R33 and R37).

RESPONDENT	ARE YOU MEDICALLY CIRCUMCISED	ATTITUDES TOWARDS MMC AS AN HIV PREVENTION PROCEDURE
R21	YES	"I am circumcised for cultural and religious reasons"; "However, I have doubts that MMC really prevents HIV"
R22	YES	"I was circumcised for cultural reasons"
R23	YES	"I'm circumcised for religious reasons"
R24	YES	"I'm circumcised for religious reasons"
R25	NO	"I don't need MMC as I have only 1 partner"
R26	YES	"I'm circumcised because of my religion"
R27	YES	"MMC prevents against HIV" "It also makes penis strong" "I don't like the condom"
R28	NO	"Not too sure"
R29	YES	"I was circumcised because of religion"
R30	YES	"I was circumcised because of parents/religion"
R31	YES	"MMC helps prevent against STIs"
R32	YES	"I was circumcised for religious beliefs"
R33	NO	"It's not necessary"
R34	NO	"I want to do it later at my doctor's, in privacy"
R35	NO	"I practice safe sex"
R36	YES	"I am a Muslim"
R37	NO	"I do not need to"
R38	YES	"I was circumcised because of my religion"
R39	NO	"I condomise"
R40	NO	"It's too painful"

Table 6: R21-R40 Indian student attitudes to MMC as an HIV prevention procedure

Discussion

Pain and death and potential loss of pleasure were cited as barriers to MMC by some respondents. Research exists that supports the view that pain and death may act as barriers to uptake of MMC. Such support is present in Largade et al (2009), Muula (2007) and Rennie et al (2007) who take seriously the fact that MMC does in fact pose significant health risks. Largade et al (2009), Muula (2007) and Rennie et al (2007) treat MMC like any medical procedure that can go wrong and that is not 100% effective or safe. Surgery can lead to “excessive bleeding, haematoma and other complications in initial months after the procedure”. In addition adverse reactions to the anaesthetic used during the circumcision may occur. However, “trained personnel and correct tools and aseptic conditions can greatly reduce the incidence of post-operative risks” (Auvert *et al* 2003: 315-327). Such assurances do not appear to hold sway over the more negative perception that MMC is painful and potentially fatal. This perception encourages the formation of specific attitudes towards MMC.

In general, there is a significant low perception of HIV prevention-related benefits and a low perception of pleasure benefits among the students. The perception held by some students, that MMC is dangerous, is the source of a specific type of an attitude. This attitude is roughly that of the “anti-circumcision” camp, particularly the camp of those campaigning for the “sanctity of the foreskin”. These include organisations highlighted in the literature review such as National Organization to Halt the Abuse, Routine Mutilation of Males (NOHARRM), the National Organization of Circumcision Information Resource Centres (NOCIRC), DOC (Doctors Opposing Circumcision), Brothers United for Future Foreskin (BUFF) and Recovery of a Penis (RECAP).

Perceived benefits are influenced, among other things, by the accessibility of information regarding a particular health condition (Hall 2011). Interestingly, information about MMC is widely available at Howard College through posters, and via the UKZN website and regular alerts through the campus email service. However, most of it appears unused and neglected by non-black students. The interview with the coordinator of the campus HIV Unit proved that this was the case. Some of the responses from the respondents seem to point to the existence of a set

of prior beliefs about the costs and benefits of getting medically circumcised. Both demographics have got a high number of responses in the “I-don’t-see-the-point” category. The Health Belief Model explains how high-perceived threat coupled with low barriers and high perceived benefits increases the likelihood of engaging in an advocated behaviour (Becker *et al* 1979). By extension, low-perceived threat, high barriers and low perceived benefits have the effect of suppressing the need to try a recommended behaviour.

From this information the researcher could reach two alternative conclusions. The first is that the respondents do not regard themselves to be at risk of acquiring HIV. This lack of knowledge is behind what I characterise as their “I-don’t-see-the-point” attitude. The second alternative conclusion is that the respondents care about HIV prevention but distrust MMC as an efficacious HIV prevention procedure. The literature of Van Howe (1999) and Garenne (2006) does indeed suggest that MMC has no correlation with HIV prevalence. Van Howe argued that, based on the existing published studies, the WHO/UNAIDS practice of “recommending routine circumcision as a prophylactic measure to prevent HIV infection in Africa, or elsewhere, is scientifically unfounded” (Van Howe 1999: 8). As noted in the literature review chapter, Van Howe’s study did not just focus on male risk alone but also included females. His conclusive position was that circumcised men were significantly more likely to be infected by HIV compared to uncircumcised men.

