

**UNIVERSITY OF THE WESTERN CAPE**  
**Faculty of Community and Health Sciences**

**Sexual Behaviour and Perception of Risk to HIV among Rosebank College Students,  
Pretoria, South Africa**

A Mini-Thesis Submitted in Partial Fulfilment of the Requirements for the Degree Masters in



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**KEYWORDS:**

- HIV&AIDS
- Risk perception
- Knowledge of HIV
- Risk behaviour
- Condom use
- HIV Counselling and Testing (HCT)
- College students
- Youth
- Gender
- HIV prevention
- Attitude towards condom use
- South Africa
- Theory of reasoned action and theory of planned behaviour



## ABSTRACT

**Background:** After the first detection of the Human Immunodeficiency Virus (HIV) in South Africa in 1982, several interventions such as HIV education and awareness programmes (e.g. Love Life), the national HIV Counselling and Testing Campaign (HCT), free condom distribution have been implemented as part of a national response to HIV in South Africa (UNAIDS, 2010). However, limited studies were conducted to assess the impact of these interventions. This study assessed the knowledge, sexual behavioural practices and HIV testing behaviour among students at Rosebank College, Pretoria, who presented for HIV testing during an HIV testing campaign and determined any gender difference among the students with regards to those variables.

**Methodology:** The study had an observational, descriptive, cross sectional design. The sample consisted of 205 participants selected through convenience sampling. All students who presented for HIV testing during the colleges' HIV Counselling and Testing campaign in December 2011 were asked to complete a self-administered closed-ended questionnaire voluntarily. The data was analysed with EPI Info versions 3.5.1. A frequency analysis was conducted for all the variables such as demographics, risk perception to HIV, knowledge of HIV, HIV testing behaviour. The association between HIV knowledge, risk perception and risk behaviours were assessed for gender differences. Chi-square analysis was conducted to determine the association between the main variable of interest HIV risk behaviour and each other explanatory variable (demographics, HIV knowledge, risk perception etc). Results were discussed using the theory of planned behaviour.

**Results:** There were significant gender differences with a number of variables e.g. knowledge of condom use, age at first intercourse, condom use at first intercourse, sex under the influence of alcohol, multiple concurrent partners, condom negotiation and "ever taken an HIV test". Significant association was detected between the following variables: knowledge of condom use and knowledge of condoms for risk reduction; condom use and attitude toward condoms; relationship status and condom use; and perceived HIV risk and number of partners. There was a strong association between the risk of getting infected with HIV and the number of sexual partners in the past 12 months ( $\chi^2 = 7.59$ ;  $p=0.006$ ). There was no significant association between knowing how to use a condom and rate of condom use the study ( $\chi^2 = 0.18$ ;  $p=0.66$ ).

## SIGNED DECLARATION

I declare that “**Sexual Behaviour and Perception of Risk to HIV among Rosebank College Students, Pretoria, South Africa**” is my own work and has not been submitted for any examination in any university that all reference or quotes used have been acknowledged.

**Signed:**

**Date:**

Carlyn Steenkamp



## **ACKNOWLEDGEMENTS**

I would like to thank the participants who contributed in making this research project a success. I would like to thank my supervisor in particular for her mentoring, support and encouragement throughout this process.





## **ABBREVIATIONS AND ACRONYMS:**

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Treatment
CDC	Centre for Disease Control
DoH	Department of Health
HIV	Human Immunodeficiency Virus
HCT	HIV Counselling and Testing
NSP	National Strategic Plan for HIV and AIDS
NGO	Non-Governmental Organisation
PLWA	People living with AIDS
STI	Sexually Transmitted Infection
WHO	World Health Organisation
VCT	Voluntary Counselling and Testing
STI's	Sexually Transmitted Infections
NSP	National Strategic Plan on HIV&AIDS and STI's 2007-2011 and 2012-2016
SANAC	South Africa National AIDS Council
TPB	Theory of Planned Behaviour



## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 South Africa's HIV&AIDS Health Profile**

While in 1982 South Africa reported the first Human Immunodeficiency Virus (HIV) infection; in recent statistics the country has the highest number of infections globally with 5.6 million people infected with HIV (USAID, 2011).

More than 30 years after detection of the first HIV case, there has been numerous prevention and intervention programmes to mitigate the impact of the disease. South Africa is thought to have one of the most comprehensive HIV&AIDS programmes as it includes a multi-sectoral approach inclusive of public, private and Non-Governmental Organisation (NGO) partnerships (USAID, 2011). These programmes cover broad spectrum interventions from primary prevention campaigns (e.g. education programmes and the national HIV Counselling and Testing (HCT)) to tertiary intervention programmes such as Antiretroviral Treatment (ART), all of which aims at creating universal access to HIV prevention, treatment care and support. The number of People Living with HIV&AIDS (PLWA) in South Africa seemed to have stabilised at 5.6 million; however, the country is still in a hyper-epidemic state due to the high adult HIV prevalence rate at 17.8% (95% CI [17.2-18.3%]) at the end of 2009 (USAID, 2011).

Even though the epidemic in South Africa has stabilised, prevention interventions in South Africa did decrease the transmission rate but not sufficiently to stop the epidemic (DoH, 2010). The most prevalent mode of transmission is heterosexual intercourse followed by mother-to-child transmission. In South Africa, HIV epidemic trends are calculated through two methods; the annual antenatal HIV prevalence survey and population based surveys (USAID, 2011). Findings from the 2005 and 2008 population based household surveys found that HIV prevalence rates have stabilised around 11% in the population over two years of age (DoH, 2010).

The youth in sub-Saharan Africa are still considered to be a high risk population group for HIV, and more so for young women. The prevalence still remains disproportionately higher overall for females in comparison to males among this age group. In South Africa women

have a significantly higher HIV prevalence rate overall when compared to men, and this trend is also reflected in the HIV prevalence rate of the youth. The HIV prevalence for the 15-24 years age group was 13.9% for females and 3.6% for males according to the 2008 national household survey (UNAIDS, 2010). It is important to note that despite the marginal decrease in HIV among the youth, this age group is still at high risk of contracting HIV and considered a vulnerable group. These findings are supported by a study done by Rehle, *et al.* (2007) among persons aged between 15-49 years: the HIV incidence rate was 2.4%; youth aged between 15-24 years constituted 34% and females accounted for 90% of new infections in this age group. What this study revealed is perhaps an indication that prevention programmes in South Africa have not adequately addressed HIV incidence in high risk population groups such as young females and that more efficient and targeted intervention programmes are required.

## **1.2 Background and Context to the Extent of the Youth Programmes**

The South African government has shown increased commitment to HIV through the implementation of a five-year National Strategic Plan (NSP) on HIV&AIDS and STI's 2007-2011 (and the current NSP 2012-2016) which is coordinated by the South Africa National AIDS Council (SANAC) with an aim to increase universal access to the prevention of HIV, treatment, care and support (DoH, 2010). This strategy incorporated increased HIV Counselling and Testing through the "Know Your Status" campaign and increased awareness targeted at the youth.

On World AIDS Day 2009, under the theme "I am responsible, We are responsible, South Africa is taking responsibility", President Jacob Zuma announced a national HIV Counselling and Testing campaign which commenced in April 2010 in a bid to accelerate South Africa's universal access to HIV prevention, treatment care and support (DoH, 2010).

The UNGASS Country Progress Report submitted a midterm review of the National Strategic Plan for HIV, AIDS and STI's 2007-2011 (DoH, 2010). Further details of the report pertaining to the youth are highlighted in the section below.

### **1.2.1 Life Skills Education in Schools and HIV Prevention Aimed at the Youth**

Education is seen as a protector to HIV&AIDS. The UNGASS midterm report on the country progress (2010) indicated that 100% of schools in South Africa provided life skills based HIV

education for both 2008 and 2009. Another important school based prevention campaign includes the Peer Education Programme aimed at enabling learners to face challenges and to support their peers going through similar challenges. It was reported that 47, 605 learners were trained in primary and secondary schools as Peer Educators, with 4,760 teachers trained as mentors (DoH, 2010).

### **1.2.2 Prevention Campaigns**

Key components in HIV prevention are mass media prevention campaigns which focus on behaviour change such as; 1) “Khomani”, which is the official government communications campaign; 2) “LoveLife”, which is a prevention campaign aimed at the youth by operating in schools, community-based organisation and clinics; 3) “Soul City” which is a national prevention campaign through television and radio dramas’ and 4) “Scrutinize” which is a campaign by the Johns Hopkins University Health and Education South Africa (DoH, 2010).

The 2008 national survey on HIV&AIDS assessed how these prevention campaigns were received by the population. The majority of South Africans had been exposed to these campaigns, and awareness messages were best received by 15-24 year old who was the primary target audience of many of the campaigns. (Avert, HIV&AIDS in South Africa 2011)

## **1.3 Characteristics of sexual behaviours amongst youth in South Africa**

### **1.3.1 Sexual Debut**

The 2008 household survey reported that 8.5% of the youth had their sexual debut before 15 years of age; while data from the 2009 National Communications Survey supported these finding, indicating that 9.5% of the youth had their sexual debut at 15 years of age (DoH, 2010). For respondents in the 15-24 year age group, the proportions for sexual debut before the age 15 years were 11.3% for males and 5.9% for females (Medical Research Council, 2008).

### **1.3.2 Condom Use**

South Africa’s extensive free condom distribution program increased its distribution from approximately 400 million male condoms in 2009 to 2.5billion male and female condoms being distributed in 2010 and thus far reached 10.2 million people (USAID, 2011). There has

been less distribution of female condoms as they are more expensive. However, female condoms are primarily available at family planning clinics. Research suggests that the ‘overwhelming majority of South Africans believe that condoms are easily accessible’ (UNAIDS, 2010).

Condom use in South Africa has significantly increased; those using condoms in their last sexual encounter have increased from 27% in 2002, 35% in 2005 and a further 62% in 2008. (Avert, HIV&AIDS in South Africa 2011). The youth show the highest rate of condom use, and this may be one of the factors contributing to the marginal decline in HIV prevalence and incidence among adults and teenagers (DoH, 2010). For the 15-24 year age group the rate of condom use was 87.4% for males and 73.1% for females (Medical Research Council, 2008).

### **1.3.3 HIV Counselling and Testing**

UNAIDS reported that in 2009, almost 7million people aged 15 years and above conducted an HIV test which makes up one quarter of the South Africa adult population. “Those who have taken an HIV test and know their result are more likely to have a higher level of education, be employed, have accurate HIV knowledge, and a higher perception of risk, among other factors. (Avert, HIV&AIDS in South Africa 2011)”.  


Furthermore, HCT is a key prevention strategy; and for those who test positive it is the entry point to HIV treatment and care. South Africa launched a national HIV Counselling and Testing campaign in April 2010 with the aim of testing 15 million people by the end of 2011 (USAID, 2011). HCT is an important intervention strategy as it encourages individuals to be knowledgeable about their HIV status where knowledge of one’s HIV positive status can lead to behaviours to protect others from infection and if HIV negative, individuals are encouraged to maintain it through prevention.

By 2005, 74% of Higher Education Institutions in South Africa established HIV Counselling and Testing sites while, 69% of these provided free HCT. The study also reported that more female students were utilising the campus HCT services than males (HESA, 2008/2009).

In summary, in South Africa, which has one of the highest HIV prevalence globally, a number of actions were undertaken:

- i. The National AIDS response has developed over the years
- ii. Education programmes have improved
- iii. There was increased access to health services and health information
- iv. There was an expansion in HIV Counselling and testing (HCT) campaigns
- v. Free condom distribution was increased
- vi. There was commitment from Department of Health to the NSP 2005-2011 and NSP 2011-2016

There is now evidence indicating that following these actions, the prevalence of HIV infection among the youth between the ages of 15 and 24 years of age has stabilised. Therefore, there is a strong basis for the hypothesis that a change in the HIV risk perception, risk behaviours and HIV testing practices among youth in South Africa is likely to have occurred.



#### **1.4 Problem Statement**

Despite reassuring findings on stabilised HIV prevalence amongst youth, the youth and especially females are still considered a high risk group, since the HIV prevalence rate for women is significantly higher than that of males in the same age group.

#### **1.5 Rationale for Conducting the Study**

Youth HIV prevention programmes were found to be limited in Sub-Saharan Africa, with evidence regarding its effectiveness still emerging. Thus far, recent trials of youth HIV prevention interventions have achieved mixed results (Harrison, 2012). Therefore, the research will assess the knowledge, risk perception, attitude toward condoms, sexual behavioural practices, HIV testing behaviour among Rosebank College, Pretoria students who present for HIV testing during an HIV testing campaign. The results of the study will be discussed using Ajzen & Fishbein's (1975) theories of reasoned action and planned behaviour. This research would also assess whether there was any significant gender differences in relation to the students' knowledge, risk perception, attitudes and sexual behaviour and testing behaviour especially since there is a marked difference between the HIV prevalence rates of females as compared with males. To further enhance the study HIV testing practices will be assessed especially since HIV testing has become more accessible.

The data collection and findings of this study may be utilised by the College and fed into the on-campus HIV and AIDS Programme.

### **Thesis outline**

**Chapter one** provides an introduction, highlights the background and gives context to the study.

**Chapter two** presents the literature review of both international and South African studies relating to HIV knowledge, attitude and practices among tertiary students. The chapter also highlights HIV testing behaviour and condom use, the role of education and gender. The chapter also introduces the two theories; the Theory of Planned Behaviour (TPB) and the Theory of Reasoned Action (TRA), which will be used to describe factors related to knowledge, attitudes and behaviour.

**Chapter three** presents the research methodology, explaining the aim and objectives of the research, the study design, sampling procedure, and the data collection process. It describes the measures taken with regards to the ethical consideration in the research design and indicates the limitations of the study.

**Chapter four** summarises the research findings systematically while focussing on the research objectives. Selected results are presented graphically in tables, graphs and figures.

**Chapter five** discusses the research findings more in-depth and compares the gender differences. The theory of planned behaviour and the theory of reasoned action were used to explain the research findings.

**Chapter six** gives the conclusions drawn from the study and possible recommendations.

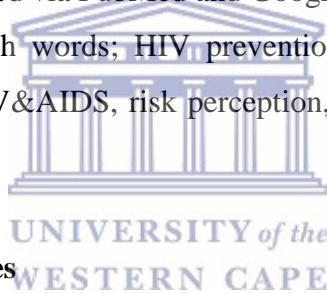
## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter presents the review of literature in relation to the study interests. The review is grouped into four subsections which cover: 1) HIV Counselling and Testing, condom use; 2) HIV prevention programmes and the role of education; 3) Gender; 4) theory of planned behaviour, and theory of reasoned action. The review also summarises the findings of similar previous studies on the topic.

The literature review consulted both primary and secondary sources. An internet literature search was conducted which provided a large amount of information on knowledge, attitude and practices with regards to HIV however, the search was then narrowed to youth, tertiary students. The search was conducted via PubMed and Google Scholar search engines using the following combinations of search words; HIV prevention, South Africa, students, youth, theory of planned behaviour, HIV&AIDS, risk perception, knowledge of HIV, condom use, HIV testing and gender.



#### 2.2 HCT and Gender Differences

Norman&Gebre (2005) examined levels of HIV testing practices among university students and the relationship between HIV testing, socio-demographic variables and HIV-related behaviours, in Jamaica. The study surveyed 1,252 students using a 193-item questionnaire measuring a variety of HIV-related knowledge, attitude and behaviour items. A hierarchical logistic regression analysis revealed that HIV education and awareness were both associated with HIV testing; persons who had attended an HIV education forum and those who reported knowing someone with HIV were more likely to report having had a previous HIV test (OR=1.53; 95% CI[1.07-2.19]; and OR=1.39; 95% CI[1.02-1.90] respectively). The study also revealed that HIV Testing was not associated with condom use or number of sex partners. Limitations of the study included that the sample was a non-randomised which relied on volunteers thus limiting the generalizability of the results to the university population in Jamaica. A self-reported survey also questions the internal validity of the study.

Peltzer, *et al.* (2009) assessed the relationship between knowledge of HIV status and factors such as socio-demographic, behavioural and social characteristics in a population based



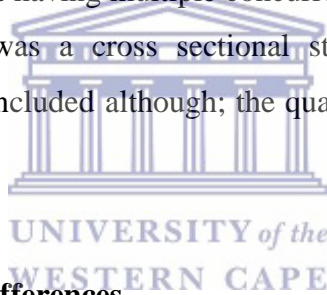
survey in South Africa. A descriptive cross-sectional study design was used and the sample consisted of 16,395 respondents, aged 15 years and above. The sample was representative of the South African population in respect to race, age distribution, province and type of living area. Results indicated that from the total sample 27.6% knew their HIV status, of which 7.8% determined their HIV status for the first time within the past 12 months. Factors associated with knowledge of HIV status were as follows: being female, aged between 25-34, higher education, being employed, urban residence, knowledge of where to get tested, impact of HIV on the household and having two or more sexual partners in the last year. The study was a cross sectional study therefore causality between compared variables could not be concluded. Some factors known to be contributing to HIV knowledge were not assessed, such as attitudes and desire to be tested for HIV.

In another study done by Peltzer, *et al.* (2004) attitudes towards HIV testing and determinants of attitudes towards People with AIDS (PWAs) were examined. The study used a cross sectional design where 600 first year university students from India, South Africa and America completed a self-administered questionnaire. Results indicated that of those who have been sexually active during the past 12 months 36.5% went for an HIV test (219 had sex and had an HIV test, while 74 had not tested). American students had a much more positive attitude toward HIV testing as compared with South African and Indian students. The main reasons for not being tested for HIV were: (1) "It's unlikely that I have been exposed to HIV" (32.7%); (2) "Did not want to think about HIV or about being HIV positive" (14.6%); (3) "Was afraid to find out if he or she was HIV positive" (10.9%). More Americans (93%) than Indians (87%) and South African students (78%) collected their last HIV test results. Samples were taken from universities in 3 different countries which made it difficult to for the results to be generalised. With regards to the data collection instrument, some measures e.g. attitudes towards homosexuality were only measured with one item.

In a study done by Chwee-Lye, *et al.* (2006) the knowledge, attitudes and sexual behaviours of 146 university students at 5 campuses were surveyed using a cross sectional study design in China. Students reported a moderate level of HIV knowledge. Women scored significantly higher with regards to knowledge (men=6.19, women= 6.47,  $p=0.01$ ), more men reported using the HIV testing services on campus (men=0.33, women=0.23,  $p=0.01$ ). Women perceived stronger support for condom use than that of men (men=23.61, women=25.88,  $p=0.01$ ). In general, the students did not perceive themselves at great risk to HIV. Some of

the limitations include that the data was collected using a convenience sample of university students by different project staff. A self-reported questionnaire may be subject to report and memory bias.

