

UNIVERSITY OF KWAZULU-NATAL

DETERMINING KNOWLEDGE, ATTITUDES AND USE OF FEMALE CONDOMS  
AMONG MALE MEDICAL STUDENTS  
AT THE UNIVERSITY OF KWAZULU-NATAL, DURBAN

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DETERMINING KNOWLEDGE, ATTITUDES AND USE OF FEMALE CONDOMS AMONG  
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BY

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31 MARCH 2013

## DECLARATION

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## ABSTRACT

Determining knowledge, attitudes and use of female condoms among male medical students at the University of KwaZulu-Natal, Durban

The HIV and AIDS epidemics have been identified as international key health challenges.

Heterosexual transmission is the predominant mode of HIV infection in sub-Saharan Africa. Women account for more than half of all infected adults in Africa. Prevention remains one of the most crucial steps in controlling the HIV epidemic. With men remaining dominant over women when it comes to sexual health issues, the need to increase their uptake of all available barrier methods has been recognized. While other female initiated HIV prevention technologies such as vaginal microbicides, are in the process of being developed, the female condom is a protection option which is already available.

The purpose of this study was to determine knowledge, attitudes and behavioural practices associated with the use of the female condom as a barrier contraceptive method among first, second and third year male medical students at the University of KwaZulu-Natal, in Durban. A purposive sampling method was used to extract a sample from male medical students attending the Nelson R. Mandela Medical School campus during 2010. One hundred and twenty nine male medical students participated in the study, (First year  $n=55$ , second year  $n=40$  and third year  $n=34$ ). Information was elicited using a self-administered questionnaire. This included demographic information as well as questions relating to sexual risk level.

Students were then asked questions to elicit their knowledge about female condoms, where they could access these; whether they had used a female condom before; and their experiences with and views about female condoms.

Results from the study data revealed that most male medical students have heard of and seen a female condom (98% and 96% respectively); however there is low uptake on the usage (7%). Although most perceptions expressed about the female condom were negative, 51% of students reported they would be willing to try the method in the future. Attention needs to be directed to interventions focusing on wide national promotion of and education about female initiated innovations especially female condoms. Female condom promotion should be aimed at young males as their cooperation is crucial in this exercise.

## ACRONYMS



AIDS	Acquired Immune Deficiency Syndrome
DOH	Department of Health
FC	Female Condom
FHI	Family Health International
HBM	Health Belief Model
HEAIDS	Higher Education HIV and AIDS Programme
HIV	Human Immunodeficiency Virus
HSRC	Human Science Research Council
KZN	KwaZulu-Natal
MC	Male Condom
PMTCT	Prevention of mother- to-child transmission of HIV
RHRU	Reproductive Health Research Unit
SA	South Africa
SCT	Social Cognitive Theory
STIs	Sexually Transmitted Infections
SSA	Sub-Saharan Africa
SADHS	South Africa Demographic and Health Survey
UKZN	University of KwaZulu-Natal
UNAIDS	United Nations Programme on HIV/AIDS
USA	United States of America
WHO	World Health Organization

## CHAPTER ONE

### 1.1 Introduction

#### 1.1.1 HIV internationally, in South Africa and in KwaZulu-Natal

One of the key challenges today is how to stop the spread of HIV (Walker, *et al.*, 2004). Globally, there were 33.4 million people living with HIV in 2009. In 2008, for every two people who started taking antiretroviral drugs, another five became newly infected. According to Piot, unless urgent steps are taken to strengthen HIV prevention, the gains of the past few years will fail to be sustained, and universal access will simply be a noble aspiration (Piot, 2008 cited in UNAIDS 2008).

Out of the 2.6 million new HIV infections worldwide, 1.8 million occurred in sub-Saharan Africa in 2009 (UNAIDS 2010). The sub-Saharan region still bears the highest share of the global HIV epidemic, and the overall number of people living with HIV (in the sub-Saharan region) is still on the rise. AIDS accounted for 75% of deaths in 2007 in sub-Saharan Africa (UNAIDS 2010). In South Africa, the prevalence of Human Immune Deficiency Virus (HIV) is at present at unprecedented levels; with HIV prevalence rates among pregnant women at 30.2% in 2010 (National DOH, 2011).

UNAIDS (2010), reports that South Africa has one of the largest HIV epidemics in sub-Saharan Africa, with people living with HIV estimated at 5.6 million in 2009. Although the global report update reveals that there is a decline in new HIV infections due to the scaling up of antiretroviral therapy, among the Southern African countries mostly affected by the pandemic: Ethiopia, Nigeria, South Africa, Zambia and Zimbabwe, there have been no signs of stability or decline (UNAIDS, 2010).

In South Africa, HIV prevalence among people aged 15 - 49 is 17.8%, with almost one in three women aged 25-29 living with HIV (HSRC, 2009). Statistics SA reported that AIDS related illnesses were the leading cause of death in South Africa by the end of 2007 with increasing death rate figures over the previous years and most seriously affecting those between ages 25-49 years (South African National HIV survey, 2008). KwaZulu-Natal (KZN) province is worst affected by HIV. The National HIV survey conducted in 2008 revealed that KZN's HIV

prevalence was estimated to be 15.8% in 2008 (South African National HIV survey, 2008). According to the survey, HIV prevalence among youth aged 15 - 24 was 8.7%, and 16.8% among adults aged 25 years and older. In 2008 in KZN, 38.7% of pregnant women attending antenatal clinics were HIV infected (SA National Department of Health, 2009).

According to the World Health Organization, AIDS related illness is the leading cause of death and disease among women of reproductive age globally, particularly in Africa (WHO, 2009, 2).

### 1.1.2 HIV and gender

Females account for half of all people living with HIV worldwide, and nearly 60% of HIV infections in sub-Saharan Africa (UNAIDS, 1996, 2008). The HIV epidemic/pandemic varies significantly in scale and scope from country to country. UNAIDS reports that HIV vulnerability of women in sub-Saharan Africa could be related to the social, legal and economic disadvantage they often confront (UNAIDS, 2008). Records of new infections for 2007 from Statistics SA indicate that a large majority (41.1%) were females in the 15-24 year age group (South African National HIV survey, 2008). In SA the HIV epidemic disproportionately affects women, with women in the 25-29 year age groups worst affected (HIV prevalence rate 33% in 2008). In 2008, the HIV prevalence among females is double that of males for the age groups 20-24 and 25-29. The worst affected age group for males is the age range from 30-34 (HIV prevalence 5.8% in 2008) (Shisana *et al.*, 2009).

### 1.1.3 HIV and race

In South Africa, HIV and AIDS affects all of the four major race groups, the racial breakdown of which, according to Statistics SA, is as follows: Blacks, 79.5%, Whites, 9.0%, Coloureds, 9.0% and Indians 2.5% (Statistics SA, 2012). However, the rate at which each race is affected by HIV and AIDS differs. The University of KwaZulu-Natal (UKZN), according to Education Statistics in South Africa (Department of Education 2007) has the best student equity profile of all of the research-intensive universities. (The racial mix in KwaZulu-Natal differs from that of the country as a whole because this region is the home of a large percentage of the Indian population and accordingly they make up a greater proportion of the population in this region.) According to the Human Science Research Council (HRSC) in 2005, the HIV prevalence in Blacks is

considerably greater than in any other racial group, measured at 13.3% in Blacks versus under 2% in each of the other major race groups (HSRC Media brief factsheet, 2005). The HIV Prevalence and Related Factors: Higher Education Sector study SA 2008-2009 among tertiary students reported the following HIV prevalence differential across racial groups: Black/ African 5.6%, Coloured 0.8%, Indian 0.3%, and White 0.3% (HEAIDS, 2010).

#### 1.1.4 HIV and religion

Religion shapes the sexual behaviour and attitudes of many people living in areas with high rates of HIV and AIDS (Zou, *et al.*, 2009). According to Statistics SA, 79.8% of South Africans are Christians, 15% described themselves as having no religion, 1.5% follow Islam and 1.2% are Hindu (Statistics SA, 2001). South Africa has a large percentage of regular church attending Christians and the particular denominations they belong to may have the potential to modify behaviour such as pre- and extra-marital sex (Garner, 2000). Christianity may also have a negative impact on HIV prevention by discouraging condom use and sex education, and by causing stigma through promoting the view that the disease is God's punishment for promiscuous behaviour (Garner, 2000). Zou *et al.*, (2009) also report that a lot of research work has been done focussing on the correlation between religion and sexual behaviours that positively impacts on HIV prevention: particularly among the Muslim population in some African countries where there is a greater proportion of the population who are Muslim than in South Africa. They cite circumcision as an example of religiously motivated practice that impacts on HIV prevalence. In a study examining the relationship between HIV and Islam, findings revealed that religiously motivated behaviours practiced by Muslims, such as abstaining from drinking alcohol and pre- and extramarital sex has led to reduced HIV rates in this population (Gray, 2004).

#### 1.1.5 HIV and circumcision

In South Africa, in a randomized controlled trial conducted in Orange Farm among young men, male circumcision reduced the risk of HIV infection by 60% (Auvert *et al.*, 2005). Similar results in other African studies support male circumcision as a key HIV prevention strategy (Gray *et al.*, 2007; Bailey *et al.*, 2007). A Cochrane Review aiming to determine the interventional effect of male circumcision on preventing the acquisition of HIV draws a more conservative conclusion, not finding sufficient evidence to support an interventional effect for male circumcision and

cautioning that careful consideration must occur before male circumcision is implemented as a public health intervention (Siegfried *et al.*, 2009). In view of the current interest in male circumcision as a possible HIV prevention intervention opportunity, knowledge about the circumcision status of study subjects is of relevance.

#### 1.1.6 HIV at tertiary institutions

The majority of university students in South Africa are between ages 18 and 30 years (Raijmakers and Pretorius, 2006), with most students residing within the campuses provided by the university. According to the findings of the South African National HIV Survey, 2008, the HIV prevalence among young females, aged between 20 and 24 years was 21.1% and this rose to 32.7% among females aged 25-29, the highest prevalence of all the age ranges. The prevalence among young males aged 20-24 and 25-29 was 5.1% and 15.7% respectively. (South African National HIV Survey, 2008). In his guideline for tertiary institutions for SSA, Saint states that young people at tertiary levels are at their peak years of sexual activity and experimentation. This is exacerbated by the ready availability of alcohol and maybe also drugs, together with divergent levels of economic resources. These circumstances create a very high risk environment for the transmission of HIV (Saint, 2004). A study conducted among 262 social science and arts students from the University of Abadan in Nigeria, revealed that a high number of sexually active university students did not use condoms, with females reporting less use compared to males (Olley and Rotimi, 2003).

Kinghorn (2000) in his modeling exercise conducted among the tertiary institutions of South Africa, concluded that the university undergraduate HIV infection rate was estimated at 22%, increasing to 33% in 2005; the technician undergraduate infection rate was projected at 24%, rising to 36% in 2005; and that the infection rate among post-graduate students was estimated at 11%, rising to 21% in 2005 (Kinghorn, 2000).

In a study conducted at higher education institutions with students and employees, findings revealed that at the University of KwaZulu-Natal, the HIV prevalence rate was 6.1 % (CI 4.5 – 8.2), of which females constituted 7.8%, and males 4.1% (HEAIDS, 2010). Because HIV disproportionately affects young women in South Africa, effective female-controlled methods

which protect against HIV and other STIs are important prevention measures. Until recently, only one female-initiated HIV prevention strategy, the female condom (Femidom®), had proved to be effective. The addition of a female controlled barrier method has increased women's options, mainly in cases where there is reluctance by the partner to use barrier protection (Mqhayi *et al.*, 2003). With the recent success of the tenofovir vaginal microbicide trial (Abdool Karim *et al.*, 2010), there is a potential to provide women with another HIV prevention strategy that has the advantage of being less dependent on partner approval, promising to greatly increase a woman's ability to protect herself from HIV infection. Until this product is ready for widespread distribution, the female condom fills an important gap in HIV prevention options.

## 1.2 Background of the study

### 1.2.1 Role of Barrier contraceptive methods

Barrier contraceptive methods are widely promoted in South Africa for single or dual protection. This comprises the use of a barrier method alone (single protection) or a hormonal contraceptive method together with a barrier method (dual protection) against unintended pregnancy and STIs, including HIV (HSRC, 2009). Male condoms are widely accessible via both the public health system and social marketing outlets.

Female Health International in its research brief emphasized that female condoms served to complement rather than replace male condoms (FHI, 2007). It is stated that 44% of current female condom users also reported using male condoms (Warren *et al.*, 2003 and Beksinska *et al.*, 2005). As stated in 'Universal access to female condom joint programme' (2008), aimed at addressing issues of accessibility particularly in developing countries, female condoms offer dual protection and the method is woman-initiated.

### 1.2.2 History of the female condom in South Africa

With the arrival of the dangers of HIV came the need for a wider range of female-controlled barrier methods. Scientific interest in the female condom, which had appeared briefly in the 1920s and 1960s, was renewed and development of several female condoms began. The first

of these to reach the marketing stage for production was the Femidom® (Bounds, 1997). This was first approved by the Food and Drug Administration (FDA) in the United States in 1993 (Beksinska *et al.*, 2001). The female condom was introduced in 1998 into a limited number of public health facilities in all provinces in South Africa. This programme has been expanded as part of the government's National Female Condom Introductory Strategy and female condoms are now freely available from most family planning clinics. By the year 2005, female condoms were available at 204 sites nationally (rural and urban sites and health education institutions), and further expansion was planned for 249 sites by 2006 (FHI, 2007).

### 1.2.3 Design of the Female Condom

The Female condom available as Femidom®, is a loose-fitting polyurethane sheath with two flexible polyurethane rings one at either end. It is a contraceptive device inserted into the vagina before sexual intercourse, and used by women to protect against both pregnancy and sexually-transmitted infections (STIs), including HIV infection. It sits inside the vagina. The inner ring, which is used to insert the condom, slides behind the pubic bone, and helps keep the female condom in place. The outer flexible ring lies outside the vagina. It offers extensive barrier protection by protecting the vagina, cervix and external genitalia (The Female Health Company, 2000).

The FC2 is a new version of the original Female Condom (FC), which was approved by the Food and Drug Administration (FDA) in 1993. It consists of a thin, flexible, nitrile polymer (synthetic latex) sheath. It (FC2) is less costly than the original product (Femidom) because of the changes in material and the manufacturing process. Female condoms are available over the counter; however, although the FC2 is registered, it is not yet in production and consequently not yet available to the general public in SA. The FC2 and the original FC are designed and intended to be used only once and are both manufactured by the Female Health Company, of Chicago, IL (Klein and Stubble, 2009).

