

BARRIERS AND FACILITATING FACTORS TO HIV TESTING:

A SURVEY OF TERTIARY STUDENTS

By

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ABSTRACT

Research estimates show that almost one in four of South Africa's university undergraduate student population is HIV positive. This study examined the factors that promote and inhibit the uptake of HIV testing among university students. The sample consisted of 602 multicultural students with 74.8% females and 25.2% male students. The current study showed that 48% of University students had an HIV test and 51% had never been tested before. However, 60% of students claimed to know their status without having been tested for HIV and 40% did not know their status. Chi-square tests showed a significant relationship between inhibiting and promotive factors towards the decision to undertake and not to undertake an HIV test. In this study, we found that university students primarily get tested because they have been engaged in unprotected sex knew someone who died of AIDS and being advised by someone else. All of these reasons suggest reactive rather than proactive reasons to testing. The findings also indicated that students forego testing because they perceive themselves to be at low risk, have abstained, fear a positive result and they see no benefit in testing for HIV. Knowledge of status is the important tool towards the prevention of HIV.

DEDICATION

I dedicate this work to:

My husband, Mawande and Siyavuya.

1. My mother- Philda Mafu, my late father Joseph Mafu and late brother
Bongani Derrick Mafu.
2. All people living with HIV/AIDS and all South Africans.

DECLARATION

I declare that:

“Barriers and Facilitating Factors to HIV testing. A Survey of Tertiary
Students”

Is my own work and that all the sources I have quoted have been acknowledged
by means of references.

A handwritten signature in dark ink, consisting of a stylized, cursive script that appears to be 'V. M. S.', enclosed within a large, loopy oval shape.

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CHAPTER ONE

INTRODUCTION

1. Introduction

HIV/AIDS has become the most severe public health problem worldwide, including in South Africa and has received much attention in both research and applied settings. HIV/AIDS influences everyone in the whole world. Both children and adults are infected and affected by HIV/AIDS everyday, since a family member, partners, friends or they themselves have HIV/AIDS. Concerns about the rapid spread of HIV/AIDS throughout the world have increase as a result of the lack of treatment for HIV. South Africa is faced with major challenges as a consequence of the AIDS epidemic. Over many years there have been a number of preventive programs in many countries that have been developed to overcome the spread of the AIDS epidemic. However, instead of improving in recent years, the spread of infection continues.

Sub-Saharan Africa has become the most infected region with HIV/AIDS in the whole world. Of the 50 million people infected with HIV/AIDS globally, almost 30-million live in sub-Saharan Africa. According to the UNAIDS (2000), estimations indicate that 71% of people living with HIV/AIDS live in sub Saharan Africa. Recent literature indicates that HIV/AIDS mostly occurs in developing countries (Doyle & Esterhuyse, 1994). South Africa is becoming the second leading country that is affected by HIV/AIDS, and 1 in 7 new HIV infections occurring in Africa, are evident in South Africa (UNAIDS, 2000). In South Africa, an estimated 3.5 to 4.5 million people are already infected with HIV, with an estimated 1 500 new infections occurring daily (Petersen, Bhagwanjee, Bhana, Rochhe, Joseph, 2002). HIV/AIDS pandemic affected 3.1-million lives and 4.9-million estimated new HIV infections occurred worldwide (UNAIDS/WHO AIDS, 2005). These results indicate a decline in the epidemic, but this does not mean that the epidemic is stabilized.

A national survey highlights the very concerning statistics that youth and young adults within the 15-24 age group are mostly at risk of becoming infected in South Africa (Petersen, Bhagwanjee, Bhana, Roche, Joseph, 2002). The survey results showed that from the 10% of youth who are infected with HIV, 77% are women. South African statistics indicate that females between the ages of 15-19 years and males between 20-24 years of age have a high prevalence rate of HIV infection. A concerning factor is, the majority of tertiary students fall within this vulnerable age group, and are therefore at a high risk of contracting HIV/AIDS. According to Zak-Place & Stern (2004) university and college students are exposed to risky behaviors that make them vulnerable to HIV/AIDS. Zak-Place & Stern state that vulnerability could be due to the fact that many college and university students are sexually active and in a transitional stage of development where their sexual fantasies and experimentation are at a peak. In addition, many stressors accompany the transition from school to tertiary institution. These include making important decisions on their own, poor support structures, studies and peer pressure.

Opt & Loffredo (2004) investigated American college students' knowledge and perceptions on HIV/AIDS. The results showed that 89% of students believe that AIDS is a serious problem among college students. Furthermore, students perceived themselves to be at low risk of contracting HIV (Lewis & Marlow cited in Opt & Loffredo, 2004).

It becomes clear that in view of the statistics of HIV infections, AIDS related diseases are prevalent among this age group and South Africa needs to pay more attention to this age group. Given the prevalence rate of infection among youth and young adults, it is the responsibility of the community and institutions of higher-level learning to realize that the HIV/AIDS epidemic calls for all people to mobilize against the spread of the HIV infection and to develop comprehensive HIV/AIDS prevention programmes.

The failure of students to assess the level of risk of contracting HIV increases their likelihood of getting infected and makes HIV prevention difficult. Given that HIV/AIDS is incurable, the only way to prevent the spread of infection is by changing

people's behavior and their sexual practices. Behavior change has so far been the only recognized way through which the spread of the HI virus can be prevented. The World Health Organization claims that the primary means of prevention of HIV is through change in behaviour (Abrams, 1991). Samet, Winter, Grant & Hingson, (1997) assert that behaviour change can be effective if individuals know their HIV status, which means HIV testing.

Voluntary counselling and testing (VCT) is identified as a significant tool that could be used to prevent the spread of HIV infection. VCT aims at helping people in making sound decisions towards testing for HIV (Opt & Loffredo, 2004). VCT is expected to promote safer sex practices and behaviour change, with the intent of preventing transmission of the virus from HIV positive individuals to HIV negative individuals. VCT plays a significant role in early detection of HIV/AIDS. Knowledge of HIV status helps individuals gain access to support and medical care, which aids the prevention of opportunistic diseases. Knowing one's status may influence the reduction of risky behaviours and pursuit of safe behaviours. HIV testing is important since the results can give us information on high-risk behaviours; modes of transmission and help future intervention plans to prevent the spread of infection and helping people living with HIV/AIDS.

There is growing evidence in HIV/AIDS research that shows the effectiveness of VCT in the prevention of the spread of HIV transmission. According to Sangiwa, van der Straten, Grinstead & The VCT Study Group (2000) VCT plays an important role in the change of risky behavior and is therefore seen as the most effective prevention method in many developing countries. Previous studies have shown that HIV positive people are more likely than HIV negative people to change their behavior (The VCT Efficacy Study Group, 2000).

However, there are probable negative consequences for individuals who test positive. These may include rejection, stigmatization, and discrimination, emotional and psychological problems. These negative implications may actively prevent people from accessing and gaining support and preventing transmission (UNAIDS, 2000). According to Sinkoyi (2000) AIDS is a disease that affects individuals' social networks. It affects families, relatives, friends, neighbours, colleagues and casual

acquaintances. Individuals in a social context live in relation to others. This therefore, implies that those who are infected with HIV are not the only ones who live with HIV/AIDS but includes everyone within that social environment. Negative implications towards being HIV positive are challenging, which will become a serious problem unless people change their attitude towards the disease. VCT prepares positive HIV/AIDS individuals with ways of coping with the disease. There is also evidence that VCT plays an important role in helping people to accept HIV positive results and to cope with the effects of positive results (Lie and Biswalo, 1994).

Despite recommendations and education of VCT's effectiveness, a large number of people are not tested. The study done by Anastasi, Sawyer & Pinciaro (1999) with college men and women in relationships to seeking HIV testing at the university health centre, showed that having an HIV test could be perceived as being promiscuous or accusing your partner of being unfaithful. Other barriers that were identified were issues of confidentiality, waiting for test results, fear that they will die and causing relationship discord. A study done, by Diedericks (2003) at the University of Port Elizabeth, investigated students HIV/AIDS knowledge, sexual behaviour and their perception on voluntary counselling and testing. The results showed some of the barriers found by Anastasi, which includes, fear, confidentiality and waiting for the results.

Lack of treatment for HIV has probably led to a continuation of unsuccessful prevention of the spread of HIV. This makes it important for us to explore the perception that individuals have towards testing in order to prevent the spread of infection and to understand the factors promoting and obstructing individuals' decision to test for HIV.

Given the role of VCT in the prevention of HIV/AIDS at individual and community level, determining and understanding the barriers and facilitators that inform decisions to uptake HIV testing is important in prevention efforts.

Tertiary institutions, in recognition of the HIV epidemic in South Africa have engaged in many comprehensive HIV/AIDS prevention programmes, with an aim of managing its impact on the student population. An attempt to explore more on the disease has been necessary, especially given that tertiary students are at high risk of

contracting the disease. This is evident with a number of studies that have attempted to understand the occurrence of HIV among this age group and also to understand behaviors related to HIV testing. Disturbed by the highest prevalence rate of HIV/AIDS among the tertiary institution age group the former minister of the department of education Kader Asmal intervened and highlighted the urgent action against HIV/AIDS within the education department (Martin & Alexander, 2002). This resulted in South African Universities developing policies and measures in response to the HIV/AIDS pandemic. These include, HIV testing on campus, opposing discrimination against those living with HIV, inclusion of HIV/AIDS education in the curricula, distribution of free condoms, free medical care and support. Opt & Loffredo (2004) conducted a study with American college students, investigating their knowledge and perceptions about HIV/AIDS. Results showed that knowledge about HIV/AIDS did not indicate concern about becoming infected with HIV and do not guarantee safe sexual practices. Zak-Place & Stern (2004) did a study with college students, investigating factors predictive of youth engaging in HIV preventive behaviours related to sexually transmitted diseases. Results revealed that perceived HIV severity was not associated with HIV testing intentions, and the students who perceived HIV as high in severity were less likely to go for HIV testing. Tertiary institutions are faced with enormous challenges since the tertiary students fall within the vulnerable age group.