Evidence in support of the second conclusion is provided by that fact that a majority of the respondents interviewed do report knowing about HIV and report to using condoms. In general, it is not difficult to conclude that the challenge of uptake is much greater amongst non-blacks than amongst blacks. The low uptake seems correlated, on one hand, to low perceived threat and, on the other hand, to negative attitudes towards MMC. Correlation, however, is *not* causation. Therefore, it is difficult to say what causes low uptake beyond the fact that the pattern of low or non-existent uptake is prominent amongst whites and Indians. When this data is compared with studies such as Naidoo *et al* (2005), it appears that this pattern of low uptake or non-existent uptake is largely exclusive to whites and Indians. By far the most important baseline finding is that a large majority of white and Indian respondents fall into the “I-don’t-see-the-point” attitude category.

The “I-don’t-see-the-point” attitude is one that I regard as reflecting the general disinterest in HIV prevention in general and MMC in particular among non-black students. Though at one level this “I-don’t-see-the-point” construct is an attitude, it is also very much an “action”. As an action, however, it needs qualifying: it is more inaction than action. This inaction is reflected in the low numbers that end up considering prevention. The relationship of attitude and action (in this case inaction) is important as it suggests that a clear correlation exists between “beliefs”, “feelings”, and “action”. The HBM assertion that “health behaviour is determined by personal beliefs or perceptions about a disease and the strategies available to decrease its occurrence” (Hochbaum 1958: 31) would appear to hold in this case.

As underpinned by value expectancy theory, the HBM model assumes that behaviour is a result of an individual’s expectations and is performed in response to beliefs and values held (Armitage & Conner 2000; Champion & Skinner 2008). The “I-don’t-see-the-point” attitude shows a clear correlation between low perceived benefits and low uptake of MMC by whites and Indians at Howard College. The problem with these sets of assumptions within HBM theory is that, once again, correlation is *not* causation. There is no way to show with any degree of certainty or precision that low perceived benefits *cause* low uptake of MMC by whites and Indians at Howard College. It is likely that answers may be found in the mangled car “model” (Fig 21) proposed above. Even, then, such answers are not likely to be definitive.

5.1.3 Perceptions

This section deliberately utilised the question “What category or categories of UKZN students should be encouraged to get medically circumcised?” in order to evaluate, firstly, perceptions about MMC’s target demography and secondly, perceptions towards MMC itself. As the responses show, the question does not lead to any particular type of response. Figure 5.5 shows three broad sets of perceptions, drawn from the data, regarding who should be targeted by MMC for HIV prevention. These are:

- No male (or female) at Howard College should be medically circumcised at all.
- All males at Howard College should be medically circumcised.
- MMC is targeted at Black students

Alternative perceptions of MMC's targeted group also focus on undergraduates and first year students. The three broad perceptions about MMC's targeted demography are structured on gender (males) and race (whites and Indians). The first two characterisations contradict each other and therefore stand at opposite poles. The first pole describes the position considered in Chapter 3 which is made up of advocacy groups and movements such as National Organization to Halt the Abuse and Routine Mutilation of Males (NOHARRM), the National Organization of Circumcision Information Resource Centres (NOCIRC), DOC (Doctors Opposing Circumcision), Brothers United for Future Foreskin (BUFF) and Recovery of a Penis (RECAP) which are opposed to MMC and advocate a stop to the practice because they believe health benefits of MMC are questionable and may cause more harm than good (Van Howe 2011, Ncayiyana 2011, Van Howe and Storms 2011).

Buttressing this first pole are researches by the likes of van Howe (1999), Garenne (2006), Greene *et al* (2010), Fox and Thomson (2010), Wawer *et al* (2009), Jozkowski *et al* (2010), McDaid, Weiss and Hart (2010) and Wei *et al* (2010). These scholars have cast doubts on the efficacy of MMC, arguing that there is no sufficient evidence for the effectiveness of circumcision as an HIV prevention procedure, that it is premature to endorse circumcision as an efficacious method for combating the spread of HIV and, furthermore, that medical ethics and human rights have potentially been violated in the scaling up MMC programmes in Africa. In a general sense, this camp of groups, activists, movements and researchers perceives MMC as harmful.

RESPONDENT	WHAT CATEGORY OR CATEGORIES OF UKZN STUDENTS SHOULD BE ENCOURAGED TO GET MEDICALLY CIRCUMCISED FOR HIV PREVENTION?	WHY?
R1	None	"MMC is not necessary"
R2	Everyone	"Not sure why; for a variety of reasons"
R3	Africans	"Because most of them are sexually active"
R4	Sexually active students	"They're in danger of unprotected sex"
R5	Males	"They have a foreskin"
R6	Males	"To prevent STIs"
R7	Males	"Because it is easy for males than females"
R8	None	"I don't see the reason"
R9	Males	"Females cannot be circumcised"
R10	Undergraduates	"They cannot control themselves"
R11	First years;	"They are prone to more risky sex"
R12	First years; Blacks	"Most first years are new to sex"
R13	Blacks	"Most blacks engage in unprotected sex"
R14	Blacks	"They are at risk"; "They don't believe in MMC but do it traditionally"
R15	None	"I'm not really sure why it is done anyway"
R16	No comment	No comment
R17	African males	No comment
R18	Africans	"They are most at risk"
R19	No comment	No comment
R20	Black students	No comment