### 1.2.4 Efficacy of the Female Condom

A systematic review was conducted to evaluate the effectiveness of the female condom. This included an in-depth focus on 5 randomized-controlled trials, which revealed that the female condom was effective in providing protection during sexual acts (in all 5 trials) and also resulted

in the reduction of STIs (in 2 of the 5 trials) (Vijayakumar *et al.*, 2006). It has effectiveness rates for pregnancy and STIs that are similar to other vaginal barrier methods (Trussell *et al.*, 1994; Farr *et al.*, 1994).

#### 1.2.5 Benefits and shortcomings of the female condom

As stated in 'The Female Condom' (2011), benefits of using the female condom have been cited as follows: it provides an opportunity for women to share the responsibility for condoms with their partners; a woman may be able to use the female condom if her partner refuses to use a male condom; it provides protection against most STIs and pregnancy if used correctly and consistently and it can be inserted in advance of sexual intercourse so as not to interfere with the moment. The shortcomings are listed as the following: the outer ring or frame is visible outside the vagina, which makes some women feel self-conscious; the female condom makes some noises during intercourse (adding more lubricant can lessen this problem); some women find the female condom hard to insert and remove; it has a higher failure rate in preventing pregnancy than non-barrier methods such as the pill; and in some countries it can be relatively expensive and limited in availability.

#### 1.2.6 Female condom and gender

In an evaluation of the Female Condom Introductory Strategy, it was suggested that the female condom is an acceptable method for many women and may help to fill the protection gap left by inconsistency in use of the male condom (Mqhayi *et al.*, 2003). A female condom acceptability study undertaken in South Africa reported a mixed response to the acceptability of female condoms ranging from extremely positive to extremely negative, with 65.4% of women who volunteered to participate in the study finding sex with the female condom to be acceptable or very acceptable (Sapire, 1995). However, although women may find the method acceptable and it is initiated by the female partner, the use of the method requires male co-operation and so must be acceptable to both the users and their partners. Brown (2003) stated in 'The Female condom: Women control STI protection' that, although the female condom is effective, its helpfulness is hindered by men's negative attitudes towards it. This concern, that the method is not female-controlled, was again raised at the Baltimore forum (PATH, 2005). In the Sapire study, many women refused to volunteer to participate, one of the main reasons being that they did not think their partner would agree to use a female condom (Sapire, 1995). In another South



African female condom acceptability study there was a high discontinuation rate among new female condom users, with partner reluctance to try the method being the main reason for discontinuation (Beksinska *et al.*, 2001). It is therefore imperative that promotion of female condoms should be equally directed to both males and females.

#### 1.2.7 Further female condom uptake challenges: accessibility and lack of advocacy

Lack of accessibility has remained a challenge around the globe and in SA. King (2005) cites reasons for the poor uptake of the FC as follows: not enough procurement, and weakened advocacy issues towards the Female condom. Again in a conference held in Baltimore (2005), accessibility and cost were among concerns relating to female condoms experienced by several countries and discussed in a forum on the Female condom (PATH, 2005). In an article cited as 'Female Condom Distribution in Southern Africa' (2009), the authors state that the female condom has been known for more than 15 years but it is still largely sidelined and not easily available.

Although the South African government is providing female condoms freely at designated sites in South Africa (including UKZN), currently, not all sites (in the province) distribute the female condom (Beksinska *et al.*, 2005). Over 3.5 million female condoms were distributed by the government of South Africa between 2006 and 2007 (Republic of South Africa, 2008). However, female condoms are only provided at selected sites, meaning that this method is still not accessible to all who may benefit from it. King (2005) continues to argue that influential people do not emphasize the female condom option.

#### 1.2.8 Female condom at UKZN

Within the University of KwaZulu-Natal (UKZN), the female condom is already available free of charge from the health clinic situated at every campus and clinic staff reported no female condom shortages (personal communication by researcher with staff at the Nelson R. Mandela School of Medicine campus clinic, UKZN).

### 1.3 Problem Statement

While the female condom is currently the only female-initiated HIV prevention method available, and has increased women's ability to protect themselves, particularly when the partner is reluctant to use a male condom, use is dependent on whether the male partner is willing to accept the method (Welsh *et al.*, 2001). Male partner acceptability appears to vary between different communities and age groups (Latka *et al.*, 2001). There are currently few published studies providing data about the views of young South African males related to the female condom.

Although another female-initiated HIV prevention method, the tenofovir vaginal microbicide, which promises greater control for the female partner, is in the process of production, it is not yet available (Bateman *et al.*, 2010). As the only female-initiated HIV prevention method presently available, it is important that the knowledge, attitudes and use related to the female condom among young males be known in order to inform how best to maximise its uptake.

All along the focus has been on women when it comes to family planning and reproductive health issues. Men have largely been neglected, especially in Africa. This is despite evidence showing that males exercise decision-making power in different social-cultural spheres and for bad or good they are involved in family planning, gender dynamics and HIV/AIDS and STD (Mufune, 2009). More recently, a need to involve men has been identified (UNFPA, 2011, 17) calling for a shift in attention toward looking at the views and knowledge of men toward reproductive health matters. This study will investigate perceptions of male medical students of female condoms as well as their knowledge and experiences of use.

### 1.4 Purpose of the study

The purpose of this study is to determine the knowledge, attitudes and behavioural practices associated with the use of the female condom as an STI infection control method among male medical students in their first three years of study at the University of KwaZulu-Natal, Durban in order to determine whether there is a further need for education and promotion of the female condom.

### 1.5 Significance of the study

Because of the escalating HIV prevalence rates in the country and worldwide, we need to ensure that the full range of HIV prevention options is effectively promoted and provided so that uptake is maximized. South African women are at particular risk of becoming infected through heterosexual sex. The female condom provides effective protection from this mode of transmission and has been shown to be acceptable among women and men. However it requires both partners' consent, its use having been found to be limited where the male does not find this method acceptable. Knowledge is lacking about the views and awareness of young males regarding the female condom. Such knowledge is essential to inform the design of effective female condom promotion interventions. This study is important because it investigates the views and awareness of a group of young males towards the female condom.

### 1.6 Hypothesis of the study

The hypothesis used in this study is that young males have little knowledge about the female condom, have not seen or used a female condom before and have little interest in using female condoms as one of their barrier methods.

### 1.7 General Objectives

- i. To describe knowledge, attitude and behavioural practices associated with the use of the female condom by male medical students
- ii. To identify and locate any associations between the demographic, educational and socio-cultural background associated with positive and negative attitude or behaviour towards female condom use as a barrier contraceptive.
- iii. To determine whether there is a need for programmes designed to raise acceptability and knowledge of female condoms.

## 1.8 Research Questions

The study aimed at addressing the following main research questions:

- i. What are the knowledge levels of male students about the female condom?
- ii. Are the attitudes of male medical students towards the female condom positive or negative?,
- iii. What are the sexual practices and characteristics associated with the use of the female condom?,
- iv. Is there a relationship between the use of the female condom and socio –demographic factors of male students in UKZN?

## 1.9 Outline of the study

This thesis is structured as follows: **Chapter one** focuses on introduction, background, problem statement and aims and significance of the research study. **Chapter two** is on literature reviewed relating to the HIV epidemic and its prevention and factors that influence attitude, knowledge as well the use of the Female condom. **Chapter three** focuses on the theories applied in changing behavior to adopt HIV prevention action. **Chapter four** describes the study method that was followed to conduct the study. **Chapter five** outlines results and analysis. Discussion, recommendations, limitations and conclusion are included in **Chapter six**.

## CHAPTER TWO

### 2. Literature Review

#### 2.1 HIV/AIDS internationally and in South Africa

Overall, the global AIDS epidemic shows signs of a decline. According to the UNAIDS global report (2009), there has been a drop in new HIV infections in the world from 3.1 million in 1999 to 2.6 million in 2009. The report relates further that HIV incidence has fallen by more than 25% between 2001 and 2009 in 33 countries in the world, 22 of which are in sub-Saharan Africa (SSA). The number of annual AIDS related deaths worldwide is decreasing and is estimated at 1.8 million in 2009. The percentage of women living with HIV and AIDS varies significantly between different regions of the world. It is reported that women living with HIV globally is estimated at 15.9 million in 2009 (UNAIDS global report, 2010).

SSA still bears an unreasonable portion of the global HIV burden. The total number of people living with HIV in this region continues to grow. An estimated 1.8 million people became infected in 2009, with the adult (15-49yrs) prevalence rate at 5.0% in SSA. Swaziland has the highest (25.9%) adult HIV prevalence in the world, whereas in West and Central Africa HIV prevalence remains fairly low, with adult HIV prevalence estimated at 2% or under in 12 countries in 2009. In SSA and the Caribbean, AIDS related mortality began to decline in 2009 (UNAIDS global report, 2010). In some countries the ratio of infection is 1:5.

More women than men are living with HIV in the region. The number and relative proportion of women infected with HIV has risen rapidly, especially in SSA. This proportion rose from 50% of people living with HIV in 1998 to 59% in 2007 (UNAIDS/WHO, 2008). South Africa's HIV infection is still leading in the world however, as stated earlier in this report, there is a gradual slowing down of new infections in the country (UNAIDS global report, 2010).

According to Statistics SA (2011) in 'Mid-year population estimates', the overall number of people living with HIV in South Africa has risen. It further narrates that nearly one-fifth of South African women in their reproductive ages are HIV positive.

Although the epidemic still remains incurable, HIV treatment (antiretroviral therapy), can suppress the virus and delay illness for many.

## 2.2 HIV heterosexual transmission prevention

It is evident that more interventions are still needed to address the HIV and AIDS epidemic globally and especially in South Africa. As stated in AVERT (2011a) the majority of people infected with HIV in SSA and in South Africa are infected through heterosexual intercourse. As stated in AVERT (2011) among effective strategies for reducing the risk of becoming infected with HIV during sex is the consistent correct use of condoms.

## 2.3 The role of male condoms

The male condom offers a safe, cheap and effective means of both preventing conception and sexual transmission of bacterial and viral infections, including HIV and AIDS (Srikanthan and Reid, 2008). A number of studies have shown that consistent and correct use of condoms, yields effective results in preventing HIV infection. On the other hand, UNAIDS (2004) points out that there are no studies that have proven that promoting condoms leads to increased sexual activity among young people (UNAIDS, 2004). However in spite of this, uptake of condoms is not optimal.

## 2.4 Obstacles to consistent and correct use of condoms

### 2.4.1 Youth sexual behaviour

One of the main reasons for the ineffectiveness of HIV prevention programmes in many countries today, is the failure to address the vulnerability to infection of certain population groups, which include students (Wiwat, 2006). Young people often find it difficult to remain abstinent and they relate condoms to promiscuity or lack of trust (Marston and King, 2006). A study conducted in Mozambique secondary schools, with young people of ages ranging from 15-20 years, revealed that the youth tended to act as if they were immune to HIV and AIDS (hence not using condoms as a method of prevention/ protection). Although they believed that everyone was potentially at risk, most believed they were not personally vulnerable because they had a lifestyle that did not expose them to HIV infection (Manuel, 2005).

#### 2.4.2 Gender power relations

Parker (2005) argues that any sexual act involves more than just an act and condom use, which is implicit. There are complicated hidden power relations, which are important to sexual encounter. These gendered power relations contribute to the decision about whether or not to make use of a barrier method, especially the female controlled barrier methods (Ulin, 2001).

In a systematic review of published evidence on intervention impact on male condom use in SSA and Asia, gender differences were also noted (Foss *et al.*, 2007). In five of the articles included in the review, condom use increased significantly among males of all age groups but not females within the same study (Jacobs *et al.*, 2003; Kagimu *et al.*, 1998; Erulkar *et al.*, 2004; Magnani *et al.*, 2005; Wiktor *et al.*, 2004).

#### 2.4.3 The influence of religion

Condoms are often viewed with scepticism and mixed feelings in countries with a high prevalence of HIV infection, particularly in SSA. Despite its benefits, in Africa, condom use is faced with resistance from Christian, religions as well as Traditionalists (Lyons, 1993). Lyons (1993) points out that regardless of the role condoms play in family planning and in avoiding the spread of sexually transmitted infections (STIs) including HIV/AIDS, their use remains associated with immorality and infidelity among men and women.

Consequently, these religions may have negative perceptions towards the use of condoms, both as contraception in family planning and as a preventive measure against the spread of sexually transmitted diseases, and this may negatively affect programmes that are aimed at reducing the spread of HIV/AIDS (Srikanthan and Reid, 2008).

#### 2.4.4 Use in a steady relationship

Runganga (1992) and Matshalaga (1999) state that for married couples or people in steady relationships, condom use is almost non-existent, as it indicates lack of trust and/or the fact that someone wants to use a condom because she or he is already infected.

## 2.5 Women and the female condom

The female condom is a female-initiated barrier method that provides women with an alternative to male condoms for the control of fertility and prevention of sexually transmitted infections including HIV and AIDS. It has increased women's options, mainly in cases where there is reluctance by the partner to use barrier protection (Mqhayi *et al.*, 2003). Vijayakumar *et al.*, (2005), in their systematic review, concluded that the female condom is effective in increasing protected sex and decreasing STI incidence among women.

## 2.6 Obstacles affecting uptake of female condom

### 2.6.1 Accessibility and knowledge

Female condom accessibility (affordability, availability and acceptability) remains an issue of concern. Although many couples could have benefited from the dual protection of the female condom if not ready for pregnancy, they either have never heard of it, and even if they have heard of it, they are not able to obtain it (Hoffman, 2008). Nearly 25 years after its invention, Hollensen (2007) states that the female condom is still not generally accessible. World production of female condoms remains a very small fraction (0.28%) of all condoms produced and access to this protective device is haphazard and inadequate (Hollensen, 2007). A study, conducted in New York City among 71 male heterosexuals, found that only one man had previously used a female condom as barrier protection and the majority of men possessed little or no knowledge about this barrier method; however their willingness to learn about the method ranged from positive to negative (Seal and Ehrhardt, 1999).