According to the authors' knowledge a few studies have been conducted in South Africa amongst this population, which is tertiary students investigating the uptake of VCT. These studies will be discussed later in the next chapter. This study surveys students at a large South African tertiary institution concerning the barriers to and facilitators to HIV testing as part of the institutions' HIV prevention treatment and support strategy. The survey was conducted as part of a broader evaluation of HIV/AIDS awareness and prevention activities conducted at this institution.

Following the literature review, the data on barriers, facilitators and motivations for testing would be presented and discussed. The Health Belief Model (HBM) would be used to discuss and account for the findings. Chapter four will present the results of the study. Chapter five will offer discussion of the results as well as conclusions and recommendations drawn from the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

The number of people living with HIV in South Africa increases everyday. The Department of Health (2003) estimated that at the end of 2002, 5.3 million South Africans had acquired HIV. 5.6 Million were estimated to be HIV positive by the end of 2003. Since there is no cure for HIV/AIDS, the HIV epidemic is still on the increases. The constant increase of the virus causes challenges for the Department of Health. It was hoped that by 2004 the HIV prevalence rate would be stabilized (The Nelson Mandela HSRC Study on HIV/AIDS [HSRC], 2002). Based on the study done by the South African Department of Health in (2004) on the antenatal clinics, 6.29 million South Africans were living with HIV by the end of 2004 and 3.3-million were women.

The Department of Health and various non-governmental organizations have implemented a range of intervention programmes to prevent the spread of HIV/AIDS in South Africa. Most behaviour change interventions have been based on educational programmes, condom promotion, and awareness of reducing risky behaviors. The media has played a significant role in disseminating information about HIV/AIDS [includes: television programmes; radio; Laduma (comic book); Soul City (Television programme); Love life billboards; magazines and newspapers]. While level of knowledge may have improved, this has had little impact on behavior change. Although knowledge does not necessarily lead to behaviour change, the role played by educational and other programmes cannot be ignored. This could imply that South African population has high levels of awareness about HIV/AIDS, but levels of awareness do not necessarily translate to behaviour change.

It is a fact that AIDS is incurable. A method to impact the epidemic is by changing people's behavior. Most recently, emphasis has been placed on HIV testing. HIV testing has proven to be a central effective behavior change intervention in the prevention and control of HIV/AIDS (CDC, 2004).

The development of the HIV screening test in 1985 was recognized in many developing countries as a useful tool to counsel individuals in HIV prevention and care (Green, 1989). HIV testing at that time included brief counselling. HIV counselling was promoted as a significant aspect of HIV prevention (Baggeley, 2000). Since then, there have been significant developments in HIV interventions. This includes the development of Antiretroviral Treatment, which is now available in many countries.

There is an increasing demand for HIV counselling services in developing countries. According to De Zoysa et al. (1995) VCT services are becoming popular in communities. VCT forms an important part of primary and secondary prevention intervention in the HIV epidemic. At primary level VCT addresses the causes of the deadly disease through education and counselling (condom distribution and awareness programmes). At secondary level VCT focuses on early detection of HI-virus, decreasing the duration and the severity of the AIDS symptoms, pre-and post counselling, preventing spread of infection and as an early entry point to treatment and care. This could also be done through HIV testing. It is hoped that VCT can achieve its goals of increasing levels of uptake in an attempt to prevent the spread of HIV infection. In addition VCT aims to reduce individuals' negative attitudes towards people living with HIV, offer support and care, help people to know their status, offer treatment (Grinstead et al., 2000).

For individuals to respond effectively to the prevention of HIV, and provide care and support for those who are already infected with HIV, it is vital to know one's status. This can be done through HIV testing. To deal effectively with HIV/AIDS, it is important to understand the issues that contribute to being vulnerability to HIV and to have an HIV test. There have been many studies investigating factors that contribute to seeking an HIV test. These will be discussed later in the chapter.

2.2 HIV/AIDS in South Africa

According to the Weekly Newsletter (2005) the 2005 midyear population estimate is 46,9 million with Africans being the majority with 37,2 million (79%) of the total South African Population, followed by Whites with 4,4 million and Coloureds estimated at 4,1 million and Indians with 1,1 million population. 51% of the reported population is female (23,8 million). The provincial estimates show that KwaZulu Natal has the biggest number of population as compared to other provinces (20.6%) followed by Gauteng with (19.2%) and Eastern Cape (15.0%). Northern Province has the smallest population with (11.7%). The HIV epidemic affects these numbers every year. According to the News 24.com (2002) educational level and socio-economic status has an influence to the HIV prevalence rate.

2.2.1 HIV National Prevalence

It is estimated that 60 million people, globally have become infected with HIV/AIDS (Department of Health, 2003). HIV/AIDS prevalence in many countries, including South Africa has reached pandemic proportions. It is estimated that approximately 11.4% of the population in South Africa are infected with HIV. According to the Weekly Newsletter (2005) HIV prevalence is approximately 10%. These results are lower than the previous year's results.

2.2.2 HIV Prevalence by Age Group

The Nelson Mandela HSRC Study on HIV/AIDS (2002) national prevalence indicates that 15.6% of persons in the age 15-49 years are HIV positive. According to the existing data from the Department of Health antenatal survey (2003), the age range most affected with HIV (35.4%) is that of 25-29 years old, in 2002 it was 34.5% and in 2001 it was 31.4% of the survey sample. The South African National HIV Survey (2005) indicates 16.2% of HIV prevalence among individuals aged 15-49 years old, with 33.3% of females aged 25-29 years old and 23.3% males aged 30-39 years old.

The lower prevalence by age was among female teenagers under 20 years. This may suggest that individuals aged 15-49 years old are the high-risk group.

2.2.3 HIV Prevalence by Gender

The HSRC (2002) statistics shows that females are more at risk of contracting HIV (17.7%) than males (12.8%). The antenatal survey done in 2003 showed that women aged 23 years old (36.3%) and 24 years old (37.1%) had the highest prevalence rate of HIV infection in the 20-24 year age group (Department of Health, 2003). The Department of Health also showed that men aged 25-29 years old (about 17%) are the most infected group. According to the South African National HIV Survey (2005), estimates showed that males had 8.2% HIV prevalence and females had 13.3% HIV prevalence.

2.2.4 HIV Prevalence by Province

HIV prevalence differs across provinces in South Africa. According to the Department of Health (2003), statistics on HIV prevalence among antenatal clinic attendees, KwaZulu Natal (KZN) in 2001 had the highest HIV prevalence with 33.5%. The 2002 statistics were 36.5% and in 2003 it was 37.5% followed by Mpumalanga with 29.2% in 2001 28.6% in 2002 and 32.6 % in 2003. However, the Nelson Mandela HSRC Study on HIV/AIDS, 2003 showed that KwaZulu Natal ranked fourth (11.7%) in the provincial HIV prevalence. Their figures showed that Free State had the highest prevalence rate with 14.9% followed by Gauteng with 14.7% and Mpumalanga with 14.1%. The South African National HIV Survey (2005) results showed that KwaZulu Natal ranked first with 16.5% HIV prevalence followed by Mpumalanga with 15.2% and Free State with 12.6%. It is important to note that there is a significant increase in the KZN HIV prevalence between 2001 and 2005. This could indicate several reasons for the discrepancies, for example, migration and relocation.

2.2.5 HIV Prevalence by Race

All races are at risk of HIV infection, but there are differences in the HIV prevalence among different race groups. According to the HSRC (2002) the difference could be due to social, economic and behavioural factors. The HSRC also shows that Africans have the highest prevalence rate of HIV (18.4%), Coloureds with (6.6%), Whites with (6.2%) and Indians (1.8%). The South African National Survey (2005) showed a decline on the HIV prevalence by race though Africans remain the highest group with HIV. Africans had the highest prevalence of HIV with (13.3%), Whites (0.6%), Coloured (1.9%) and Indians (1.6%). The HSRC suggests that the highest HIV prevalence rate among Africans could be because of complex historical, social and economic factors.

2.2.6 Awareness of HIV status

Of both males and females aged between 25-29 years old (28.0%) are HIV positive, followed by 30-34 age group (24%) and lower prevalence in other age groups (The HSRC, 2002). Similarly the Department of Health (2003) showed that women and men aged 25-29 years old have high HIV prevalence rates. Individuals who had not had an HIV test reported various reasons for not doing so, which will be discussed later in the chapter. Individuals who are HIV positive and do not know their status could spread the infection. It is important to know that early detection of the virus is important for prevention. A study done at the University of Durban - Westville showed that 26% of women and women between ages 20-24 had tested HIV positive (News 24. com, 2002). A study done by Professor Uys at Rand Afrikaans University (2001) with a group of voluntary students to determine the level of infection on campus showed that out of 1 217 participants, only 13 students (1.1%) were HIV positive (News 24.com, 2002). These respondents were between the ages of 17 and 27.

The South African demographic statistics showed different results with an increase from 2001-2003. The Department of Health statistics showed that HIV rates have not decreased nationally and the rate of increase has slowed. The HSRC statistics also

showed an increase in HIV prevalence. Although there appears to be a slight increase on both results, these findings are not statistically significant. However, both findings show that HIV/AIDS is still a public health problem that needs to be given full attention by the Department of Health and everyone involved stabilizing the spread of the virus. These findings indicate that South African HIV prevalence rate remains high. Although it is going through a process of stabilization the prevalence rate has not yet declined. Non-Governmental Organizations and the Department of Health are working hard in stabilizing the HIV epidemic.

2.3 Voluntary Counselling and Testing

VCT is the process by which an individual undergoes counselling enabling him or her to make an informed choice about being tested for HIV. This decision must entirely be the choice of the individual. It is vital that he or she must be assured confidentiality (UNAIDS Technical Update, May 2000). VCT is seen as an entry point into treatment care and support. VCT can play an important role in de-stigmatizing HIV.