The HESA, (2008/2009) study on HIV prevalence, knowledge, attitude, behaviour and practice sought to survey the scope and impact of HIV&AIDS in the higher education sector in South Africa. This cross-sectional study included 21 public higher education institutions and included the voluntary participation of both students and employees. The study consisted of mixed methods inclusive of a self-administered survey, HIV testing and focus group discussions making up the qualitative component. A total of 23,375 participants were included in the study of which 17,062 were students. Cluster and stratified sampling were weighted before analysis. The mean HIV prevalence for students was 3.4% [95% CI 2.7-4.4]. At last intercourse, 60% of students reported using condoms. The study found that 19% of males and 6% of females reported having multiple concurrent partners. The limitations of the study includes that the study was a cross sectional study therefore causality between compared variables cannot be concluded although; the qualitative section explained some of the quantitative findings.



### **2.3 Condom Use and Gender Differences**

In a study done by Hendriksen, *et al.* (2007) the Reproductive Health and HIV Research Unit National Youth Survey was used in order to determine predictors of condom use among sexually experienced young adults aged between 15 and 24 years in South Africa. The sample consisted of 7,686 participants where a bivariate and multivariate logistic regression analysis was used to determine whether the participants had used a condom during their most recent sexual intercourse. Results showed that condom use at first intercourse and being able to discuss condoms with partner were significantly associated with current condom use ( $p=0.001$ ). Discussing condoms with partner was associated to higher condom self-efficacy ( $p=0.001$ ). This indicated that condoms used at sexual debut and talking with one's partner about condoms were the most significant predictors of condom use at most recent intercourse. The study used a cross sectional designed therefore no causal conclusion could be made. Although the survey was intended to be nationally represented, Africans were overrepresented in the sample while other racial groups were under represented.

Ungan&Yaman (2002) conducted a cross sectional study to determine the Turkish university students knowledge, sexual risk behaviour, attitudes towards HIV and educational needs concerning HIV. A 32 item self-administered survey was used to collect the data of 1,427 new registrants at the university. The questionnaire addressed socio-demographics, sexual risk behaviour, self-assessed knowledge of HIV transmission, attitudes towards HIV and HIV patients. The response rate was 84%, where 30% of respondents reported condom use during their last sexual encounter, 51% stated that they had good knowledge of AIDS. Limitations of this study included that the data was collected on a convenience sample of students on the registration day of first year students who volunteered to participate in the study. In addition a self-reported questionnaire may be subject to bias.

Rehle, *et al.* (2007) analysed the 2005 national household survey in order to generate incidence and prevalence profiles. In total 23,275 individuals participated in the survey, while 15,851 respondents agreed to be tested for HIV. The HIV incidence rate in the age group 15-24 years was 2.2% (95% CI [1.3-2.3]). Among the 15-24 age group, reported condom use at last intercourse was correlated with lower HIV prevalence indicated by 14% (95% CI[11.00-18.4]) versus 20.8% (95% CI[15.3-27.8]), and lower HIV incidence 2.9%(95% CI [0.5-5.2]) versus 6.1% (95% CI [0.0-12.9]). Of all new infections 34% occurred in young people 15-24 years old, of which females accounted for 90% of new infections. The utilisation of a survey could have led to reporting bias.

Tan, *et al.* (2007), assessed students' knowledge, attitudes and practices on HIV and AIDS. A questionnaire was administered in a cross sectional study of 259 Chinese undergraduate students. Stratified cluster sampling was carried out to select the participants from different faculties. Results indicated that majority of students had a moderate knowledge of HIV and AIDS, acceptance and attitude toward people with HIV and AIDS. 6.2% of the students reported having 3-5 lifetime sexual partners. With regards to attitudes toward HIV, 59% indicated willingness to live in the same community with someone who is HIV positive while 23% felt afraid to have contact with them.

The National Youth Survey (2005) conducted by the Reproductive Health and HIV Research Unit (RHRU). Results indicated that among female participants (n=3890) factors related to high self-efficacy for condom use included; knowing how to avoid HIV (OR=2.30; 95% CI [1.05 - 5:00]), having spoken to someone other than a guardian or parent about HIV/AIDS

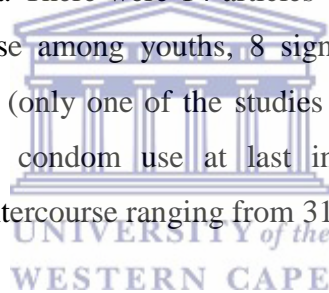
(OR=1.46; 95% CI [1.01-2.10]), and having life goals (OR=1.28; 95% CI [1.10 -1.48]). In contrast factors related to low self-efficacy included; not using condoms during sexual debut (OR=0.61, 95%; CI [0.50 -0.76]), a history of unwanted sex (OR=0.66; 95% CI [0.51- 0.86]), and the belief that condom use implies distrust in one's partner (OR= 0.57; CI [0.51-0.86]). For male participants (n=3519) factors related to high self-efficacy included; those who took HIV seriously (OR=4,03, 95% CI [1.55 -10.52]), those who believe they were not at risk for HIV (OR= 1,38; 95% CI[1.12 - 1.70]), those who report that obtaining condoms was easy (OR= 1.85; 95% CI [1.23 - 2.77]), and those who have life goals (OR=1.30; 95% CI [1.10-154]). In contrast factors related to low self-efficacy included; not using condom during sexual debut (OR= 0.51; 95% CI [0.39-0.67]), a history of unwanted sex (OR= 0.47; 95% CI [0.34 -0.64]), belief that condom use implied distrust of one's partner (OR= 0.63; 95% CI [0.46-0.87]), and refusing to be friend with HIV infected person (OR= 0.52; 95% CI [0.31-0.85]). The cross sectional design of the study was a limitation as the researcher was unable to draw conclusions about the causal relationship between the variables and self-efficacy.

Peltzer, *et al.* (2005) measured HIV/AIDS knowledge and sexual behaviour among 13-24 year old students chosen from 150 secondary schools in a cross sectional study. The study found that 63.8% of males and 78.7% of females used a condom at their sexual debut. Amongst those who were sexually active, there was no difference between knowledge of HIV and condom use at last sex ( $F=0.00$ , ns). Rate of condom use during intercourse was 35.7%, while 43.7% reported condom failure during their last intercourse. Condom use was not correlated with knowledge of HIV: 93.4% of students were aware that condom use was an essential component in the prevention of HIV but the rate of condom use among sexually active students was only 35.7%. Limitations of the study included reporting bias for questionnaire.

In a study done by Sayles, *et al.* (2006) a logistic regression modelling was used to identify factors related to high self-efficacy for condom use. The sample consisted of 7409 sexually active South African youth aged between 15 -24 years. The sample consisted of n=3150 students of which 44.1% were male and 55.9% were female from both urban and non urban schools. The number of self-reported lifetime partners for more than half of the respondents was more than one at an average age of 15.75 years. Results showed that 46% of 16 year old males and 20% of 15.5 year old females have been sexually active. While 63.8% of the males and 78.7% of the female students reported that they used a condom at their sexual debut. Of

the students 25.6% reported that they had had sex with someone much older (above 30 years of age) which was significantly higher for females (31.2%) than that of males (22.9%). The study also found that knowledge of HIV/AIDS was poor in some areas while satisfactory in others, but generally not satisfactory enough to sustain an adequate response to HIV/AIDS in the context of a high HIV/AIDS prevalent society. The study was a cross sectional design therefore no causal relationship between the variables could be concluded. The study was conducted among South African youth which may not be generalised to other countries.

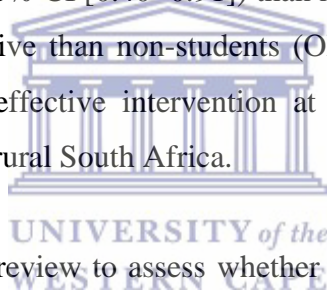
Foss, *et al.* (2007) conducted a systematic review of published articles from 1998 to 2006 on interventions promoting condom use and its impact in sub-Saharan Africa and Asia. Six databases were searched: PubMed, MEDLINE, Cochrane Library, BIDS CAB Abstracts, EMBASE and POPLINE. In total 62 articles met the inclusion criteria of which 42 articles reported significant increase in condom use. Of the 62 articles 44 were from sub-Saharan African while 18 were from Asia. There were 14 articles on condom use and youths; of the articles focussing on condom use among youths, 8 significant studies reported a 6-19% absolute increase in condom use (only one of the studies were from Asia). Five reported a significant increase in reported condom use at last intercourse, with a reported post intervention condom use at last intercourse ranging from 31% to 78%.



#### **2.4 Effectiveness of HIV Prevention Programmes and the Role of Education in HIV Risk Reduction**

A systematic analytical review of HIV interventions targeted at the youth aged 15-24 years was conducted by Harrison, *et al.* (2010). The researchers looked at interventions targeted at South African Youth since 2000 while looking at study design, intervention design, thematic focus and HIV causal pathway, and intervention delivery. The search strategy included computerised searches on MEDLINE, social Sciences Index, and NIH search engine CRISP. During their search 8 youth intervention programmes were reviewed: all were similar in prevention content and objective however varied in thematic focus, hypothesis causal pathway, theoretical basis, delivery method, intensity and duration. The interventions were school based; 5 were group based while 3 involved in and out of school youth. Most of the studies were based on cognitive models. Results indicated that 5 of the 8 interventions showed a significant improvement in HIV-risk behaviours which include condom use, HIV testing, alcohol use during intercourse, and intimate partner violence. This study supports evidence of an effective HIV intervention and education programmes.

Hargreaves, *et al.* (2008) conducted a study which determined whether the prevalence of HIV infection and risky sexual behavioural practices could be differentiated between those who attend school or college and those who do not attend. The study design consisted of a random population sample of unmarried youth (n=916) males and (n=1003) females aged between 15-24 years in rural South Africa. Data on school attendance and HIV risk factors came from structured face-face interviews and HIV serostatus was determined by oral fluid ELISA. A logistic regression model was used to specify HIV serostatus and high risk behaviours as outcome variables, while the primary exposure was school attendance. Results indicated that HIV knowledge, communication about sex and HIV testing were similarly distributed among students and non-students. The lifetime number of partners was lower for both male and female students than that of non-students (OR=0.67; 95% CI [0.44-1.0]) for more than 3 partners for men while (OR=0.69; 95% CI [0.46-1.04]) for more than two partners for women. Among young women fewer students reported having unprotected sex during the last year (OR= 0.60; 95% CI [0.40 -0.91]) than non students. Among men students were less likely to be HIV positive than non-students (OR=0.21, 95% CI [0.06-0.71]).The study supports evidence of an effective intervention at school. Limitations of the study include that the study is based in rural South Africa.



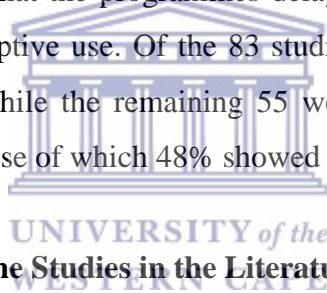
Jukes, *et al.* (2008) conducted a review to assess whether education is a protective factor to HIV infection among female students across southern Africa. The analysis combined the results of previous literature reviews and updated them with findings of recent randomised controlled trials. The study focussed on three areas namely; education's influence on the determinants of sexual behaviour, sexual behaviour itself and lastly assessed whether education influenced the risk of HIV infection. Findings suggested that education may affect the thought process of individuals, which subsequently affect their behaviour. Furthermore more educated people are more likely to believe that they have control over their own behaviour for example, educated women are more likely to negotiate safer sex, discuss family planning with their partner and feel a sense of control in their sexual relationships. Increased education levels can influence the kind of people one meets. In Ethiopia the social norms regarding HIV/AIDS was a significant predictor of the desire to learn more about HIV/AIDS. In South Africa social norms surrounding men dominance over women in sexual relationship were prevalent. Education played a protective factor whereas in Zimbabwe more educated women were able to benefit more from other protective measures. Data from demographic and health surveys in 11 countries showed that women with primary school education were

more likely than those with no education to report using a condom at last sex. In 9 of these countries secondary education was related to a further increase in the likelihood of using a condom at last sex. A limitation of this study is that it only focussed on female participants and not on their male counterparts.

In a study by Pettifor, *et al.* (2008) the researchers examined risk factors for HIV infection among young women aged between 15-24 years reporting one lifetime partner in South Africa. The 2003 national representative household survey of sexual behaviour was used. Of the 11,904 youth aged between 15-24 years, the analysis focussed on a subset of sexually experienced women with only one reported lifetime partner (n=1708). Findings indicated that the difference in “condom use at last intercourse” between males and females was not significant (56% vs 48% respectively [p=0.07]). While, for the variable “ever been tested for HIV”, the difference was significant between males and females (14% vs 24.7% p= 0.001). Factors associated with HIV infection in young women and HIV infection was investigated using multivariable logistic regression models. Results showed that 15% of those reporting one lifetime partner were HIV positive. Women who had not completed high school were more likely to be infected with HIV compared with those who had completed high school (OR 3.75; 95% CI [1.34-10.46]). Young South African women in this population were at high risk of HIV infection despite reporting only having one partner. This study however only focuses on women.

Smith, *et al.* (2008) evaluated the HealthWise program and hypothesised that compared to controls, HealthWise participants could have delayed sexual debut, reduced rates of current sexual activity, increased use of condoms and perceived availability of condoms and lower rates of lifetime and past use of multiple substances. An efficacy trial was conducted in 9 schools in Cape Town. Of the 9 schools in the pilot phase, 4 schools were identified as the treatment schools while another 4 schools in the area were randomly selected as the control group (n=2383). Longitudinal data were analysed using logistic regression and results indicated that the control participants when compared with the HealthWise participants continued heavy alcohol consumption (OR=1.4; 95% CI [1.1-1.8]) and (OR=1.6; 95% CI [1.2-2.2]) respectively. Furthermore, control participants when compared with the HealthWise participants continued cigarette use (OR=1.4; 95% CI [1.1-1.7]) and (OR=1.4; 95% CI [1.1-1.8]) respectively. The limitations of the study include that the sample was not representative and generalizable.

Kirby, *et al.* (2007) conducted a review of 83 studies which measured the impact of curriculum-based sex and HIV education programmes on sexual behaviour change among the youth below 25 years of age. Of the 83 studies, 56 were conducted in the United States, 9 in developed countries like Canada, the Netherlands, Norway, Spain and United Kingdom while 18 studies were conducted in developing nations like South Africa, Brazil, Chile, Jamaica, Tanzania, Kenya, Thailand, Zambia and Mexico. Some of the inclusion criteria included; a reasonable strong experiment or quasi experimental design, having a sample size of at least 100 participants, measure programme impact based on one or more of the following sexual behaviours: sexual debut, frequency of sex, number of sexual partners, use of condoms and other contraceptives and include measures of sexual risk. The last inclusion criterion was measurement of the impact behaviour in 3 months or 6 months based on the outcome. Ten databases were searched namely PubMed, PsychInfo, Popline, Sociological Abstracts, Psychological Abstracts, Bireme, Dissertation Abstracts, ERIC, CHID, and Biological Abstracts. The finding suggests that the programmes delay or decrease sexual behaviour or increase condom use or contraceptive use. Of the 83 studies, 28 had the strongest evidence for positive behaviour change while the remaining 55 were less strong. Fifty-four studies measured the impact of condom use of which 48% showed an increase in condom use.



## **2.5 Gender Differences across the Studies in the Literature Review**

The 2009 HSRC, survey found that 90% of the population aged between 19-55 years was exposed to one or more health communication programmes which included peer education, community dialogues and multimedia campaigns. Yet the Global AIDS Response Progress, (2012) report highlighted that females between the age of 15-24 years are four time more likely to have HIV than males in the respective age group. Young females on average become HIV positive approximately 5 years earlier than males. With regards to HIV prevalence rates among university students in South Africa and gender the HESA, (2008/2009) report highlighted similar findings that females reported a higher HIV prevalence rate (4.7%) than males (1.5%) and the difference was statistically significant ( $p < 0.001$ ). Men reported having more sexual partners (19%) than women (6%). With regards to intergenerational sex, 6% of men and 7% of women indicated having partners aged 10 years or more above them. Among the females aged 18-24 who reported having partners aged 10 years or more above them, 12,8% were HIV positive while those who had partners less than 10 years older, the HIV prevalence was 3.8%. The study by Peltzer, *et al.* (2005) found that more females (78.7%)



than males (63.8%) used a condom at their sexual debut however this percentage begins to decrease particularly for females during later sexual activity. Despite the reach of intervention programmes in South Africa the relationship between intervention and sexual behaviour is not straightforward and other factors do intervene; the final outcome of “whether or not to use a condom” is a result of complex interactions between knowledge, risk perception, attitudes and intentions as detailed in the section thereafter. The review on the theories of reasoned action and planned behaviour by Albarracin, *et al.* (2001) found that the theories are highly successful predictors of condom use. Thus, gender-related factors, intertwined with factors related to attitudes, perceived behavioural control and social norms expose females aged 15-24 years to a very high risk of contracting HIV.

## 2.6 Theory of Reasoned Action and Planned Behaviour

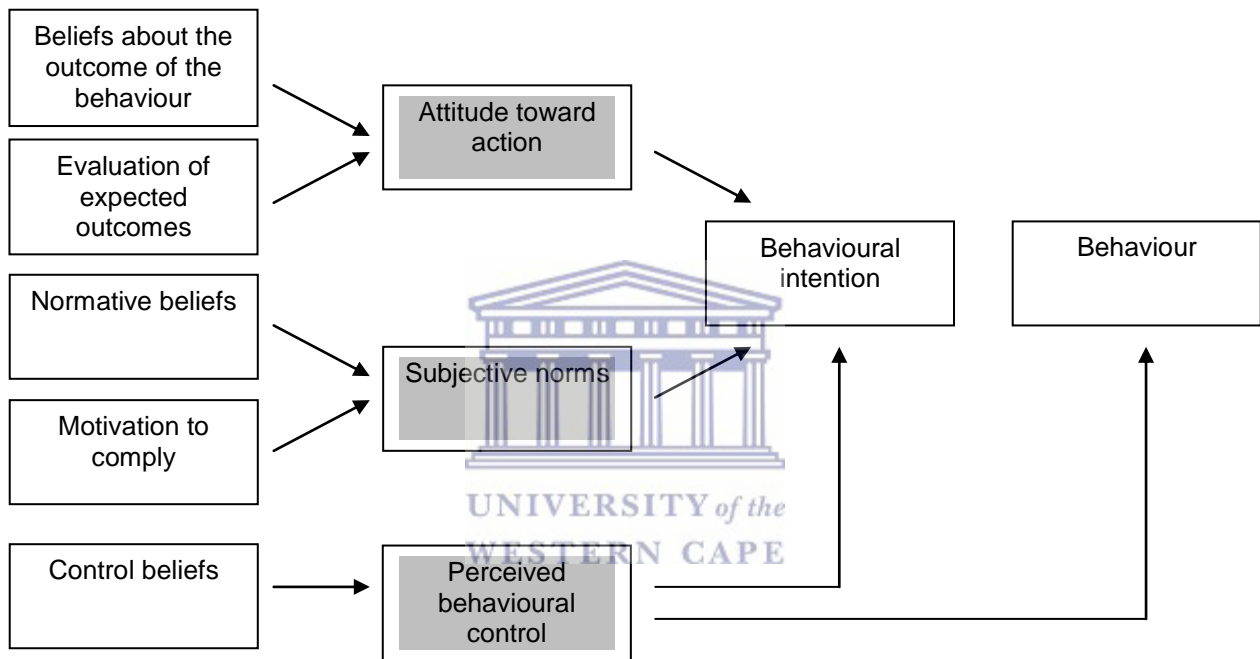
Several models have been designed to predict health behaviours and outcomes; among those, Ajzen&Fishbeins’ (1975) theories of reasoned action and planned behaviour were first used to understand the relationship between attitudes and behaviour and attempts to explain the relationship between attitudes and intentions toward risky sexual behaviour, condom use and HIV testing.