#### 2. 6.1.1 Attitudes and views on female condom

Studies report mixed attitudes among both male and female study subjects towards the female condom. Farr (1994) found that among US and Latin American women, most women liked using the device, would recommend it to others and would select it above other barrier methods. According to Mantell *et al.*, (2008), use of the female condom can empower women, give them a greater sense of self-reliance and autonomy, and enhance dialogue and negotiation with their sexual partners. Thornburn (2007) reports that the majority of African American men in his study, which examines attitudes and perceptions in relation to the selection of contraceptive



methods, with a particular focus on gender differences, displayed willingness to try the female condom. The findings of a review conducted in the US by Severy and Spieler (2000) revealed that many men prefer the female condom to the male condom because it is less constricting, and makes sex more pleasurable and more natural. In their review of studies on the female condom, Vijayakumar *et al.*, (2006) revealed that female condoms are acceptable to many women, offering a useful alternative to women who may desire to use dual protection methods. A later study revealed another finding linked to sexual pleasure. This study found that while women recognized the dual protection offered by the female condom, the fact that they liked it is linked to sexual satisfaction. They mentioned that it can be inserted before foreplay, a positive factor also stated by males during the focus group discussions in a study conducted in Zimbabwe among sexually active women and men (Francis-Chizororo and Natshalanga, 2003). Respondents expressed the need for more information regarding use and its effectiveness in prevention of sexually transmitted diseases including HIV.

In contrast to these positive findings related to attitude, the findings of Ford and Marthie (1993) were more varied. They reported that female condoms had allowed female study participants more control in pregnancy and disease prevention decision making and their ability to protect themselves was less dependent on the male partner's acquiescence. However they also found a number of barriers to their use including clients' distrust of unfamiliar methods, inconvenience, insertion difficulties and reluctance among male partners. They discovered that women who have used or have been introduced to the female condom have undergone different experiences which were often culturally contingent. They concluded that women may discontinue their use because of their partner's opposition, and that male opposition to female condom usage varies in different settings (Ford and Marthie, 1993).

Their conclusion is in keeping with one of the findings discussed in the study by Farr (1994). In the Farr study, reasons for inconsistent female condom use among participants varied between US and Latin American subjects, with the latter reporting partner objection as one of the main reasons for not using the female condom consistently. Partner co-operation was also found to be a key issue in an African study assessing the impact of introducing the female condom (Welsh *et al.*, 2001). The researchers reported that the use of the female condom depended on the willingness of the male partner. A Kenyan study, conducted in 1996, aiming at identifying the factors and rationale that determine the use and non-use of the female condom, reported that cultural taboos prevented women from discussing intimate subjects, such as female condoms

with male partners (Ankrah and Attika, 1997). Similarly, Beksinska *et al.*, (2001) pointed out that the main issue when introducing a contraceptive method was overcoming partner opposition. In a later study conducted among Zimbabwean women and their partners, female condoms were the least preferred method compared to the diaphragm and male condoms, mainly because of their obviousness and partial coverage of outer-genitalia that interfered with sexual pleasure (Buck *et al.*, 2005). A Botswana news report discussing the results of a survey conducted at several government clinics and health posts revealed that many people are still reluctant to use the female condom, despite claims by the Botswana Ministry of Health that the female condom has been greatly accepted (Ngwanaamotho, 2010).

There is a lack of data relating to the views of young men, who play such a critical role in fuelling the HIV epidemic, on prevention methods such as the female condom. Gordon and Mwale (2006) in a case study on preventing HIV with young people in Zambia argue that lack of knowledge about sexual practices and their safety puts young people at risk of both STIs and HIV, as well as unwanted pregnancy. Due to that fact, the focus of this study will be on the views of young males regarding the female condom and their knowledge of and experience with this HIV prevention method.

## CHAPTER THREE

### 3. Theoretical Framework

#### 3.1 Introduction

This chapter focuses on theories that support this study and unpacks theoretical concepts that may influence an individual's decision to behave in a particular manner. The theoretical framework in this study is comprised of two components, namely: social cognitive theory and the health belief model. These two theories focus on the individual and environmental factors leading or contributing to a particular change in behaviour. Cognitive theories of behavior have been the centre of HIV prevention intervention since the 1980's.

These two theories focus mainly on the control of an individual over his behavior and on what influences this. They assume that an individual will employ different strategies to eliminate the risk of infection. These strategies involve, for example, condom use and choosing to be faithful to one partner (Parker, 2005).

These theories relate to any behaviour including reproductive health (Fisher and Fisher, 2000). Therefore, they are applicable to this kind of the study. The two theoretical frameworks were used to guide the design of the study and the development of the questionnaire used in this study.

#### 3.2 Social Cognitive Theory

Social cognitive theory (SCT) is sometimes referred to as Social Learning Theory. It provides a framework for understanding, predicting, and changing human behavior (Brigham Young University Theories used in IS research, 2011). The focal point of Social Learning Theory is the kind of learning which occurs within a social context. The theory identifies human behavior as an interaction of personal factors, behavior and the environment. Albert Bandura, the founder of this theory, proposed that learning is a three way interaction between the environment, the individual's internal events and the individual's behaviour (Gredler, 2001). According to SCT, the

learner acquires knowledge as his or her environment converges with personal characteristics and personal experience.

In this model, the interaction between the person and behavior involves the influences of a person's thoughts and actions. The interaction between the person and the environment involves human beliefs and cognitive competencies that are developed and modified by social influences and structures within the environment. Also, interaction between the environment and behavior involves a person's behavior, determining the aspects of their environment, and in turn their behavior is modified by that environment. As gender roles are social constructs involving personal and environmental factors, according to this theory they are expected to influence behaviour including sexual and health seeking behavior (Bandura, 2001).

Social Cognitive Theory (SCT) is a learning theory that describes how behaviours are learned, thus when using interventions that affect these constructs, SCT can be used to instill certain health promoting behaviors or to reduce risky behaviors associated with poor health (McAlister, Perry and Parcel, 2008)

Furthermore, Social Cognitive Theory or Social Learning Theory draw attention to the role of the social environment in relation to behaviour change and demystifies the role the individual's attitude and experiences play in forming part of the behaviour change.

This theoretical framework will help in understanding and predicting individual sexual behaviours and identifying how knowledge acquired translates to actual use of the female condom. The reason for choosing this model is that it looks holistically at factors that influence human behavior.

To summarise, according to Social Cognitive Theory, making and maintaining a behaviour change depends on expectations about one's ability to perform a certain behaviour (self-efficacy or efficacy expectation) and the expectation regarding the outcome resulting from performing that behaviour (outcome expectations). Efficacy expectations are based on an individual's belief in their capability to perform a certain behaviour. Self-efficacy is not a personality trait but is specific to a given situation. Self-efficacy is learned from four primary sources: 1) performance accomplishments, 2) verbal persuasions and encouragement, 3) social modeling or 4) vicarious experiences and physiological states (Keller *et al.*, 1999).

### 3.3 Health Belief Model

The Health Belief Model (HBM) model remains one of the most widely used conceptual frameworks of health behavior. It views health behavior as a function of an individual. This model is a commonly used framework to understand health behavior, and has been extensively used for condom use promotion as well as other health related behaviors (Fisher and Fisher, 2000). These authors further emphasize that this model has been commonly used to explain and understand numerous health behaviours. In a nutshell, this model assumes that a person's health beliefs influence their health behavior (Glanz *et al.*, 2002). The theory behind this model is that people fear diseases and that the degree of fear or perceived threat motivates them to take necessary precautions (Rosenstock *et al.*, 1994).

In this model, factors of perceived susceptibility and of perceived severity combine to yield perceived threat. The perceived benefits of behaviour also are compared with the perceived barriers to determine or evaluate the course of action to be taken (Armitage and Conner, 2000).

HBM is based on the understanding that a person takes a health related action if he or she feels that a negative health condition can be prevented. The chance that an individual will act to decrease susceptibility depends on the perceived difficulties and benefits that are linked to change in the behaviour (Fisher and Fisher, 2000). Variables like knowledge of the female condoms, age, religious beliefs and cultural factors may influence an individual's perception of these difficulties and benefits and so may also influence the decision to either change or not change a specific behaviour.

The model also assumes that if an individual perceived that there is a benefit in taking a recommended action (in this case using the female condom), this will result in continuous use. Later on, cues or triggers to action, perceived barriers and self efficacy were incorporated as part of this model. The concept of self-efficacy describes the conviction that individuals possesses that they are capable of a particular ability, for example, they believe they can perform a particular preventative measure related to a positive health outcome (e.g. consistent use of a condom) successfully. If a person holds this conviction, then according to the Health Belief Model, he/she has a greater chance of experiencing the positive outcome in question, e.g. prevention of HIV and STI or pregnancy (Rosenstock *et al.*, 1988).

In summary, the premise of this theory is that to change behavior, individuals must: 1) feel personally susceptible to the health problem, 2) feel the problem can cause them serious harm, and 3) know what actions can be taken to avoid the harm, and know the cost or benefits of the actions.

### 3.3.1 Validity of the health belief model.

Many studies have investigated the utility of the Health Belief Model for predicting safe sexual behaviour (i.e. either intended or actual condom use). A study of college students revealed that those with positive attitudes about condoms reported more condom usage over their lifetimes. These positive beliefs may reflect either benefits or “absence of barrier” in the HBM (Boone and Lefkowitz, 2004).

### 3.4 Application of the models into the study

Within the framework of Social Cognitive Theory (SCT) and the Health Belief Model, the researcher was interested in learning about the knowledge of, attitudes towards, and use of female condoms pertaining to male medical students in their years on campus at UKZN. These two theories supplement each other in understanding the individual, behaviour and behavioural changes that could be influenced by a number of factors, including age, religion, culture, personality traits and environment. Reeler (2007) states that theories are needed because they help the researcher to ask appropriate questions, more systematically and rigorously, and guide the understanding of the real work that is needed, mainly helping communities and their organizations to ‘understand and shape their own realities’ (Reeler, 2007).

It is important to note that people do not exist in isolation, but people are influenced, and follow a certain way of behaving that is acceptable to the bigger group to which they belong. Behavioural theories seem to explain and to predict behaviour in a relatively wide variety of situations (Van Ryn and Heany, 1992).

The Health Belief Model construct of self efficacy is critical in this context, say if these young males have a good knowledge of the female condom and understand its importance and know how to use it, then they will be confident in their ability to use this method successfully (i.e. they

should possess self-efficacy) and should be more likely to use this method or other infection prevention strategies and therefore more likely to be protected from sexually transmitted diseases including HIV.

## **CHAPTER FOUR**

### **4.1 Research Methodology**

This chapter presents the methodology that was used to conduct this study. This is a quantitative study. It is an observational, descriptive, cross sectional study that is aimed at determining and describing male medical students' knowledge about, attitudes towards and use of female condoms.

### **4.2 Study site**

The study was conducted at the University of KwaZulu-Natal, Nelson R. Mandela School of Medicine campus. UKZN was formed on 1 January 2004 as a result of a merger between the University of Natal and the University of Durban Westville. It is situated in KwaZulu-Natal (KZN) province. The university is comprised of five campuses namely; Edgewood, Westville, Howard, Pietermaritzburg and Nelson R. Mandela School of Medicine. Participants in the study were drawn from one of its five campuses, the Nelson R. Mandela School of Medicine, commonly known as the "Medical School".

Health clinics located at all of these campuses have been involved in activities related to the national introduction of the female condom. Female condoms (FCs) are routinely supplied as a contraceptive method to students at these sites and the clinic staff have received intensive training on barrier methods, including the dual protection role of barrier methods in prevention against pregnancy and STIs and HIV.

### **4.3 Study population**

The study population comprised of first, second and third year male medical students registered in the year 2010, at the University of KwaZulu-Natal, at the Nelson R. Mandela School of Medicine campus, in Durban.



#### 4.4 Sampling Method

The target population (ideal selection) was all first, second and third year male medical students registered in 2010. The accessible population (pragmatic selection) was all consenting first, second and third male medical students who attended a routine first, second or third year lecture selected to avoid interference caused by absenteeism prior to tests and other assessments and where the content was least dense to minimize inconvenience to students and lecturers. A convenience sampling method was therefore utilized to collect data from this group of students, because specific steps were taken to maximize the sample size. One of the characteristics of this method is that the sample is selected based on their availability and the judgment of possession of particular characteristics and for a specific purpose to satisfy the researcher's needs. This method is deliberately selective and biased. Those willing to take part in the study gave written informed consent, and answered a self-administered questionnaire. These students formed the study sample.

#### 4.5 Sampling size

On consultation with a statistician, a minimum sample of one hundred (100) consenting participants was deemed adequate.

In 2009, there were 92 male First year students, 82 male Second years and 88 male Third year students, a total study population of 262 at the Nelson R. Mandela School of Medicine campus. Due to some logistics and ethical delays, data was only collected in 2010. However, our minimum sample size of 100 students would represent 40% of the current cohort of male medical students. In 2010, 94 First year males, 75 male Second years and 83 males were doing third year of their study, totaling up to 252 male medical students forming the study population. This therefore, made it possible to reach and exceed our minimum target of 100 male medical students.

From these 252 male medical students in the first three years of study, a sample from First year (n=55), Second year (n=40) and Third year (n=34) male medical students was obtained, giving a total of 129 (51% of study population) sample size.

#### 4.6 Data Collection Tool

The design of the questionnaire is based on an instrument which has been employed previously to assess the acceptability of the female condom among women in South Africa (Beksinska *et al.*, 2001). Questions were selected for their appropriateness with regard to males. The two theoretical frameworks used in the study assisted in the formulation of the data collection tool, as they both focus on an individual, environment and behaviour. These frameworks, as well as the research questions that needed to be addressed together with the purpose of the study, guided the selection of relevant questions to be asked during the interview. It was also important that students avoid significant lecture disruption; as a result questions were kept to a minimum. These considerations resulted in the development of a four (4) page self-administered questionnaire requiring not more than 15 minutes to complete.

The questionnaire was designed by the student researcher with the assistance of a statistician. It consists of two sections namely: demographic information (questions 100-103) and female condom knowledge, attitudes and use (the remaining questions). Within the latter section, questions 200-201.2, 217, 219 relate to student sexual characteristics and risk reduction behavior; questions 202-208 and 221 focus on student knowledge about the female condom; questions 209, 211 and 215 involve the use of the female condom and student attitudes are explored with questions 210, 212-214, 216, 218 and 222-226.