Given that there is no cure for HIV, VCT has been vital in the management of the epidemic. VCT is hoped to reduce unsafe behaviours and prevent transmission of the HI-virus from an individual who is HIV positive to an individual who is not infected. Counselling is important in helping people to receive and assimilate HIV positive news and to cope with their status (Miller, 1987).

HIV is a very sensitive topic and is seen as a death sentence by most people. Counselling would therefore, be beneficial for such individuals.

VCT plays an important role in early diagnosis of HIV, which is important for prevention and early treatment of opportunistic infections. Counselling also allows individuals to prepare for the consequences of a positive result, especially where social consequences and discrimination exist. According to Painter (2001) for VCT to be effective it needs to work collaboratively with previously implemented strategies (media, education) and the community as a whole.

VCT offers psychological and social advantages to knowing one's status. VCT allows individuals an opportunity to plan for the future, gives the ability to discuss HIV with

their sexual partners and the risks involved and it also reassures individuals who are HIV positive about their status (The HIV 1 Counselling and Testing Study Group, 2000).

According to the UNAIDS (2001) most research studies conducted to measure the efficacy of VCT services have shown significant benefits to those who use VCT services. However, there is very little evidence on whether behavior changes can be maintained in the long term for both those who test negative and those who test positive (UNAIDS, 2001). It seems that the argument related to the efficacy of VCT as a primary tool in the prevention of spread of the HIV remains unclear. Despite the confusion about the efficacy of VCT, some studies show that VCT plays an important role in HIV prevention, increases awareness and knowledge about HIV/AIDS (Lie & Biswalo, 1994).

VCT at a community level has played a significant role; it has disseminated HIV prevention information, promoted HIV testing and helped in reducing stigma through relevant information about HIV/AIDS and testing (Sangiwa et al, 2000).

2.3.1 Testing for the HIV

Testing is a critical issue because it involves a number of emotional issues. HIV testing is an important tool in the VCT process, used to detect HIV infection. VCT emphasizes testing because awareness of one's status is the key to prevention (CDC, 2004). Testing also raises awareness of risky behaviour, encourages behaviour change and is important for appropriate referral, care and support (Stein and Nyamathi, 2000).

Early diagnosis of infection with the virus is important for HIV prevention. The CDC (2002) indicated that a quarter of HIV positive individuals do not know that they are HIV positive (Hou & Wisenbaker, 2005). This leads to huge problems since the virus could be transmitted unwittingly. Hou & Wisenbaker further state that the decision to undertake an HIV test is a critical issue for many individuals. According to the (2002) Nelson Mandela/HSRC Study on HIV/AIDS results showed that among respondents aged 15 years or more, 18.9% had an HIV test and were aware of their HIV status, 59.4% said they would consider going for an HIV test if confidentiality was

maintained and 28.5% said they would be motivated if VCT services were accessible and had good quality services (Shisana & Simbayi, 2002).

There is a demand for HIV testing. People want to know their status, but this is accompanied by a number of negative and positive effects. Although there is demand for HIV testing, research shows that in South Africa, VCT uptake is least used and about 5% population has undertaken HIV testing (Wilkinson & Wilkinson, 1996, in Richter et al, 2001). HIV testing makes people realize that nobody is immune to HIV infection and it can affect everyone. Some people realize the seriousness of HIV and testing, only once they have been tested.

Testing positive could mean changes in one's life and making important decisions. According to Evian (2000) it could be difficult for a person who has been tested positive to adjust to the idea that his/her life may be shortened. The individual may have a fear of developing serious diseases. Positive results could also mean changing sexual habits.

Individuals may fear undertaking an HIV test or going to VCT centres because they could be identified as HIV positive or as promiscuous. Individuals with HIV are usually discriminated by the community, friends, family, employers and colleagues. According to Miller, Weber & Green (1996) such response from the community makes these individuals view themselves as dirty. This makes them feel incompetent, unworthy and guilty as a result of bringing the disease upon them. This could actively prevent HIV positive people from accessing care and gaining support. These factors also inhibit them from undertaking an HIV/AIDS test, which therefore does not prevent transmission.

A study done by Hou & Wisenbaker (2005) with college students aimed at identifying the psychosocial factors predicting decision making of HIV testing among students who have never been tested, found factors that impacted on the decision to have an HIV test. These factors included: perceived HIV risk, acknowledging risky behaviors, fear about coping with the results and prior HIV testing were associated with low acceptance of testing and stigma. The 2002 Nelson Mandela/HSRC Study of HIV/AIDS on South African National HIV Prevalence, results showed that awareness

of status was associated with high levels of knowledge about the fact that HIV causes AIDS. Further, awareness improves communication about HIV and HIV serostatus with sexual partners (Shisana & Simbayi, 2002). Knowledge about VCT services, which includes care, support and availability of treatment, could be a motivational factor for testing. Other studies show that individuals go for testing because they want to know their status, have been exposed to HIV, plan to have children, past sexual behaviours, partners' sexual behaviour, caring for an HIV positive person and due to HIV symptoms.

The social discourse attached around death, fear, deviant behavior and the potential danger related to a positive result, are some of the factors that help us explain why individuals undertake/do not undertake an HIV test (Hou & Wisenbaker, 2005).

The results of the study done by Sangiwa et al. (2000) in Tanzania showed that 93% of participants went for VCT because they wanted to know their status. It could be hypothesized that they went for testing because they perceived themselves to be at risk. The main motivation to use VCT services was to check their health, including knowing their status. Other motivations were to treat sexually transmitted infections, nutritional counselling and health education. Few participants wanted to know their status before getting married or starting a new relationship. Motivation for testing differed for individuals who were HIV positive and those who were HIV negative. The 2002 Nelson Mandela/HSRC Study of HIV/AIDS results showed that the majority of respondents who had a test and tested HIV positive underwent testing for different reasons, which are; personal reasons 47.3%; pregnancy 22.5%; requested by the bank or insurance company 14.8% and other circumstances 15.4% (Shisana & Simbayi, 2002).

HIV prevention strategies should be made possible through the use of integrated approaches, for example, HIV prevention, counselling and HIV screening. If people do not get tested for HIV, they are likely to continue with their behavior, and this is likely to increase the risk of infecting others and re-infection is likely to take place.

It is hoped that testing for HIV can control the spread of infection through behavior change, care of people living with HIV/AIDS and for diagnosing to prevent

opportunistic infections. Therefore it is also important to know the preventive and motivating factors to testing in tertiary students since they are observed as the high-risk group. This could help prevent the spread of infection and increase the uptake of VCT.

2.3.2 Individuals targeted for testing

The question of who should be tested remains unanswered and this is an important question (Nefale, 1999). Nefale believes that testing everyone for HIV would be cost ineffective. The individuals who perceive themselves to be at higher risk of infection are more likely to be tested and return for results (Fichtner et al., 1996 in Stein & Nyamathi, 2000). Although with the rapid test this has changed, individuals do not have to return for the results because they get them immediately. People have different opinions about who should be tested. Some think people should be tested when applying for a job, as well as those who apply for insurance policies (Nefale, 1999). The implication of this is that, those who test positive will be refused employment and rights to insurance policies. Constitution and policies have been implemented that prevent such things and discrimination of people living with HIV/AIDS.

Falco and Cikins (1989) suggest that testing should be directed to those who are identified as 'high risk groups'. High-risk groups include prostitutes and patients with sexually transmitted infections (Jacobsen, Perry and Hirsch, 1990). According to the literature injecting drug users, individuals aged between 15-49 years old and young women are also seen as high-risk group. Gay communities in a western context were previously seen as the primary high-risk group, until further research was done, which showed that not only was the gay community a high-risk group, but heterosexual communities were also exposed to HIV/AIDS. However, an extreme focus on high-risk groups is argued to lead to a key problem of HIV prevention (World Health Organization [WHO], 1990), meaning that the so called low risk group could go on spreading the virus without noticing because they are not seen as high risk group. Furthermore, they do not perceive themselves to be at risk of contracting HIV. This

could also lead to discrimination and stigmatization, and may also promote the spread of infection and risky sexual behavior (WHO, 1990).

Focus on high-risk groups could increase the spread of infection by excluding those individuals who are at risk of contracting the virus (Nefale, 1999). Focus should be on high-risk behaviors rather than high-risk group. Identifying individuals as high-risk groups could imply that they are being labelled and discriminated against.

According to Fichtner et al., (1996 as cited in Stein & Nyamathi, 2000) the individuals who perceive themselves to be at a higher risk of infection were more likely to change their behaviour. Change in behaviour includes HIV testing and returning for results. Previous studies have identified age and level of education as factors associated with higher rates of HIV testing (Inungu, 2002, as cited in Mashburn, Peterson, Bakeman, Miller, Clark & The Community Intervention Trial for Youth (CITY) Study Team, 2004). The results of the study showed that respondents aged 18 and 19, less than grade 12 educations were significantly less likely to have ever been tested for HIV. The 2003 National HIV and Syphilis Antenatal Sero-prevalence Survey in South Africa results showed that teenagers have been used as an estimate of new HIV infections. When these estimates are merged together with those of women in their early twenties, there is a slight increase in the HIV prevalence (UNAIDS/WHO, 2000).

HIV testing among sexually active youth is a critical issue (Samet et al., 1997). Youth is the most targeted group in the prevention of HIV/AIDS, so the intervention should target the high-risk group and focusing on them could be a positive step. Literature indicates that youth in South Africa represents over 30% of the prevalence rate amongst risk population groups (UNAIDS, 2001). It is hoped that targeting youth will produce social change in respect of HIV/AIDS risky sexual behaviour and increase in behaviour change and promote HIV testing.

2.4 Efficacy Studies of Voluntary Counselling and Testing

Despite some problems facing VCT services, most studies conducted to measure the efficacy of VCT show accumulating evidence in the ability of VCT to prevent HIV

transmission. These studies also show significant advantages to people undertaking VCT services (UNAIDS, 2001). Previous studies conducted showed that VCT is effective in reducing unprotected sex, condom usage and safe sexual practices to those who had undertaken VCT services (Baggeley, 1994; Kaleeba, et.al 1997; The VCT Efficacy Study Group, 2000).