These theories can be applied to any type of behaviour change. In the review on the theories of reasoned action and planned behaviour on medication adherence for TB and HIV, 3 main findings came out; firstly, of 13 studies, 75% of intervention affected change in behaviour in desired direction; secondly, of 56 studies, about one third of the behaviour could be explained by the combined effect of intention and perceived behavioural control to that particular health behaviour; and lastly; 185 empirical tests explained about a third of behaviour to the combined effect of intention and perceived behavioural control (Munro, 2007). Furthermore, in the review on the theories of reasoned action and planned behaviour explaining models of condom use, the theories were seen as highly successful predictors of condom use (Albarracin, 2001).

**Theory of Reasoned Action:** The theory of reasoned action hypothesises that one’s intentions influences actual behaviour (e.g. likelihood to use condoms and likelihood to get tested for HIV). The theory suggests that one’s intentions are linked to ones’ attitude to performing the behaviour (Ajzen&Fishbein, 1975).

**Theory of Planned Behaviour:** The theory of planned behaviour is similar to the theory of reasoned action. However, an additional variable is factored into this theory, which is perceived behavioural control (e.g. control over correct and consist condom use (Ajzen&Fishbein, 1975). ‘Behavioural control’ represents the difficulty or ease of performing particular health behaviour. (See Figure 1.Theory of Planned Behaviour)

*Theory of Planned Behaviour*



**Figure 1.Theory of Planned Behaviour.**

In the theory of planned behaviour, “perceived behavioural control” was added to the theory of reasoned action, to account for factors which were outside of an individual’s voluntary control that may affect their intentions and behaviour. This extension was based on the idea that behavioural performance is determined by motivation (intentions) and ability (behavioural control) (Ajzen, 1991).

**Constructs of the Theory of Reasoned Action and Planned Behaviour**

**Beliefs about the outcome of the behaviour:** a person belief that the behaviour leads to certain outcomes and their evaluation of these outcomes.

**Attitudes toward the Behaviour:** an individual's positive or negative feeling about performing a particular behaviour.

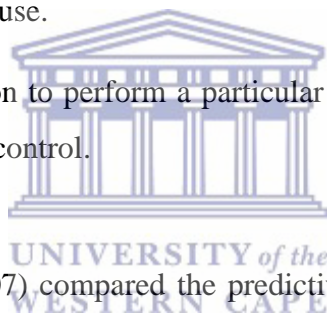
**Normative Beliefs and Motivation to Comply:** the person's beliefs that specific individuals or groups think that he/she should or shouldn't perform the behaviour and his/her motivation to comply with the specific referents.

**Subjective Norms:** what an individual thinks that his/her significant others, society, religion, peer group etc. expects in terms of performing particular behaviour (what others think about the behaviour).

**Control Beliefs:** personal attributes such as confidence, positive outlook, self esteem which will impact of perceived behavioural control.

**Perceived Behavioural Control (TPB):** beliefs that the individual can confidently perform a particular behaviour e.g. condom use.

**Behavioural Intentions:** intention to perform a particular behaviour as a result of attitudes, belief and perceived behavioural control.



The study by Heeren, *et al.* (2007) compared the predictive value of the theory of planned behaviour among university students in South Africa (n=251) and the United States (n=160) where participants completed an anonymous questionnaire. A multiple regression analysis was conducted which indicated that condom use and intention of condom use was significantly predicted by a positive condom attitude, subjective norm, self-efficacy and attending university in South Africa. Interactions between country and subjective norm inculcated that condom use and intention was stronger in the American sample than that of the South African sample. Furthermore “attitude predicted intention” was stronger in the American sample than there South African sample whereas, “self-efficacy predicted intention” was stronger in the South African sample than the American sample. In critique of the study a convenience sample of volunteers was used with some exclusion criteria at both universities (e.g. sample between 18-24 years).

The study by Munoz-Silva, *et al.* (2007) sought to compare the two models Theory of Reasoned Action (TRA) and Theory Planned Behaviour (TPB) in sexual transmission of HIV. The study evaluated the effectiveness of the two models TRA and TPB in condom

prediction by distinguishing the components which make up the variable perceived behavioural control namely; self-efficacy and control. The study sample included 601 Portuguese and Spanish university students using a questionnaire. Attitude toward condom use was measured by using four bipolar 7-point scales while the variable Perceived Behavioural Control was measured using two steps. The first step looked at 'communication' which looked at perception of communication skills and condom negotiation skills. The second step analysed 'control' which looked at how sure participants were that they could use a condom effectively during intercourse. Results indicated that females scored higher than average in all of the TPB variables than males except in the frequency of condom use as females requested the use of condoms less than males. For prediction of intention the predominant variable among females was attitude whereas the predominant variable for males was subjective norm and self-efficacy. TRA (30-29%) to TPB (35-38%) was statistically significant ( $p=0.001$ ) in both subsamples. In comparison the TPB model predicts better condom use intention than TRA in both males and females. However there is no difference in the two models in relation to predicting condom use.

Bryan, *et al.* (2006) developed and tested models of intentions and behaviour among 261 grade 10 and 11 pupils from Cape Town, South Africa. All participants completed an initial questionnaire to measure attitudes, beliefs and prior behaviour which was used to develop intentions of condom use based on the Theory of Planned Behaviour. Of the initial sample 227 completed a follow-up behavioural questionnaire after 4 months of which ( $n=72$ ; 44=young men and 30= young women) reported having had sex in the 4 months prior to the follow up. The data from the smaller sample was used to develop a model of predictors of condom use based on the Theory of Planned Behaviour. Results generally supported the validity for the Theory of Planned Behaviour in relation to predictors of condom use based on intentions. HIV knowledge and positive outlook (self-esteem and optimism of future) were significantly related to intentions. A study limitation was that the sample size was small and not generalizable. In addition, the sample consisted only of secondary school grade 10 and 11 pupils aged between 14-19 years.

In a study by Ravis&Sheeran (2003) a meta-analysis was conducted to measure the relationship between descriptive norms and intentions and to determine the increment in variance attributed to descriptive norms from the Theory Planned Behaviour. Literature searched on social scientific database such as PsychLit etc. Where 18 articles were found

which included 21 tests on the relationship to between descriptive norms and intentions based on a total of n=8,097 that could be included in the review. A regression analysis showed that descriptive norms increased the variance explained in intentions by 5% after attitude, subjective norm, and perceived behavioural control has been taken in to account. A moderator analysis showed health risk behaviour and younger samples were both associated with stronger correlations between descriptive norms and intentions.

**Gap 1: Not all surveys have taken place during HIV Counselling and Testing campaign:**

Some of the studies in the literature conducted the surveys without providing participants with the opportunity to actually go for an HIV test. In some studies researchers asked about the intention to test, without following up with actual testing while in other studies participants test without collecting their results. Despite intentions influencing behaviours or being predictors of behaviours the researcher believed that the study would be enhanced if the surveys were conducted then followed by actual tests for HIV. This could also assist in narrowing the limitation by preventing a reporting bias (e.g. the participant indicates that they would like an HIV test because they think it is what the researcher expects).

**Gap 2: Limited studies focus particularly on tertiary students in South Africa, though constituting a high risk population:** The literature review found studies on risk perception, sexual behaviour and HIV testing practices among tertiary students in China, Turkey, Nigeria, Jamaica, America, Spain, Portugal and three studies in South Africa, one done by Peltzer, *et al.* (2009) and the other done by Hendriksen, *et al.* (2007), HESA study 2008/2009. South Africa has one of the highest rates of HIV infection and according to the literature the youth population group 15-24 years of age are considered a high risk population group for HIV. Therefore further studies should be conducted to better understand this population group and the factors exposing this population at high risk for HIV. The HESA 2008/2009 was the first HIV prevalence study in South African specifically among university students.

**Gap 3: Studies in the literature review are grouped in categories either risk perception and HIV testing or risk perception and condom use:** This research study incorporates all factors. This study looks at research risk perception, sex behaviour which includes condom use as well as HIV testing practices. This research would like to build on previous studies and further add on, by researching the knowledge to HIV, risk perception, attitudes toward

condom use, sexual behavioural practices and actual HIV testing behaviour. Furthermore, this study has particular interest in gender difference for all the survey variables knowledge, attitude, risk perception, behaviour and testing.



## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter describes the aim and objectives of the research study, study design, sampling procedure, and the data collection process. This chapter also highlights the validity, reliability, analysis and generalizability of the study. It shows the ethical considerations in the research design and provides details on the limitations of the methodology.

#### **3.2 Aim**

The aim of the study was to describe students' behavioural risk to HIV in relation to their knowledge, attitude, perceived risk and HIV testing practices and to assess whether there are any significant gender differences with regards to these variables among those who presented for an HIV testing campaign at Rosebank College, Pretoria.

#### **3.3 Objectives**

- i. To describe the gender differences with regards to knowledge of HIV, attitudes towards condom use, sexual behavioural practices and HIV testing practices
- ii. To describe the association between the variables: knowledge of HIV, attitudes towards condom use, sexual behavioural practices and HIV testing practices
- iii. To interpret the findings using the theory of planned behaviour

#### **3.4 Methodology**

The study is an observational, descriptive, cross sectional design. The study consists of tertiary college students at Rosebank College, Pretoria. The sampling method was convenience sampling as all students who presented for HIV testing during the colleges' HIV counselling and testing campaign were asked to complete a voluntary survey in order to participate in the study.

The survey assessed the following areas:

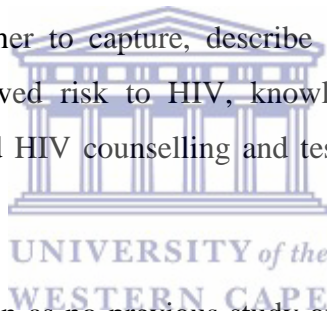
- i. Demographics
- ii. Knowledge and perceived risk to HIV
- iii. Attitude to condom use

- iv. Sexual behavioural practices
- v. HIV Counselling and Testing behaviour

### **3.4.1 Study Design**

The study was quantitative and used a descriptive, cross-sectional survey design to describe students' perception risk to HIV, knowledge of HIV, attitudes toward condom use, sexual behaviour and HIV testing practices. The anonymous self-administered questionnaire was utilised to minimise student's embarrassment or discomfort in having to answer the questions related to their sexual history and to assist in gaining more accurate and honest responses.

The design was also chosen as it was relatively cost-effective and could be executed with the limited time available to carry out the study. This methodology also eliminated the researchers influence and gives the facts as they are captured from the field. The methodology allows the researcher to capture, describe and quantify the factors that are influencing the students' perceived risk to HIV, knowledge of HIV, sexual behaviour, attitudes toward condom use and HIV counselling and testing practices in order to test for their statistical significance.



The quantitative study was chosen as no previous study of this nature was conducted at the College. Therefore this study may be utilised as a baseline study for any future subsequent studies, such as qualitative studies. The outcome of the study may also feed into the on campus HIV and AIDS Programme.

### **3.4.2 Study population and description of study setting**

The study population comprises of undergraduate tertiary students between 18-24 years of age who attend Rosebank College. The majority of the students come from working class to middle class families from the Pretoria and the surrounding middleclass townships such as Soshanguwe but also attracts many students from neighbouring provinces such as, Limpopo, Mpumalanga, North West and Free State provinces. Most of the students from the surrounding provinces are sent by their families to study in Pretoria to create a “better life for them” as the city forms part of the greater Gauteng Province which is considered the most industrialised province in South Africa where there are more job opportunities available. The Census 2011 confirms this migration pattern as the Gauteng Province showed the highest in-flow migrations from other provinces (Statistics South Africa, 2012).



Rosebank College is a private higher education institution registered with the Department of Higher Education and Training. The institution consists of 4 campuses located across the country with campuses in Cape Town, Johannesburg, Durban and Pretoria. This particular study was conducted at the Pretoria Campus which is situated in Pretoria's central business district. Rosebank College, Pretoria campus had a total of 1,318 student enrolled at the college for 2011, of which 976 were registered as full-time students while 342 were registered as part-time students (Rosebank College, 2012).

The study focus on tertiary students between 18-24 years of age was decided based on the National HIV&AIDS statistics. Despite the stabilisation of HIV in the country 15-24 year old age group are still considered to be a high risk group for HIV. Furthermore, most students by the time they have reached tertiary education would have been exposed to some form of school-based HIV Educational Programmes both at primary and secondary school which would be further reinforced when they reach tertiary education. The UNGASS midterm report on the country progress (2010) indicated that 100% of schools in South Africa provide life skills based HIV education for both 2008 and 2009 (DoH, 2010).

### **3.4.3 Campus HIV programme**

The Rosebank College HIV programme falls within the Campus Wellness Programme which places emphasis on promoting a healthy lifestyle, awareness programmes and education inclusive of HIV&AIDS. The programme is targeted at the students as well as employees at Rosebank College. The programme consists of general counselling service to provide emotional support to students, Peer Education Programme where students are selected and trained to be role models or provide support to their fellow peers, quarterly HIV Counselling and Testing campaigns, the distributions of HIV&AIDS awareness communication material (e.g. pamphlets, brochures etc), condom distribution and events such as World AIDS Day and Candlelight Memorial Day.

### **3.4.4 Sampling procedure and sample size**

The study population comprised of both male and female students at Rosebank College, Pretoria who presented at the HIV counselling and testing campaign held on 29 and 30 November 2011. The sampling was done through a convenience sampling method as all those who presented at the HIV testing campaign to be tested for HIV were asked to voluntarily participate in the study before going for the actual HIV test. This is a specific group as they

presented for HCT and therefore already had an intention to test and this in itself excludes all other students at the Rosebank College, Pretoria campus.

The total student population at Rosebank College, Pretoria comprised of 1,318 registered students in 2011 which comprises of 976 full-time and 342 part-time students.

A total of 221 people presented at the HIV counselling and testing campaign however, only 205 participants were considered for the study as they met the inclusion criterion and agreed to complete the questionnaire during the HCT campaign. The campaign took place over two days with approximately 100 participants who presented on each day. On average, and based on previous HCT campaigns at Rosebank College, approximately 300 students were expected to attend the HCT campaign however, only 221 students presented at the time when the study was conducted.

**3.4.5 Sampling Strategy:** Convenience sampling method was used as the study targeted those who presented for HIV counselling and testing. A further exclusion is that only students within the 18-24 year old age group were selected as those students fell within in the vulnerable group in respect to the countries HIV risk profile.



The calculation of the sample size was conducted with the response distribution at 31.8% based on the average percentage in the literature review for the variable “always use condoms”. The Raosoft sample size calculator <http://www.raosoft.com/samplesize.html> was used to calculate the sample size:

- The margin of error was indicated at 5%
- The confidence interval was indicated at 95%
- The population size was 1,318
- The response distribution was indicated at 31.8%

The recommended minimum sample size was 267 participants. Therefore, it is hypothesised that some results with no significance could be due to a lack of power.

### **3.4.6 The measuring instrument**

The measuring instrument consists of 6 sections which included demographic characteristics, knowledge on HIV; perceived risk to HIV, attitudes, sexual behaviour and HIV testing practices. The tool was developed based on the available research and aligned to other similar

surveys. The survey consisted of a self-administered anonymous predominantly close-ended questionnaire with a few open end-questions to clarify some responses. For the section on attitudes a 6-point likert scale was used. However, the other sections only used 3-point categorical response set.

### **3.4.7 Data Collection Methods**

The data collection was done through a voluntary, anonymous and self-administered questionnaire. The data collection took place over two consecutive days with approximately 100 participants on each day. All surveys were completed prior to HIV counselling and testing and while the Non Governmental Organisation; Right to Care was responsible for conducting the actual HIV counselling and testing. All data collection was conducted by the researcher. All participants included in the study were briefed and gave their consent before participating in the study.

The data management began with cleaning the data, 221 surveys were conducted and all surveys were checked for obvious errors such as question omissions. The data was then captured into a MicrosoftExcel spreadsheet; all responses were grouped into 6 categories according to the survey. To ensure that the data was entered correctly, the researcher double checked the capturing process and all surveys were kept for further verification. Blanks making up more than 5% of the questionnaire were not considered for data input and were deemed invalid. After the data management process only 205 surveys were valid and utilised in the study.

The key areas of analysis were then outlined. The data was then analysed both descriptively and analytically. Descriptive statistics such as frequencies, percentages and means were summarised. The statistical program EpiInfo version 3.5.1 was used (2008, Atlanta Georgia USA).

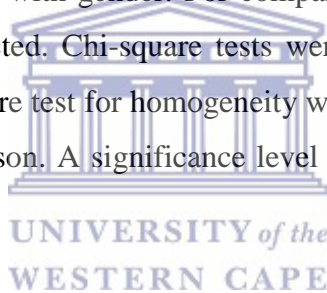
### **3.4.8 The Following Analysis was conducted**

Frequency analysis of all the variables was conducted. Thereafter, frequency tables of all individual variables such as demographics, perception of risk to HIV, knowledge of HIV, sexual behaviour and HIV testing practices use were drawn up. The variables were grouped according to the subject matter e.g. demographics, knowledge of HIV, perception of risk to

HIV, sexual behaviours, HIV testing practices. Gender differences between the variables were then drawn up.

For the descriptive statistics, frequency analysis was conducted for all variables and for the total sample. All variables were then stratified by gender to see whether there were significant differences in the demographic data between male and female students. However for variables where the groups within the various categories were small those variables were regrouped in preparation for the chi-squared analysis. For some variables certain categories were ignored.

Chi-square tests were used to assess the association between the main variable of interest gender and all other variables (demographics, HIV knowledge, and perception of risk, sexual behaviour and HIV testing practices). All these factors were assessed as to whether there were any significant associations with gender. For comparison of means of age, and age at sexual debut t-tests were conducted. Chi-square tests were conducted for variables with 2 categories and for rates. Chi-square test for homogeneity was used for more than 2 categories and Fisher test for rates comparison. A significance level of 0.05 was chosen as the cut-off for significance.



The association of variables was then compared with each other. When comparing the associations between knowledge, perceived risk, attitudes, sexual behaviour and testing practices chi-square tests were run for several combinations of variables within the 6 categories. During the analysis many of the initial results were invalid due to the groups being too small per category within the variables. The variables were then regrouped into fewer categories to increase statistical power when conducting the chi-square tests. This ensured that fewer categories were represented in each variable which in turn increased the number of counts per category. After regrouping the categories per variable the chi-square analysis were rerun and some associations were observed. Chi-square uncorrected tests was used to test the associations with and Fisher exact when one expected value  $<5$  in any cell.