Table 7: R1-R20 perceptions of MMC as an HIV prevention procedure

The second pole, described in the literature as holding the pro-MMC position, sees medical male circumcision as a universal good that should be pursued in the interests of eradicating HIV. The foremost proponents of the pro-circumcision school are WHO and UNAIDS. WHO and UNAIDS (2010, 2012 and 2013) have continuously stated that medical male circumcision is an efficacious intervention for HIV prevention that should be carried out by trained medical professionals under conditions of informed consent. Their collective position is stated clearly at the “Male Circumcision Clearinghouse”,¹⁴ a “collaborative project of WHO, UNAIDS, AVAC, FHI 360 and many other stakeholders”¹⁵ that states that “Conclusive research shows that medical male circumcision substantially reduces men’s risk of acquiring HIV infection through vaginal sex”.

The Clearinghouse states unequivocally that “the efficacy of male circumcision in reducing female-to-male HIV transmission has been proven beyond reasonable doubt” and that the three randomised trials provided “definitive evidence” of this. Research in the pro-medical circumcision school has tended to point to biological and epidemiological evidence that shows that the presence of the foreskin increases the “biological susceptibility” of men to HIV (Morris 2007; Weiss 2007). The conclusion is that MMC reduces the risk of HIV infection as the removal of the foreskin reduces the ability of HIV to penetrate the skin of the penis (Patterson et al 2002; Szabo & Short 2000; MacLeod, Edwards & Bouchier 2007; Morris 2007).

The third and last school of thought represents the racist positioning taken by Justine Sacco. The “Sacco” position sees HIV as a black disease that whites and other non-African races are seemingly immune from. This is a controversial and politically incorrect position. For this reason, it is not often held or defended publicly. The controversy and political incorrectness explains the notoriety of the infamous Sacco tweet of December 2013. The controversy and racism also explains why there are no scholars who openly hold this position. The fact that few people say that HIV is a black disease, however, does not mean that people do not think such thoughts. It is instructive, therefore, that some respondents to the study held such opinions. It

¹⁴ www.malecircumcision.org

¹⁵ Ibid

would appear that, for obvious reasons, the perception is likely to be privately held but rarely expressed publicly.

RESPONDENT	WHAT CATEGORY OR CATEGORIES OF UKZN STUDENTS SHOULD BE ENCOURAGED TO GET MEDICALLY CIRCUMCISED FOR HIV PREVENTION?	WHY?
R21	Males	"They have the foreskin"
R22	All	"It is essential"
R23	All	"It has health benefits for all"
R24	None	"It's an individual choice"
R25	18-24 age group	"They are promiscuous at that age"
R26	Muslims	"For religious purposes"
R27	Blacks	"They mostly do not support condoms"
R28	None	"It is painful"
R29	All	"It prevents STIs"
R30	Sexually active males	"They are sexually active"
R31	All male students	"It is good for their health"
R32	African male students	"They are most affected by HIV"
R33	Blacks	"They usually have AIDS"
R34	First years	"Sex is still new to them"
R35	All male students	"They are sexually active"
R36	Everyone	"It has health benefits"
R37	None	"There is no benefit to anyone"
R38	Black students	No comment
R39	Africans	"Sexual promiscuity"
R40	None	"It's too painful"

Table 8: R21-R40 perceptions of MMC as an HIV prevention procedure

The “anti-MMC” position is represented in both the R1-R20 and R21-R40 data sets. It seems that students are opposed to MMC for a variety of reasons. Three respondents from the R1-R20 data set (R1, R8 and R15) point out that they do not see the point in medically circumcising students. Four respondents in the R21-R40 data set (R24, R28, R37 and R40) are also opposed to MMC for different reasons. R24 uses a human rights and ethics perspective to argue that medical circumcision should be an individual choice. The suggestion is that MMC campaigns do not allow for individuals to exercise freedom of choice to refuse since they package MMC as necessary for an HIV-free generation. R28 and R40 are opposed to MMC because “it is too painful”. Finally, R37 takes the position of R1, R8 and R15 that MMC is a pointless waste of time. Interestingly, only two of the respondents in the R1-R20 demography want to be circumcised for HIV prevention.

The pro-MMC position perceived MMC as essential to the fight to eradicate HIV. This position was represented by twenty out of forty respondents from both data sets who advocated that “all males” should be medically circumcised. R7, for instance, is of the opinion that HIV affects everyone, and so MMC would benefit every UKZN student. The perception that MMC was good for “all males” suggested that HIV prevention transcended race. Such a perception was, however, directly contradicted by the “Sacco” perception which views HIV as a “black disease”. The “Sacco” perception was held by twelve respondents from the two data sets. R32, for instance, was of the view that non-black students would be least benefitted by MMC because of the low prevalence rate. In his words, “Indians are not likely to contract HIV”. R27 also thinks that whites would be least benefitted by MMC because, in his words, “they are more civilised”. This position takes race as a marker of disease and to be black as a sign of being diseased. Interestingly, holding the view the MMC was for “all males” did not mean that respondents could not hold the parallel view that HIV was a “black disease”. Rather strangely, the Sacco account of HIV (non) prevention overlapped with WHO/UNAIDS account of HIV prevention. That is, positions that seem poles apart also converge. This contradiction suggests that one can actually hold contradictory health beliefs. The HBM does not sufficiently explain this apparently normal holding of contradictory health beliefs.