Literature indicates that VCT is more effective as a measure of secondary prevention in African countries. This may suggest that VCT is more effective at facilitating behaviour change in those who test HIV positive than in those who test HIV negative. The efficacy of VCT in achieving primary prevention is to facilitate behaviour change. VCT further achieves secondary prevention through facilitation of behaviour change in those tested positive. Studies conducted in Africa regarding efficacy of VCT in achieving primary and secondary prevention goals showed different results. Most previous studies done in Western investigating efficacy of VCT at primary and secondary level showed that VCT has been able to be more effective in accomplishing secondary prevention goals than primary prevention (Wilson, Levinson, Jaccard, Minkoff and Endias, 1996; Lokovics, Morrill, Beren, Walsh and Robin, 1994, cited in Solomon et al., 2004).

The study done in a rural part of Uganda showed that individuals who had undertaken VCT showed no difference in their sexual behaviour after one year when compared to those who had not been tested regardless of their HIV status (Kipp, Kabagambe & Konde-lule, 2001). However, some studies showed positive outcome of VCT efficacy. For example, a study done in Kampala and Uganda showed that individuals who had been tested and received counselling for HIV reported change in their sexual practices as compared to those who had been tested regardless of their HIV status (Muller, Barugahare, Schwartlander, Byaruhanga, Kataaha, Kyeyune, Heckmann & Ankra, 1992).

An efficacy trial conducted in Kenya, Tanzania and Trinidad, showed that individuals and couples who tested HIV positive were more likely than HIV negative to reduce unprotected sex (Coates & The VCT Efficacy Study Group, 2001 in Solomon et al., 2004)). Similarly, another study done in Kenya, Tanzania and Trinidad showed that infection of sexually transmitted diseases and longer periods of HIV/AIDS risk was

reduced for individuals who were using VCT services as compared to individuals who received HIV/AIDS information using health education (Coates & The Voluntary Counselling and Testing Efficacy Study Group 2001 in Painter, 2001). These results indicate that the effectiveness of VCT is promoting behaviour change. This also suggests that individuals who are HIV positive are more likely than HIV negative individuals to change their risky behavior. However, it is questionable as to how VCT assists individuals who are HIV negative to remain negative (Higgins, Galvotti & O'Reilly, 1991; Merson et al., 2000; Weinhardt et al., 1999; UNAIDS, 2001 in Solomon et al., 2004).

The efficacy of VCT offered in different countries differs in such a way that it makes comparisons of interventions complicated and sometimes misleading (UNAIDS, 2001). VCT includes a number of interventions depending on the kind of setting offered. Many HIV prevention interventions have made a difference, and prevention efforts have helped to decrease HIV infection. Application of VCT services allows people to use the health care facilities effectively and addresses their needs, especially those at risk of being infected and those who have not been tested for HIV. According to Anastasi et al. (1999) HIV testing is a tool used to control the spread of infection among tertiary students

Although VCT is effective in many communities, it has disadvantages that prevent its effectiveness. According to UNAIDS (2001) there is little data on whether VCT objectives could be sustained in the long term. This may suggest that the effectiveness of VCT does not last long and needs further investigation as time goes on. Individuals are confused as to why they are still experiencing the high rate of infection, whereas several campaigns have been conducted to educate people about the spread of HIV infection and the prevention of the HIV. The question that arises is what level of knowledge individuals have on VCT. A number of studies have been conducted to raise awareness concerning VCT services. To increase the use of VCT services, the barriers that prevent demand for VCT services must be identified and dealt with accordingly.

VCT plays an important part in helping individuals who are HIV positive to accept and cope with psychosocial issues associated with an HIV positive status (Lie & Biswalo, 1994). There is however, little research done on the efficacy of VCT for achieving treatment and psychosocial support goals to those who have been tested positive. Most of the studies done on psychosocial support focused on the impact of VCT on coping mechanisms used by the individuals who have been tested HIV positive and also focused on disclosure (Solomon, van Rooyen, Griesel, Gray & Stein, 2004).

Disclosure has been encouraged not as a method for accomplishing psychosocial support but also as a method to prevention (Solomon et al, 2004). Research done on the efficacy of VCT on disclosure has shown results that are less optimistic. The HIV-1 Counselling and Efficacy Study conducted in Tanzania revealed that only 27% of HIV positive women disclose their status to partners 6 months after testing (Grinstead, 2001, in Maman, Mbwapbo, Hogan, Kilonzo & Sweat, 2001).

However, Roux (2001, as cited in Solomon et al., 2004) acknowledged that there is conflicting tension between the need for emotional support from others and the stigmatization issues on disclosure. He further argues that while fear of stigmatization may be the motive for non-disclosure, non-disclosure also aggravates stigma. This may suggest that non-disclosure is a barrier to the flow of information regarding HIV and the risk of infection (Solomon et al., 2004).

Confidentiality has also been seen as the issue of concern in the efficacy of VCT. Literature shows some resistance to VCT uptake in African countries due to confidentiality issue. The literature indicates that individuals do not trust confidentiality procedures and they believe that stigmatization and discrimination are the results of disclosing one's status (Solomon et al., 2004). Such concerns may outweigh the chances of having an HIV test, preventing the spread of infection and disclosing one's status.

Despite the reports from literature about negative personal and social outcomes after VCT, uptake of VCT is still encouraged. Individuals tested, regardless of their status, reduce their number of sexual partners in comparison to people who do not know their

status (Richter, et al., 2001). The impact of VCT among individuals plays a vital role to individuals who have been tested, regardless of the results. This may suggest that information they received from counselling has an influence in change of behaviour.

Common findings across the literature on the efficacy of VCT is that VCT seem to be more effective in facilitating behaviour change in those who test positive than in those who test negative and who are more likely to continue engaging in risky sexual behaviour.

2.5 Barriers and Facilitators toward HIV Testing and Counselling

Although a number of studies have attempted to investigate behavior related to testing, little is known about the psychosocial determinants of HIV testing. Such information is critical in the development of effective interventions aimed at encouraging HIV testing and prevention. There may be many factors promoting and preventing the use of HIV testing among individuals.

Perceived likelihood of an HIV positive test result may lead to failure to return for results and post-test counselling (Wilson et al., 1996 in Solomon et al., 2004).

According to Maman, Sweat, Mbwapo, Hogan, Kilonzo, Campell & Weis (2001) this happens despite the notion that awareness of risk is a motivating factor for testing. Studies done investigating this showed that high risk behaviour was not associated with the decision to undertake an HIV test (Sahly et al, 1999; Machekano, Mcfarland, Mbizuo, Bassett, Katzenstein & Latif, 1998 in Solomon et al., 2004). These studies showed that males who reported recent casual partners tended to be more reluctant to know their test results.

Another study done with women at an antenatal clinic in Ethiopia showed that only 35% of HIV positive women requested their results (Ladner et al, 1996 and Kiarie et al, 1999 in Solomon et al., 2004). This may suggest that individuals take an HIV test because they believe it will come back negative. Ginbney et al, (1999) & Maman et al, (2001 as cited in Solomon et al., 2004) believed that the ability to plan for the future is seen as the perceived benefit of testing, because it allows couples to continue

engaging in unprotected sexual practices, fall pregnant, prolong their lives and getting married.

Some researchers focused on demographic characteristics in an attempt to identify factors associated with HIV testing and demand for VCT. These studies showed inconsistent results, they did not show anything about the decision making process in undertaking an HIV test. Maman et al. (2001) found that gender inequality affected the uptake of VCT amongst women because they fear their partners' response to testing and on disclosing positive results. Such fear and attitude will decrease the number of women taking an HIV test. Men and women get tested for different reasons. According to Maman et al. (2001) men get tested because they want to confirm that they are negative and women get tested because they usually perceive themselves to be susceptible to HIV infection, therefore they get tested to find out if they are HIV positive.

Fear of being able to face the news of a positive result inhibits testing. Individuals usually go for testing when they see some signs and symptoms of illness that is associated with HIV/AIDS (Solomon et al, 2004).

Many studies have been done, identifying factors related to seeking testing. A study done by Davies, Deren, Beardsley, Wenston, and Tivtu: (1977 in Ford et al., 2004) showed that the decision to have an HIV test was strongly related to a person's health and illness. It could also be related to symptoms of a disease as well as high-risk behaviors. Other factors that influenced the decision to undertake /and not to undertake an HIV test included perceived and actual risk of HIV infection (McCusker et al., 1994), previous negative test results, longer stay in drug treatment and AIDS education programs, personal risks, confidentiality, and access to treatment (Irwin, 1993), risky sexual behavior and injection drug use (Solomon, Moore, Astemborski, and Vlahov, 1996 in Ford et al., 2004).

According to Temmerman et al (1995); van der Straten et al, (1995) and Maman, (1999, as cited in Solomon et al., 2004) fear that people may experience negative consequences such as physical harm, relationship problems and rejection following

HIV testing and counselling are major barriers to HIV testing. Stigma is another barrier that could prevent people from using VCT services (UNAIDS, 2000).

VCT is regarded as an important strategy in the management of the HIV/AIDS. Literature has shown that despite its success in the prevention of HIV/AIDS there are problems experienced by VCT that act as obstacles to its efficacy, for example, attitudes and beliefs. These problems may negatively influence individuals' decision to undertake/not to undertake VCT services. Since VCT is used as an important tool towards HIV prevention, it is imperative to understand the factors related to its uptake. There could be a number of factors that prevent the uptake of VCT.

Across the literature a number of factors have been identified as barriers to the effective implementation of VCT and testing for HIV/AIDS. For example, perceived vulnerability, confidentiality, disclosure, stigma, and perceived benefit.

Discrimination, fear of facing a positive result, pregnancy, marriage, caring for a person living with HIV/AIDS and knowing someone who died of HIV/AIDS were also identified as barriers. This study will mainly focus on disclosure, confidentiality and stigma. Each of these factors identified in the literature that serves as barriers to the uptake of VCT will be discussed in turn below.