#### 4.7 Data Collection Process

A knowledge, attitude, behaviour (KAB) survey was undertaken. According to World Health Organisation, a KAB survey is a study of a sample of people representing a specific population to gather data about what this population knows, believes and does in relation to a particular topic (KAB surveys) can identify what is commonly known and what attitudes are commonly held. To some extent, they can identify factors affecting behavior, reasons for their attitudes, and how and why people practice certain health behaviours (WHO and Stop TB Partnership, 2008, 6).

Measurement of these individual-level variables provides a basis for understanding why people act in a particular manner, based on the premise that knowledge affects attitudes, which then has a further influence on practice and behavior (Katzenellenbogen *et al.*, 1997). This will

provide some insight into attitudes and feelings among this little-researched target group concerning female condoms, which will hopefully provide a useful starting point in the development of programmes to broaden the use of this HIV prevention tool.

To be eligible for this study, a participant would have been a male medical student, 18 years old or older, currently enrolled in his first, second or third year of study at the University of KwaZulu-Natal, and would have given his written informed consent to participate in the study.

The questionnaire was written in English as it is the language of instruction at UKZN. Questionnaires were piloted or pre-tested once to ensure their validity and reliability among several second-year nursing (one male and three females) students at the Howard College campus, who were asked to complete the questionnaire. Nursing students were used instead of medical students, and females as well as the male student because of their availability. A few changes to the wording were made as a result of the pilot.

A self-administered questionnaire was used to collect data from the study sample at the end of a routine first, second and third year lecture. Lecturers from the Department of Therapeutics and Medicines Management were approached prior to the date of interview, and lecture sessions were selected which would allow time for students to fill in questionnaires and which were at times that would be convenient for students and staff. For a selected session, the lecturer would first conduct the prescribed pharmacology lecture (these were related to dosing calculations in first year, dosage adjustment in renal impairment in second year and thyroid medication in third year). A questionnaire pack was distributed to males' students, consisting of a written information sheet, a consent form and a self-administered questionnaire. A tutorial on the lecture material was distributed to the female students. Next, the lecturer gave a brief introduction to the study and the female students were asked to leave. The male students were promised that the tutorial given to the female students would be provided electronically and asked to spread out to maximize privacy. Consenting students provided written informed consent and responded to the questionnaire. When a student had finished he put up his hand, the questionnaire and consent form was collected, and the student left the venue.

#### 4.8 Ethical Issues

The study complied with the ethical standards and regulations of the Human Science Research for this kind of research. Permission was obtained to conduct this study from the university's ethics committee (BF 108/09) and the head of departments for the university (See Appendix 4, Letter of Ethical Approval). The Biomedical Research and Ethics committee provides representation of human subjects and protection of their rights, ensuring that they are respected and that the most fundamental ethical considerations are taken into account, that is, informed consent, confidentiality, anonymity (Green and Thorogood, 2004; Nueman, 2000) and voluntary participation of participants into the study (Masons, 2002; Nueman, 2000).

Participation was voluntary and written informed consent was obtained from each participant. To ensure anonymity and confidentiality, respondents were asked not to put their names anywhere on the questionnaire, to protect their identity. After reading the accompanying information sheet and informed consent form, students were asked to sign and provide their student numbers. Questionnaires were self-administered. They were completed in a designated lecture hall and a researcher was present to ensure that there were no interruptions during that process. Questionnaires and consent were kept in a locked cupboard to ensure privacy. Confidentiality and anonymity was guaranteed to every participant.

There were no direct benefits and there were no risks involved in participating in this research study and this was explained in the information sheet. There was no compensation offered to participants.

#### 4.9 Data Analysis

Data collected on the questionnaires was cleaned and captured using Epi-Info, version 3.3.2. Frequencies of responses were calculated together with proportions given as a percentage. The 95% confidence limits around these proportions were also calculated, in order to provide a confidence interval so that if the study were repeated, the researcher could be confident that 95 times out of 100, the proportion for the repeated study would fall within this interval.

Associations were sought between the demographic and sexual characteristic variables and key responses related to female condom knowledge, attitude and use. For categorical data, the

uncorrected chi-squared test was used. For tables generating cells with an expected value of less than 5, Fisher's Exact Test was used. For continuous data (e.g. age), a student T-test was performed. Tests were considered to be statistically significant if the associated p-value was less than 0.05.

Qualitative data gathered from open-ended questions was categorized according to common themes and arranged in tables. Where comments and categories linked to one of the theoretical constructs, the Health Belief Model (HBM) or Social Cognitive theory (SCT), these were labelled as follows to show how they linked with which parts of which theory.

HBM1: Personal susceptibility to health problem

HBM2: Aware problem can cause serious harm

HBM3: Knows actions can be taken to avoid harm, benefits vs. cost of action

The labeling system was developed from the HBM premise discussed in Chapter 3, that to change behavior individuals must: 1) feel personally susceptible to the health problem, 2) feel the problem can cause them serious harm, and 3) know what actions can be taken to avoid the harm, and know the cost or benefits of the actions.

SCT1 self-efficacy, efficacy expectation

SCT1.1 self-efficacy from performance accomplishments

SCT1.2 self-efficacy from verbal persuasions and encouragement

SCT1.3 self-efficacy from social modelling or vicarious experiences

SCT1.4 self-efficacy from physiological states

SCT2 outcome expectations

The labelling system was developed from the tenets underpinning SCT (see Chapter 3), that making and maintaining a behaviour change depends on 1) expectations about one's ability to perform a certain behaviour (self-efficacy or efficacy expectation) and 2) the expectation regarding the outcome resulting from performing that behaviour (outcome expectations). Self-efficacy is learned from four primary sources: 1) performance accomplishments, 2) verbal persuasions and encouragement, 3) social modeling or vicarious experiences and 4) physiological states.

## CHAPTER FIVE

### 5. Results and Analysis

#### 5.1 Introduction

This chapter reports on the findings of the study. The results were computed to test the hypothesis stated in Chapter One. The demographics of respondents are described as well as the frequencies of responses for each question. Possible relationships between variables are sought and described.

A sample size of 129 respondents (51% of the study population) was obtained. Overall, there were 131 male students who considered taking part in the study. Of these, 129 gave written informed consent and completed self-administered questionnaires. One student felt that the questions were too personal and the venue was not conducive to answering the questionnaire, while another one felt that the questions were not relevant for homosexual men.

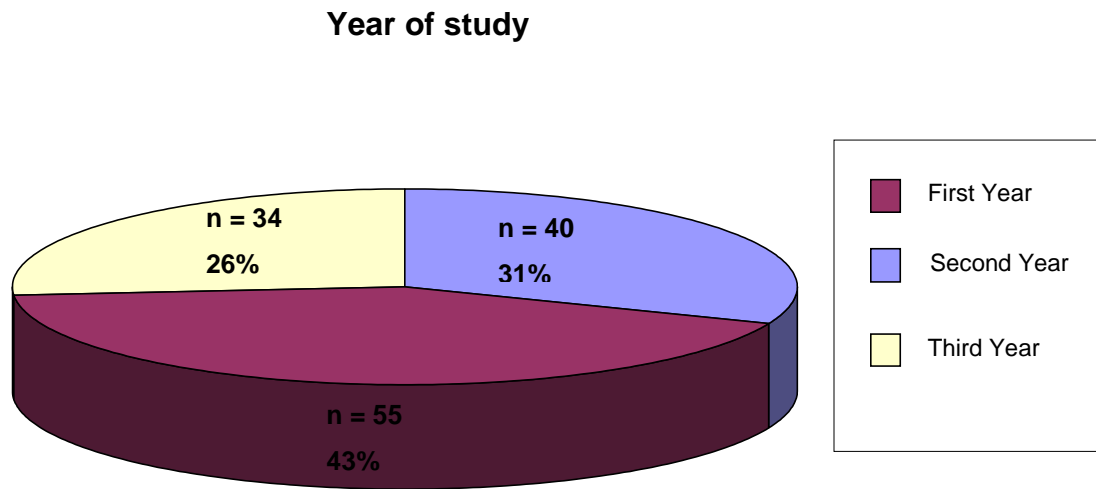
#### 5.2 Demographic profile of respondents

Demographic characteristics of respondents measured include year of study, age, race and religion.

##### 5.2.1 Year of study of respondents

The proportion of male medical students from each of the three years of study sampled is illustrated in Chart 1 below.

Chart 1. Year of study of respondents



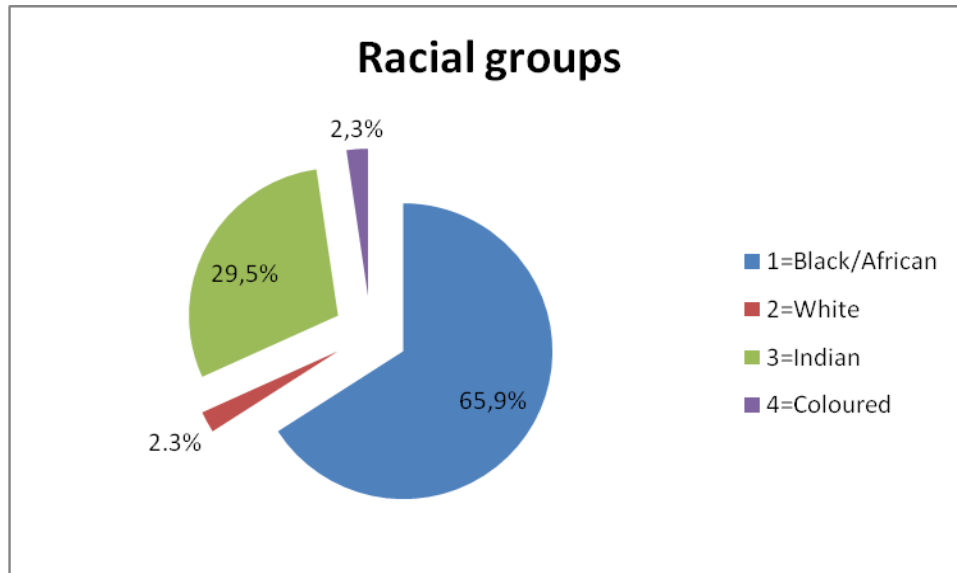
The study sample consisted of First Years  $n=55$  (43%), Second Years  $n=40$  (31%) and Third Years  $n=34$  (26%). The total sample size  $n=129$ . Refer to Chart 1.

#### 5.2.2 Age of respondents

Of the 129 respondents, one did not state his age. The remaining 128 respondents ranged from 18 to 34 years, with an average age of 21 (standard deviation 3.2).

### 5.2.3 Race of respondents

Chart 2. Racial breakdown of respondents.



The study sample was comprised of the following four race groups; Blacks  $n=85$  (65.9%), Whites  $n=3$  (2.3%), Indians  $n=38$  (29.5%) and Coloureds  $n=3$  (2.3%). The study population comprised 252 males, Black African  $n=142$  (56%), Indian  $n=91$  (36%), Whites  $n=9$  (4%), Coloureds  $n=10$  (4%).



#### 5.2.4 Religion of respondents

Three participants did not respond to this question. The remaining 126 responses are shown in Table 1 as follows:

*Table 1. Religious affiliation of respondents*

Religion		Frequency	Frequency	%	Total %
Christians	(no denomination specified)	10		8	
	Protestants	19		15	
	Gospel	11		9	
	Zionist	9		7	
	Roman Catholic	14		11	
	Charismatic/Evangelist	13		10	
Total Christians			76		60
Hindu			27		21.4
Muslim			2		2
Other			18		14.3
None			3		2.3
<b>Total</b>			<b>126</b>		<b>100</b>

As evident in the table above, most of the respondents were Christian (60%), followed by Hindus (21.4%). Muslims comprised 2% of the respondents. The remaining 14.3% were categorised as 'Other' and three students (2.3%) responding as 'None'.

### 5.3 Students sexual information

#### 5.3.1 Proportion reporting current or recent sexual activity

##### 5.3.1.1 Current sexual activity

*Table 2. Sexual activity*

<b>Are you currently sexually active?</b>	<b>Frequency</b>	<b>%</b>	<b>(95% Conf Limits)</b>
Yes	57	44.2	(35.5- 53.2)
No	72	55.8	(46.8-64.5)
Total	129	100.0	

#### *Recent sexual exposure of respondents who reported current sexual activity*

Of the 57 respondents who reported current sexual activity, one did not respond to the question whether he had had sex in the previous four weeks. Thirty two respondents (56%; confidence interval 43-70%) reported sexual activity and the remaining 24 (43%; confidence interval 30 - 57%) did not have sex in the previous four weeks.

#### 5.3.2 Proportion having experience using a condom

*“Have you used a male condom before”?*

*Table 3. Usage of male condoms*

<b>Have you used a male condom before?</b>	<b>Frequency</b>	<b>%</b>	<b>(95% Conf Limits)</b>
Yes	72	60.5	(51.1- 69.3)
No	47	39.5	(30.7- 48.9)
Total	119	100.0	

Ten students did not respond to this question. Of the remaining 119 students, 72 students (61%, confidence intervals between 51 and 69%) reported having used the male condom previously while 47 students (40%, confidence intervals between 31 and 49%) had not used it before.

*Protection used by respondents who reported recent sexual exposure*

Of the 32 respondents reporting sexual activity in the previous four weeks, two did not respond to the question asking whether they had used protection during sex. One respondent (3% of the 30 giving answers), reported using a female condom in the previous four weeks and six respondents (20% of those who gave answers), reported ‘Other’, with two of these elaborating that they had used no condom, and one of these reporting ‘yes’, but not specifying which form of protection he had used. The remaining 23 respondents (77%) reported using a male condom. However, for these 32 recently sexually active students, in response to the question, ‘At last sexual act did you use a condom’, two students skipped this question, 17 (53%) students reported using a condom and 13 (41%) reported not using a condom. Of these 13 students, two students reported never having previously used a condom.

*Table 4. Protection used by respondents who reported recent sexual exposure*

<b>Did you use protection during sex?</b>	<b>Frequency</b>	<b>%</b>	<b>At last sexual act did you use a condom?</b>	<b>Frequency</b>	<b>Have you used a male condom before</b>	<b>Frequency</b>
Female condom	1	3	yes	1	yes	1
Other	6	20	no	5	<b>no</b>	<b>1</b>
					yes	4
			yes	1	yes	1
Male condom	23	77	missing	2	yes	1
					missing	1
			no	6	<b>no</b>	<b>1</b>
					yes	5
			yes	15	yes	15

### 5.3.3 Condom use at last sexual act

Twenty six students did not respond to this question. Of the remaining 103 students, 53 (52%, confidence interval 41-61%) reported having used a condom and 50 (49%, confidence intervals 39-59%) did not use a condom. The 53 students who had used a condom all reported having used a male condom. In addition, one of the students who did not respond to the question about condom use at last sexual act responded that he had used a male condom to the following question about which condom was used. This brought the number of students reporting male condom use at last sexual act to 54. No female condom use was reported at last sexual act. Of the 50 students who reported not using a condom, 20 responded that they were currently sexually active and 30 were not.