Shireen Mukadam (2013), in the newspaper article titled “Aids does affect Muslims” mentioned in Chapter One, considers the question of HIV amongst the Muslim Indian communities of South Africa. Mukadam quotes Ashraf Kagee, Professor and chair of the Psychology department at Stellenbosch University, as stating that HIV exists in the Muslim Indian community – as evidenced in a study that Kagee headed in Cape Town that found a 3% HIV prevalence in a random sample. Kagee stated that a significant challenge in dealing with HIV amongst the Muslim Indian community was the stigma attached to being HIV-positive. Such stigma caused sufferers not to disclose.

Discussion

Respondents reported that perceived barriers contributed to their wanting or not wanting to adopt “recommended” behaviours. Barriers such as inconvenience, as well as personal barriers such as pain, anxiety or death, had an effect on the participants’ perceptions, attitudes and knowledge towards MMC as an HIV prevention procedure. However, perceived barriers do not appear to be the only factors. The issue of “low” or “high” self-efficacy also played a significant role. The lack of perceived benefits, tied to a general low sense of susceptibility to HIV, seemed to impact the odds of white, Indian male students adopting new preventive behaviours. There was a plausible correlative relationship between the students’ perceptions and attitude towards HIV prevention and the action of going or not going to be medically circumcised for HIV prevention at the Campus HIV Aids Unit. The explanatory assumption, in this regard, was that perceptions and attitudes influenced behaviour and guided decision-making.

The assessment of white and Indian male students’ perceived severity of MMC suggests that it is a factor in their lack of use of MMC facilities provided on campus. The data set seems to show that respondents must, at the very minimum, first believe that they are at risk of HIV in order for them to undergo MMC. Similarly students who believe that they are not at risk of contracting HIV will not undergo MMC. Uptake of healthy behaviour is also influenced by perceptions and personal beliefs, some of which seem to be characterised by the belief that HIV prevention in general and MMC in particular are unnecessary unless one is black or “African”. The data seems to show that a UKZN white or Indian male student will take a health-

related action like MMC only if he feels that a negative health condition like HIV infection cannot be avoided; has a positive expectation that by taking the recommended action (MMC) he will avoid the negative health condition; and believes that he can successfully take the recommended health action.

An individual's perceptions, values and beliefs towards health conditions or campaigns such as MMC are assumed to have a certain level of influence on their behaviour and decision making. For white and Indian male students to undergo MMC there must, at the very minimum, be the belief that these students are at risk of HIV. Essentially, those students who do not believe that they are not at risk of contracting HIV will not see any benefit in undergoing MMC. Where MMC is believed to be unnecessary, there is no self-efficacy. Are perceptions instrumental, therefore, in facilitating risky behaviour? It appears that this is the case. As noted by Phyfer (2012), white students who do not do "interracial" (sex) are not constrained to use condoms. The controversial Twitter storm torched of by Justine Sacco's statement that she did not fear catching HIV since she was white is also an instructive case in point. Perception is correlated with attitude and with action. What this study has been able to prove, in large part, is the correlation between knowledge, attitudes and perceptions and "action". However, as already noted, correlation is not causation. It is next to impossible to prove causation.

The problem of disclosure within the Indian community noted above suggests that the issue of low prevalence is not a simple matter of one and one making two. Figures indicating low prevalence may be an indicator of other issues such as stigma. In such as case, the correlation between low prevalence and low infection is misleading. The many gaps that correlation cannot account for need to be filled by a more robust model or explanatory framework of health behaviours that probes beyond statistical relations and simple co-variance and tries, instead, to understand *cause* in its social contexts and in all its complexity. This may call for a turn from a simple reliance on the six constructs of the HBM, back to the SEM. However, as we saw earlier, the SEM itself suffers from inadequate complexity. Its assumption that society is nested, or is a set of ecologically-interconnected interactions, does not go far enough in eliciting insights about what goes on in each particular nest at any particular time. The SEM does not show how the behaviour of individuals within

nests affects the structure of those nests. It also does not show us how disruptions within nests disrupts relations between nests. The metaphor of interconnection and interaction is only one side of the coin. The other side, made up of disconnections and in-action, has yet to be revealed. The systematic symmetry of the SEM is therefore contradicted by respondents whose responses suggest that their beliefs about MMC are essentially asymmetric.