2.5.1 Confidentiality

Confidentiality of testing and results are seen by Melton (1988) as the most significant basic principle in HIV testing. In the study done in Kenya, concerns about confidentiality were found to be the key barrier to VCT uptake (van Dyk & van Dyk, 2003). Some individuals prefer to go where they are not known to have an HIV test due to confidentiality issues. The study by Dyk & van Dyk showed further that 50% lack trust in the health services close to them, 29.6% feared lack of confidentiality, 8.6% feared rejection and prejudice by health care workers and 4.3% feared embarrassment. Participants also feared that nurses will gossip about their HIV status and that they will be refused hospital treatment.

A Study done by Grinstead et al. (2000) showed that HIV counsellors felt pressure from the community the patients to be non-judgemental and to protect and contain

information regarding the patients' results. They further added that counsellors found confidentiality as an important component of the counselling relationship. It builds trust between the client and the counsellor. A study done with black young African women, who did not plan to be tested, showed that they would opt for HIV testing if no one else could have access to their results (Phillips, Coates, Eversley, Catana, 1995, as cited in van Dyk & van Dyk, 2003). Although VCT is promoting HIV testing to prevent the spread of infection and promote access to care and support to those living with HIV/AIDS, it is evident that lack of trust is a problem in the VCT prevention programs. Confidentiality may be an inhibiting factor to successful intervention programs regarding VCT. This may suggest, the disclosure of patients' HIV/AIDS status to other people by counsellors or health care professionals, may lead to discrimination, rejection and stigmatization. The attitude by others towards people living with HIV can have a negative impact on VCT programmes.

2.5.2 Disclosure

Disclosing HIV status is the most difficult thing that people who are HIV positive are faced with. A chief basic goal of counselling is to help individuals deal with HIV positive results. Different attitudes and beliefs about HIV testing, negative experiences of women who have been tested for HIV and a positive result increase fear of testing and stigmatization (Solomon et al, 2004). Therefore, disclosing one's status becomes difficult.

Disclosing ones' status to relatives, friends or a partner etc is a negative life event that has been reported several times by people who have HIV. According to Termmerman, Ndiya-Acola, Aubani & Piot (1995) 6% of HIV infected pregnant women in Nairobi reported a violent experience after disclosing their status. A positive event that was experienced by HIV positive individuals was support from health professionals. This may suggest that these individuals choose to disclose or seek support from someone who is unknown to them to prevent discrimination and stigmatisation.

An HIV positive person is usually blamed for being positive, since HIV/AIDS is associated with deviant behavior. Sontag (1989) stated that an HIV positive person

tends to be ashamed of disclosing his/her status because shame is associated with feelings of guilt and embarrassment.

A study conducted by van Dyk & van Dyk (2003) on the attitudes towards VCT, identification of possible perceptions of VCT, and ascertaining the various reasons why people in South Africa may resist participation in VCT programs, found that fear of disclosing one's HIV status is a barrier to the implementation of VCT services.

Women are often blamed for bringing the disease to their partners. This contributes to their silence about their HIV status. Since many women are socially and sexually disempowered, this exposes them to fear of disclosing their HIV status to their partners. Campbell et al 2001 cited in van Dyk & van Dyk, (2003) found that women fear the consequences that are attached to disclosing their HIV status. These consequences are violence, divorce, being neglected or disowned by families and friends, loss of security, shelter, food and relationships and murder. Therefore, women tend to deal with their HIV/AIDS status on their own because they also fear being blamed for infecting their partners. This consequently undermines the potential effectiveness of VCT as a treatment and care support strategy. Individuals prefer to disclose their status to community members rather than their sexual partners (Ford, Wirawan, Sumantera, Sawitri & Stahrel, 2004). A study done by Gillard et al. (2000) showed that 68% of women who were tested positive did not disclose their status to sexual partners, mainly for fear of violence, break up of the relationship, neglected, disowned by their families, loss of security and shelter. In the study done by van Dyk & van Dyk, (2003) results showed that 84.5% of participants would disclose their HIV positive status, while 15% said they would keep their status a secret. Fear of disclosure inhibits people from the benefits of knowing one's HIV status through HIV testing. Non-disclosure of one's status could lead to the continued spread of HIV infection and decreased demand for HIV testing.

The availability of real social and emotional support is important in the management of the HIV/AIDS epidemic (Hedge, 1990). HIV/AIDS carries a lot of negative perceptions, stigma and attitudes from the communities and therefore increases the need for social support. As a result of the stigma attached to HIV/AIDS psychosocial support becomes limited. The main problem facing HIV positive individuals is who to

disclose to. The issue of who to disclose to depends on the amount of emotional support available from others and trust. The study done by van Dyk & van Dyk (2003) investigating psychosocial barriers to VCT programmes in South Africa showed that 42.7% would solely tell their partners, 38.4% would disclose to their partner and one or more other trusted relatives or acquaintances (e.g. a friend, minister, mother, sibling and a traditional healer), 15.9% would only tell their friends, 3% would disclose to the community. Another study conducted in Bali, Indonesia with drug users by Ford et al. (2004) showed that 92% would disclose to their physicians and 78% to their spouse. 62% would disclose to their sexual partners, 58% employers, 52% relatives including siblings, 52% friend, religious leader 40%, 12% would tell their children and 5 % would disclose to the community.

The severity of the stigma and the urgency for disclosure - given their role in prevention- has prompted key political figures to make high profile statements in this regard. For example, former president Nelson Mandela in the (2002, p2) 14th International AIDS Conference in Barcelona said, “when you do not disclose your status you are signing a death warrant”. People do not want to accept their HIV positive status because of the stigma attached to the disease. Counsellors identify lack of knowledge in many family members as the cause of stigma and fear of disclosure (Grinstead et al., 2000). The reluctance of individuals to disclose their HIV positive status acts as a barrier to HIV testing and VCT uptake. Non-disclosure deprives individuals’ benefits of knowing their status and receiving treatment and care.

2.5.3 Stigma

Goffman (1963, as cited in Brown, Macintyre & Trujillo, 2003) defines stigma as an undesirable attribute that an individual has, thus reducing that individual’s reputation in the eyes of society. He further states that stigma is complicated and emanates from the fact that the individuals’ attitudes, beliefs, and values have been violated (Brown et al., 2003). Stigma threatens the well being of people living with HIV/AIDS and incapacitates societies’ ability to provide effective treatment to those infected. Therefore, it is important to consider the stigma that surrounds HIV/AIDS. This may inform us about (in this case) students’ perceptions and attitude towards HIV testing.

Stigma and discrimination inhibit individuals from testing and from having access to treatment for AIDS (Ford et al., 2004).

VCT faces many challenges in its implementation towards the prevention of spread of the disease. One of the challenges is AIDS related stigma. The study done by Shisana & Simbayi (2002) revealed that 20% of respondents stated that they cannot share a meal with a person who has AIDS, 18% are unwilling to sleep in the same room with someone who has AIDS and 6% would not talk to a person who has AIDS (Kalichman & Simbayi, 2004). Stigma is associated with a number of beliefs people hold about HIV/AIDS. These beliefs have hostile effects on those people living with HIV or seeking HIV testing, care and support. Meisenhelder & La Charite (1989, as cited in Brown et al., 2003) stated that there is evidence that AIDS stigma is a coping mechanism people use to compensate for their fears of contracting the disease when they have been in contact with an infected person.

In the traditional African cultures, it is common for people to believe that spirits and supernatural forces cause their illnesses. Their beliefs may be associated with stigmatizing the infected individual (AIDS Weekly, 2001). Kalichaman & Simbayi (2004) in their study found that stigma associated with traditional beliefs about the causes of AIDS & AIDS depends on the individual's related knowledge about AIDS. According to Shisana & Simbayi (2002) 4% of South Africans believed that AIDS is caused by witchcraft and 14% was uncertain about the causes. These beliefs could be a leading cause of stigmatization in South Africa (van Dyk, 2001). This could further lead to misinformation about the spread of HIV/AIDS. Herek, Capitano, Widaman (2003) in their study showed that 38% of a US national sample of adults indicated that they would fear stigma if they were HIV positive. According to Kilewo, Massawe, Lyamuya, Semali, Kalokola, Urassa, Giattas, Temu, Karlsson, Mhalu & Biberfeld (2001) stigma has an influence in decision making to seek HIV testing (Kalichaman & Simbayi, 2004). Therefore, stigmatization could have an adverse effect on people seeking HIV testing and access to other health care services.

Stigma appears to be a major issue of concern in HIV infection and is normally attached to being identified as HIV positive. Former South African state president Nelson Mandela (2002, p2) called for an end to HIV/AIDS stigma amongst adults and

children living with this disease. He further stated that the stigmatization of people living with the HIV is unacceptable. Stigma and other barriers have a negative implication to those who are HIV positive and also prevent the uptake of VCT services. According to the Presidential Commission on the Human Immunodeficiency Virus Epidemic, stigma about HIV/AIDS has resulted in discrimination being one of the barriers to implementing effective interventions and reaching high-risk groups (Miller et al., 1990). Stigma is associated with individual's beliefs about HIV/AIDS (myths). These implications have great impact on behavior change and prevention of HIV infection.

Results on previous studies done on campaigns to decrease AIDS stigma in developing countries showed that some of the interventions appeared to work on a small scale and on a short term (Brown, Macintyre & Trujillo, 2003).

Stigma is not novel to public health, nor is it unique to HIV/AIDS. Previously, people have been stigmatized for their illnesses. In HIV/AIDS, stigma is so important because it destroys people's lives and inhibits them from accessing care and support. According to Valdeseri (2002) underestimating the power of stigma may place the efficacy of HIV prevention and care programs at risk. Funding of HIV prevention programs does not guarantee good care or behavior change as care for HIV/AIDS patients only begins once the individual has been tested positive (Valdeseri, 2002).