The results of the study were interpreted using Ajzen&Fishbeins' (1975) theories of reasoned action and planned behaviour to explain perceptions, attitudes and intentions toward risky sexual behaviour, condom use and HIV testing.

### **3.4.9 Generalizability**

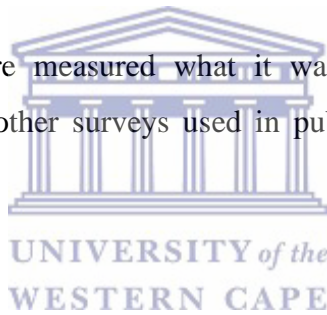
This study is purely descriptive and should be viewed within the context of the study as the sample only consisted of students at Rosebank College, Pretoria campus who present for HIV counselling testing during a campaign. This study will have limited generalizability and may apply to students in the same socio-economic category and age-group within the country.

### **3.4.10 Rigour**

The sampling method relies on convenience sampling to ensure rigour during these process only students who present for HIV counselling and testing campaign were asked to participate in the study. Furthermore, only students between the ages of 18-24 years were considered to participate in the study as they fall within the youth category as described in my rationale for conducting the study.

### **3.4.11 Validity and Reliability**

To ensure that the questionnaire measured what it was truly intended to measure the questionnaire was aligned with other surveys used in published studies which studied the same or similar topic.



### **3.4.12 Results and findings**

The findings of the study were discussed and explained according to the two theories of reasoned action and the theory of planned behaviour. The results were also explained in terms of gender differences between the variables.

## CHAPTER 4

### 4.1 LIMITATIONS

As a descriptive study the research is limited to describing the phenomena (knowledge of HIV, perceived risk, sexual behaviour, HIV testing practices and gender difference between the variables) therefore the research cannot make inferences on the causal relationship between the variables.

There are limitations in the sampling method itself as convenience sampling was utilised impacting on selection bias.

The measuring instrument is not a standardised assessment tool; it was developed based on the research and other similar questionnaires. For the section on attitudes a 6-point likert scale was used. However, the other sections only used 3-point categorical response set which could be seen as being too limited.

The survey is quantitative in nature and there is a need for mixed methods research to enhance the quantitative finding which would provide more meaning and clarity to the data.

The sample was collected during an HCT campaign where participants who voluntarily visited the campaign were asked to participate in the study therefore impacting on sample selection. Sample selection occurred as participants came voluntarily for HCT, hence there might be an overrepresentation of females in the sample, compared to the actual male to female ratio in the College.

There was a limitation in finding significant differences in certain analysis due to a lack of power. In terms of sample size, the desired sample size of 267 participants was not obtained and as a result the analysis may require statistical power.

There may have been recruitment bias as Rosebank College consists of 4 campuses in Johannesburg, Cape Town Durban however, the study was only conducted at the Pretoria campus and the results should be interpreted within this context.

The limitations of a self-administered questionnaire include response and memory bias. Some biases may impact on the responses given by the participants or the participants may not answer the questions truthfully.

The study was conducted around the period of World AIDS Day, end of November 2011, which took place toward the end of the academic year however, by then most of the students either had already completed their exams and were already on vacation, or were not on campus as they were on study leave in preparation for their exams, which could account for the limited participation during this study.

The research findings are explained using the theory of planned behaviour which provides a possible limitation in that this cognitive behaviour model focuses on individual risk-reduction which may have limited application in an African context (Harrison, *et al.* 2005).

#### **4.2 ETHICAL CONSIDERATIONS**

The study adds value by providing greater insight to the students perceived to HIV, their sex behaviours, knowledge, attitudes and HIV testing practices and gender difference between the variables at Rosebank College, Pretoria. This study can also support and perhaps enhance future HIV intervention programmes at Rosebank College, Pretoria. All participants completed an informed consent form. All participants were verbally briefed on the background and purpose of the study, and were explained that the study is volunteer-based; answers were kept confidential and anonymous. All participants signed the consent form. All participants were informed that they are free to withdraw from the study at any point should they wish to do so. Confidentiality and anonymity of the students and their responses were respected throughout the study. (See Appendix A and B, letter of consent and participant information sheet). Both institutions Rosebank College, Pretoria and Right to Care gave permission for the study to be conducted. Further ethical considerations were made through the approval of the ethics committee of the University of the Western Cape.

## CHAPTER 5

### RESULTS

#### 5.1 DESCRIPTIVE STATISTICS AND INTERACTIONS BY GENDER

This chapter presents the research findings. The data on the students' demographic characteristics, HIV knowledge, perceived risk, attitudes to condom use, sexual behaviour and HIV testing practices are presented in the tables and graphs listed below. This chapter describes the patterns of the tertiary students' at Rosebank College, Pretoria with respect to their sexual behaviour including, age at first intercourse, condom use, number of partners and the different types of sexual practices amongst the students.

##### 5.1.1 Demographic Characteristics by Gender

The study sample consists of 205 tertiary students between the ages of 18-24 years of age. The demographic characteristics of the students are displayed in **Table 1** below. Of the 205 respondents 140 were female and 65 were male. The majority of the respondents were aged between 19-22 years (85.4%) with a greater proportion of females (68.2%) than males (31.7%) within the sample. Only 16 out of 205 participants were 18 years of age while 6 and 8 students in the sample were age 23 and 24 years respectively. With respect to ethnic origin the majority (98%) of students were African, 3 out of 205 respondents were Coloured and only 1 respondent was White.

Means were run for the continuous variables namely current age and age at first intercourse. For the total sample, the mean for current age of sample was 20.6 years with a standard deviation of 1.48 years. The minimum age was 18 years and maximum age was 24 years, median was 20 years. For those who were sexuality active (n=186) the mean age at first intercourse was 17.6 years with a standard deviation of 2.1 years. The minimum age was 9 years and maximum age was 24 years, median was 17 years. The means for age at first intercourse was then stratified by gender to see if there were gender differences between the two groups. In the sample group of females who have had sexual intercourse (n=123) the mean age at first intercourse was 17.7 years with a standard deviation of 1.73 years. The minimum age was 13 years and maximum age was 24 years, median was 18 years of age. In comparison the sample group of males who have had sexual intercourse (n=63) the mean age



at first intercourse was 15.7 years with a standard deviation of 2.2 years. The minimum age was 9 years and maximum age was 21 years, median was 16 years of age.

With regards to relationship status 37.6% of the respondents classified themselves as being single or not in a relationship, while 3.9% of them were married, 30.2% were in a relationship for longer than 12 months and 28% of respondents were in a relationship for less than 12 months. In terms of sexual preferences the majority (91.7%) of respondents classified themselves as being heterosexual, while 2.9% classified themselves as bisexual and 5.4% as homosexual.



**Table 1. Demographic Characteristics of total students, compared by gender (n=205)**

	<b>Total (%)</b>	<b>CI 95 %</b>	<b>Male (%) (n=65)</b>	<b>CI 95% male</b>	<b>Female (%) (n= 140)</b>	<b>CI 95% female</b>	<b>*p-value</b>
<b>Age (in years)</b>							
18-19	25.4	17.1-35.9	16.9	6.5-35.7	29.2	18.7-42.8	0.42
20-21	39.5	29.2-51.6	40	22.2-63.5	39.3	27.1-54.1	
22-24	35.1	25-48.8	43.1	26.1-21.4	31.5	19.8	
<b>Ethnicity</b>							
African	98	95.1-99.5	99	91.7-100	98	93.9-99.6	N/A
Coloured	1.5	0.3-4.2	1	0-8.3	1	0.2-5.1	
White	0.5	0-2.7	0	0-5.5	1	0-3.9	
<b>Relationship status</b>							
Single	37.6	30.9-44.6	43	30.8-56	35	27.1-43.5	0.5
Married	3.9	1.7-7.5	3	0.4-10.7	4	1.6-9.1	
Relationship (>12 months)	30.2	24-37	29	18.6-41.8	31	23.2-39.1	
Relationship (< 12 months)	28	22-35	25	14.8-36.9	30	22.6-38.3	



## Sexuality

Heterosexual	91.7	87.1-95.1	95	87.1-99	90	83.8-94.4	0.1
Bisexual	2.9	1.1-6.3	2	0-8.3	4	1.2-8.1	
Homosexual	5.4	2.7-9.4	3	0.4-10.7	6	0.4-10.7	

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\*Chi-square test for homogeneity

### 5.1.2 HIV Knowledge by Gender

The proportion of students who had correct knowledge of HIV by gender is shown in **Table 2** below. In terms of HIV knowledge, sexual transmission and prevention the majority of respondents correctly answered that sexual transmission of HIV is prevented through correct and consistent condom use (75.6%), being faithful to one partner (72.2%) and abstaining from sex (96.1%).

The majority of respondents provided correct responses to the question related to HIV risk and that having an STI increases ones' risk of HIV (75.6%), while (57.1%) of respondents answered correctly that oral sex increases ones risk of HIV, and (97.6%) of respondents answered correctly that having unprotected sex with an infected partner increases ones' risk of HIV infection.

The majority of respondents provided correct responses related to the question of not being able to identify someone with HIV by the way they look (95.6%). Ninety-nine percent of the respondents indicated that they knew where to get condoms. With regards to the question on where the students obtained information on HIV, represented in number of counts either on its own or in combination with other sources of information, (114 counts) indicated from mass media; (77 counts) from health service providers, (86) college health programme, (58 counts) family or friends, (29 counts) non profit organisations, (2 counts) other.

All variables in this section were stratified by gender to see whether there were any significant differences between male and female students with respect to their knowledge of HIV however; there were no significant gender differences for HIV knowledge.

**Table 2. Knowledge of HIV by Gender (n=205)**

	<b>Total</b>	<b>CI 95</b>	<b>Male</b>	<b>CI</b>	<b>Female</b>	<b>CI</b>	<b>*p</b>
	<b>(%)</b>	<b>% for</b>	<b>(%)</b>	<b>95%</b>	<b>(%)</b>	<b>95%</b>	<b>values</b>
		<b>total</b>	<b>(n=65)</b>	<b>Male</b>	<b>(n= 140)</b>	<b>Female</b>	
HIV can be prevented by abstaining from sex	96.1	92.5-98.3	98	91.7-100	96.1	90-98	0.12
Reduce chances of HIV infection through correct consistent condom use	75.6	69.1-81.3	69.2	56.6-80.1	78.6	70.7-85.1	0.2
Reduce risk of HIV infection through being faithful to one partner	72.2	65.5-78.2	87.7	77.2-94.5	65	56.5-72.9	0.15
STI increases risk of contracting HIV	75.6	69.1-81.3	69.2	56.6-80.1	78.6	70.8-85.1	0.2
Contract HIV from unprotected oral sex	57.1	50-63.9	60	47.1-72	55.7	47.1-64.1	0.7
Get infected by having unprotected sex with person infected with HIV	97.6	94.4-99.2	100	100-100	96.4	91.9-99.8	0.14
Cannot identify someone with HIV by how they look	95.6	91.8-98	98.5	91.7-100	94.3	89.1-97.5	0.4
Where to get condoms	99	96.5-99.9	98.5	91.7-100	99.3	96.1-100	0.58

\*Chi-square for 2 categories and chi-square for homogeneity for more than 2 categories

### 5.1.3 Perceived risk to HIV by Gender

With regards to risk perception to HIV, (82.9%) of respondents indicated that they knew enough about HIV. For the question on risk of becoming infected 59% indicated that they were not at risk of becoming infected with HIV. In terms of risk perception to HIV there was no significant differences between males and females in the study sample 60% vs.58.6% respectively ( $p=0.84$ ). In terms of discussing HIV with one's partner the majority (78.5%) of respondents indicated that they are able to discuss HIV with their sexual partner. For males and females in the study sample there was no significant differences for being able to discuss HIV with ones' partner, 72.3% vs. 81.4% respectively ( $p=0.13$ ). In response to the question on whether participants thought that they could reduce their risk and prevent HIV infection (96.1%) of respondent indicated that they were able to reduce their risk and prevent HIV infection. There was no significant gender differences for participants being able to reduce their HIV risk in the study sample, 96.9% vs. 95.7% respectively ( $p=0.50$ ). For the question on correct condom use the majority (88.8%) of respondents indicated that they could use a condom correctly. There was a significant difference between males and females in the study sample who indicated that they could use condoms correctly 96.9% vs. 85% respectively ( $p=0.01$ ). The majority (64.9%) of respondents indicated that they knew someone who is HIV positive. There was no significant gender differences for knowing someone who is HIV positive, 58% for males and 68% for females ( $p=0.18$ ).

With regards to gender differences in whether the respondents perceived that they were at risk of HIV infection, there was no significant difference 60% in males and 58.6% in females ( $p=0.84$ ).

The proportion of students and their perceived risk to HIV are represented in **Table 3 below**.

**Table 3. Risk Perception to HIV in Total Sample and Compared by Gender (n=205)**

	<b>Total</b>	<b>CI</b>	<b>Male</b>	<b>CI</b>	<b>Female</b>	<b>CI</b>	<b>*p-</b>
	<b>%</b>	<b>95%</b>	<b>(n=65)</b>	<b>95%</b>	<b>(n=</b>	<b>95%</b>	<b>value</b>
		<b>total</b>	<b>%</b>	<b>Male</b>	<b>140)</b>	<b>female</b>	
					<b>%</b>		
Know enough about HIV	82.9	77.1-87.8	87.7	77.2-94.5	80.7	73.2-86.9	0.1
Not at risk of becoming infected	59	52-65.8	60	47.1-72	58.6	33.2-50.1	0.84
Can discuss HIV with their sexual partner	78.5	72.3-84	72.3	59.8-82.7	81.4	74-87.5	0.13
Can prevent or reduce risk of HIV infection	96.1	92.5-98.3	96.9	89.3-99.6	95.7	90.9-98.4	0.50
Know how to use a condom correctly	88.8	83.6-92.8	96.9	89.3-99.6	85	78-90.5	*<0.01
Know someone who is HIV positive	64.9	57.9-71.4	58	45.6-70.6	68	59.4-75.5	0.18

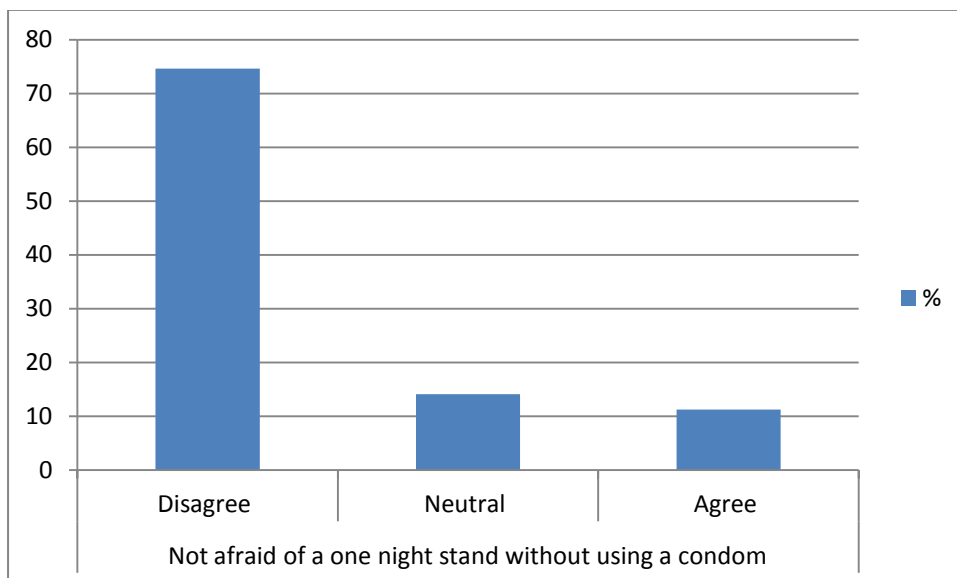
\*Chi-square for test homogeneity

### 5.1.4 Attitudes to Condoms

Attitudes toward condom use were measured using a likert scale ranging from 1-6, with the number 1 representing strongly disagreeing with the statement on the continuum and 6 representing strongly agreeing with the statement on the continuum. The means for n=205 statements for attitudes were; for the statement “I’m not afraid to have a one night stand” the mean was 1.9 with a standard deviation of 1.64. For the statement, “I will be able to discuss condoms with my partner” the mean was 5.34 with a standard deviation of 1.17. The mean for the statement “I know exactly how to use a condom” was 5 with a standard deviation of 1.33. For the statement “It is okay to stop using condoms while in a relationship with only one partner” the mean was 2.9 with a standard deviation of 1.79. For the last statement, “condoms decrease sexual pleasure” the mean was 2.6 with a standard deviation of 1.76.

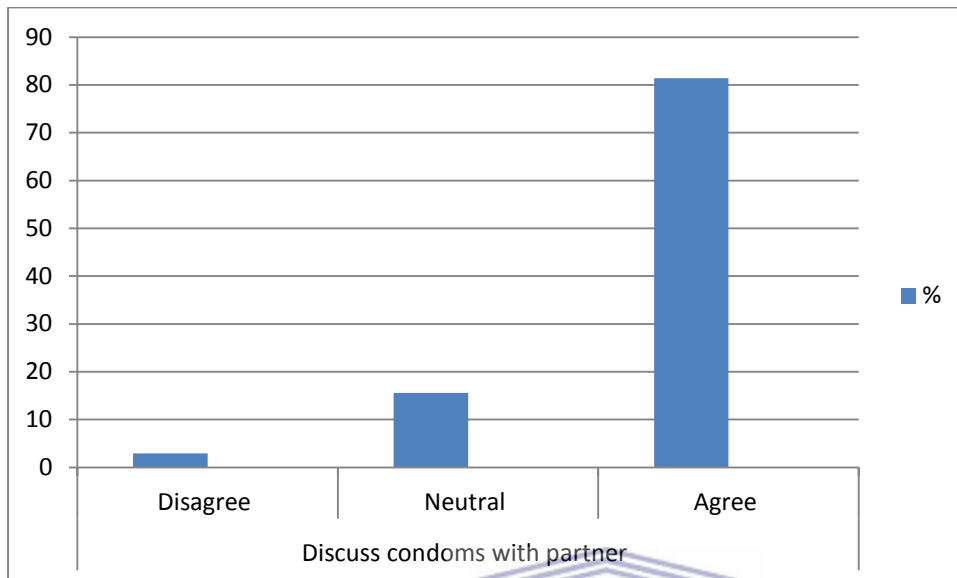
The continuum was later regrouped into 3 categories to simplify the calculations; scores 1 and 2 were grouped as disagree, scores 3 and 4 were grouped as neutral and scores 5 and 6 were grouped as agree. The regrouping into 3 categories was done to gain statistical power as well as to maintain a neutral category in order to maintain a clear distinction a clear distinction between those who disagree and those who agree with the statements.

From the series of five statements; for the first statement, “I’m not afraid to have a one night stand” the majority of respondents disagreed with the statement (74.6%; CI 95% [66.3-83.8]) as represented in **Figure 2** below.