The study found that the beliefs of white and Indian students regarding HIV prevention in general and MMC in particular were too complex to be represented by the simplistic image of an oval egg made up of nested and interconnecting levels or by simple correlation between health and belief. Rather, the responses showed that the racial and gendered identities of white and Indian students are mere “tips” of the iceberg and that the situation beyond the “tip” is necessarily always in a flux, such that the causes of the health beliefs that the students hold need to be looked for beyond this “snapshot”. The true causes of the students’ health beliefs are to be found in the larger flux of contradictions and complexities of South African society. I suggest that the image of a mangled, crashed car is a much more apt representation of how people obtain knowledge and come to hold attitudes and perceptions of health and disease in every day contexts. Knowledge, attitudes and perceptions are not metric units but social forms. The search for causes behind knowledge, attitudes and perceptions go beyond simple and isolated explanations of health and disease. This study has nevertheless pointed something far more important: that research into knowledge, attitudes and perceptions of health and disease is an important starting point. Such a starting point, however, needs to be accompanied by even more robust explanatory frameworks and models.

Other Findings

Indicative Information

Though the study has gathered baseline information about knowledge of, and attitudes and perceptions towards MMC at the UKZN’s Howard College, other important baseline information was also gathered in the process. For instance, the dataset indicated that there are non-black students who are circumcised for HIV prevention purposes. Another finding was that the most popular HIV and STI

prevention procedure amongst the groups surveyed is the condom because of its accessibility and availability, followed by abstinence. Ironically, MMC is the least popular HIV prevention procedure. The data set also indicated that many Indian students and some whites are circumcised for religious purposes.

5.3 Conclusion

This penultimate chapter examined and analysed data collected in the course of the study. The analysis sought to establish what white and Indian male students at the University of KwaZulu-Natal's Howard College know about MMC as an HIV preventive procedure. Furthermore, the analysis was targeted at establishing the knowledge, perceptions and attitudes of the respondents towards MMC. Finally, the chapter evaluated the significance of the data in relation to the study's research questions, objectives, and the two conceptual models that were used to frame the inquiry. The next chapter is the conclusion to the study which synthesises the key points of the whole study.

CHAPTER SIX

FINDING AND CONCLUSIONS

Introduction

The study examined knowledge, attitudes and perceptions towards medical male circumcision (MMC) amongst white and Indian male students at the University of KwaZulu-Natal's Howard College. This research aimed to fill the gap in studies of non-black student demographics with regards to HIV prevention. Literature on MMC revealed that there are deep divisions on the value of MMC. There are researchers and organisations who oppose MMC and want it stopped. Scholars in the oppositional camp argue that the health benefits of MMC are questionable and may cause more harm than good. The mainstream view, however, is that MMC works and that it is necessary for sub-Saharan Africa. This is the view taken by WHO, UNAIDS, PEPFAR, JHHESA, HSRC and other organisations involved in managing the HIV/AIDS industry in Africa. Research in the pro-medical circumcision school has tended to point to biological and epidemiological evidence that shows that the presence of the foreskin increases the "biological susceptibility" of men to HIV. Others fall in a "middle-ground" camp that recommends cautious adoption of MMC instead of blind rejection or blind faith.

Literature also reveals that knowledge, attitudes, perceptions about MMC are varied. These factors vary according to country and even within countries. At the same time, there are also a range of striking similarities, such as the view that MMC is painful or that it is effective for preventing HIV. A predominant number of studies and monographs presented what (black) Africans know and say about medical male circumcision as a preventive procedure. Few studies, however, have used race as a variable to study attitudes towards HIV prevention in general and MMC as an HIV prevention procedure in particular. Whites and Indians, in particular, remain largely under-researched.

The study's research questions were all qualitative, given that they stood to generate words rather than numbers. Particularly, the questions restricted the investigation to only three specific parameters: *knowledge*, *attitude* and *perception*. Knowledge, attitude and perception are not easy to measure quantitatively because they are intangible, uncountable and personal – and because it is also not possible to control knowledge, attitude and perception in a clinical laboratory setting. The ideal approach to assessing knowledge, attitude and perception, therefore, was qualitative and interpretive. The qualitative and interpretive methods were also ideal in a situation such as this one where not much was known about the problem. In this study knowledge, perceptions and attitudes were evaluated by looking at responses to a two-page structured questionnaire and evaluating the extent to which they showed whether one thought MMC was important or not. Two concepts, namely “social ecology” and “health belief”, were introduced, defined and described. This was done through drawing attention to two specific models, the Social Ecology Model (SEM) and the Health Belief Model (HBM). These two broad models were used to explore a range of questions. While knowledge could be broadly defined and measured, attitudes and perceptions were more difficult to isolate and pin-point.

The study made inferences about how knowledge, attitudes and perceptions (or the lack of them) are picked up from multiple levels ranging from intrapersonal, interpersonal, and institutional to community and public policy. A central focus of the study was assessing the nature of students' perceived benefits, or their beliefs regarding “the value or usefulness” (Hayden 2009: 33), of MMC in decreasing their exposure to HIV. Through this line of questioning, the researcher was able to assess, among other things, whether attitudes and perceptions are instrumental in facilitating risky behaviour. The researcher was able to evaluate the extent to which the concept of perceived barriers contributes to white and Indian male students' willingness to adopt “recommended” behaviours.