### 5.3.4 History of circumcision

The circumcision status of the 129 respondents is reported in Table 5 below.

*Table 5. History of circumcision*

<b>Have you been circumcised?</b>	<b>Frequency</b>	<b>%</b>	<b>(95% Conf Limits)</b>
Yes	44	34.1	(26.0 – 43)
No	85	65.9	(57.0 -74.0)
Total	129	100.0	

Of the 85 students who reported not being circumcised, 34 students (40%) reported being currently sexually active and the remaining 51 students (60%) reported not being currently sexually active.

## 5.4 Student knowledge about the female condom

### 5.4.1 Awareness of the female condom

#### *Heard of the female condom*

*Table 6. 'Have you heard of the female condom?'*

<b>Have you heard of a female condom?</b>	<b>Frequency</b>	<b>%</b>	<b>(95% Conf Limits)</b>
Yes	127	98.4	(94.5 – 99.8)
No	2	1.6	(0.2 - 5.5)
Total	129	100.0	

#### *Sources of knowledge about female condom for respondents who reported that they had heard of the female condom*

All 127 students (Table 6) who reported hearing of the female condom gave their sources of this knowledge. Media was reported to be the largest source of this information, given by 52 students (41%). Of the 21 students who reported 'Other' as a source of hearing about the female condom, 19 students elaborated as follows: nine gave a lecture or lecturer as a source, four responded with 'campus' or 'medical school', two reported their source as a 'campaign' or 'workshop' and the remaining four students responded with 'orientation', 'parents', 'sample' and 'all of the above.'

*Table 7. Sources of knowledge about the female condom*

<b>If heard of female condom, from where?</b>	<b>Frequency</b>	<b>%</b>	<b>(95% Conf Limits)</b>
Friend	16	12.6	(7.4 - 19.7)
Clinic nurse	21	16.5	(10.5 - 24.2)
Media	52	40.9	(32.0 - 50.0)
Partner	1	0.8	(0.0 - 4.3)
School	16	12.6	(7.4- 19.7)
Other	21	16.5	(10.5 - 24.2)
Total	127	100.0	

*'Have you seen the female condom?'*

One student did not respond to this question. Of the remaining 128 students, 124 had seen a female condom and four students had seen a picture of one.

*Table 8. 'Have you seen a female condom'*

<b>Have you seen a female condom?</b>	<b>Frequency</b>	<b>%</b>	<b>(95% Conf Limits)</b>
Yes, seen the condom	124	96.1	(91.2 – 98.7)
Yes, seen picture of it	4	3.1	(0.9 – 7.7)
Missing	1	0.8	(0.0 – 4.2)
Total	129	100.0	

*Sources of samples or pictures of female condoms seen by respondents*

Although the student recorded as 'missing' above did not respond to the question 'Have you seen a female condom', he did give a source of a sample or picture, this being 'university'. Of the remaining 128 students who had all reported seeing a sample or a picture of a condom, one student did not report his source. Of the 24 students who responded with 'Other' as a source, 23 elaborated further as follows: 11 students gave 'lecturer' as a response, four reported seeing a sample or picture at school, four gave their source as the HIV workshop given to students on starting medical school, two reported 'medical school' or 'campus' as a source and a further two elaborated with 'sample' or 'demonstration'.

*Table 9. Sources of samples or pictures of the female condoms*

<b>If seen sample or picture, from where?</b>	<b>Frequency</b>	<b>%</b>	<b>(95% Conf Limits)</b>
Friend	10	7.8	(3.8 - 13.9)
Clinic nurse	19	14.8	(9.2 - 22.2)
Media	15	11.7	(6.7 - 18.6)
Partner	2	1.6	(0.2 - 5.5)
University clinic	58	45.3	(36.5 - 54.3)
Other	24	18.8	(12.4 - 26.6)
Total	128	100.0	

#### 5.4.2 Knowledge about access to the female condom

*‘Where can you get a female condom?’*

Students were able to choose more than one option for this question. One student did not respond to this question. A further seven responded with ‘I don’t know’ as their exclusive answer. Of the remaining 121 students, ‘Primary health care clinic’ and ‘Pharmacy’ were the most frequently chosen options, each of which was chosen by 83 students (69%). The option ‘University clinic’ was chosen by 75 of these students (62%), ‘Campus health clinic’ by 65 of the 121 students (54%) and ‘Shop/kiosk’ by 16 students (13%).

*‘Are you aware that the female condom is available at the campus clinic?’*

*Table 10. Awareness of FC availability on campus*

<b>Are you aware that the female condom is available at the campus clinic?</b>	<b>Frequency</b>	<b>%</b>	<b>(95% Conf Limits)</b>
Yes	79	61.2	(52.3 – 69.7)
No	50	38.8	(30.3 -47.7)
Total	129	100.0	

Of the 79 students who reported they were aware of the availability of the female condom at the campus clinic, one student left out the question ‘Where can you get a female condom’. Of the remaining 78 students, only 47 (60%) and 58 (74%) students chose ‘campus health centre’ and ‘university clinic’ respectively, as options for this question.

#### 5.4.3 Knowledge about cost of the female condom

*‘How much does the female condom cost?’*

Two students did not respond to this question. Of the remaining 127 students, 97 responded ‘don’t know’, 28 students responded ‘free’ and the remaining two students responded R5 and R15 respectively.

#### 5.4.4 Knowledge about uses of female condom

*'What is the female condom used for?'*

The majority of the students (97%) responded to the question, with 57% of them giving a response 'prevention of both pregnancy and sexually transmitted diseases. Three students responded by 'don't know' and only four (3%) did not respond to the question.

*Table 11. Female condom uses*

<b>What is the female condom used for?</b>	<b>Frequency</b>	<b>%</b>	<b>(95% Conf Limits)</b>
Missing	4	3.1	(0.9 – 7.7)
Prevention of pregnancy	22	17.1	(11.0 – 24.7)
Prevention of STIs and HIV	27	20.9	(14.3 – 29.0)
Prevention both pregnancy and STIs and HIV	73	56.6	(47.6 – 65.3)
Don't know	3	2.3	(0.5 – 6.6)
Total	129	100.0	

#### 5.5 Female condom usage

##### 5.5.1 Previous female condom use

One student did not respond to this question. Responses for the remaining 128 students are given in Table 12.

*Table 12. 'Have you used the female condom before?'*

<b>Used a female condom previously?</b>	<b>Frequency</b>	<b>%</b>	<b>(95% Conf Limits)</b>
Yes	9	7.0	(3.3 – 12.9)
No	119	93.0	(87.1 – 96.7)
Total	128	100.0	



None of the students who reported ever using a female condom before reported having used the same condom more than once. Of the nine students reporting previous female condom usage, two reported being currently not sexually active.

#### 5.5.2 Current female condom use

Of the nine students who reported previous condom usage, one student did not respond to the question about current female condom use. Seven students reported that they were not currently using the female condom and only one student reported that he was currently using a female condom.

### 5.6 Attitudes towards female condom use

#### 5.6.1 Previous experience

Of the nine students who reported previous female condom usage, one student did not elaborate on what he thought of the experience. This student reported that he would consider using the female condom in the future. The remaining eight students described the experience with negative comments. Five of these students, who indicated that they would not consider using the female condom in future, gave the following comments about their experience:

##### *Reasons related to size*

Student 122: *'it is big'*

##### *Reasons related to difficulty of use*

Student 33: *'hard to use'*

(this student reports he is not currently sexually active)

##### *Reasons related to overall negative perceptions*

Student 24: *'useless'*

Student 47: *'sexual encounter not nice'*

(this student reports he is not currently sexually active)

Student: 79: *'I don't trust it, fluid can lick (leak) in'*

None of these five students are currently using a female condom. Only student 79 elaborates why this is, giving his reason for this as *"I don't want to risk my life"*. Reasons were given by four

of these students for not considering future female condom use. These were related to the following:

*Reasons related to preferring the male condom*

Student 24: *'there is no need because male condoms are available'*

*Reasons related to lack of trust*

Student 79: *"I don't want to risk my life"*

*Reasons related to comfort/pleasure*

Student 122: *'it is uncomfortable'*

Student 47: *'sex is not great with a female condom'*

(this student reports he is not currently sexually active)

The remaining three students of the eight who had described their experiences using the female condom did not feel so negatively about them as to be put off being willing to try the female condom in the future. They described their experiences as follows:

Student 25: *'not easy to use'*

Student 45: *"but in the absence of male condom"*

Student 57: *'it is uncomfortable'*

One student, (student 45) reported current use of the female condom. The remaining students were not currently using the female condom and did not provide further explanation for this. Two students (indicated above) reported not being currently sexually active. The remaining students all reported being currently sexually active.

#### 5.6.2 Future female condom use

One student, who did not respond to this question, also did not respond to the question relating to whether he had used a condom previously. Of the 119 respondents who reported not using a female condom, six students did not respond to the question whether they would consider using a female condom in the future. Sixty two students indicated they would consider using the female condom in future. These students, together with the four students (discussed in the previous paragraphs) who had previously used the female condom and said they would use it in the future, bring the total of those reporting that they would consider future condom use to 66

students. This number amounts to more than half of the 129 respondents (51%).

Of the 129 respondents, 56 (43%) would not consider future use of female condom. Of the 56 students, 37 provided reasons as described in Table 13 below. Five students had previously used the female condom and have been discussed previously. Four of these provided comments that form part of the reasons categorized in Table 13.

*Table 13. Reasons why future female condom use would not be considered*

<b>Reasons/comments</b>	<b>Link to theoretical construct</b>	<b>Frequency</b>	<b>% of students not considering future FC use</b>
<i>Odd/ugly</i>		7	12.5
<i>Prefer male condom</i>		16	28.6
<i>Too much effort</i>	SCT1.1 self-efficacy	6	10.7
<i>Lack of trust</i>		2	3.6
<i>Only after marriage</i>		3	5.4
<i>Don't know</i>		3	5.4
<i>No reason given</i>		19	33.9

### 5.6.3 Condom type preference

*'Which condom type do you prefer using?'*

Of the 57 students who reported being currently sexually active, three students did not give their preference regarding condom type. The responses of the remaining 54 were as follows:

*Table 14. 'Which condom type do you prefer using?'*

<b>Condom Preferences</b>	<b>Frequency</b>	<b>%</b>	<b>(95% Conf Limits)</b>
Yes	127	98.4	(94.5 – 99.8)
Female condom	1	1.9	(0.0 – 9.9)
Male condom	38	70.4	(56.4 - 82.0)
None/Nothing	11	20.4	(10.6 - 33.5)
Never used a female condom before	4	7.4	(2.1 -17.9)
Total	54	100.0	

For the 72 students who reported not being currently sexually active, 10 did not answer the question about condom preference. Although four students gave their preference as the female condom, all of these reported that they had not used a female condom previously. Forty students preferred a male condom. Two of these students did not respond to the question about whether they'd used a male condom previously. Of the remaining 38 students preferring a male condom, only half reported using a male condom before.

#### 5.6.4 Views about partner communication regarding female condom use

*“Which partner do you think it is easier for a woman to discuss the use of a female condom?”*

Of the 129 respondents, 120 (93%) responded to the question above. Of these, 91 respondents (76 %) indicated ‘stable partner’, 11 (9.2%) chose a casual partner, 15 (13%) selected ‘don’t know’ and the remaining three students said ‘other’. The last group further elaborated on their responses as follows: one indicated ‘any partner, one wrote ‘anyone’ and the last one gave ‘no’ as his response.

#### 5.6.5 Student perceptions toward the female condom

*‘What do you think would make it easier for males to use the female condom with their partners?’*

Fifty five students did not respond to this question and a further 11 students (8.5%, confidence interval 8-25%) responded with only ‘I don’t know’. The majority of the remaining 69 students gave more than one response to this question, with 15 students giving a response related to design improvement. Responses have been categorized and are reported in Table 15 below, together with some illustrative responses.

Table 15. 'What do you think would make it easier for males to use female condoms with their partners?'

Main Categories of Students' responses	Frequency	Comment examples	*Link to theoretical construct	Frequency
Design Improvement	15	<b>General:</b> 'Better design', 'new design'		2
		<b>Related to texture:</b> 'Improve material'		1
		<b>Related to size:</b> 'less huge', 'smaller', 'If size of condom is not too limiting for female to enjoy coitus'		3
		<b>Related to smell taste:</b> 'Fragrance and taste'		1
		<b>Related to appearance:</b> 'More appealing' 'Female condom looks unsightly when used'		2
		<b>Related to sexual pleasure:</b> 'If they were sure it did not compromise sexual pleasure'		1
		<b>Related to safety:</b> 'If female condoms could be more protective than male condoms'	SCT2 Knowledge that actions can be taken to avoid harm	1
		<b>Related to ease of use:</b> 'Ease of FC use', 'make it more practical'	SCT1.1 self-efficacy	4
Condom Negotiation	14	'communication' 'If stable partner would convince me to use it' 'Partner must put a foot down and explain the use of female condom'	SCT1.2 self-efficacy	
Availability of FC	8	'availability'		
Education and Advertisement	8	'Education' 'Advertisement' 'Understanding'	HBM:3 knowledge that actions can be taken to avoid harm	
Nothing/Not sure	8			
Lack of Availability of MC	5	'No male condom' 'Male condom more effective' 'Use male condom'		
Responsibility to rest with female	4	'Don't have to use condom themselves' 'If females carry their own' 'Proactive about it' 'Females taking an initiative'		
Partner commitment	4	'Trust' 'Open and honest relationship between the two'	SCT1.2, 1:4 self-efficacy	
Planning	3	'Scheduled sex'		
		'If the female had it on already'		
		'Convenience'		
No need for a condom	2	'I am not believing in condoms at all'		

*‘What would make you or others consider using a female condom?’*

Of the 129 participants, only 26 (20%) students responded to this question. Seventeen of these students responded with terms that could be categorized as relating to availability, while the remaining nine gave unique individual responses, each student giving more than one response (see Table 16 below).