**Figure 2. One night stand without using a condom (N=205)**

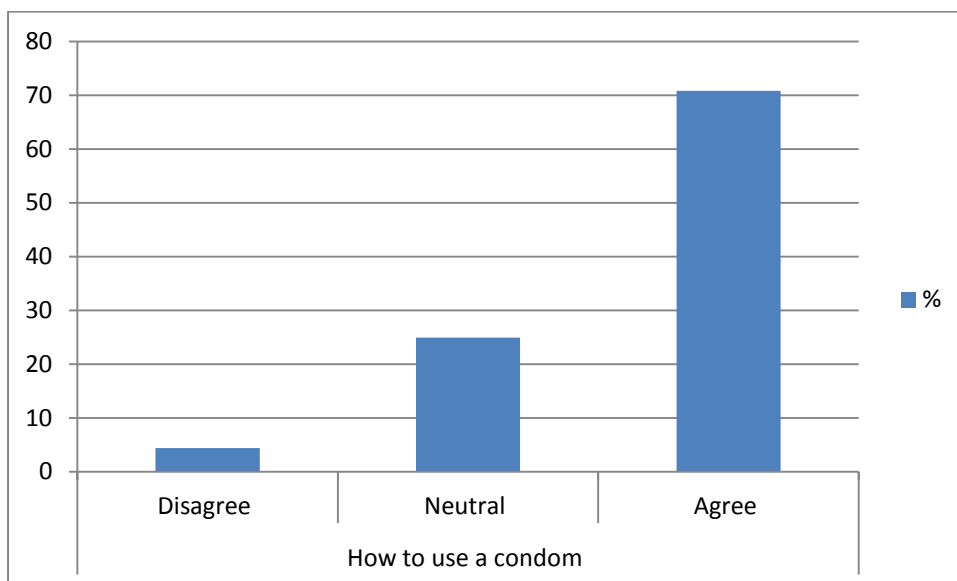
For the statement, “I will be able to discuss condoms with my partner” the majority of respondents agreed with this statement (81.4%; CI 95% [70.8-92.7]) as represented in **Figure 3** below.



**Figure3. Discuss condoms with partner (N=205)**



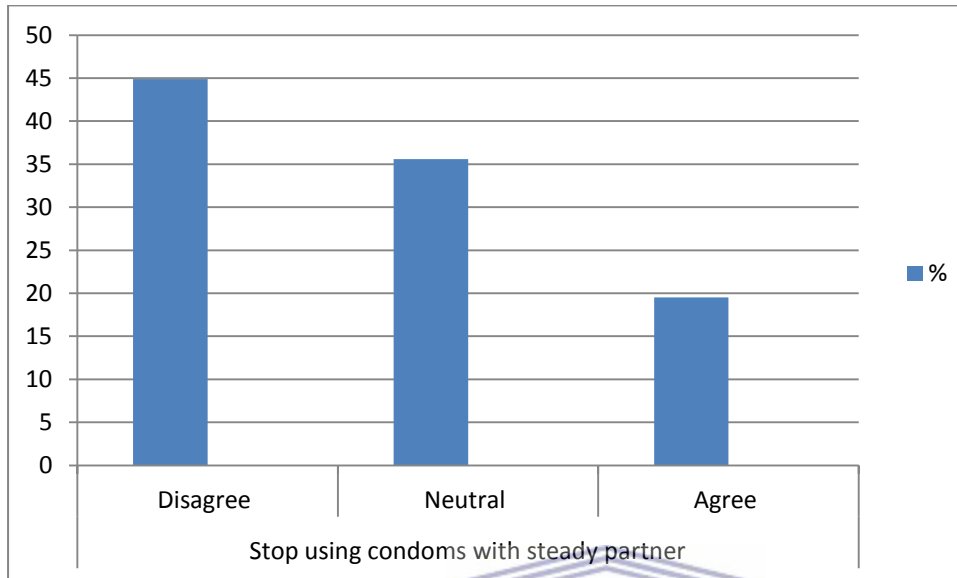
In **Figure 4** below, indicates that the majority (70.8%) of the respondents agreed with the statement that they know exactly how to use a condom (70.8%; CI 95% [58.8-83.5]).



**Figure4. Know how to use a condom (N=205)**

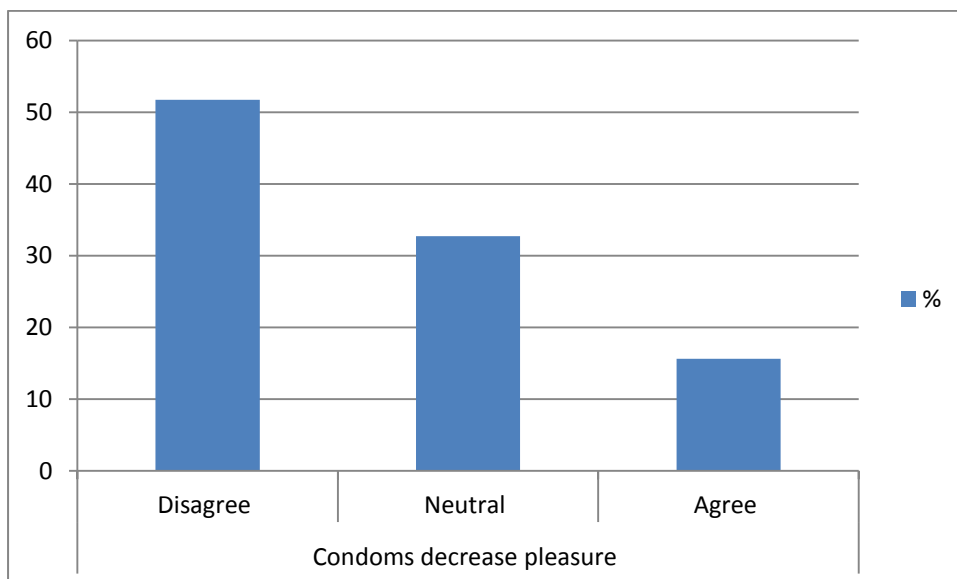


Moreover, 44.9% of respondents disagreed with the statement that it is okay to stop using condoms while in a relationship with only one partner (CI 95% [34.7-56.8]); whereas 19.5% agreed with the statement (CI 95% [12.4-29.1]); presented in **Figure 5** below.



**Figure 5. Stop using condoms with steady partner (N=205)**

On **Figure 6** below, the statement “condoms decrease sexual pleasure” 51.7 % of the respondents disagreed with the statement (CI 95% [41.4-63.5]) and 15.6 of respondents agreed with the statement (CI 95% [9.4-24.4]).



**Figure 6. Condoms decrease pleasure (N=205)**

All variables were stratified by gender to see whether there were any gender differences for the attitudes toward condom use. Using the same 3 groupings as above for the statement, “know exactly how to use a condom” the majority of male respondents agreed (75.5%; CI 95% [66.5-87.5]) with the statement that they knew exactly how to use a condom while (67.1%; CI 95% [58.7-74.8]) of female respondents agreed the statement. For those who disagreed with the statement, “know exactly how to use a condom” the (1.5%; CI 95% [0-8.3]) of male respondents agreed with the statement that they knew exactly how to use a condom while (5.7%; CI 95% [2.5-10.]) of female respondents agreed the statement. There were no other significant gender differences for attitude toward condoms use.

### **5.1.5 Sexual Behaviour Practices by Gender**

With reference to sexual behaviour, 186 out of 205 participants ever had sexual intercourse. The majority (90.7%) of respondents had sexual intercourse. When comparing genders there was a significant difference in the study sample; 96.9% among males vs. 87.9% among females ( $p=0.03$ ). Of those who had sexual intercourse ( $n=186$ ) the following were their responses with regards to their sexual behaviours. Age at first intercourse was grouped into three categories 9 -15 years, 16-18 years and 19-24 years of age. The age range was between 9-24 years of age with majority of respondents (58.6%) ranging between the ages of 16 -18 years of age. The percentage for those between the predominant age group were; 16 years (15.5%), 17 years (17.7%), 18 years (26.3%) of the respondents respectively. There was a significant gender difference with regards to age. The mean age at first intercourse for males=15.7 vs. females=17.7 ( $p=0.02$ ).

The majority (70.4%) of respondents indicated that they had used a condom during their first intercourse while, (51.1%) of respondents indicated that they have used a condom during their last sexual intercourse. There was a significant difference between gender and condom use at first intercourse; 57.1% among males vs. 77.2% among females ( $p=0.004$ ), while for condom use at last intercourse there was no significant difference between males and females (58.7% vs. 47.2% respectively,  $p=0.13$ ).

With regards to frequency of condom use (52.7%) of respondents indicated that they sometimes use condom while (38.7%) of respondents indicated that they always use

condoms. Of those who always use a condom during sexual intercourse when stratified by gender (35.8%) for the female respondents and (44.4%) of the male respondents.

The majority (61.3%) of respondents never had sexual intercourse under the influence of excessive alcohol, while (36%) indicated that they sometimes do and (2.7%) indicated that they always do. When stratified by gender there was a significant difference between males and females; (55.6% vs 26.6 respectively,  $p < 0.001$ ).

With respect to drugs, the majority (90.9%) indicated that they never have sexual intercourse under the influence of drugs, while (8.6%) indicated that they sometimes do. For regular sexual intercourse for gifts or money the majority (93.5%) indicated that they do not, while (6.5%) indicated that they do regularly engage in sexual intercourse for gifts or money. In terms of differences between males and females for engaging in sexual intercourse in exchange for gifts or money there was no significance ( $p = 0.61$ ).

With respect to the number of sexual partners in the past 12 months the majority (47.3%) indicated that they had one sexual partner while, (23.7%) indicated that they had two sexual partners and (24.7%) indicated that they had three or more sexual partners in the past 12 months, while 4.3% of respondents indicated that they had abstained from sexual intercourse in the past 12 months. When stratified by gender (60.2%) of females (22.2%) of males had one sexual partner over the past 12 months; (24.4%) of females and (22.2%) of males had two sexual partners over the past 12 months; while (10.6%) of females and (52.4%) of males had three or more sexual partners over the past 12 months.

The majority (67.2%) indicated that they did not have sexual intercourse with multiple concurrent partners during the past 12 months while (32.8%) indicated that they did have multiple concurrent partners. There were significant differences between males and females in terms of having multiple concurrent partners; (54% vs. 22% respectively,  $p < 0.001$ ).

In response to the question on “who decides on condom use” the majority (65.6%) indicated that both partners decide on condom use, while (29.6%) indicated that they decide on condom use, (2.7%) indicated that their partner decides on condom use while (2.2%) of respondents do not use condoms at all. Of those who indicated that they decide on condom use when

stratified by gender males and females, (44.4% vs. 22%,  $p < 0.001$ ). Of those who indicated that both partners decided (74%) were female and (49.2%) were male.

The proportion of students and their sexual behaviour practices are represented in **Table 4** below.

**Table 4. Sexual behaviour practices by gender (n=186)**

	<b>Total %</b>	<b>CI 95% total</b>	<b>Male (n=65) %</b>	<b>CI 95% Male</b>	<b>Female (n= 140) %</b>	<b>CI 95% Female</b>	<b>*p- value</b>
<b>Ever has sexual intercourse?</b>							
No	9.3	5.7-14.1	3.1	0.4-10.7	12.7	7.2-18.7	0.03
Yes	90.7	85.9-94.3	96.9	89.3-99.6	87.9	81.3-92.8	
<b>Age at first intercourse?</b>							
9-15	20.4	9.9-41.1	42.9	17.8-95.4	8.9	12.4-29.1	0.02
16-18	59.6	43.4-79.9	49.2	25.3-83	65	45.1-89.2	
19-24	19.9	10.1-38.1	8	0.8-41.9	25.9	12.8-51.4	
<b>Used a condom at first sexual intercourse?</b>							
Yes	70.4	63.3-76.9	57.1	44-69.5	77.2	68.8-84.3	0.004
No	29.6	23.1-36.7	42.9	30.5-56	22.8	15.7-31.2	
<b>Used a condom at last sexual intercourse?</b>							
Yes	51.1	43.7-58.5	58.7	45.6-71	47.2	38.1-56.4	0.13
No	48.9	41.5-56.3	41.3	29-54.4	52.8	3.6-61.9	

**How often do you use condoms?**

Never use condoms	8.1	4.6-13	6.3	1.8-15.5	8.9	4.5-15.4	0.4
Sometimes use condoms	52.7	45.3-60	47.6	34.9-60.6	55.3	46.1-64.3	
Always use condoms	38.7	31.7-49.1	44.4	31.9-57.5	35.8	27.3-44.9)	
Only virginal intercourse			1.7	0-8.5	-	-	

**Sexual intercourse under the influence of excessive alcohol?**

Never	61.3	53.9-68.3	39.7	27.6-52.8	72.4	63.6-80	<0.001
Sometimes	36	29.1-43.4	55.6	42.5-68.1	26	18.5-34.7	
Always	2.6	0.9-6.2	4.8	1-13.3	1.6	0.2-5.8	

**Sexual intercourse under the influence of drugs?**

Never	90.5	85.8-94.6	88.9	78.4-95.4	91.9	85.6-96	0.5
Sometimes	9.5	5-16.6	11.1	4.6-21.6	8.1	3.4-17.8	

**Regular sexual intercourse in exchange for gifts/money?**

Never	6.5	3.4-11	6	1.8-15	6.5	2.8-12.4	0.61
Sometimes	93.5	89-96.6	97	84.5-98.2	93.5	87.6-97.2	

**Number of sexual partners in last 12 months?**

None	4.3	1.9-8.3	3.2	0.4-11	4.9	1.8-10.3	<0.001
1 partner	47.3	40-54.7	22.2	12.7-34.5	60.2	50.9-68.9	
2partners	23.7	17.7-30.4	22.2	12.7-34.5	24.4	17.1-33	
3/more partners	24.7	18.7-31.6	52.4	39.4-65.1	10.6	5.7-17.4	

**Multiple concurrent partners during the past 12 months?**

Yes	32.8	26.1-40	54	40.9-66.6	22	15-30.3	<0.001
No	67.2	60-73.9	46	33.4-59.1	78	69.7-85	



**Who decides on condom use?**

I decide	29.6	23.1-36.7	44.4	31.9-57.5	22	15-30.3	<0.001
My partner decides	2.7	0.9-6.2	3.2	0.4-11	2.4	0.5-7	
Both of us decides	65.6	58.3-72.4	49.2	36.40-62.1	74	65.3-81.5	
Never use condoms	2.2	0.6-5.4	3.2	0.4-11	1.6	0.2-5.8	

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\*Chi-square test for 2 categories and chi-square test for homogeneity for more than 2 categories

**5.1.6 HIV Testing Practices by Gender**

The proportion of students and their HIV testing practices are represented in table 6 below. All respondents (100%) indicated that they knew where to obtain an HIV test, while (73.7%) of respondents have ever taken an HIV test. There was no significant gender differences for

ever taking an HIV test in study sample 66.2% amongst males and 77.1% amongst females (p=0.09). Of those who have ever tested for HIV the majority (57.6%) have last taken a test within 0-6 months; while (32.5%) of those who have ever taken an HIV test have last tested within 7-12 months; while (9.9%) have last tested 13 months or more ago.

The proportion of students and HIV testing behaviours are represented in **Table 6 below**.

**Table 6. HIV testing behaviour by gender (n=205)**

	<b>Total (%)</b>	<b>CI total</b>	<b>95%</b>	<b>Male (%) (n=65)</b>	<b>CI male</b>	<b>95%</b>	<b>Female (%) (n=140)</b>	<b>CI female</b>	<b>95%</b>	<b>*p-values</b>
Ever taken an HIV test?										
Yes	73.7	67.1-79.5		66.2	53.4-77.4		77.1	69.3-83.8		0.09
No	26.3	20.5-32.9		33.7	22.6-46.6		22.9	16.2-30.7		
If yes, when last?										
0-6 months	57.6	24.3-65.6		65.1	49.1-79		54.6	44.8-64.2		0.2
7-12 months	32.5	25.1-40.5		27.9	15.3-43.7		34.3	25.4-44		
13 months or more	9.9	25.7-15.9		7	1.5-19.1		11.1	5.9-18.6		

\*Chi-square test for 2 categories and chi-square for homogeneity test for more than 2 categories

## **Results Summary for Descriptive Statistics and Gender**

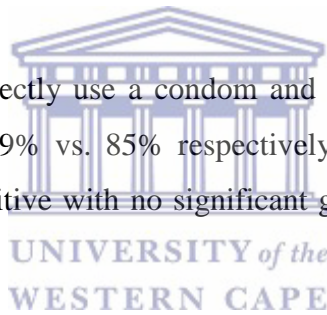
### **Demographic Characteristics**

The study captured students at Rosebank College between the ages of 18-24. Female (68%) made up two-thirds and males (32%) made up one-third of the participants. The majority of the students were African (98%).

### **Knowledge, Risk Perception and Attitude**

Overall, appropriate knowledge of HIV was above 80%. The majority (78.5%) of students indicated that they could discuss HIV with their partner and there was no significant difference between males and females 72.3% vs. 81.4% respectively ( $p=0.13$ ). Students obtained information on HIV from mass media campaigns; from health service providers, college health programme, family or friends, and non profit organisations specialising in HIV&AIDS.

The majority (88.8%) could correctly use a condom and there was a significant difference between males and females (96.9% vs. 85% respectively ( $p=0.01$ ). The majority (64.9%) knows someone who is HIV positive with no significant gender differences, 58% for males and 68% for females ( $p=0.18$ ).



There were no other significant gender differences for attitude toward condoms use.

### **Sexual Behaviour Practices by Gender**

The majority (90.7%) of respondents had sexual intercourse, when comparing genders there was a significant difference between males and females 96.9% vs. 87.9% respectively ( $p=0.03$ ). For sexual debut the majority (58.6%) ranged between 16-18 years. There was a significant gender difference with the mean age at first intercourse males=15.7 vs. females=17.7 ( $p=0.02$ ).

The majority (70.4%) used a condom at first intercourse while, (51.1%) used a condom at last intercourse. There was significant difference between gender and condom use at first intercourse; 57.1% for males vs. 77.2% for females ( $p=0.004$ ), while condom use at last intercourse there was no significant difference between males and females (58.7% vs. 47.2% respectively,  $p=0.13$ ).



The majority (61.3%) never had sexual intercourse under the influence of excessive alcohol and when stratified by gender there was a significant difference between males and females; (55.6% vs 26.6 respectively,  $p < 0.001$ ). The majority (90.9%) indicated that they never have intercourse under the influence of drugs while for regular sexual intercourse for gifts or money the majority (93.5%) indicated that they do not do so.

The majority (67.2%) did not have sexual intercourse with multiple concurrent partners, while (32.8%) did have multiple concurrent partners over the past 12 months. Significantly more males than females had multiple concurrent partners (54% vs. 22% respectively,  $p < 0.001$ ).

The majority (65.6%) indicated that both partners decide on condom use, while (29.6%) indicated that they decide on condom use, (2.7%) indicated that their partner decides on condom use while (2.2%) of respondents do not use condoms. Amongst those who indicated that they decide on condom use when stratified by gender, there were significantly more males than females (44.4% vs. 22%,  $p < 0.001$ ).