Through applying the concept of perceived barriers, the researcher assessed the degree to which physical barriers such as expense and inconvenience, as well as personal barriers, such as pain, anxiety or death, have anything at all to do with the participants' perceptions, attitudes and knowledge towards MMC as an HIV prevention procedure. The issue of “low” or “high” self-efficacy also played a

significant role in this study in the sense that the researcher was in a position to evaluate the extent to which perceived benefits and perceived barriers affected the possibilities or chances of white and Indian male students to adopt new behaviours. At the same time, the researcher recognised that the relationship between attitudes and behaviour is not straightforward but is affected and restricted by many extraneous factors.

Findings

It was found that the demographic and socio-psychological variables of HIV were perceived by some respondents as indicating that MMC is a preventive strategy that is targeted solely at black UKZN students. The perception that white and Indian male students are not at risk of HIV is relatively widespread, while, by extension, the perception that strategies such as MMC are meant for black students is held by many. The data set showed that gender and race (and to some extent age) are not only important but are interrelated and nested. The implication of this assumption was that variables as race had an influence on knowledge, perceptions, and health behaviours. There were unavoidable interrelationships between knowledge, attitudes and perceptions, on the one hand, and race, on the other. In turn, this interrelationship was determined by a mix of factors ranging from highly individualised reasons for wanting or not wanting to be medically circumcised to reasons based on peer group influences, and so on. Hence race as a variable was adapted as a starting point for investigation of attitude and perception, and not because the researcher blamed or was targeting race in isolation from other factors.

The HBM was used to explain how high-perceived threats coupled with low barriers and high perceived benefits is believed to increase the likelihood of engaging in the recommended behaviour (Becker *et al* 1979) such as getting circumcised medically. By extension, low-perceived threat, high barriers and low perceived benefits may have suppressed the need to try MMC. A theory such as the protection-motivation theory, which works through appeals to an individual's fears (Munro *et al* 2007),¹⁶

¹⁶ The theory uses three components of fear arousal, namely the magnitude of harm of a depicted event, the probability of that event's occurrence and the efficacy of the protective response. (Munro *et al* 2007)

would be irrelevant where certain UKZN students did not see the clear benefits of circumcision. The HBM, on the other hand, explained health behaviour change in terms of barriers to and benefits of action. The perceived seriousness of, and vulnerability to, a disease was seen as influencing an individual's perception of threat of a disease while perceived benefits and perceived barriers influenced perceptions of the effectiveness of health behaviour (Becker *et al* 1979). The researcher concluded that "perception" was one of the most critical aspects of HBM highlighted in the data as participants held contradictory and overlapping perceptions towards MMC as an HIV preventive procedure.

More detailed analysis showed that a majority of respondents have a positive perception towards the procedure as long as it is not being performed on them. Negative perceptions towards the procedure, however, set in when the questionnaire suggested that MMC could be targeted at the respondents. Only a small number of responses suggested active uptake of MMC by whites and Indians at UKZN's Howard College. Interestingly, these perceptions seemed to be influenced by social issues and habits which the HBM did not fully explain but could be explained by recourse to the SEM. The occurrence of overlapping views about MMC being "pointless" and "waste of time" and, at the same time, being meant for "black Africans" suggests the need for a deeper explanation beyond the straightforward holding of health beliefs. The SEM drew attention to the way in which perceptions are always completely linked but in ways that were not obvious. In a "race-obsessed" society such as South Africa, it was worthwhile to examine how race may shape health behaviour. It was suggested that belonging to a certain race lowered the sense of perceived susceptibility to HIV while also affecting cues to action and the sense of perceived severity.¹⁷

¹⁷ It is not surprising that some respondents thought that only Africans should be medically circumcised. Professor Ashraf Kagee, chair of the psychology department at the University of Stellenbosch, has remarked that HIV not only affects the Muslim community in South Africa, but one of the greatest challenges was the stigma attached to being HIV positive (*Muslim Views*, December 2013). Kagee says that there was a tendency for sufferers not to disclose. Fagreed Miller, the first Muslim woman to disclose her HIV status in 1996 on world AIDS Day agreed with Kagee's assertion about the existence of misconceptions (*Muslim Views*, December 2013).

By far the most important baseline finding was that a large majority of white and Indian respondents fell into the “I-don’t-see-the-point” attitude category. The “I-don’t-see-the-point” attitude was regarded as reflecting the general disinterest in HIV prevention in general and MMC in particular among non-black students. Though at one level this “I-don’t-see-the-point” construct was an attitude, it was also very much an “action”. As an action, however, it was more in-action than action. This inaction was reflected in the low numbers that end up considering prevention. Of the three main demographic groups on campus, whites and Indians were the least represented in terms of uptake of HIV prevention information. The fact that whites and Indians did not see the point of being circumcised for HIV prevention explained why both racial demographics generally had a low knowledge and low uptake of MMC. Understanding what underlay this low knowledge and low uptake called for a combination of The Social Ecology Model (SEM) and the Health Belief Model (HBM). A perspective informed by the social ecological model, for instance, suggested that a combination of personal, behavioural, social and environmental aspects was behind this state of affairs. Looked at from several angles, one saw that the phenomenon was actually not a single phenomenon, but a set of nested phenomena of different, graduated levels of influence.