Lack of knowledge and misperception about the transmission of HIV leads to stigma, and it also develops programs that are not stigmatizing to those at risk and those living with HIV/AIDS. Valdeseri (2002) believed that educating the communities about HIV transmission could prevent the negative influence of stigma on public health.

It is important to understanding the sources of stigma and how it affects society in behavior change and prevention of HIV. Stigma needs to be recognized as an obstacle to the prevention and care programs (Valdeseri, 2002). Individuals have different beliefs and perceptions about the disease. The stigma attached to HIV/AIDS could have a great influence to an individual at personal and community level. This makes it

difficult for people who are HIV positive and those who do not know their status to disclose their status and to access VCT services.

2.6 Theoretical context

People's lifestyle has been regarded as the cause of many modern diseases, including HIV/AIDS. Given that, lifestyle is a cause to diseases. Health promotion has focused on identifying the area of behaviour, which has an influence on individuals' health (Naidoo & Wills, 2000). Therefore, for this to be effective, it is vital to recognize how individuals' behaviour may be influenced and maintained by the community in which they live. This may include change in healthy behaviours. The Health Belief Model (HBM) was chosen for this study to explain the influence of different variables on an individuals' health related behaviour. This model tries to explain the factors, which influence the likelihood of individuals to change their behaviour and how they make decisions about their health.

2.6.1 Health belief model (HBM)

HBM is well known for focusing special attention on the function of beliefs in decision- making (Naidoo & Willis, 2000) In additional, this model focus on the perception of the degree of threat health problem poses and the perceived possible behaviours changes to preventing the health problem (Becker in Marteau, 1989). This may suggest that the likelihood of an individual to undertake a decision, in this case HIV testing depends on individuals' perceptions of their susceptibility to the diseases, and the potential benefits and costs involved in the decision to have an HIV test. Research has shown that perception of being at risk of contracting HIV leads to the decision to undertake an HIV test (Beever and Catalan, 1993). HBM suggests that behaviour change will be influenced by individuals' action and the benefits are measured against its cost. Miller, Hennessy, Wendell, Webber and Schoenbaum (1996) conducted a study investigating sexual behavioural risk factors for HIV infection, associated with the decision to undertake HIV testing and return for the results. Results showed that perceived risk of contracting HIV was associated with HIV testing.

According to Becker, for a behaviour change to be effective, the individuals:

1. Must have an incentive to change.
2. Feel threatened by the current behaviour.
3. Feel change would be beneficial in some way and have few adverse consequences.
4. Must feel competent to carry out the change.

The HBM posits that for an individual to take action or make a decision he/she must have some kind of promising/positive behaviour. HBM is known for predicting behaviour in the health context. It is hoped that the HBM will predict the conditions under which individuals decide to have/not to have an HIV test. The results of the study will be discussed making use of this theoretical framework.

2.7 Conclusion

The HIV/AIDS epidemic in South Africa and many other developing countries is still rising. This calls for major and urgent intervention programme that will help prevent the spread of infection. According to Lachman (1999), UNAIDS report, (2000) an estimate ranging from 25-50% of the population aged 20-40 will be infected with HIV by 2005.

In conclusion, it is clear that social variables have an impact in the HIV/AIDS prevention and therefore affects the decision to undertake and not to undertake an HIV test.

The efficacy of many prevention programs is limited because of the emphasis that is placed on knowledge and prevention, while the teaching of skills needed to achieve these goals is ignored. Therefore, the underlying causes of HIV/AIDS are ignored and significant issues that face people everyday are inappropriately addressed, when making decisions about practicing safe sex. It is hoped that this study will produce data that can help us understand more about barriers to uptake of VCT so that these services can be designed and delivered in a way that promotes uptake in order that the VCT objectives of treatment, care; support, prevention and others might be realized.

Despite the increase in HIV/AIDS awareness, people have not shown significant and adequate behavior change. There were some arguments about the efficacy of VCT as a prevention strategy, but VCT was also seen as a current available effective tool in the prevention of HIV. As public awareness of HIV increases, so will public demand for VCT (Brown, Macintyre, Rutenburg & Hassig, 2001 in Solomon et al., 2004). According to Brown et al. (2001) Uganda is an example of an African country with big demand for VCT in comparison to other countries. It is important to provide testing for HIV, which is the entry point for the provision of medical care and psychosocial support.

Different arguments concerning HIV testing and efficacy of VCT have been raised, with the issue of unwillingness to undertake an HIV test as of concern. Possible reasons for the decision to undertake/not to undertake an HIV test were highlighted. From the literature it became clear that barriers and individuals perception about VCT services are a major problem to VCT programmes in South Africa.

Literature demonstrates that there is a relationship between knowledge of status, counselling and education and behaviour change. This may suggest that the key to effective prevention of the spread of HI-virus is through HIV testing and being educated about HIV and VCT services. Literature has also shown that efficacy of VCT and prevention of the disease depends in the early detection of the virus, access to treatment to prevent opportunistic infections and counselling. Disclosure to accomplish further transmission of the virus, gaining support and destigmatisation outcomes through VCT represent a major role in the uptake of VCT. Solomon et al. (2004) stated that the more people are tested the more chances of disclosing their status, more chances of decreasing stigma attached to being diagnosed positive and could also normalize HIV in the community. It is the above factors that the present study will focus on, and this includes the factors that inhibit and promote the decision to undertake/not to undertake an HIV test.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter discusses the methodology followed to collect and analyze the data.

3.1 Rationale of the Study

The AIDS epidemic and the spread of HIV infection continues with more frequent occurrence in young adults. In many countries especially in developing countries like South Africa, AIDS is the leading cause of death among young adults 25-44 years of age. The World Health Organization estimated that as from March 1993, half of the 14 million HIV infected people worldwide were infected between ages 15 and 24 years (Samet et al, 1997). This HIV prevalence among young adults is not surprising considering the reported behaviour of sexually active young adults. Appropriate behaviour change to control the spread of infection may be effective if young adults are aware of their HIV status. Research shows that college students were unlikely to seek HIV testing, even if they knew that they have been exposed to HIV (Anastasi et al., 1999). Voluntary Counselling and Testing is one of the important psychological interventions to people living with HIV/AIDS. It has also been pointed out from the literature review that VCT services have become the most important intervention strategy in the prevention of the spread of infection and in behavior change. VCT, however, has limited success due to numerous problems such as beliefs, attitudes and others factors that contribute as psychosocial barriers towards utilization of the services. Research has shown that in most cases individuals were not tested for HIV, because of fear of perceived risk, fear of receiving a positive result, lack of perceived risk, stigma attached to HIV, site atmosphere, convenience and protecting family members Ford et al., (2004).

Although there is an increase of literature and research around the psychosocial implications of AIDS and HIV testing, research in the area of barriers towards HIV testing among tertiary students has been lacking. Studies indicated that the general attitudes towards people living with HIV/AIDS have not changed especially among students (Samet et al, 1997). These studies have demonstrated that there is considerable stigma attached to AIDS and HIV testing. Further, negative attitudes towards people living with HIV/AIDS and HIV testing have also been widely reported. Stigma associated with AIDS and HIV testing continues to be a serious problem. In the study done by MacDonald, Ginzburg & Bolan, (1991) the results showed that discrimination was the key issue.

It is therefore the aim of this study to investigate why individuals decide to undertake and not to undertake the HIV test. To this author's knowledge there are no surveys of South African tertiary students, which investigate the factors that prevent and promote the uptake of HIV testing. The best available data relies on interpreting the HSRC survey. This is explored because students are seen as a group that is at high risk of HIV infection.

3.2 Statement of the problem

This research seeks to investigate the factors that inhibit and promote the decision to undertake an HIV test.

Answers to this problem were found on the following questions:

3.4.1 What is the attitude of the large South African University students towards HIV testing?

3.4.2 What factors promote the decision to test for HIV?

3.4.3 What factors serve as barriers to testing for HIV?

3.3 Aims of the study

The aim of this study was to:

- Identify factors that affect the decision to undertake an HIV test.

- Identify the context within which individuals undertake the decision to have an HIV test.
- Explore whether there is a significant relationship between the various barriers/ variables, demographic variables and the decision to undertake and not to undertake an HIV test. .

It is hoped that the findings will contribute to the process of improving the utilization of VCT services and the prevention of the spread of HIV/AIDS. Other variables have been added in an attempt to focus on other social and demographic factors that might influence the decision to undertake or not to undertake the HIV test.

3.4 Design

This is an exploratory study. A survey methodology was considered for this study. The survey was conducted among students attending all the campuses of a large South African university. The survey was conducted in November 2004. Data was collected from all participating students. This study as mentioned earlier is part of a broader evaluation of HIV/AIDS awareness and prevention activities conducted at the large South African university. The university conducted different AIDS programs to guide the development of a strategic approach to dealing with HIV/AIDS at the university. The programs were firstly aimed to oversee that students graduate healthily and secondly are able to function in an effective and professional way in the world that is exposed and affected by HIV/AIDS. Research that was done in the university showed that students do not utilize VCT services in an expected way for various reasons. Some of the reasons were; they feel there is no hope since there is no cure and they feel that stigma and discrimination surrounding HIV/AIDS will affect their lives enormously. A campaign was developed by the university in 2004 to stop the negative perceptions students had about the VCT services. The campaign focused on the impact of AIDS awareness and prevention programmes that were done previously with students. The same questionnaires were used in the collection of data for the campaign evaluation and the current study. The data analysis for this study was however, different to that for the campaign and is described later in this chapter.

3.5 Research Questions

1. What factors are associated with the decision to undertake/and not to undertake an HIV test?
2. What is the relationship between the factors that serve as barriers to testing and the decision to have an HIV test?