#### **HIV Testing Practices by Gender**

All respondents (100%) knew where to get tested for HIV, (73.7%) had ever taken an HIV test.

## 5.2 ASSOCIATION BETWEEN KNOWLEDGE, RISK PERCEPTION, ATTITUDES, SEXUAL BEHAVIORS AND HIV TESTING PRACTICES

### 5.2.1 Knowledge

The variables related to knowledge of HIV were observed for any significant difference in relation to risk perception, attitudes, sexual practices and HIV testing behavior.

In **Table 7**, the association between knowledge of correct condom use and condom use for risk reduction to HIV, there was a strong association between knowing how to use a condom correctly and knowledge of condoms as a way to reduce HIV infection ( $p= 0.006$ ).

**Table 7. Knowledge of condom use by knowledge condom use for risk reduction**

	Know that condoms use reduces HIV risk	
Know how to use condoms correctly	Yes	No
Yes	178	19
No	4	4
n=205		
Fisher exact 2-tailed $p=0.006$		

Testing the association between knowing how to use a condom and the behavior of condom use at last intercourse revealed that there was no significant association ( $\chi^2 = 0.18$ ;  $p=0.66$ ). While, the association between knowing how to use a condom and rate of condom use the study revealed no significant association ( $\chi^2 = 0.18$ ;  $p=0.66$ ).

**Table 8** below, shows that there was no association between knowing that being faithful to one partner reduces HIV risk and the behaviour of having multiple concurrent partners ( $\chi^2 = 0.43$ ;  $p=0.5$ ).

**Table 8. Knowledge of prevention through being faithful by having multiple concurrent partners in last 12 months**

	Having multiple concurrent partners in last 12 months	
	Yes	No
Knowledge of being faithful to one partner		
Yes	51	85
No	4	10
n=150		
Uncorrected chi-square=0.43		
2- tailed p=0.5		

### 5.2.2 Perceived risk

The variables related to HIV risk perception were observed for any significant differences between knowledge of HIV, attitudes, sexual practices and HIV testing behaviour.

In **Table 9** below, shows a strong association between the perceived risk of getting infected with HIV and the number of sexual partners in the past 12 months (behaviour) ( $\chi^2 = 7.59$ ;  $p=0.005$ ).

**Table 9. Perceived HIV risk by number of sexual partner in 12 months**

	Number of partners in last 12 months	
	Yes	No
Risk of getting infected		
Yes	28	47
No	60	103
n=178		
Uncorrected chi-square=7.59		
2-tailed p=0.005		

In **Table10** below, There was a strong association between knowing how to use condoms correctly and ever had sexual intercourse ( $p=0.001$ ).

**Table 10. Knowledge of condom use by ever had sex**

	Ever had sex	
Knowledge of condom use	Yes	No
Yes	12	170
No	7	16
n=205		
Fisher exact $p=0.001$		

There was no significant association between ability to discuss HIV with partner and condom use at last intercourse ( $\chi^2 = 0.56$ ;  $p=0.44$ ).

Testing the association between ability to discuss condoms with ones' partner and rate of condom use there was no significant association  $\chi^2 (2, N=186) = 3.62$ ;  $p=0.16$ . There was no significant association between being able to discuss HIV with one's partner and relationship status  $\chi^2 = (2, N=205) = 1.69$ ;  $p=0.42$ . Testing the association between knowing someone who is HIV positive and condoms at last intercourse there was no significant association ( $\chi^2 = 1.36$ ;  $p=0.24$ ).

There was no significant association between perceived risk of getting infected and relationship status  $\chi^2 (2, N=205) = 1.53$ ;  $p=0.46$ . Testing the association between knowing someone who is HIV positive and rate of condom use the study revealed no significant association  $\chi^2 (2, N=186) = 0.02$ ;  $p=0.98$ . There was no significant association between perceived risk of getting infected and condom use at last intercourse ( $\chi^2 = 0.16$ ;  $p=0.66$ ).

In **Table 11** below, there was no significant association between perceived risk of getting infected and having more than one sexual partner ( $\chi^2 = 2.58$ ;  $p=0.1$ ).

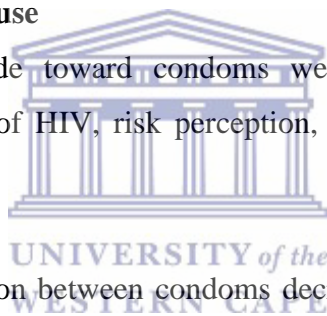
**Table 11. Perceived HIV risk by multiple concurrent partners**

Perceived HIV risk	Multiple concurrent partners	
	Sometimes	Never
Yes	31	48
No	30	77
n=186		
Uncorrected chi-square=2.58		
2-tailed p=0.1		

There was no significant association between perceived risk of getting infected and rate of condom use  $\chi^2 (2, N=186) = 3.76; p=0.15$ .

### 5.2.3 Attitudes toward condom use

The variables related to attitude toward condoms were observed for any significant differences between knowledge of HIV, risk perception, sexual practices and HIV testing behaviour.



In **Table 12** below, the association between condoms decrease pleasure and condom use at last intercourse the study revealed significant results  $\chi^2 (2, N=186) = 6.78; p=0.03$ .

**Table 12. Attitude that condoms decrease pleasure by condom use**

Condoms decrease pleasure	Condoms use at last intercourse	
	Yes	No
Disagree	56	42
Neutral	30	28
Agree	9	21
n=186		
Uncorrected Chi-square=6.78		
2-tailed p=0.03		
d.f.= 2		

After further regrouping of the categories and only taking disagree and agree into account the association between attitude that condoms decrease pleasure and condom use at last intercourse was significant  $\chi^2 (2, N=128) = 6.77; p=0.009$ .

There was no significant association between being able to discuss condoms with ones' partner and condoms at last intercourse  $\chi^2 (2, N = 178) =3.76; p=1.51$ . There was no significant association between stop using condoms with a steady partner and relationship status  $\chi^2 (4, N=205) = 4.06; p=0.39$ .

### 5.2.4 Sexual behaviour

The variables related to sexual behaviour were observed for differences between knowledge of HIV risk perception to HIV, attitudes toward condoms and HIV testing behaviour.

In **Table 13** below, the association between condom use at last intercourse and relationship status the study revealed a strong significant results  $\chi^2(2, N=186) = 9.55; p=0.008$ .

**Table 13. Relationship status by condom use**

Relationship status	Condoms use at last intercourse	
	Yes	No
Single	44	23
Long term	27	41
Short term	24	27
n=186		
Uncorrected chi-square=9.55		
2-tailed p=0.008		
d.f.= 2		

There was no significant association between rate of condom use and number of sexual partners in the last 12 months  $\chi^2 (2, N = 178) =3.76; p=1.519$ . Testing the association between condom use at sexual debut and condom use at last intercourse was not significant ( $\chi^2 = 0.45; p=0.5$ ).

### 5.2.5 Testing practices

HIV testing practices were observed for any associations between knowledge of HIV, risk perception to HIV, attitudes to condoms and sexual behavior practice. Testing the association between ever taking an HIV test and relationship status was not significant  $\chi^2(2, N = 205) = 2.38; p=0.30$ .

**Table 14** below shows that the association between ever taking an HIV test and number of partners in the last 12 months was not significant ( $\chi^2 = 3.07; p=0.07$ ).

**Table 14. Number of sex partner in 12 months by ever taken an HIV test**

Sex partners in last 12 months	Ever taken an HIV test	
	Yes	No
Relationship status		
Only one partner	69	19
More than one partner	60	30
n=178		
Uncorrected chi-square=3.07		
p=0.07		



The association between ever having had sexual intercourse with HIV testing practices was not significant ( $p=0.59$ ).

In **Table 15** below, the association between condom use at last intercourse and ever having taken an HIV test there was not significant ( $\chi^2 = 0.11; p=0.73$ ).

**Table 15. Condoms use by ever taken an HIV test**

	Ever taken an HIV test	
Condoms at last intercourse	Yes	No
Yes	71	24
No	66	25

n=186  
Uncorrected chi-square=0.11  
2-tailed p=0.73

**Results Summary for the Association between Knowledge, Perceived Risk, Attitudes, Behaviour and HIV Testing Practices**

**Knowledge**

There was a strong association between knowing how to use a condom correctly and knowing that condom use prevents or reduces risk of HIV infection ( $p= 0.006$ ). Testing the association between knowing how to use a condom and condom use at last intercourse revealed that there was no significant association ( $\chi^2 = 0.18$ ;  $p=0.66$ ). There was no association between knowing that being faithful to one partner reduces the HIV risk and having multiple concurrent partners ( $\chi^2 = 0.43$ ;  $p=0.5$ )

**Risk perception**

There was a strong association between the risk of getting infected with HIV and the number of sexual partners in the past 12 months ( $\chi^2 =7.59$ ;  $p=0.005$ ). There was a strong association between knowing how to use condoms correctly and ever had sexual intercourse ( $p=0.001$ ).

The association between ability to discuss condoms with ones' partner and rate of condom use there was not significant  $\chi^2 (2, N=186) = 3.62$ ;  $p=0.16$ . The association between knowing someone who is HIV positive and condoms at last intercourse there was not significant n ( $\chi^2 = 1.36$ ;  $p=0.24$ ). There was no significant association between perceived risk of getting infected and condom use at last intercourse ( $\chi^2 =0.16$ ;  $p=0.66$ ). There was no significant association between perceived risk of getting infected and having more than one



sexual partner ( $\chi^2 = 2.58$ ;  $p=0.1$ ). There was no significant association between perceived risk of getting infected and rate of condom use  $\chi^2 (2, N=186) = 3.76$ ;  $p=0.15$ .

### **Attitudes toward condom use**

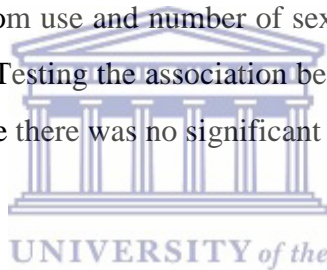
The association between condoms decrease pleasure and condom use at last intercourse the study revealed significant results ( $\chi^2 (2, N=186) = 6.78$ ;  $p=0.03$ ). After further regrouping of the categories by only taking “disagree” and “agree” into account, the association between condoms decrease pleasure and condom use at last intercourse was even more significant  $\chi^2 (2, N=128) = 6.77$ ;  $p=0.009$ .

### **Sexual behavior**

The association between condom use at last intercourse and relationship status the study revealed a strong significant results  $\chi^2(2, N=186) = 9.55$ ;  $p=0.008$ ). There was no significant association between rate of condom use and number of sexual partners in the last 12 months  $\chi^2 (2, N = 178) = 3.76$ ;  $p=1.519$ . Testing the association between condom use at sexual debut and condom use at last intercourse there was no significant association ( $\chi^2 = 0.45$ ;  $p=0.5$ ).

### **Testing practices**

Testing the association between ever taking an HIV test and relationship status there was no significant association  $\chi^2(2, N = 205) = 2.38$ ;  $p=0.30$ ). While the association between ever taking an HIV test and number of partners in the last 12 months there was no significant association, though the p-value was close to the threshold of 0.05 ( $\chi^2 = 3.07$ ;  $p=0.07$ ). For the association between condom use at last intercourse and ever having taken and HIV test there was no significant association ( $\chi^2 = 0.11$ ;  $p=0.73$ ).



## **CHAPTER 6**

### **DISCUSSION**

For this chapter the discussion will be divided into two sections; 1) the discussion pertaining to the association between gender differences and the interaction between questionnaire variables, 2) the associations between the knowledge, risk perception, attitudes and behaviour. This will further be discussed and explained in relation to the Theory of Planned Behaviour.

#### **6.1 GENDER DIFFERENCE BETWEEN VARIABLES**

##### **6.1.1. Demographic Characteristics**

The study captured students at Rosebank College between the ages of 18-24 years during an HIV testing campaign. The proportion of females (68%) made up two-thirds of the participants and males (32%) made up one-third of the participants. The proportion of females to males in the study was consistent with other literature where generally more females than males presented at an HIV testing campaign or have ever been tested for HIV. These findings are further supported Pettifor, *et al.* (2008) in his study, “ever been tested for HIV” 14% of males and 24.7% of females have tested ( $p < 0.001$ ). This could be due to several possible factors such as the fact that women may be more concerned about health matters than that of males.

In terms of race the majority of the students were African (98%) which is consistent with the racial makeup of the students registered at Rosebank College, Pretoria.

##### **6.1.2. Knowledge, Risk Perception, Attitude and Gender**

Overall the students’ knowledge of HIV was consistently high, above 80%. In terms of risk perception, 41% of students considered themselves at risk of contracting HIV. According to the literature the drivers of the HIV epidemic include; low perception of risk, multiple concurrent sexual partnerships, intergenerational sex, low condom use, excessive alcohol use (USAID, 2010).

The majority (78.5%) of students indicated that they could discuss HIV with their partner. Additionally, more females (81.4%) than males (72.3%) indicated that they could discuss HIV with their partner however, the gender difference was not statistically significant ( $p=0.13$ ). It could be hypothesised that the lack of significance was due to a lack of statistical power. Accurate knowledge of HIV and HIV transmission helps individuals make informed decisions about their sexual behaviours for prevention (Medical Research Council, 2008).

The majority (88.8%) of students indicated that they knew how to use a condom correctly. This was compared by gender to determine any significant difference especially for the 11.2% who indicated that they did not know how to use a condom correctly. There was a significant difference by gender in knowing how to use condoms correctly ( $p=0.001$ ) more males indicated that they knew how to use a correctly than females. This result may be explained in terms of sexual activity and experience as a higher percentage of males (96.9%) in the sample were sexually active than that of females (87.9%). Therefore, one can assume that those who did not know how to use a condom correctly were not sexually active. Despite this assumption, condoms are used to prevent HIV infection through sexual intercourse, therefore both males and females should have been sensitised to condoms in some way. Aside from the Campus Wellness Programme, the majority students at some point in their lives were exposed to mass media campaigns such as LoveLife, Khomanani, and Soul City or Life Skill education in schools. The HSRC, (2008) survey reported that there has been an increase in exposure to one or more HIV&AIDS communications programmes with 90.2% of the youth aged between 15-24 years being reached such programmes. Education played a protective factor in HIV prevention (Jukes, *et al.* (2008). Therefore those who have not had sexual intercourse should know how to use a condom theoretically, as a result of these campaigns, despite not being sexually active, even if they consider themselves not knowing “in practice”.

When assessing whether students knew someone who was HIV positive 64.9% of the students indicated that they did so. More females (68%) indicated that they knew someone who was HIV positive than that of males (58%). When determining the difference by gender there was no significant difference ( $p=0.18$ ). It is hypothesised that this result was obtained due to a lack of statistical power. Indeed, a significant gender-difference was expected, since women are the primary caregivers. Therefore if a relative had AIDS and needed care; it is likely that the females in that household would have that responsibility. The HESA (2008-

2009) study showed that between 5-15% of students and staff had missed classes or work to attend the funeral of a person who died of AIDS- related illnesses. These findings are indicative of the extent to which people know someone who is HIV positive, but unfortunately the study did not assess gender differences for this variable.

In terms of attitudes toward condom use, overall most students displayed a positive attitude toward condoms. Many factors may have contributed to this outcome: condom promotion is part of most HIV prevention Programmes; it is readily available; and is commonly used to prevent HIV. According to the theory of planned behavior (TPB), attitudes toward the behaviour, subjective normative beliefs (someone the individual holds in high esteem e.g. peer group) and perceived behavioural control (e.g. ability to use a condom correctly) can accurately predict intention to perform a particular behaviour (e.g. condom use) (Ajzen, 1991). Furthermore, the study by Heeren, (2007) found that intention of condom use was significantly predicted by a positive condom attitude, subjective norm, self-efficacy and attending university in South Africa.

For the question on being faithful to one partner reduces the risk of HIV infection the majority (72.2%) answered correctly. When comparing the association to gender, 87.7% of males and 65% of females answered correctly. This indicates that males in the study are aware that having multiple concurrent sexual partners increases the risk of HIV infection; however this is not reflected in their behaviours as significantly more males (54%) than females (22%) reported having multiple concurrent partners. The qualitative data in the HESA (2008/2009) study highlighted the challenges of students residing away from home are faced with. Some of the general findings showed that among males it was acceptable for males to have more than one partner at a time. The theory of planned behaviour suggests that behavioural intentions are linked to ones' attitude to performing the behaviour, social norms and perceived behavioural control (Ajzen&Fishbein, 1975). It could be explained that multiple concurrent partners is positively associated with societal norms (it is more acceptable for males to have multiple partners) and self-efficacy and self-esteem. So it will compete with knowledge on HIV risk reduction and could possibly lower the risk perception of such behaviour.

### 6.1.3. Sexual Practices and Gender

In the association between ever had sexual intercourse and gender, significantly more females (87.9%) never had sex compared to males (96.9%). The mean age for sexual debut for females was 17.6 years while the mean age for sexual debut for males was 15.7 years. There was a significant gender difference for sexual debut ( $p=0.02$ ). This means that overall significantly more males in the sample have their sexual debut earlier than that of females. In a study by Sayles, *et al.* (2006) results supported these findings as 46% of 16 year old males and 20% of 15.5 year old females were sexually active. While 63.8% of the males and 78.7% of the females reported that they used a condom at their sexual debut.

The Medical Research Council (2008) reported that, age of sexual debut, multiple sexual partnerships, unprotected sex, and intergenerational sex are risk factors for HIV infection. An earlier sexual debut for males may be as a result of sexual experimentation, peer pressure or proving manhood. Sexual debut is an important factor in the vulnerability of youth to HIV infection (Medical Research Council, 2008). In this study the majority (70.4%) of students used a condom at their sexual debut. When compared to gender significantly more females (77.2%) used a condom than males (57.1%). Similar findings were reported by Peltzer, *et al.* (2005) where more females (78.7%) than males (63.8%) used a condom at their sexual debut. According to the Medical Research Council, (2008) there is a maturity level that accompanies delayed sexual debut as seen among females, increased maturity could affect better decision making and therefore increased like likelihood to use a condom.

Half of the students (51%) used a condom at last intercourse. When compared with gender more males (58.7%) than females (47.2%) used a condom at last intercourse. Condom use at first intercourse for males was comparable however, for females, condom use had significantly decreased by 30%. The UNGASS, (2009) and the HSRC, (2008) survey showed an overall increase in condom use, with the 15-24 year olds displaying the highest percentage of condom use with 73.1% for females and 87.4% for males reported at last intercourse. The results in this study shows a much lower percentage of condom use when compared with those in the national reports. Overall females in this study as well as the national surveys reported lower condom use than their male counterparts. A possible explanation could be that the decrease of condom use amongst females results in higher HIV infection among them. They are perhaps faithful to their partners, explaining the decrease in condom use, but they

do not know if their partners might be engaged in a concurrent relationship, or, even if they suspect so, they cannot negotiate condom use since it might be viewed as a sign of mistrust. This is supported by findings in the National Youth Survey, (2005) where results indicated that among female participants (n=3890) factors related to low self-efficacy included; not using condoms during sexual debut (OR=0.61, 95% CI [0.50 -0.76]), a history of unwanted sex (OR=0.66; 95% CI [0.51- 0.86]), and the belief that condom use implies distrust in one's partner (OR= 0.57; CI [0.51-0.86]). Also, females are biologically more at risk of HIV acquisition compared to males. South Africa women have a significantly higher HIV prevalence rate overall when compared to men, and this trend is also reflected in the HIV prevalence rate of the youth (UNAIDS, 2010).