On the one hand, the problem with the sets of assumptions within HBM theory was that correlation was not the same as causation. There was no way to show with any degree of certainty or precision, for instance, that low perceived benefits caused low uptake of MMC by whites and Indians at Howard College. In such as case, the correlation between low prevalence and low infection was misleading. The many gaps that correlation could not account for needed to be filled by a more robust model or explanatory framework of health behaviours that probed beyond statistical relations and simple co-variance and tried, instead, to understand cause in its social contexts and in all its complexity.

On the other hand, I found out that the SEM levels not only contained levels within levels, and more levels within even more levels, but that the flow of influence between each level was not unidirectional. Rather, there was flow from in every direction, sometimes simultaneously. But this relationship of flows was only the beginning. Beyond this flow I observed that one level was not necessarily

subordinate to or fully coordinated with the next level. Indeed, some levels may not even have a functional relationship. That is, I observed that the SEM did not need to perfectly nested and functional flows between levels to function. In fact, the flow between levels could be clogged and blocked, as each level modifies and alters the flow of influence between levels such that what people experience at one level is not what they experience at the next level.

I found the simple drawing of the SEM in the shape of a smooth oval to be problematic. This was because it did not fully capture the conflicts and breaks between levels. It merely showed that the levels were necessarily nested. I argued, however, that the nests were neither necessarily harmonious nor functioned predictably. The diagram presented a homogenous shape of interactions that was difficult to achieve in the chaos real life and competing agendas. What the diagram lacked, therefore, was an account of competing interests. It failed to show that the five levels may compete and conflict rather than just connect or interact. In real life, there was as much competition as interaction.

As such, the SEM in diagrammatic form (after McLeroy et al 1988) was problematic because its assumption that there is an “ecology” at work ignores implies flow-like, interactive, symmetrical relations from level to level. The “ecology” metaphor ignored the fact that what in fact happens in real life was asymmetrical, chaotic and disruptive. The knowledge that students get on MMC was not coming from the smooth flow-like interactions but rather from the clash of interests of all five levels and the many other levels nested under them. It is impossible to avoid asymmetrical, lop-sided relations in any model where such complex influences converge.

While the SEM was critical to assessing the level of knowledge of whites and Indians at Howard College, it was clear that the “ecology” of how knowledge was gained was not symmetrical but increasingly chaotic and lopsided. The diagram therefore needed to be less like a smooth oval-shaped egg but like a mangled chassis of car after a head-on crash with – some parts missing, others flattened, or lying in the road. I suggested that the image of a mangled, crashed car is a much more apt representation of how people obtain knowledge and come to hold attitudes and perceptions of health and disease in every day contexts. Knowledge, attitudes and

perceptions are not metric units but social forms. The search for causes behind knowledge, attitudes and perceptions went beyond simple and isolated explanations of health and disease.

A Note on Recommendations and a Short “Index” to Further Research

The study observed that the association of HIV with a specific race is both a sad fact and a sign of enduring prejudices and stigma. The study therefore recommends that such stigma should be dealt with through critical health communication strategies and approaches that i) question the social reproduction of stigma and ii) are race sensitive. It is my view that critical sensitivity to the complexities of race in public health communication has the potential to radically minimise the reproduction of distorted knowledge, attitudes and perceptions of certain races as natural bearers of deadly viruses. In part this critical sensitivity may be achieved through consciously making the search for the reasons behind the production and reproduction of knowledge, attitudes and perceptions go beyond simple and isolated explanations of health and disease. The redesign of aspects of the social ecology model to resemble the form of the image of a mangled, crashed car would be a much more apt representation of how people obtain knowledge and come to hold attitudes and perceptions of health and disease in real-life every day contexts. Finally, the alteration and modification of aspects of the Health Belief Model to take cognisance of the fact that *correlation is not causation* is recommended.

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APPENDICES

APPENDIX 1

UKZN ETHICAL APPROVAL LETTER



26 November 2013

Ms Phebbie Sakarombe 212558266
School of Applied Human Sciences - (CCMS)
Howard College Campus

Protocol reference number: HSS/0578/013M
Project title: Knowledge, and perceptions of medical male circumcision as an HIV prevention procedure by White and Indian male students at the University of KwaZulu-Natal.