*Table 16. ‘What would make you or others consider using female condom?’*

<b>Comment category</b>	<b>Link to theoretical construct</b>	<b>Example of comments</b>	<b>Frequency</b>
<i>Availability</i>		<i>Student 1- ‘availability, advertisement’</i>	17
<i>Education</i>	HBM:3 knowledge that actions can be taken to avoid harm	<i>Student 28- ‘more knowledge to the public on its application’ Student 57- ‘teach a lot about how it is used’</i>	2
<i>Advertisement/Information</i>	HBM:3 knowledge that actions can be taken to avoid harm	<i>Student 2- ‘more media awareness’</i>	1
<i>experience/ curiosity</i>	SCT1.1 self efficacy	<i>Student 5- ‘fetish, curiosity’ Student 59- ‘to try it out(something new)’</i>	2
<i>Prevent pregnancy/ STIs or HIV</i>	HBM 1 personal susceptibility	<i>Student 47- ‘if we want to prevent pregnancy, if we want to prevent sexually transmitted diseases’</i>	1
<i>Lack of male condom availability</i>		<i>Student 2- ‘no male condoms produced’ Student 77- if it is the only condom available at the time of activity Student 49 – Unavailability of male condom</i>	3

*‘What would make you or others not consider using a female condom?’*

Students were able to give several responses related to more than one category for this open-ended question. Thirty six students did not respond to the question. Of the remaining 93 students, various responses were given and are highlighted in Table 17 below.

*Table 17. Categories of responses to ‘What would make you or others not consider using female condom’*

<b>Comments</b>	<b>Frequency of responses</b>	<b>% (no/129)</b>
<b>Reasons related to awkwardness of insertion: SCT 1.1 Self-efficacy expectations</b>		
<i>It seems tedious to use/complicated</i>	7	5.4
<i>Take too long to insert</i>	14	10.8
<i>Don't know how to use/ inconvenience/</i>	8	6.2
<i>Unusual/unpractical/awkward</i>	2	1.6
<i>Male condoms are easier to insert</i>	3	2.3
<b>Visual reasons</b>		
<i>Big/large/very huge/ cumbersome</i>	7	5.4
<i>Ugly/unappealing</i>	6	4.6
<i>Looks like a 1 litre bottle</i>	1	0.7
<b>Tactile reasons</b>		
<i>It is messy</i>	2	1.6
<i>Uncomfortable</i>	13	10.0
<b>Auditory reasons</b>		
<i>Noisy/produces unpleasant sound</i>	3	2.3
<b>Lack of pleasure</b>		
<i>No Pleasure/everything</i>	5	3.9
<i>I don't like female condom</i>	1	0.7
<i>It seems undignified and probably a mood killer</i>	1	0.7
<b>Fears</b>		
<i>Can get stuck inside</i>	3	2.3
<i>Makes woman to be in control</i>	3	2.3
<i>Embarrassing</i>	3	2.3
<i>Peer pressure</i>	2	1.6
<b>Pragmatic reasons</b>		
<i>Not available</i>	7	5.4
<i>If ready to have babies HBM 1</i>	2	1.6

### *'What do people say about female condoms'?*

There were 35 questionnaires with missing responses to this question. A further 16 students responded with 'I don't know' to this question. The remaining students gave one or more responses that were either positive or negative. These have been categorized in Table 18 below.

*Table 18. 'What do people say about the female condom?'*

<b>Comments by students</b>	<b>Frequency</b>	<b>Percentage</b>
<i>Ugly/huge/large</i>	17	13.1
<i>Difficult to insert/complicated</i> SCT1.1	13	10.0
<i>Uncomfortable/bad</i>	12	9.3
<i>'Nothing'/ignorance of people</i>	10	7.7
<i>No pleasure</i>	10	7.7
<i>Not easily available</i>	7	5.4
<i>'Noisy</i>	6	4.6
<i>Don't like it</i>	5	3.8
<i>'Makes women to be in charge'</i>	4	3.1
<i>Condom is not known</i> HBM3,SCT1.3	3	2.3
<i>Pleasure to use</i>	2	1.5
<i>Not spoken about</i> SCT1.2,1.3	2	1.5
<i>Disgusting, not good but it depends'</i>	1	0.7
<i>'Eating a banana with its peel on'</i>	1	0.7
<i>'Material is plastic '</i>	1	0.7
<i>'It's an acquired "taste" '</i>	1	0.7
<i>'No glove no love'</i>	1	0.7
<i>Expensive</i>	1	0.7
<i>'Vague in structure'</i>	1	0.7

## 5. 7 Relationships between variables

### 5.7.1. Demographics and sexual characteristics describing respondents who reported FC use

The age of the nine students who reported female condom use ranged from 18 to 33 years. Six of the nine students were Black Africans, three of whom were Zionists, with a further two being Protestant and the remaining student reporting his religion to be Charismatic. Three of the nine students were Indian Hindus. There were two, three and four students from Years 1, 2 and 3 respectively. Six students were circumcised, while the remaining three, (one Black Zionist student, one Black Charismatic student and one Indian Hindu student) were not circumcised. Seven students reported that they were currently sexually active and two students that they were not currently sexually active. Four of the nine students reported using a condom at last



sexual act, the remaining five students reporting not using a condom. Refer to Annexure 1 individual student characteristics for these nine students.

Taking into account the small number of students who had used a female condom, their proportional representation according to race and religion was comparable with that of all 129 participants. The proportion of female condom users representing the three years of study varied from that for the total population, with the greatest representation in the third year among female condom users and in the first year among all participants. The average age of the female condom users was 23.7 years, compared with 20.5 years among non-users of the female condom. This difference was statistically significant. (T-statistic =2.5226; p-value = 0.013). No relationship between using a female condom and the marker for high risk behavior 'lack of condom use at last sex' was found for either all participants or the group of 54 responders who reported current sexual activity, Fisher Exact Tests 0.46 and 0.22 respectively.

#### 5.7.2 Relationship between knowledge and socio-demographic factors

Because nearly all students (127 of 129) had heard of a condom and had also either seen a real female condom or a picture of one (128 of 129 students), it was not relevant or necessary to seek associations for knowledge about the female condom. Although there was a trend toward improved knowledge about FC access with increasing year of study with 56% (31 students), 63% (25 students) and 68% of students (23 students) in years 1, 2 and 3 aware that the female condom is available in the campus clinic, these differences are not statistically different ( $p=0.55$ ;  $\chi^2=1.1657$ ;  $Df=2$ ). Students also do not differ statistically in their response to this question in terms of circumcision ( $p\text{-value}=0.24$ ;  $\chi^2= 1.3555$ ;  $Df=.1$ ). It was not possible to determine whether race was associated with a statistical difference, because several expected values were less than five, so the chi-squared test could not be used. The Epi-Info® programme was not able to calculate a Fisher Exact Test for a table greater than 2 x 2, (in this case 4 x 2). However for 125 respondents, with increased year of study, there was a statistically significant increase in student's knowledge that the female condom can be obtained free of charge (13% (7 students); 19% (7 students) and 41% (14 students) First, Second and Third Years respectively knowing this). ( $p=0.006$ ;  $\chi^2= 10.04$ ;  $Df= 2$ ). This knowledge did not differ statistically in relation to circumcision status. ( $p=0.13$ ;  $\chi^2= 2.3135$ ;  $Df= 1$ ). Association for race could not be determined for the same reasons as the condom availability at the campus clinic question.

### 5.7.3 Relationship between attitudes and socio-demographic factors

#### 5.7.3.1 Year of study

##### 5.7.3.1.1 Future willingness to use a female condom

For the students who responded to the question about whether they would consider using the FC in the future, there is a trend towards decreasing willingness with increasing year of study 60% of 50 respondents in their first year, 54% of 39 Second Year respondents and 46% of 33 Third Year students who responded. However these differences are not statistically significant ( $p$ -value = 0.43;  $\chi^2$ = 1.6952;  $Df$ =2).

##### 5.7.3.1.2. Condom type preference for students reporting recent sexual activity

For the 32 students who reported recent sexual activity, 30 responded to the question about condom type preference. Of the 30, there were 9, 13 and 8 in their first, second and third years of study respectively. There was a trend towards increased male condom preference (56%, 85% and 88% for years 1, 2 and 3 respectively.) However, it was not possible to determine whether this was statistically significant, nor was it possible to determine an association for the 57 students reporting current sexual activity, because several expected values were less than five, so the chi square test was not valid. A Fisher Exact test could not be performed for a 4 x 2 table on Epi-Info ®.

#### 5.7.3.2 Circumcision

There is no statistically significant difference in terms of future willingness to use a FC between respondents grouped according to circumcision status ( $p$ -value= 0.78), ( $\chi^2$ = 0.0761), ( $DF$ =1). It was not possible to determine which option the 32 students reporting recent sexual activity (or The 57 students reporting current sexual activity) preferred: male condom, female condom or nothing, because an expected value was less than five rendering the chi-squared test result invalid, and it was not possible to perform a Fisher Exact Test on 3 x 2 table in Epi-Info®.

### 5.7.3.3 Race

It was not possible to determine whether there was an association between race and future willingness to use a female condom due to several expected values being less than five, making the Chi-square test invalid. It was not possible to perform a Fisher Exact test on this 4 x 2 table using Epi-Info®. For the same reasons, it was not possible to determine whether the students reporting recent or current sexual activity preferred a male condom, a female condom or nothing.

## 5.8 Linking qualitative findings to the Theoretical Framework

### 5.8.1 Health Belief Model (HBM)

#### 5.8.1.1 Comments reflecting personal susceptibility to the health problem

See Tables 16 and 17.

#### 5.8.1.2 Comments reflecting feeling that the problem can cause serious harm

One student with previous female condom experience who had voiced misgivings about the protective benefits of the female condom gave the reason why he was not currently using an FC, nor would consider future use as: 'I don't want to risk my life'.

#### 5.8.1.3 Findings reflecting knowledge that action can be taken to avoid the harm and the costs or benefits of the actions

Responses to the question '*What is the female condom used for?*' generated information relating to the third point, with 57% of students knowing the full spectrum of harm avoided: HIV and STI as well as unwanted pregnancy when the particular action of using a female condom was taken. Categories and comments in Table 15, 16 and 18 are linked to this theoretical construct (HBM3).

## 5.8.2 Social Cognitive Theory (SCT)

### 5.8.2.1. Comments related to self-efficacy expectation

One student describing his previous experience with a condom said it was 'hard to use'; such that he reported that he would not consider using the female condom in the future. A second participant who had experienced the female condom said 'it is not easy to use'. This student said he would consider future female condom use. For related comments and categories see Tables 13,15,16,17 and 18.

### 5.8.2.2 Outcome expectation

Two comments given in relation to previous experience with the female condom provides insight into these individuals' beliefs regarding the outcome of making the behaviour change of using a female condom. The first comment is 'useless' and the second 'I don't trust it, fluid can leak in'. Both individuals reported they would not consider using the female condom in the future. A further comment related to this construct can be found in Table 15.

## CHAPTER SIX

### 6.1 Discussion

#### 6.1.1 Female Condom knowledge

Most students in the study had both heard of or have seen the female condom, (98% and 96% respectively). These results were consistent with several other studies. In a study that was conducted in the US on adolescents, findings revealed that 95% of them have heard of a female condom (Haignere *et al.*, 2000). Again, findings from a Nigerian study amongst undergraduate students revealed that students had high levels of knowledge about the female condom (Mung'ala, 2006). The fact that these are medical students, more likely to know about such health prevention matters than other students or other young Africans, must be considered when comparisons are made with these populations. The media was selected by the largest number of students (41%) as the source of this information. This study finding concurred with a research study result conducted in Italy among females and males, which revealed that most participants heard about the female condom from different sources such as media and friends (Spizzichino *et al.*, 2007).

It is of interest to learn that more than half (57%) of male medical students show that they knew that female condoms are for the prevention of both pregnancy and sexually transmitted diseases. Likewise prior studies conducted on the female condom show that users of this female initiated barrier method explicitly mentioned its dual protection abilities (Myers, 2003; Kerrigan, 2000). More than 80% of students in this study chose an option which included prevention of HIV.

Students were less sure that the female condom could be obtained free of charge at the campus clinic, with 39% responding that they did not know if the condom could be obtained there and 75% not able to give the cost of the female condom as free or under R100 if obtained in a retail setting. This lack of knowledge may be addressed by an educational intervention.

### 6.1.2 Sexual characteristics and practices of respondents

The respondents that reported current sexual activity amounted to 44% (57 students). Of these 32 students (26% of all participants) were recently sexually active (i.e. having had sex in the previous 4 weeks). This level of sexual activity is lower than the findings for young people aged 16-24 collected as part of the Second National HIV Communication Survey conducted in South Africa in 2009, where 70% of young people were sexually active (Johnson *et al.*, 2009). However, findings for survey participants were for whether they had ever been sexually active, while participants in our study were asked whether they were currently sexually active. While the first figure includes all those who had ever had sex, the second excludes those who have had sex previously but who are not currently in a sexual relationship or have not recently had sex, and this must be taken into account if comparisons are to be made between the two groups.

Of the 32 students reporting recent sexual activity, 13 students reported not using a condom at last sexual act. Of these 13, two students reported never having used a condom previously. Again, of 24 students who reported current but not recent sexual activity, seven students did not use a condom at last sexual act, three of whom had never used a condom previously. This brings the total number of students either currently or recently sexually active who report not using a condom at last sexual act to 20. Lack of condom use during last sexual intercourse is used as an indicator of high sexual risk behavior among adolescents in the South Africa Demographic and Health Survey 2003, (National Department of Health, 2007). Results from the survey showed that 75% of males in this age group had not used a condom at last sexual intercourse. In contrast to these findings, 16% (20 students) in our study appear to be at sexual risk. The majority of the 129 respondents (61%) reported previous use of male condoms while 39% had not used male condoms before. The 39% include the five students who reported current and/or recent sexual activity, as well as those who were either not currently having sex but had done so previously, and those who were not yet sexually active.