After regrouping the variable number of sexual partners over the past 12 months into 2 categories: those who had one partner and those who had two or more partners in the past 12 months; more males than females had two or more sexual partners during the past 12 months (74.6% vs. 35% respectively [ $p<0.001$ ]). A similar pattern emerged when comparing the gender differences with multiple concurrent partners. Significantly more males than females had multiple concurrent partners (54% vs.22% respectively [ $p<0.001$ ]). In the 15-24 year age group 30.8% of males and 6% of females reported having more than one sexual partner in the past 12 months. Multiple concurrent partnerships were approximately 5 times more common in males than females (Medical Research Council, 2008). The qualitative data in the HESA (2008-2009) study highlighted the challenges of students residing away from home are faced with. Some of the general findings showed that among males it was acceptable for males to have more than one partner at a time. The qualitative data showed that partners from 'home' tended to be ongoing over periods of time while the student would also have a relationship at university. These qualitative findings could explain the reason behind the quantitative findings in this study

The association between sexual intercourse under the excessive influence of alcohol and gender showed that more males than females engage in sexual intercourse under the influence of excessive alcohol (61% vs.28% respectively [ $p<0.001$ ]). Risky sex behaviour under excessive influence of alcohol was measured as being 5 or more drinks for males and 4 or more drinks for females. In the South African National HIV Prevalence, Incidence, Behaviour and Communication survey, (2008) found that high risk drinkers were identified as part of the most at risk population for HIV and were associated with other risky sex

behaviours. High risk drinkers had the highest level of multiple concurrent partners (Medical Research Council, 2008).

With regards to who decides on condom use, after regrouping the categories there was a significant difference between who decides on condom use. More males indicated that they decided on condom use than that of females. However, more women indicated that both partners decide on condom use (49.2% vs. 74% [ $p < 0.01$ ]). An explanation for this could be a result of intergenerational sex where for example a female may not feel that she is able to negotiate condoms with a much older partner or because it may be perceived as an indication of distrust in her partner.

#### **6.1.4. HIV Testing Practices and Gender**

The majority (73.7%) of students had ever tested for HIV. When compared by gender the results were not significant as 77.1% of females and 66.2% of males have even taken an HIV test. The overall result of high HIV testing behaviour may be explained by the accessibility HIV testing sites. Global AIDS response progress report (2012), indicated that the national HIV testing campaign has resulted in significantly increasing the number of people coming forward for HIV Counselling and Testing. The possible increased percentage of females testing could be a result of recruitment bias as more females participated in this study. Another possible explanation is that males, particularly those who practice risky sex behaviours are not ready to be tested for HIV. In the study by Peltzer, *et al.* (2004) the main reasons for not being tested for HIV were: (1) “It’s unlikely that I have been exposed to HIV” (32.7%); (2) “Did not want to think about HIV or about being HIV positive” (14.6%); (3) “Was afraid to find out if he or she was HIV positive” (10.9%).

## **6.2 KNOWLEDGE, RISK PERCEPTION, ATTITUDES AND BEHAVIOUR AND TESTINGIN RELATION TO THEORIES**

The findings of the study discuss and explained according to the two theories; the theory of reasoned action and the theory of planned behaviour. The theories were applicable to only some of the findings.

## Behaviour Change Theories

**Theory of reasoned action:** The theory of reasoned action hypothesises that one's intentions influences actual behaviour (e.g. likelihood to use condoms or likelihood to get tested for HIV). The theory suggests that one's intentions are linked to ones' attitude to performing the behaviour (Ajzen&Fishbein, 1975).

**Theory of planned behaviour:** The theory of planned behaviour is an extension of the theory of reasoned action. However, an additional variable (perceived behavioural control) is factored into this theory (e.g. ability to correctly use a condom). 'behavioural control' represents the difficulty or ease of performing particular health behaviour (Ajzen&Fishbein, 1975).

In summary, the theory of planned behavior is an extension of the theory of reasoned action as the original model had limitations in predicting the behaviour of individuals who have complete voluntary control over a particular behaviour (Ajzen, 1991).

*Figure 1:*

### *Theory of Planned Behaviour and All Variables Interacting with Condom Use*

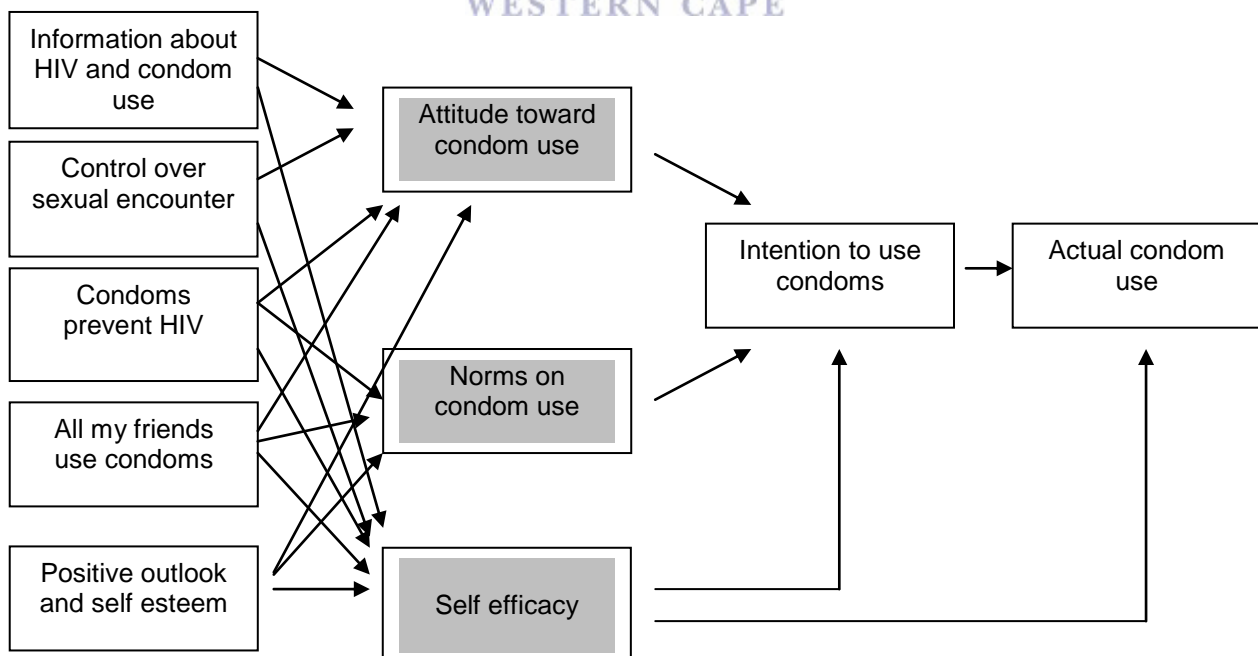
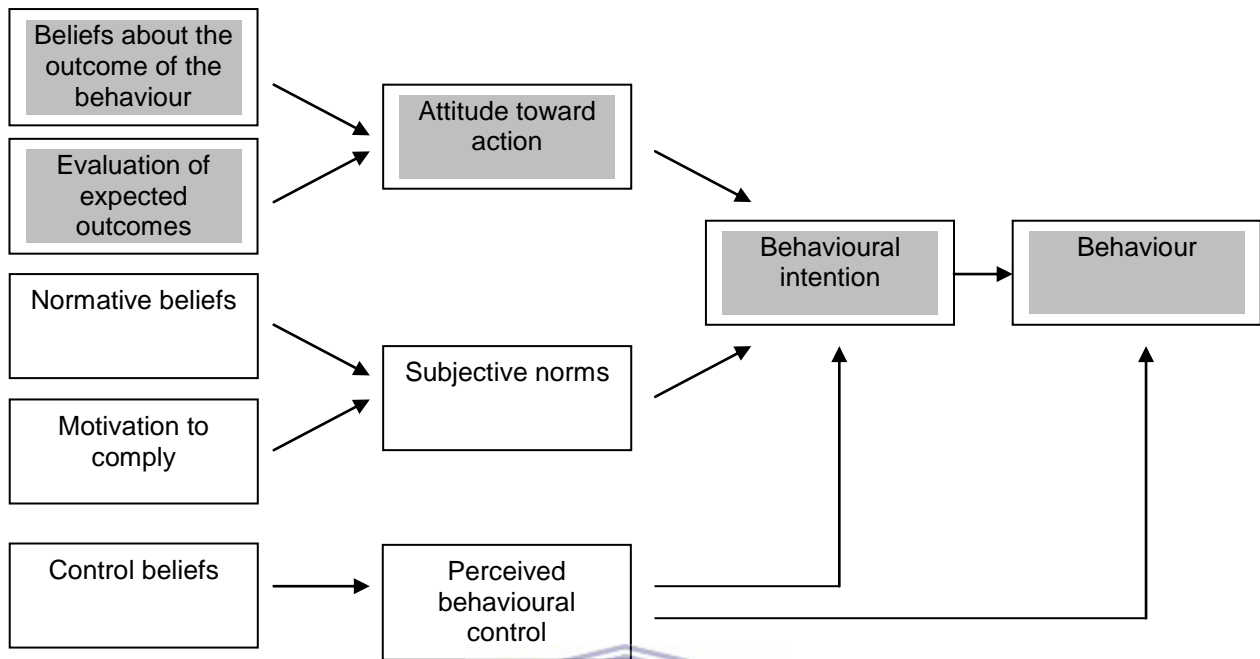


Figure 1: shows the several possible pathways for the TPB and the interaction of the variables



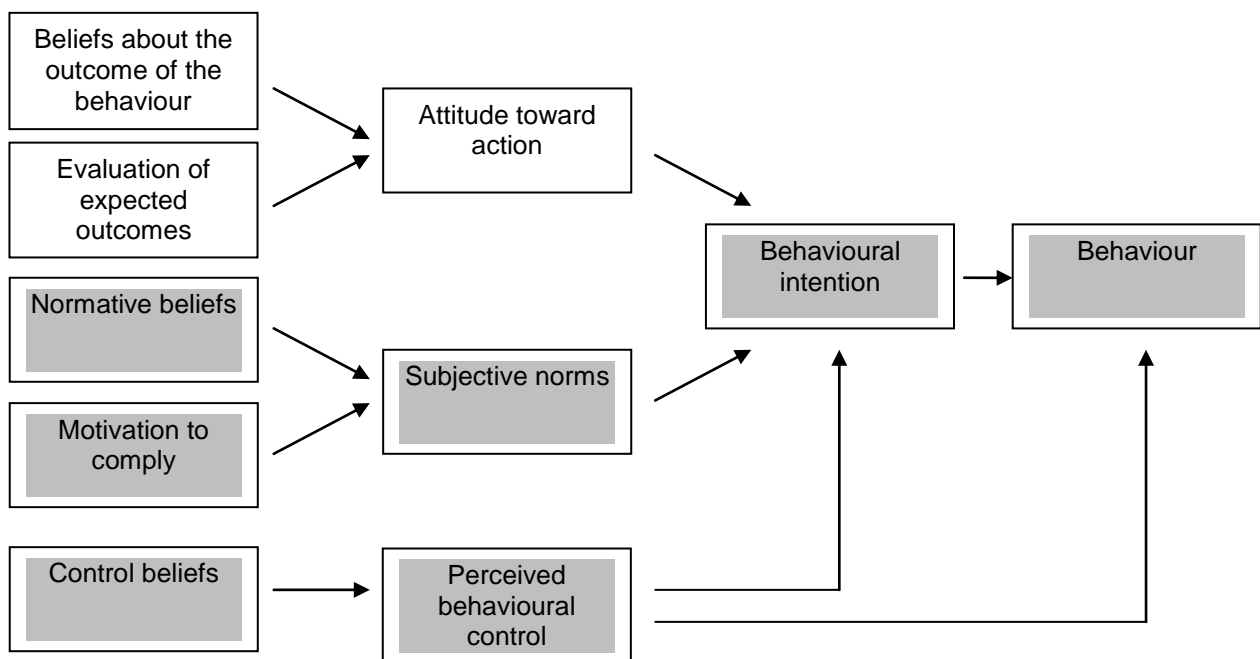
**Figure 2. Theory of Planned Behaviour and explanation of condom use**



*Example of interaction pathway on condom use for females*



**Figure 3. Theory of Planned Behaviour explanation on condom use**



*Example of interaction pathway on condom use for males*

The study by Munoz-Silva, *et al.* (2007) showed that for prediction of intention the predominant variable among females was attitude whereas the predominant variable for males was subjective norm and self-efficacy. Figure 2 & 3 above, shows a graphic representation of these findings and shows the pathway to behavioural intentions for males and female as found in the study by Munoz-Silva, *et al.* (2007).

## **Interaction of Survey Variables with the Theory**

### **6.2.1 Knowledge, Risk Perception and Attitude**

The association between knowledge of correct condom use and knowledge that HIV risk could be prevented through condom use was significant ( $p=0.006$ ). The majority (95%) of the students indicated that they knew how to use condoms correctly and knew that it was within their control to prevent HIV. The theory of planned behaviour explains that individuals' control beliefs would affect intentions to perform the behaviour. The students' who share this belief and have the ability to prevent HIV through condom use are more likely to use condoms (figure 1). Alternatively knowledge of correct condom use can be obtained through actual condom use therefore hypothesising that those who are sexually experienced would have knowledge of condom use. However, since there was a significant association between the two variables it could be interpreted that knowledge on condom use does not necessarily affect the actual ability to prevent or reduce HIV through condom use. In the study by Peltzer, *et al.* (2005) has similar finding where condom use was not associated with knowledge of HIV: 93.4% of students were aware that condom use was an essential component in the prevention of HIV but the rate of condom use among sexually active students was only 35.7%. Perhaps this could be explained in terms of condom negotiation. Where students know how to correctly use a condom however their ability to implement could be affected by their ability to negotiate condoms. So there are probably gender differences.

The association between knowing how to use a condom correctly and condoms at last intercourse was significant ( $p=0.006$ ). Therefore knowledge on condom use alone does not lead to condom use but a number of supporting factors such as attitude toward condom use coupled with normative beliefs leads to actual condom use (figure 1). In a study by Herren, *et al.* (2007) self efficacy toward condom use predicted intentions to use a condom. Last

intercourse is an indicator of current condom use and self efficacy or perceived behavioural control is linked to knowing how to use a condom correctly. The theory of planned behaviour therefore predicts that those who have knowledge of correct condom use would in turn have increased perceived behavioural control in performing that behaviour and is thus likely to actually perform that behaviour should there be no social barriers and should they have a positive attitude toward condom use (Ajzen, 1991). Therefore good knowledge on condom use would be associated with a high rate of condom use should the other two theoretical variables normative beliefs (social norms supporting the behaviour) and attitude (positive attitude toward condom use) support the behaviour. Thus, knowledge alone does not have an effect on condom use without those two variables being present. Some of the studies in the literature have similar results where knowledge of condom use had no effect on actual condom use. In the study by Bryan, *et al.* (2006) despite the increased knowledge of HIV and the risks of unprotected sex, South African youth frequently does not report using condoms.

The association between knowledge that being faithful to one partner reduces the risk of contracting HIV and the actual practice of monogamy was not significant. The most common mode of transmission is through heterosexual intercourse. Unprotected sexual intercourse with multiple partners significantly increases the risk of HIV transmission (Medical Research Council, 2008). This indicates that other factors are affecting multiple concurrent partnerships. Despite the participants knowing that having multiple partners increases one's risk to HIV, their behaviour is not affected. In terms of the theory; a behaviour is most likely to be performed if the individual had a strong intention to perform that behaviour, has the necessary skills or ability to perform the behaviour, and if there are no environmental constraints or barrier to hinder the performance of that behaviour (Fishbein, 2000). Beadnell, *et al.* (2008) suggested that males with more traditional attitudes toward masculinity, reported more sexual partners, a less intimate relationship with their current partners, and a greater belief that relationships between men and women are antagonistic.

The association between risk perception to HIV and the number of sexual partners in the last 12 months was not significant. According to Ajzen, (1991) intentions to perform a variety of behaviours can be predicted with high accuracy from attitudes toward the behaviour, subjective normative beliefs and perceived behavioural control. Results showed that 47% of the students indicated that they were in a monogamous sexual relationship whereas 43% indicated that they had multiple concurrent partnerships. Those who had multiple partners did

not see themselves as being at greater risk to HIV. In the Department of Health's UNGASS report (2009), consistent condom use was increased among those who had multiple concurrent partners. This result may be explained as those who have multiples partners are practicing "safer sex".

Risk perception to HIV was also measured against condoms at last intercourse however this association was not significant. In several studies of HIV-risk behaviours, perceived risk of infection is considered an essential precondition for changing behaviour (Beadnell, *et al.* 2008). Therefore those with a low perception of risk are less likely to change their behaviour.

There was a strong association between knowing how to use condoms correctly and ever had sexual intercourse ( $p=0.001$ ). This could indicate that knowing how to use a condom is associated with sexual intercourse and vice versa. All students within the sample would have been exposed to some form of HIV prevention campaign (e.g. campus HIV prevention programme, school based Peer Education Programmes, mass media HIV prevention campaigns etc.). The HSRC, (2008) survey reported that there has been an increase in exposure to one or more HIV&AIDS communications programmes with 90.2% of the youth aged between 15-24 years being reached such programmes. Thus it is possible that those students who never had sexual intercourse may know theoretically how to correctly use a condom.

The ability to discussion condoms with ones' partner was measured against several variables to determine if there were any significant associations. For the association between being able to discuss HIV with ones' partner and condom use at last intercourse there was no significance ( $p=0.44$ ). The majority (80%) of the students felt that they were able to discuss HIV with their partner. Furthermore there was no association between discussing condoms with partner and general rate of condom use.

There was also no significant association between being able to discuss condoms with ones' partner and relationship status. This indicates that the ability to discuss HIV with ones' partner had no effect on condom use and whether or not the students were in a relationship. Hendriksen, *et al.* (2007) found that condom use at sexual debut and being able to discuss condoms with ones' partner were significantly associated with current condom use ( $p<0.001$ ). Discussing condoms with ones' partner was associated to higher condom self-efficacy

( $p < 0.001$ ). In application of the theory the belief that one could negotiate condoms use could lead to the likelihood that a condom would be used during sexual intercourse. Albarracin, *et al.* (2001) reported that the application of the theories of reasoned action and planned behaviour to be successful predictors of condom use. Therefore, individuals are more likely to use condoms if they have formed the corresponding intentions.