3.6 Sample

The study surveyed students who attend different campuses of a large South African university. The target population for this study included undergraduate and post-graduate students. The participants were selected from different campuses of the university. This was a convenience sample. As a result of this study being part of a larger study, the survey aimed at recruiting as many students as possible in the time available. The study had constraints. Data was collected a week before the exams and the ethical clearance from the social science research ethics committee was delayed. Nevertheless a large sample was targeted and the sample stratified for race, age and gender. Sample size consisted of 628 students from five campuses. The median age for the sample was 20 years. Of 628 participants 160 were university residents and 442 were non-residents and 26 questionnaires were missing yielding a total sample of 602 participants.

Participants were recruited from all faculties. The research assistant was a qualified psychologist who was involved in the larger study. Each field worker was required to collect data from the different campuses.

3.6.1 The Large South African University Population Composition

Among the 44 462-student population of this large South African university in, 628 agreed to participate in this survey. 717 students of another campus at the university

were not investigated for this study. The total student population at the university consisted of 19 708 male and 24 754 female students.

Campus A consisted of, 2 494 students, Campus B=19 387 students, Campus C=7 954 students, Campus D=12 480 students and Campus E=2 147 students.

With regards to race, the total African students were 21 706, Coloured students=1 380, Indian students=14 479, White students=6 890 and Other students=7. According to race and gender there were 6 563 African male students and 12 143 African female students; 531 Coloured male students and 849 Coloured female students; 6 249 Indian male students and 8 230 Indian female students; 3 Other racial group male students and 4 female students and lastly 3 362 White male students and 3 528 White female students.

The results of the study are based on the 602 students who responded to the questionnaires.

3.7 Data Collection

The lecturers approached students before the researcher worked with them. The aim of the study was explained to the lecturers prior to approaching the students. The lecturers briefly explained the purpose of the study to the students. Later the lecturers introduced the researcher to the students. The students were informed in detail about the nature of the study and verbal consent was obtained. Students were asked whether they were willing to be participants and complete a questionnaire during their seminar period.

This was a voluntary study, where respondents were free to decide on participation or not, thereby making a fully informed decision to participate in the study. Participants were ensured confidentiality and anonymity. Ethical clearance was obtained from the university's Social Science Research Ethics Committee (SSREC).

The questionnaires administered in this study were conducted in accordance with a protocol approved by the University Social Science Research Ethics Committee.

Questionnaires were distributed to various campuses. The questionnaires were screened and marked for errors and omissions. Participants were approached with the

lecturer's permission while attending their seminars. The researcher explained the procedure with the assistance of the lecturers.

Participants were given the opportunity to ask questions prior to and on completion of the questionnaire. All participants who agreed to complete the survey were able to self-administer the survey with minimal assistance. There was one facilitator for each group of students. The protocol took approximately 20 minutes to complete. The data collection followed the same process in all universities. Students were advised to consult with the researcher or campus counsellors if some part of the questionnaires caused distress and were informed of ways to access the relevant counsellors. No questions were raised afterwards.

3.8 Instrument Used

The instrument used to identify factors related to HIV testing was questionnaires (see appendix A consisting of demographic data and specific questions related to the study). The questionnaire served as an information gathering technique about the student's perception of HIV testing, barriers to HIV testing and knowledge about HIV/AIDS. The study also seeks to understand and explain how the student's knowledge, attitudes and perception impact on the uptake of VCT services. Collecting data using questionnaires is one of the effective ways of collecting data.

Questionnaires were used in this study because the sample was large and from a widely spread population. Questionnaires were also used because they are a good starting point yielding questions for further in-depth qualitative study and to generate hypotheses for further study. The researcher ensured that the type of questions used in the interview were non-intrusive and non-threatening to the students.

A mixture of open and closed-ended questions and likert-scale items was used to collect the data for the study. The purpose of the questionnaire was to establish the beliefs and attitudes of the participants towards VCT and behavior change. An introductory front page described the nature of the research and the researcher's university affiliation and interest. Possible differences in beliefs, perception and attitude towards VCT between different groups (based on demographic details) were also investigated. The questionnaire was presented in English.

The larger study focused on knowledge about VCT services offered by the universities and also on knowledge about HIV/AIDS campaigns. Since this was part of a larger evaluation of AIDS awareness campaign a number of items in the questionnaire for this current study was limited. The researcher worked collaboratively with the larger study team in constructing the questionnaires. The development of questionnaires was informed by existing literature. Questions focused on demographic details, testing for HIV, disclosure, counselling, testing site, motivators and inhibitors towards the decision to undertake/ not to undertake the HIV test. The questionnaires considered HIV issues from the perspective of the Health Belief Model as well as from beliefs about HIV testing, efficacy of VCT services and the availability of treatment. Due to its importance in the literature, closed ended questions on place of testing were included and closed ended questions on disclosure were also included. Responses were coded into categories.

3.8.1 Measures

3.8.1.1 Demographic characteristics

Demographic characteristics assessed included age, gender, faculty, campus, whether the student stays in the residence or not and year of study. This section was included to provide a description of the study population. Students indicated the year of study, and whether they stayed on campus or off campus. Students were asked to identify the campus in which they were studying.

3.8.1.2 Knowledge of status

This variable measured whether students knew about their HIV status. The variable was measured by asking students if they knew their HIV status.

3.8.1.3 HIV testing

The dependent variable in this study, HIV testing, was measured by asking students whether they had ever been tested for HIV.

3.8.1.4 Site of testing

One item measured the site for testing. Students were asked if they knew a comfortable place for an HIV test. This was measured by asking students whether they had a HIV test on campus. There were two options for preferred site of testing. These were testing on campus or testing off campus. This variable was measured to explain whether the place of testing has an influence on the decision to undertake/not to undertake an HIV tests.

3.8.1.5 Counselling when tested

One item measured whether students who had an HIV test received counselling prior to testing. The counselling variable was measured by asking students if they received counselling.

3.8.1.6 Motivating factors for HIV testing

An 11-item scale was included to indicate factors that motivated students to have an HIV test. The students could identify more than one reason. The items measured were:

Someone I know has HIV

Someone I knew died of HIV

My partner is/was HIV positive

I had unprotected sex

Pregnancy

Mistrust of partner

I was advised/sent by someone else

Accidental/involuntary exposure

I am caring for an HIV positive person

Other reasons

3.8.1.7 Barriers to HIV testing

The 9-item scale variable measured the factors that prohibit students from undertaking an HIV test. The items reflecting preventive factors included:

- Fear that I may be HIV positive
- I do not perceive myself to be at risk of getting HIV
- The results are not reliable
- Difficult accessing services
- I have never had sex before/abstinence
- There is no such thing as HIV
- I do not trust the clinic to keep the results confidential
- There is no benefit to knowing my status
- Other reasons

3.8.1.8 Thought of testing

The variable measured whether students who had never been tested thought about having a test. The thought of testing variable was measured by asking the students if they had ever thought about having a HIV test.

3.8.1.9 Disclosure

This section focused on the support available for those who undertake HIV testing as a motivating factor to testing and disclosing ones status. Items ranged from 1 to 11. Students could choose more than one option. This included a section about to whom the respondent might disclose their status in the community or on campus. The variable was measured by asking the following questions:

Do you think it is safe for someone to be open about his or her HIV status on campus?
Do you think it is safe for someone to be open about his or her HIV status in his or her community?

Please indicate which of the following people you would tell if you were HIV positive:

- | | | |
|---------------|------------------|-----------------|
| Doctor/Nurse | Partner | Minister/Pastor |
| Family friend | Mother/Father | |
| Peer educator | Teacher/Lecturer | |

Former sexual partner	Aunt/Uncle
Other	Friend

3.9 Analysis of the Questionnaire

Data collected from the study was coded and analyzed, using the statistical analysis package (SPSS). SPSS was used to analyze the relationship between the demographics, other situational factors and the dependent measures. A coding scheme was developed from the research questions. The distribution of responses for each item was examined carefully.

The questionnaires from different campuses was analyzed separately and then compared later to assess the differences in the students responses towards VCT and also compared students' opinion between five campuses.

3.10 Descriptive Statistics

The socio-demographic characteristics of the sample population, and the test specific questions responses were analyzed using descriptive statistics and employing frequency distributions and tables and figures. These were used for demographics, HIV testing, site of testing, knowledge of status, motivation for testing, received counselling, preventive factors, thought of testing and disclosure (who to disclose to).

3.11 Inferential Statistics

Chi-square tests were used to analyze the data, and the level of significance was set at 5%. Chi-square was used to determine the association between various variables tested and demographics, for example, knowledge of status, testing for HIV, site of testing, received counselling, motivating factors, preventive factors, thought of testing, disclosure in association with the demographic variables.

Pearson correlation coefficient was the primary statistics used to analyze this study. (Kerlinger, 1986). The smaller the p-value, the greater the probability that the null-hypothesis is false and indicates a significant result. In the current study the p-values

for each test will be reported. A significant result is indicated if the p-value is smaller than 0,05.

CHAPTER FOUR
ANALYSIS OF RESULTS

The descriptive statistics of the sample are presented firstly followed by an analysis of the variables associated with uptake of HIV counselling and testing.

4.1 Descriptive statistics
4.1.1 Demographics of the Sample

The analysis was conducted on a sample of 628 university students.
Figure 1, 2, 3, 4, 5, 6 & 7 below presents bar graphs of some demographic characteristics of the sample used.