Of the 20 students reporting to have had risky sexual behaviour, 13 were uncircumcised. This finding reveals a place for adult circumcision as a risk reduction option for such students, as well as the subgroup among the 51 uncircumcised students not currently sexually active (60% of the uncircumcised students), who may engage in high risk unprotected sex in the future. Such students may benefit from the launch of the new 'Medical Male Circumcision Campaign' in April

2010 following a shared commitment from traditional leaders and provincial government of KwaZulu-Natal to roll it out as part of the comprehensive HIV prevention strategy. The Minister of Health for the province stated that the expansion of medical male circumcision to tertiary institutions will aid in combating the spread of HIV among young men where the HIV burden is the highest in the province; between the ages of 15-24 years (MEC of Health, Dr Dlomo, 22 October 2010).

#### 6.1.3 Sexual characteristics and practices, and socio demographics associated with female condom use

Despite the high level of knowledge among male medical students, when students were asked whether they had used a female condom before, nine students responded that they had and of these, two reported not being currently sexual active, while one reported current use of the female condom. This finding of poor female condom use concurs with a recent study conducted among South African male students (n=74) about male and female condom use, where only very few of the participants reported having used a female condom (Mantell *et al.*, 2011).

Although we were able to describe the demographics, and sexual characteristics and practices of the nine students reporting experience with the female condom, the numbers were too small to provide associations for many variables (e.g. religion).

In response to the question about which partner with whom a woman would find it easier to discuss the use of a female condom, 76% of respondents indicated that they thought a stable partner would be easier for their partner to negotiate condom use while 9.2% selected a casual partner. These findings concur with studies conducted in the US on female condom usage and partner discussion where respondents reported that it was easier to discuss female condom use with a steady partner than a casual one (Macaluso *et al.*, 2000; Hoffman *et al.*, 2004). Our study differs from these studies, though, in that they ask females themselves with which kind of partner they would find it easier to negotiate condom use, while we asked participants (males) to make a guess at what they thought their partner might think. This is discussed further in 'Limitations', section 6.3.

#### 6.1.4 Attitudes towards the female condom

Female condoms continue to lack popularity. In our study all students who had used one and who elaborated on these experiences reported negative perceptions towards them. These findings are in contrast to those of a multi-site US study conducted among 89 participants (33 of them men), where those who had reported previous female condom use were more positive about it than those who had never used it before (Hirky as cited in Cohen, 2004).

One student with previous female condom experience who had voiced misgivings about the protective benefits of the female condom gave the reason why he was not currently using an FC, nor would consider future use as: 'I don't want to risk my life'. This reason links with the first and second tenets underpinning the Health Belief Model, that in order to effect a change in behaviour, an individual must recognize that the problem can cause 1) personal harm and 2) serious harm to health. In this case, though, the individual does not have the third key view, that the activity (in this case female condom use) will avoid harm. His response shows a lack of trust in the efficacy and safety of the female condom. According to the Social Cognitive Theory, he lacks the Outcome Expectation that the female condom will protect him from the risks he is concerned about.

One hundred students (78%) knew that the female condom protected against HIV and STI. It is expected that medical students would know this information. This finding links with the third key view mentioned in the paragraph above. More surprisingly 22 students (17%) chose 'prevention of pregnancy' alone as their option for the uses of the female condom. These students would be candidates for an educational intervention aimed at improving their knowledge that actions can be taken (in this case using a female condom) to avoid the particular harm of HIV and STI.

The experience of the student who said he had found the female condom 'hard to use', led to a self-efficacy belief that he lacked the capacity to use the female condom successfully and consequently to his report that he would not consider using the female condom in the future. A second participant who had also described his experience with the female condom as that 'it is not easy to use'. However, this experience did not damage his self-efficacy belief to the extent that he resolved never to try the female condom again. This student, in fact, said he would consider future female condom use, perhaps because he trusted his ability sufficiently to succeed at using the female condom.



The comments related to outcome expectations from students with previous experience with the female condom (see section 5.8.2.2) suggest that, for them, performing the behaviour change does not lead to the perception of a high level of efficacy in relation to contraception and protection against HIV and other STI Infection. Both individuals reported they would not consider using the female condom in the future.

However, despite their less than optimal experience with female condoms, four of the nine students who had reported using the method and not liking the experience said they would consider future use of the female condom, suggesting that for these individuals its benefits may outweigh its drawbacks in certain situations. Although an encouraging 51% of the study subjects overall would be prepared to try the female condom in the future, willingness to try the female condom among males was found to be even better in an Italian study conducted among 162 participants, (33.3% males) (Spizzichino *et al.*, 2007). In that study, Italian researchers found that 18.5% of males (versus 43% of participants in our study) stated that they would not use the female condom in future. Unlike our participants, approximately three quarters of males and of females in the Italian study had not heard of a female condom. As a result, these Italian participants would not have had negative preconceptions. This may in part explain the difference in willingness to consider future condom use between the Italian study and ours.

Our study found that for the 54 currently sexually active students, one (1.8%) preferred the female condom. Results were higher (18%) in a peer-led intervention conducted among 65 high risk male and female adolescents in an emergency homeless shelter who were interviewed after an educational intervention (Haignere *et al.*, 2000). The difference in these results can be explained by the difference in the wording and therefore meaning of the question used to determine preference: the Haignere study used 'which condom would you prefer', which would allow for both those with and without experience of the female condom to choose it as a preference. Our study used 'which condom do you prefer', which, if correctly understood, would eliminate students who have not tried a female condom.

The main three groups of reasons why students would not consider future use of the female condom related to awkwardness of insertion, visual and tactile reasons. Insertion discomfort was also one of the main reasons given why participants might not consider using female condoms in the future in the Haignere study. Although that study reported that reasons for preferring the male condom to the female condom were similar for both adolescents and female

adults, a view revealed by predominantly young male participants was that the female condom might be more comfortable for them. This led the researchers to recommend further research among young males. Our participants did not express this view of possible greater comfort for the male partner.

It is interesting to note that after student responses to the open-ended questions were coded according to the theoretical models they related to, while students mainly gave reasons related to these theories to explain why they would consider female condom use in the future, when it came to why respondents would not consider future female condom use, reasons (apart from awkwardness of insertion) were largely related to sensory perceptions. These perceptions are not readily accounted for by either the Health Belief Model or Social Cognitive Theory.

## 6.2 Recommendations

The researcher would like to recommend that the way forward would be to study the knowledge, attitude and use related to the female condom among males in the general population. If necessary, education could then be increased and accessibility of the female condom could be addressed. Finally, new female condom designs may make it aesthetically more pleasing. Anything that can be done to either physically improve the female condom or its image so that real and perceived sensory barriers are removed, should tip the benefit/cost (including negative sensory experiences) in favour of increased female condom use.

At the medical school campus, as the female condom is being offered as one of several HIV prevention options at the campus health clinic, it is recommended that more effort should be channeled into the promotion of this method and increasing its access, with a focus on the message that the female condoms are freely available at the campus health centre/university clinic.

Severy and Spieler (2000) recommend the strategy of promoting the positive aspects of the female condom, including the concept of sexual enjoyment of this method. Their report on preliminary data on female condom acceptability revealed that many men prefer new reproductive technologies such as the female condom to the male condom, finding them less constricting, more natural and female-applied. This may be an acceptable option for men who feel that male condoms destroy their sexual pleasure. Among the nine participants who had

used the female condom previously, there were no such positive reports. In fact, three of these participants, two of whom had disliked the experience sufficiently not to consider condom use in the future, made comments related to lack of comfort. However, four of our participants mentioned that greater agency by their partner in relation to suggesting that the couple use the female condom would make this method easier for the male partners to use the female condom. This finding concurs with the Severy *et al.* (2000) finding that many men prefer the contraceptive method to be one that can be female-applied. If attention were drawn to the positive findings of the Severy and Spieler paper and promotion aimed at the many students who had not tried a female condom but would be willing to do so in the future, some of these students could have similar positive perceptions leading to product satisfaction and further use.

### 6.3 Limitations of the study

This study was being conducted to understand more about young males' knowledge of and exposure to the female condom. Ideally the student researcher would have used a sample which is representative of all South African young males, but for reasons of convenience, had to limit the focus of the study to male medical students at the UKZN Medical School. Students are not typical young South African men. Rather, they are a subset of this population, and medical students are a subset of all students and are not likely to be representative of all males or even of all male students. These are medical students who are highly educated and, largely from a middle class background. The student researcher realizes that the results of this study cannot be generalized to the broader male tertiary population. However, the researcher was interested in the results as they apply to male medical students as it could inform a future intervention among this group and fuel further studies among other groups of males.

The major challenge with a convenience sample of self-administered questionnaires administered in lecture time was that not all students were willing to participate and the fact that some students did not attend the particular lecture dedicated for administration of questionnaires, or because they feel intimidated to respond freely due to a lack of privacy. This as a result affected the proportion of students that completed questionnaires. The use of self-report measures of sexual behaviour can be unreliable as participants may be reluctant to share personal information and as a result may present socially desirable responses. The sensitive nature of the research was found to be a stumbling block for at least one student (who withdrew his consent because of a lack of sufficient privacy for his needs). This is in spite of attempts

made from the onset to emphasize the confidentiality of the information provided. Another limitation to this method is a fact that there is no one to explain or clarify questions privately, in a one-on-one interaction, to an individual leading to irrelevant answers. In order to minimise this difficulty, extensive piloting of questions is required to find and correct questions that are misunderstood

The design of our questionnaire did lead to several problems, and there is evidence that some questions were misunderstood. First, it did not acknowledge that there may be sexually active homosexual individuals, for whom the female condom would not be of use, making the questionnaire irrelevant to them. Exclusion criteria should have accounted for such individuals. A further concern was that the question asking about condom use among students who had recently had sex did not explicitly provide the option of not using a condom. Although the option 'other' and a blank were provided, this might have been misunderstood and the provision of the option of not using a condom would have made the questionnaire clearer. For the two questions related to sources of knowledge about the female condom (where they heard of it and where they had seen it), the only university-related option provided was 'university clinic' or 'campus health centre'. Twenty one and 24 students respectively selected 'other' as an option, most elaborating with a university-related source, such as 'campus workshop', 'orientation', 'lecturer', 'HIV workshop' and 'medical school campus'. The option 'university', perhaps with a blank for elaboration, or specific university related options e.g. lecture; orientation HIV workshop might have provided the researchers with a clearer picture of what exactly is assisting students in this regard. Although there was a good response to the question *"Which partner do you think it is easier for a woman to discuss the use of a female condom?"*, this question would require the respondent to have to consider the perspective of a possibly hypothetical partner in a hypothetical situation where they possibly had a casual or a stable partner or both. In retrospect, this seems to ask more than can be expected of the participant and so the results should be viewed with caution.

Further difficulties arising from the design of the questionnaire led to several groups of responses which indicated a difficulty responding appropriately to the questions. Firstly, there was a lack of correlation between students responding 'yes' to 'are you aware that FC are available at the university campus' and those choosing 'university clinic' or 'campus health clinic' as options for 'where can you find female condom'. The question itself was misleading, using two options, 'campus health centre' and 'university clinic' for one place which should have been

given as one option 'campus health centre/university clinic.' Secondly, students also misunderstood the question "What condom type do you prefer using" as "What condom type would you prefer using". This conclusion can be drawn from the finding that just under half of forty students choosing the male condom as their preference despite not reporting being either currently or recently sexually active, reported never having used a condom before. Thirdly, a further problem relating to lack of options for responding to a question occurred for the question relating to condom use at last sexual act. No options were provided for students who were not yet sexually active, so it seemed this group resorted to either leaving out the question or choosing the option 'no', that they had not used a condom. For this reason, it was not possible to use the 'no' response to condom use as a marker of high sexual risk taking behavior.

Problems relating to the questions about sexual activity have led to difficulty interpreting the data arising from to these questions. Consequently, data relating to sexual activity should be interpreted with caution. Firstly, students were asked whether they were currently sexually active, but no definition was given relating to how this was defined. If they perceived themselves not to be currently sexually active, they were asked to skip the following question relating to whether they were recently sexually active. If a student perceived current sexual activity to mean, for example whether he was currently involved in a sexual relationship, where he may have had sex the previous night and might have sex in the day or two following completion of the questionnaire, then such a student might have responded 'no' and consequently skipped the following question relating to 'recent sexual activity' even though he may have had sex in, say, the first of the previous four weeks. Although such a student should have been defined as 'recently sexually active', if he followed the questionnaire skip instructions, he might have been missed and taken to be not currently or recently sexually active. The question about current sexual activity should have been better defined and the skip instruction removed, or the question should have been left out altogether. The question about recent sexual activity is the accepted measure of sexual activity as used in the SADHS, (South African Demographic and Health Survey) consequently all students should have had the opportunity to answer this question.

Secondly, students were not asked if they had ever had sex and in retrospect students should have been asked this question. As a consequence of not having this data, students who were not yet sexually active were included in the data related to condom experience and use during last sex, causing difficulty in interpreting the results of these questions. The 47 students and 50

students who had not used a male condom before and who did not use a condom at last sexual act respectively could include both students engaging in unprotected sex and students not yet sexually active. We have attempted to make sense of the data looking at the responses given by the students who responded that they were recently sexually active, but we recognize that this figure could be lower than the true figure.

The fact that question 'Are you aware that the female condom is available from the campus clinic' preceded the question 'from where can you get a female condom' will have affected the responses to the latter question as they have been told in earlier in the questionnaire where the condom can be obtained. Consequently, the results for the latter question may show more knowledge of how to access the female condom than would have been the case if the former question was not included in the questionnaire and these results should be interpreted with caution.

These misunderstandings occurred despite university students being among the most highly recognized literate group of the youth and the student researcher having used questions from a tested questionnaire, previously used in a female condom survey among female university students. The questions chosen for inclusion in our data tool were selected for their relevance to young males. Some of the questions that were not clear may have been picked up if the questionnaire had been more thoroughly piloted among similar males. The questionnaire could then have been revised to overcome these problems. If qualitative methods, such as individual interviews or focus groups had been used, this may have allowed for less misunderstanding and greater clarity, allowing for more accurate responses.

It is clear that students are acquainted with the male condom and its use; however consistent correct use thereof was not explored during the study

## 6.4 Conclusion

In conclusion: based on the study findings it is evident that male medical students are fully aware of the female condom and its uses. However the reportedly low numbers of previous female condom use shows that this knowledge has not led to female condom use. The low uptake of the female condom compared with the male condom is attributable to several factors including the lack of knowledge that female condoms are freely obtainable from the campus

health clinic, negative experiences among female condom users, negative perceptions among those who've not tried a female condom related to the female condom and that students were first introduced to the male condom and have been sufficiently satisfied with the method not to need to seek for a different method. These findings must be interpreted bearing in mind that only 44% of the study subjects reported being currently sexually active. The finding that over half of the study subjects would be willing to try the method, despite the myriad of negative perceptions reported, is an encouraging one.