Dear Ms Sakarombe,

Expedited Approval

With regards to your response to our letter dated 23 July 2013, I wish to inform you that your application has now been granted Full Approval.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the discipline/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Dr Sheruka Singh (Chair)

/ms

cc Supervisor: Eliza Govender
cc Academic Leader Research: Professor D McCracken
cc School Administrator: Ms A Luthuli

Humanities & Social Sciences Research Ethics Committee

Dr Sheruka Singh (Acting Chair)

Westville Campus, Govan Mbeki Building

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APPENDIX 2

UKZN GATEKEEPER APPROVAL LETTER



19 November 2013

Miss Phebbie Sakarombe
School of Applied Human Sciences
College of Humanities
Howard College Campus
UKZN
Email: 212558266@stu.ukzn.ac.za
Phoebe.sakarombe@gmail.com

Dear Miss Sakarombe

RE: PERMISSION TO CONDUCT RESEARCH

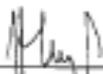
Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal towards your postgraduate studies, provided Ethical clearance has been obtained. We note the title of your research project is:

"Perceptions, Knowledge, Medical male circumcision, HIV prevention, Whites and Indian Males".

It is noted that you will be constituting your sample by randomly interviewing White, Indian and Coloured male students from Howard College Campus.

Data collected must be treated with due confidentiality and anonymity.

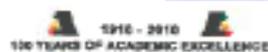
Yours sincerely



Professor J.J. Meyerowitz
REGISTRAR

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APPENDIX 3



INFORMED CONSENT FORM

Dear Participant

Thank you for taking part in this research study and your input will add significant value in this research project. This research process forms part of my Masters Research Project entitled:

Knowledge and perceptions of medical male circumcision as an HIV prevention procedure by White and Indian male students at the University of KwaZulu-Natal.

Please be advised that that you may choose not to participate in this research study and should you wish to withdraw at a later stage, you have full right to do so and your action will not disadvantage you in anyway.

Your participation in this research study will be through participating in an unstructured interview. These will be arranged to bring the most minimal disruption in your daily schedule.

There is no material or financial benefits attached to participating in this research study and this is done on a volunteer basis. The information obtained will be treated as of confidential nature and will be safely stored at the University of KwaZulu-Natal. Respondents will be informed that their information and responses shared during the research will be kept anonymous by means of a questionnaire cover letter and verbally during the interviews discussions. The respondents will not be asked to disclose their names on the questionnaire. This will ensure that the respondents' identities are protected.

Should you need further clarity on the matter explained above, or at any matter that directly or indirectly associated with this research study, please contact me or my supervisor:

Phoebe Sakarombe
0790 589 338
phoebe.sakarombe@gmail.com

Dr Eliza Govender
031 260 2505
Govendere@ukzn.ac.za

Your participation is much appreciated, thank you.

DECLARATION:

I ... hereby declare that I am fully aware of the contents of this document and the nature of the research project, and I fully agree to participate in this research project.

However, I am taking part in this project as a volunteer, and therefore I have full rights to refuse to answer questions that I may not wish to answer. I also have full rights to withdraw at any point in this research project should I wish to do so, and my action will not disadvantage me in any way.

Signature of Participant

Date

APPENDIX 4



RESEARCH QUESTIONNAIRE: KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF MEDICAL MALE CIRCUMCISION

This questionnaire is confidential, and information will only be used for purposes of understanding issues of MMC. No names will be attributed to the respondents.

1. AGE _____

2. RACE

WHITE	
INDIAN	

3. Which HIV preventive method do you think is the most effective and Why?

4. Have you heard about MMC? _____ Where have you heard about MMC? _____

5. Did you believe what you heard about MMC? _____ Explain

5. Describe briefly what you know about Medical Male Circumcision -

6. Have you heard about the UKZN MMC campaign? _____ If YES, Do you support the campaign? _____ Why?

7. Would you encourage people to be medically circumcised? _____ Explain

8. What sort of people would you encourage to be medically circumcised? - _____ Explain

9. Would you discourage people from being circumcised? _____ Explain

10. What sort of people would you discourage from being medically circumcised? - _____
Why?

11. Are you (medically) circumcised? _____ Give reasons

_____ -

12. Are any of your friends medically circumcised? _____ Why do you think this is so?

13. Have you and your friends discussed MMC? _____ If YES, please tell us what your friends say about MMC?

_____ -

14. Should people be circumcised to prevent HIV/AIDS? _____ Explain your answer

15. Who do you think is specifically being targeted by MMC campaigns at UKZN and why?

16. Who do you think would be most benefited by MMC campaign at UKZN and WHY? _____

17. Who do you think would be least benefited by MMC at UKZN and why?

18. Would you approve if your friend or brother went for MMC? ____ Explain your answer

19. Besides MMC, what other HIV prevention methods are currently available to you?

19. Do you think MMC as an HIV prevention procedure would work for you personally? _____
Explain

20. WOULD YOU SUPPORT A UKZN CAMPUS CAMPAIGN OF MMC? _____ EXPLAIN

Questionnaire administered by Phebbie Sakarombe, CCMS, Howard College

THANK YOU FOR YOUR PARTICIPATION