There was no significant association between the variables knowing someone who is infected with HIV and condom use at last intercourse ( $p = 0.98$ ). Despite these findings the assumption could be that knowing someone infected with HIV could be related to increased awareness and knowledge of HIV. Increased knowledge and awareness would in turn be related to increased likelihood of condom use. In the study by Norman & Gebre (2005), persons who had attended an HIV education forum and those who reported knowing someone with HIV were more likely to report having had a previous HIV test (OR=1.53; 95% CI [1.07-2.19]; and OR=1.39; 95% CI [1.02-1.90] respectively) which is indicative of increased HIV awareness.

Risk of getting infected with HIV and the number of sexual partners in the past 12 months was significantly associated ( $p = 0.005$ ). This was observed as those who had multiple concurrent partners also perceive themselves as not being at risk of contracting HIV. The opposite was reflected in those who did not have multiple concurrent partners and saw themselves as being at risk of HIV. Possible explanations for this could be a result of intergenerational sex or the belief that one is not affected by HIV. When the theory is applied, an increased risk of getting infected with HIV would be related to risky sex behaviours and a lower risk of contracting HIV is related to safer sex practices. According to Ajzen, (1991) intentions to perform a variety of behaviours can be predicted with high accuracy from attitudes toward the behaviour, subjective normative beliefs and perceived behavioural control.

The association between condoms decrease pleasure and condom use at last intercourse the study revealed significant results ( $p = 0.03$ ). In terms of attitudes toward condom use there was a significant association between the attitude that condoms decreases pleasure and condom use at last intercourse. It is likely that majority of those who agreed to the statement that condoms decrease pleasure were also consistent with not using a condom during their last sexual intercourse. One third of respondents indicated that they were neutral about whether or not condom decreases pleasure and were evenly distributed in their response to practicing

condom use in the same category. In relation to the theory of planned behavior, respondents might have selected neutral because they have not formed a strong enough opinion on whether or not condoms decreased pleasure. The theory of planned behaviour predicts that, behavioural intention is directly dependent on attitude, subjective norms and PBC whereas for theory of reasoned action intention is dependent on only attitude and subjective norms (Munoz-Silva, *et al.* 2007). Therefore those students who have a negative attitude toward condoms are likely to not practice safe sex and vice versa, as a positive attitude toward condom use would translate into condom use. Among South African University students condom use and intention of condom use was significantly predicted by a positive condom attitude, subjective norm, self-efficacy (Heeren, *et al.* (2007).

### **6.2.2 Sexual Behaviours**

In the association between condom use at last intercourse and relationship status the study revealed a strong significant result ( $p=0.008$ ). The HESA (2008/2009) study showed that, condoms were most often used in casual, once off, and new sexual relationships. The study also found that in terms of gender differences and condom use, females who carry condoms or initiated condom use were branded as being promiscuous or HIV positive. Many females described strong resistance to such stereotyping. The assumption may be that majority of respondent who were single used a condom while the majority of those in long term relationships were less likely to use a condom. For those who were in short term relationships (for less than 12 months) condom use was not consistent in terms of those who did not practice risky sex behaviours at last intercourse. Those who were in a relationship were less likely to use a condom, this could be a result of a possible comfort zone or decreased risk perception as they perceive that the risks are lower because they are in a steady relationship. In term of relating this to the theory the students who are in a relationships believe that they will not contract HIV possibly because their partner cares about them (lowered risk perception) or that having unprotected sex proves their trust in each other, this leading to the attitude that it is okay to have unprotected sex which in turn leads to their behaviour of not practicing safe sex. These findings are further supported by the report on the Global AIDS response progress, (2012) which found that young single women and young people reporting multiple sexual partners are most likely to report condom use.

Testing the association between condom use at sexual debut and condom use at last intercourse was not significantly associated ( $p=0.5$ ). In the association between condom use at sexual debut and condom use at last intercourse there was no significance. This indicates that the current sexual behaviours are not related on past ones. Ajzen, (1991) suggests that as long as the factors remain unchanged, the behaviour would also remain stable over time. Thus the author suggests that past behaviour could predict future behaviour if all those conditions are met. The author further indicates that although past behaviour may influence later behaviour, it cannot be considered a causal factor.

### 6.2.3 Testing Practices

According to the UNGASS report (2009) one of the primary objectives of the NSP is to create a social environment that encourages individuals to know their status through voluntary HIV counselling and testing.

The association between ever taken an HIV test and relationship status was not significantly associated ( $p=0.30$ ). This indicates that those who are in a relationship are also not testing for HIV. As part of the HESA (2008/2009) report, recommendations suggested that HIV prevention needs to depart from simple awareness campaigns, condom distribution and HCT campaigns and expand on the more specific needs of the students. Furthermore, building on the message of “knowing your status” student should be encouraged to know their partners status.

There was no significant association between ever taking an HIV test and number of partners in the last 12 months ( $p=0.07$ ). This indicates that students are going for HIV testing whether or not they are sexually active. Although taking percentages into account, 73% of students in the study who are sexually active have at some point gone for an HIV test. When applying the theory, HIV testing might be seen as a motivation to comply especially as a result of the national “Know your Status”, campaign where knowing one’s HIV status would lead to the behaviour to test as it’s “the right thing to do”, or because HIV testing is accessible which would lead to the actual testing. However if the students fear testing this would lead to a negative belief about the outcome test, which in turn would affect their attitude to test and their testing behaviour. Obermeyer&Osborn, (2007) indicated that “Often those less at risk tends to be more interested in knowing their status”. The study by Norman&Gebre, (2005)

revealed that HIV Testing was not associated with condom use or number of sex partners which support the findings of this study.

The association between condom use at last intercourse and ever tested for HIV was not significant ( $p=0.73$ ). Approximately half of those who have used condom at their last intercourse have also tested for HIV. The literature suggests that going for an HIV test has no bearing on HIV prevention (HESA, 2008/2009).





## CHAPTER 7

### 7.1 CONCLUSION AND RECOMMENDATIONS

The study revealed that knowledge of correct condom use did not necessarily translate to safe sex behavioural practices particularly with regards to condom use as explained by the theories of reasoned action and planned behaviour. The study found that the association between knowing how to use a condom correctly and condoms at last intercourse was significant whereas knowledge of condom use was high yet current condom use was low. Therefore knowledge on condom use alone does not lead to condom use but a number of supporting factors such as individual and social factors leads to actual condom use. Some of the studies in the literature have similar results where knowledge of condom use had no effect on actual condom use. In the study by Bryan, *et al.* (2006) despite the increased knowledge of HIV and the risks of unprotected sex, South African youth frequently does not report using condoms.

Furthermore, those who had multiple concurrent partners did not perceive that they were at risk of HIV. In the Department of Health's UNGASS report (2009), consistent condom use was increased among those who had multiple concurrent partners. This result may be explained as those who have multiple partners are practicing "safer sex" (consistent condom use).

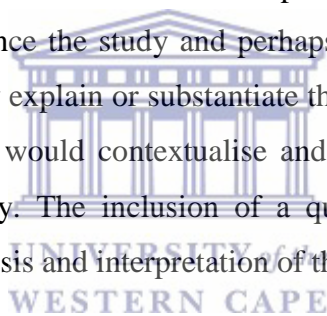
The campus HIV&AIDS Programme should tailor its programme to address the specific HIV related risk highlighted in the study. Some of the recommendations included in the HESA (2008-2009) suggested that HIV Programme needs to be customised towards specific needs rather than adopt a "one size fits all" approach. Hence the Campus Wellness Programme may be tailored to meet the specific needs of the students and address the gaps identified by this study e.g. build on the Peer Education Programme by including positive prevention where people who are living with HIV (e.g. HIV positive students/staff/community members) should be actively involved in the prevention campaigns. The HESA (2008/2009) report, suggested that HIV prevention needs to depart from simple awareness campaigns, condom distribution and HCT campaigns and expand on the more specific needs of the students.

Behavioural interventions are effective in reducing HIV risk, with the most effective interventions being those directed at specific behaviour changes (Fishbein, 2000). Therefore

since students at Rosebank College are still at risk of infection the Campus Wellness Programme can customize their programme to fit the risk profile of the students identified by this study.

Knowing ones' HIV status through HIV Counselling and Testing is important in the prevention, spread and treatment of HIV. It is commendable that all the participants in the study, "the leaders of tomorrow", took responsibility and tested. However since HIV testing is well received by the students at the College, the students should be encouraged to know their partners status as well. The HESA (2008/2009) report, suggested programmes should build on the message of "knowing your status" where students should be encouraged to know their partners status as well.

Despite the use of the theories of reasoned action and planned behaviour there is a need for mixed methods research to enhance the study and perhaps fill in some of the gaps that the two theories could not adequately explain or substantiate the findings. With a mixed methods study the qualitative component would contextualise and deepen the understanding of the results of the quantitative survey. The inclusion of a qualitative component would have allowed for deeper levels of analysis and interpretation of the quantitative findings.



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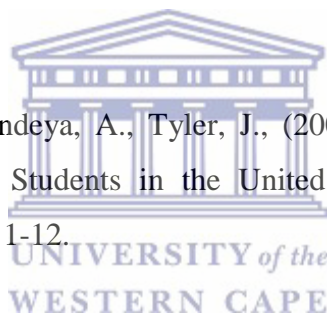
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*Appendix A. Participant Information Sheet*



**UNIVERSITY OF THE WESTERN CAPE**  
**School of Public Health**

Private Bag X17 • **BELLVILLE** • 7535 • South Africa  
Tel: 021- 959 2809, Fax: 021- 959 2872



Dear student

This study seeks to explore college students' risk perception to HIV, sexual behavioural practices and HIV testing which will be measured through a voluntary, self-administered questionnaire. I am a student at the University of the Western Cape conducting this research in order to obtain my master's degree in Public Health.

I would like to request your informed consent as a participant of this study. Please note that your refusal to participate in the study or withdrawal from the research at any stage will not adversely affect you in anyway.

Your identity will be kept anonymous and your participation in this research is entirely voluntary. To assist in maintaining your anonymity you will be required to not write your name on the questionnaire and your responses will be kept confidential. Aside from me the only other person who will have access your confidential information will be my supervisor.

If at a later stage you are interested in the outcome of the study you may contact me on the details provided below after November 2011:

**Contact details of researcher:**

Carlyn Steenkamp

**UWC student no.:2115814**

**Cell:** 073 921 76 49

**Email:** [carlyn\\_steenkamp@yahoo.com](mailto:carlyn_steenkamp@yahoo.com)

**Contact details of supervisor**

Dr Johann Cailhol

**School of Public Health**

**Office:** 021 959 9389

**Email:** [jcailhol@uwc.ac.za](mailto:jcailhol@uwc.ac.za)



## **Appendix B. Informed Consent Sheet**

### **RECORD OF INFORMED CONSENT TO CONDUCT A SURVEY**

Date:

Researcher: Carlyn Steenkamp

Tel: 073 921 7649 Fax: 0866 520 411

E-mail: carlyn\_steenkamp@yahoo.com

Institution: University of the Western Cape

Participant number:

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Thank you for agreeing to participate in the study. What follows is an explanation of the purpose and process of this research. You are asked to give your consent to me verbally and to sign this participant consent form.

#### **1. Information about the researcher**

I am Carlyn Steenkamp, a student at the SOPH, University of the Western Cape. As part of my Masters in Public Health, I am required to conduct research which will form part of my thesis in order to graduate. I will be focusing on risk perception to HIV and sexual behavioural practices. I am accountable to Dr Johann Cailhol who is contactable at 021 959 9389 or SOPH Fax: 021 959 2872 or by e-mail at jcaihol@uwc.ac.za

#### **2. Purpose of the research and content of the questionnaire**

This study seeks to explore students' risk perception to HIV, sex behaviour and HIV testing practices which will be measured through a voluntary, self-administered questionnaire.

The questionnaire measures your risk perception to HIV and questions will be asked about your sexual behavioural practices. The questionnaire will take approximately 20 minutes to complete. Your answers to the questionnaire will remain completely anonymous and confidential.

#### **3. Anonymity of contributors**

At all times, I will keep the source of the information confidential. I shall keep any other records of your participation locked away at all times, and destroy them after the data has been collected.

#### **4. Things that may affect your willingness to participate**

The survey contains questions of sensitive nature and requires you to answer as truthfully as possible. Your participation in this research is voluntary and you may withdraw at any time. If there is any question that you would prefer not to answer, please feel free to say so or to tick the box "don't want to answer". It is important that you answer all the questions but there will be no negative consequences if you would prefer not to answer a question.

#### **5. Agreement between the participant and the researcher**

The participant and the researcher thus agree to the stipulations and the participant gives his/her consent to partake in this study by signing below. The researcher shall keep the answers to the questionnaire confidential. The contents will be used for the purposes referred to above, but may be used for published or unpublished research at a later stage without further consent. Any change from this agreement will be renegotiated with you.

Participant's signature:.....

Researcher's signature:.....

Date:.....

Place:.....



*Appendix C. Survey*

**For office use only:  
Dear Student**

Participant Number	
--------------------	--

Thank you for participating in this study. Your answers to this questionnaire will be kept strictly **confidential** and are completely **anonymous**.

Your participation in this research is entirely voluntary and you can withdraw from the study at any time without any penalties.

**Instructions:**

Please respond accurately to all the questions below. Where there are options select the appropriate response by marking with a cross (x) in the box of your choice.

Please note that any question making reference to sex refers to oral, vaginal and anal sex unless otherwise specified. Furthermore, any question making reference to condoms refers to both male and female condoms.

**1. General Information**



1.1 Age: 

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1.2 Gender:

Female	
Male	

1.3 Ethnicity:

African	
Coloured	
White	
Indian/Asian	
Other	

1.4 Current relationship status:

Single & not in a relationship	
Married	
Relationship of 12 months or more	
Relationship less than 12 months	

1.5 Sexual preference:

Heterosexual	
Bisexual	
Homosexual	

2.3 To reduce your chances of becoming infected with HIV you must be faithful to one partner?

Yes	
No	
Don't know	

2.4 Does having a sexually transmitted infection (STI) increase your risk of contracting HIV?

Yes	
No	
Don't know	

2.5 Do you think you can contract HIV from unprotected oral sex?

Yes	
No	
Don't know	

2.6 Can you become infected by having unprotected sex with a person who is infected with HIV?

Yes	
No	
Don't know	

2.7 Can you identify someone with HIV by how they look?

Yes	
No	
Don't know	

**2. Knowledge of HIV**

2.1 The spread of HIV through sexual transmission can be prevented by abstaining from sex (not having sex)?

Yes	
No	
Don't know	

2.2 You can reduce your chances of becoming infected with HIV by correctly using condoms during sex?

Yes	
No	
Don't know	

2.8 a) Do you know where to get condoms from?

Yes	
No	
Don't know	

2.8 b) If yes, where?.....

.....

.....

2.9 What sources of HIV&AIDS related information have you been exposed to? (You may cross (x) as many boxes as required)

Mass Media	
Health service providers	
College /Campus health programmes	
Family or friends	
Non-Profit Organisations	
Other (specify below)	

3.4 Do you think that there are things that you can do to prevent or reduce your risk of becoming infected with HIV?

Yes	
No	
Don't know	

3.5 Do you know how to use a condom correctly?

Yes	
No	

3.6 Do you know someone who is HIV positive?

Yes	
No	

**3. Risk perception to HIV**

3.1 Do you think that you know enough about HIV?

Yes	
No	

3.2 a) Do you think you are at risk of becoming infected with HIV?

Yes	
No	
Don't know	

3.2. b) If yes, why?.....

.....

3.3 Do you think that you will be able to discuss HIV with your sexual partner?

Yes	
No	
Don't know	

**4. Attitudes towards condom use**

*To what extent do you disagree or agree with each of the following statements. Rate your answer on the scale from 1 to 6 with 1 indicating that you strongly disagree and 6 indicating that you strongly agree with the statement.*

4.1 I'm not afraid to have a "one-night-stand" without a condom.

Strongly disagree 1---2---3---4---5---6 Strongly agree

4.2 I will be able to discuss condoms with my sexual partner.

Strongly disagree 1---2---3---4---5---6 Strongly agree

4.3 I know exactly how to use a condom.

Strongly disagree 1---2---3---4---5---6 Strongly agree

4.4 It is okay to stop using condoms when you are in a relationship with one person only.

Strongly disagree 1---2---3---4---5---6 Strongly agree

4.5 Condoms decrease sexual pleasure.

Strongly disagree 1---2---3---4---5---6 Strongly agree

**5. Behavioural practices**

The next few questions ask about your sex behaviour practices. The term "sex" refers to vaginal, oral or anal sex unless otherwise specified.

5.1 Have you ever had sexual intercourse?

No, never	
Yes	

If your answer is no, please move on to section 6. If your answer is yes, kindly answer all the questions below.

5.2 How old were you when you first had sex? (Age in years)

--	--

5.3 Did you use a condom at your first sexual intercourse?

Yes	
No	

5.4 Did you use a condom the last time you had sex?

Yes	
No	

5.4 a) How often do you use condoms when you have sex?

Yes	
No	

Never use condoms	
Sometimes use condoms	
Always use condoms	
Only if vaginal sex	
Only if anal sex	
Only if oral sex	

5.4 b) If never or sometimes use condoms - why or in what situations do you not use condoms? .....

.....  
 .....

5.5 Do you drink alcohol?

No	
Yes	

5.6 If yes, do you ever have sexual intercourse under the excessive influence of alcohol? (Excessive alcohol is defined as 5 or more drinks for men and 4 or more drinks for women in one sitting).

Never	
Sometimes	
Always	

5.7 Do you take drugs (dagga, tik, mandraxetc)?

No	
Yes	

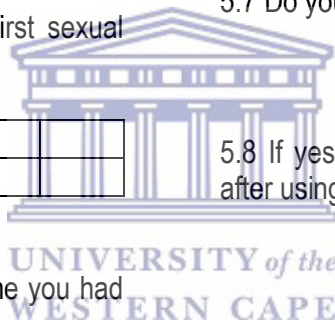
5.8 If yes, do you ever have sexual intercourse after using drugs?

Never	
Sometimes	
Always	

5.9 Do you have a sexual relationship where you regularly receive money, gifts or any form of support in exchange for having sex?

5.10 How many sexual partners have you had in the past 12 months?

None in the past 12 months	
1 partner	
2 partners	
3 partners or more	



5.11 Do you have or did you have more than one sexual partner at the same time during the past 12 months?

Yes	
No	

5.12 When you have sex who decides when a condom should be used?

I decide	
My partner decides	
Both of us	
Never use condoms	

6.3 If yes to question 6.2, when last have you gone for an HIV test?

0-6 months	
7-12 months	
13 months or more	

6.4 a) Do you intend to go for an HIV test?

Yes	
No	

6.4 b) If not, why not?.....  
 .....  
 .....

**6 HIV Testing practices**

6.1 Do you know where to go for an HIV test?

Yes	
No	

*Thank you for taking the time to complete this questionnaire - it is much appreciated!*

6.2 Have you ever taken an HIV test?

Yes	
No	