The rate of HIV infection is steadily increasing in spite of a number of interventions from the department of health and private sector. Dr Osotimehin states that "Women and girls remain vulnerable to HIV and we have to summon the courage and political will to empower and protect them. We have to invest in practical tools that women can use to protect themselves, such as the female condom" (UNFPA, 2011, Page 3).

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## **APPENDIX 1**

### **PARTICIPANT INFORMATION DOCUMENT**

Determining knowledge, attitudes and use of female condoms among male medical students at the University of KwaZulu-Natal, Durban

I, Nobuhle Mthembu, am doing a research study to determine the knowledge, attitudes and use of female condoms among male medical students at the University of KwaZulu Natal. This research is aimed at providing answers to questions relating to female condom knowledge, use and attitudes of male students. I hope these results will assist in developing or strengthening programmes that are aimed at increasing awareness towards female condoms.

We are asking you and all other First, Second and Third Year medical students at this campus to participate in this research study. If you consent to participate in this study you will be given a questionnaire to fill in by yourself. You must remember that there are no wrong or right answers to these questions. There is no risk involved. The questionnaire should not take more than 20 minutes to complete. This is the only involvement that would be required of you. The information which you would provide us will be kept confidential and no names will be used in any of our documents.

Participation in the study is voluntary and refusal to participate will involve no penalty. You may refuse to answer any questions or stop answering the questionnaire anytime should you feel uncomfortable.

While every effort will be made to keep personal information confidential, this information may be disclosed if required by law. Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the Research Ethics Committee.

For further information you can contact: Nobuhle Mthembu on 0837102868.

Contact details of BREC administrator and chair – for reporting of complaints / problems.

Biomedical Research Ethics Committee, Private Bag X54001, Durban 4000

Telephone: +27 (0) 31 260- 4769 Fax: +27 (0) 31 260 -4609

Email: [BREC@ukzn.ac.za/ramnaraind@ukzn.ac.za](mailto:BREC@ukzn.ac.za/ramnaraind@ukzn.ac.za)

## **APPENDIX 2**

### **Informed Consent Document**

We are asking you to participate in this research study titled” Determining knowledge, attitudes and use of female condoms among male medical students at the University of KwaZulu-Natal, Durban”

The purpose of this consent form is to give you the information you will need to help you decide whether or not to be in the study. Please read this form carefully. You may ask questions about what we will ask you to do, the risks, the benefits, your rights as a participant, or anything else about the research. When all of your questions have been answered, you can decide if you want to be in this study or not. This process is called “informed consent”.

#### **Purpose of the Study**

The purpose of this study is to gather feedback from you about knowledge, attitudes and the use of female condoms. Your feedback will assist in identifying gaps where they exist which would be useful for any researcher who are aiming to develop or strengthen programmes that are aimed at increasing awareness towards female condoms.

#### **Confidentiality**

All personal information gathered about you during this study will be kept strictly confidential and only research staff will know that you are in the study. Information learned from this study will be used in reports, presentations, and publications but you will not be personally identified.

#### **Voluntary participation**

Your participation in this research is voluntary, and you will not be penalized if you refuse to participate or decide to stop. You may withdraw from this study at any time.

#### **Concerns or Problems**

If you have any concerns, questions or problems you feel may be associated with this research, contact Nobuhle Mthembu at 083 7102 868 or may contact the Biomedical Research office at Westville Campus at 031-260 4769, if you have questions about your rights as a research participant.

If you agree to participate, you will be given a signed copy of this document and the participant information sheet which is a written summary of the research.

The research study, including the above information, has been described to me orally. I understand what my involvement in the study means and I voluntarily agree to participate.

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Witness

\_\_\_\_\_  
Date



## PARTICIPANT QUESTIONNAIRE

Date:     /     /

Quest No:

We are conducting this research study to determinate the knowledge, attitude and use of female condoms among male medical students. The information that you will provide will be treated with utmost confidentiality. We request your honest response to questions that we will pose to you. We will not ask for your name or ask questions that will identify you. Remember that there is no wrong answer to these questions. This will take about 20 minutes of your time.

## DEMOGRAPHIC INFORMATION

Where options are given, please circle your response.

100. How old are you?

101. What is your religion?

- 1= Protestant (Anglican/ Lutheran, Methodist etc)  
2 = Christians  
3 = Hindu  
4 = Muslim  
5 = Gospel  
6 = Zionist

7 = Roman Catholic Church  
8 = Charismatic/Evangelical  
9 = Jewish  
10 = other, \_\_\_\_\_

102. What is your race?

1 = Black/African  
2 = White  
3 = Indian  
4 = Coloured  
5 = other \_\_\_\_\_

103. What is your year of study?

1 = 1<sup>st</sup> year  
2 = 2<sup>nd</sup> year  
3 = 3<sup>rd</sup> year

#### FEMALE CONDOM KNOWLEDGE, ATTITUDES AND USE

I would like to ask you some questions related to female condom knowledge, attitudes and use.  
Remember that all the information that you provide, will be kept confidential.

200. Have you been circumcised?

1 = Yes  
2 = No

201. Are you currently sexually active?

1= Yes  
2= No

**If No, Skip to 202**

201.1. If yes, have you had sex in the last 4 weeks?

1 = Yes  
2= No

201.2 If yes, did you use any of the following during sex?

Please circle

1 = Female condom  
2 = Male condom  
3 = other: \_\_\_\_\_

202. Are you aware that the female condom is available at the campus clinic? 1=Yes  
2=No

203. Have you heard of a female condom? 1 = Yes  
2 = No **If No, Skip to 207**

204. If yes (to Question 203), from where? 1 = Friend  
2 = Clinic nurse  
3 = Media  
4 = Partner  
5 = other: \_\_\_\_\_

205. Have you seen a female condom? 1 = Yes, seen the condom  
2 = Yes, seen a picture of it  
3 = No **If No, Skip to 207**

206. If yes, (to Question 205) from where? 1 = Friend  
2 = Clinic nurse  
3 = Media  
4 = Partner  
5 = University clinic  
6 = other: \_\_\_\_\_

(Student, please circle as many options as applicable)

207. From where can you get a female condom? 1 = PHC Clinic  
2 = Pharmacy  
3 = Campus health centre  
4 = Kiosk/ shop  
5 = University clinic  
6 = Don't know  
7 = Other \_\_\_\_\_

208. How much does the female condom cost? 1. \_\_\_\_\_  
2. Don't know

209. Have you used a female condom before?

1 = Yes

2 = No **If No, Skip to 213**

210. If yes, what did you think about it?

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211. Are you still using a female condom?

1 = Yes **If Yes, Skip to 213**

2 = No

212. If no (to Question 211), why not?

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213. Would you consider using a female condom in future?

1 = Yes **If Yes, Skip to 215**

2 = No

214. If no (to Question 213), why not?

---

---

---

215. Have you used the same female condom for more than one round?

1 = Yes

2 = No

216. Would you consider using the female condom, washing it and re-using it, in future?

1 = Yes

2 = No

217. Have you used a male condom before?

1 = Yes

2 = No

218. Which condom type do you prefer using?

1 = Female condom

2 = Male condom

3= None/nothing

4= Never used a female condom before

5= Other, \_\_\_\_\_

219. At last sexual act, did you use a condom?

1= Yes

2= No

**If No, Skip to 221**

220. Which condom did you use?

1= Female condom

2= Male condom

3= None

221. What is the female condom used for?

1 = Prevent pregnancy

2 = Prevent sexually transmitted diseases including HIV

3 = Prevent both pregnancy and sexually transmitted  
diseases

4 = Don't know

5 = other, \_\_\_\_\_

222. With which partner do you think it is easier for a woman to discuss the use of a female condom?

1 = Stable partner

2 = Casual partner

3 = Don't know

4 = other, \_\_\_\_\_

223. What would make you or others consider using a female condom?

List these: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

224. What would make you or others not consider using a female condom?

List these: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

225. What do you think would make it easier for males to use a female condom with their partners?

List these: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

226. What do people say about female condoms?

List these: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Thank you!

## APPENDIX 5

### POSTGRADUATE APPROVAL



03 March 2009

Mrs C S Harries  
Therapeutics and Medicine Management  
NRMSM

**PROTOCOL: "Assessing Knowledge, Attitudes and use of Female Condoms  
among Male Medical Students at the University of Kwazulu-Natal, Durban"  
N.Mthembu, 204515035, Master of Public Health, Protocol number: MPH012/08**

Dear Mrs Harries

The Postgraduate Education Committee ratified the approval of the abovementioned study on 03 March 2009.

Please note:

The Postgraduate Education Committee must review any changes made to this study.

The study may not begin without the approval of the Biomedical Research Ethics Committee.

May I take this opportunity to wish the student every success with the study.

Yours sincerely

Dr A Voce  
**Dean's Assistant: Coursework Programmes**  
Postgraduate Administration

CC: Mrs N Mthembu

**Nelson R Mandela School of Medicine, College of Health Sciences,  
Medical Research Administration**

Postal Address: Private Bag 7, Congella 4013, South Africa

Telephone: +27 (0)31 260 4495

Facsimile: +27 (0)31 260 4529

Email: [lupkek@ukzn.ac.za](mailto:lupkek@ukzn.ac.za)

Website: [www.ukzn.ac.za](http://www.ukzn.ac.za)

Founding Campuses:

Edgewood

Howard College

Medical School

Pietermaritzburg

Westville

## APPENDIX 4

### ETHICS LETTERS OF APPROVAL



UNIVERSITY OF  
KWAZULU-NATAL

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION  
Research Office, Westville Campus  
Govan Mbeki Building  
Private Bag X 54001  
Durban  
4000  
KwaZulu-Natal, SOUTH AFRICA  
Tel: 27 31 2604769 - Fax: 27 31 2604609  
Email: [BREC@ukzn.ac.za](mailto:BREC@ukzn.ac.za)  
Website: <http://research.ukzn.ac.za/ResearchEthics11415.aspx>

19 November 2009

Ms Nobuhle Mthembu  
Medical Research Ethics Committee  
491 Ridge Road,  
Overport  
Durban  
4031  
e-mail: [nobuhle.mthembu@mrc.ac.za](mailto:nobuhle.mthembu@mrc.ac.za)

Dear Ms Mthembu

**PROTOCOL: Assessing knowledge, Attitudes and use of female condoms among male medical students at the University of KwaZulu- Natal. REF: BF108/09.**

The Biomedical Research Ethics Committee (BREC) has considered the abovementioned application.

The study was approved by a quorate meeting of BREC on 14 July 2009 pending appropriate responses to queries raised. Your responses received on 28 August 2009 to queries raised on 27 July 2009 have been noted by a sub-committee of the Biomedical Research Ethics Committee. The conditions have now been met and the study is given full ethics approval and may begin as from today; 19 November 2009.

The study protocol and related study documents have been reviewed and approved:

This approval is valid for one year from 19 November 2009. To ensure uninterrupted approval of this study beyond the approval expiry date, an application for recertification must be submitted to BREC on the appropriate BREC form 2-3 months before the expiry date.

Any amendments to this study, unless urgently required to ensure safety of participants, must be approved by BREC prior to implementation.

Your acceptance of this approval denotes your compliance with South African National Research Ethics Guidelines (2004), South African National Good Clinical Practice Guidelines (2006) (if applicable) and with UKZN BREC ethics requirements as contained in the UKZN BREC Terms of Reference and Standard Operating Procedures, all available at <http://research.ukzn.ac.za/ResearchEthics11415.aspx>.



BREC is registered with the South African National Health Research Ethics Council (REC-290408-009). BREC has US Office for Human Research Protections (OHRP) Federal-wide Assurance (FWA 676).

The following Committee members were present at the meeting that took place on 14 July 2009:

Professor D Wassenaar	Chair
Ms T Esterhuizen	Faculty of Medicine
Ms P Naidoo	External
Ms J Haddingham	HEARD
Dr Z Khumalo	KZN Health - External
Professor D Pudiffin	Medicine
Prof Puckree	Physiotherapy
Dr A A Sathar	Medicine
Prof R Bhimma	Paediatrics and Child Health
Mrs T Makhanya	External
Dr S Paruk	Psychiatry
Prof T Madiba	General Surgery
Mr R Moore	Law/UKZN IP Officer
Dr J Singh	CAPRISA

We wish you well with this study. We would appreciate receiving copies of all publications arising out of this study.

Yours sincerely



PROFESSOR D R WASSENAAR  
Chair: Biomedical Research Ethics Committee

## APPENDIX 6

### LETTER FROM UKZN DEAN



TO WHOM IT MAY CONCERN

This is to confirm that Nobuhle Mthembu, a Masters student in Public Health, has been granted permission to conduct a study that will involve Medical School students.

This permission is granted in the hope that the way she conducts the study will be in accordance with the ethical requirements.

Sincerely

A handwritten signature in black ink, appearing to read "Dr. BW Ngcobo".

Dr. BW Ngcobo  
**DEPUTY DEAN: STUDENTS**  
Howard College & Medical School

19 June 2008

**DEPUTY DEAN: STUDENTS**  
**HOWARD COLLEGE & MEDICAL SCHOOL**

**Postal Address:** Howard College Campus, Durban, 4041, South Africa

**Telephone:** +27 (0)31 260 2443

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**Cell:** 084 321 6793

**Founding Campuses:**

Edgewood

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Medical School

Pietermaritzburg

Westville

**Annexure 1 Table showing demographic profile of students reporting FC use**

	1*	2	3	4	5	6	7	8	9
	Willing to use FC in future				Unwilling to use FC in future				
Age	25	18	22	22	24	19	20	30	33
Race	Black	Black	Indian	Black	Indian	Indian	Black	Black	Black
Religion	Charismatic	Zionist	Hindu	Zionist	Hindu	Hindu	Zionist	Protestant	Protestant
Year of study	3rd	2nd	2nd	3rd	1st	2nd	3rd	3rd	1st
Circumcision	no	yes	no	yes	yes	yes	no	yes	yes
Current sexual activity	yes	yes	yes	yes	yes	no	yes	no	Yes
Used condom at last sexual act	yes	no	no	yes	yes	yes	no	no	no

\* currently using FC

## **Annexure 2**

### **The Female condom**