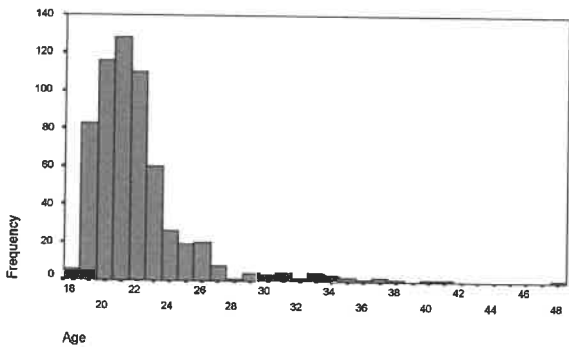
4.1.1.1 Sample composition-age

Table 1

Descriptive Statistics								
	N	Range	Minimum	Maximum	Mean		Std.	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Age	605	31	17	48	20.98	.14	3.333	11.106
Valid N (listwise)	605							

Age distribution

Figure 1

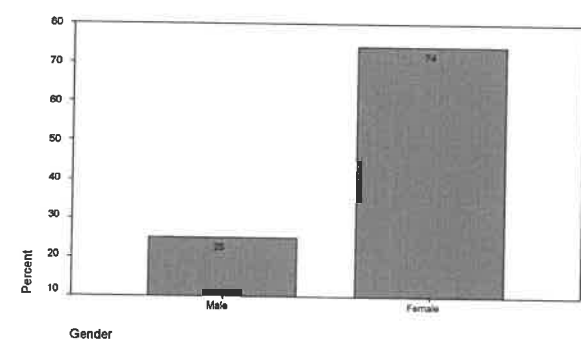


The participants’ ages ranged from 17 to 48 years, with a mean age of 20.98 or 21years SD=3.333 (Figure 1).

4.1.1.2 Sample Composition- Gender

4.1.1.2.1 Gender sample

Figure 2



Distribution sample of the whole large South African university population

Table 2

Gender	Percentage
Males	44.73%
Females	55%

Table 2 shows that the larger university consisted of 44.73% male students and 55% female students. Figure 2 indicates that women represented 74.8% (N=466) of the sample, and men made up the remaining 25.2% (N=157).

4.1.1.3 Sample composition-Race

4.1.1.3.1 Race sample

Figure 3

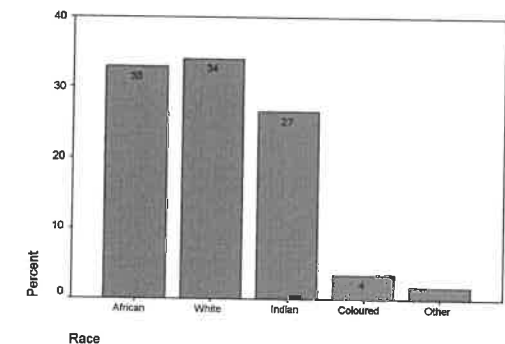


Figure 3 depicts the sample distribution by race.

Table 3

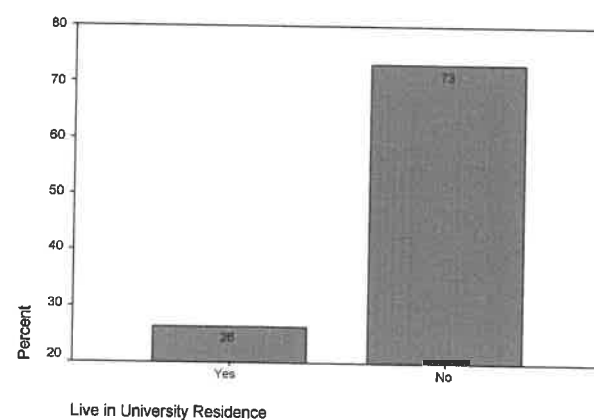
Race	Percentage
Africans	48%
Whites	15%
Indians	32%
Coloureds	3%
Other	.7%

Table 3 depicts the distribution by race of the population of the university studied. The whole population consisted of 48% African students, 32% Indian students, 15% White students, 3% Coloured students and .7% Other. With regards to the study sample, Figure 3 shows that there were 34% (N=214) Whites students, followed by 33% (N=207) Africans, 27% (N=167) Indians and 4% (N=22) Coloureds and 2% (N=21) students were listed as 'Other'.

4.1.1.4 Sample composition – Residence

4.1.1.4.1 Residence sample

Figure 4



Distribution of the university population by residence

Table 4

Residence	Percentage
Campus A	26%
Campus B	24.7%
Campus C	18.7%
Campus D	15.6%
Campus E	15%

Table 4 shows residence of the student population of the whole large South African university. The data show that 26% of students lived in campus A, 24.7% in campus B, 18.7% in campus C, 15.6% in campus D and 15% in campus E.

Figure 4 above shows that of the study’s sample 73.5% (N=460) of students lived outside campus and 26.5% (N=166) lived on campus.

4.1.1.5 Sample composition – Year of study

Figure 5

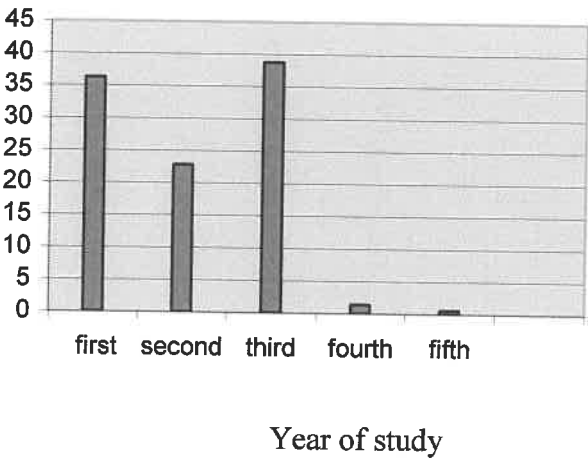


Figure 5 indicates that the majority of students were in the third year of study with 38.8% (N=243), followed by first years 36.3% (N=227), second years 22.8% (N=143), fourth years 1.4% (N=9), and fifth years 0.6% (N=4).

4.1.1.6 Sample composition - Faculty

Figure 6

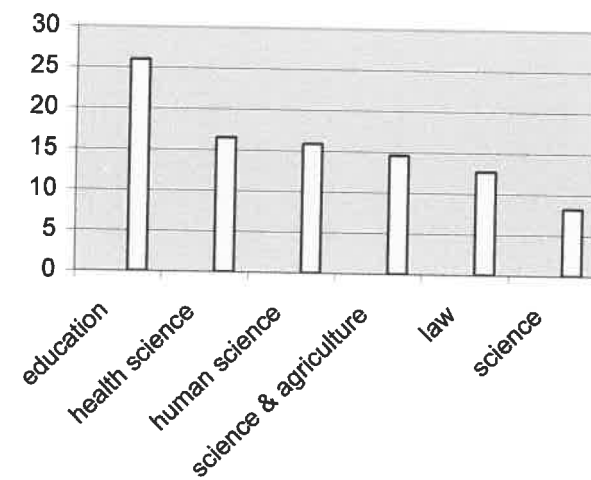


Table 6 indicates that 26.0% of students were in the Education faculty, followed by Health and Science with 16.5%, 15.9% Human Sciences, 14.6% Science and Agriculture, 12.7% Law faculty and the least presented were from faculty of Management Studies with 1.0%, 0.3% Engineering and Community and Development Disciplines.

4.1.1.7 Sample composition – Campus

Figure 7

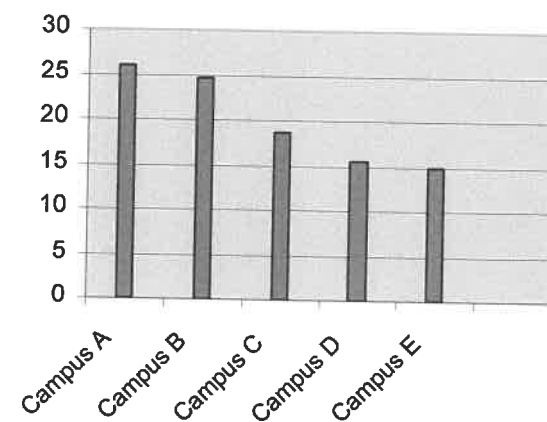


Figure 7 shows that the most represented campus was Campus A with 26.0%, followed by Campus B 24.7%, Campus C 18.7%, D 15.6% and Campus E with 15.0%.

4.2 Inferential statistics

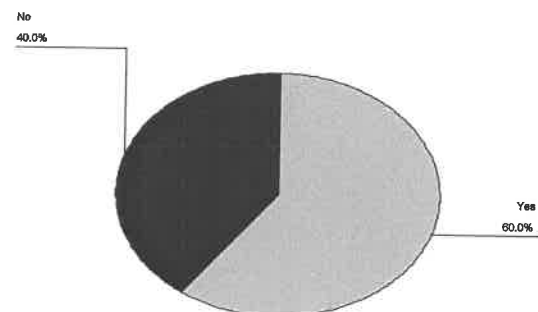
4.2.1 Age variable

Because the age range was so narrow, the results are not meaningful and although some statistical significance was found, it is not meaningful and therefore not reported. Tables are included in Appendices C.

4.2.2 Knowledge of HIV status

Figure 8 below presents a pie chart of the percentage distribution of the students' knowledge of status.

Figure 8



Students were asked, 'Do you know your HIV status'. Of the total sample 96% of respondents answered this question. Of those that answered 60% (N=362) reported to know their status and the remaining 40% (N=241) did not know their status. The pie chart above illustrates this (Figure 8)

4.2.3 Knowledge of Status in Relation to Demographic Variables

Chi square tests were conducted to determine if there was an association between knowledge of HIV status and specific demographic variables. These are presented below. An alpha level of 0.05 was used in all analyses.

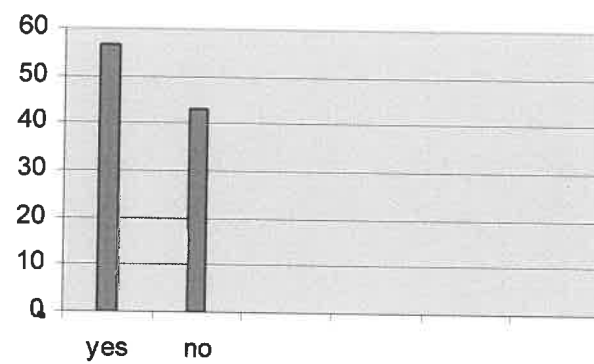
4.2.3.1 Gender variable

Figures 9 & 10 presents bar graphs of the percentage distribution of male and females' knowledge of status.

Tables 5, 6, 7 present chi-square results of the demographic characteristics of the sample.

Knowledge of status by males

Figure 9

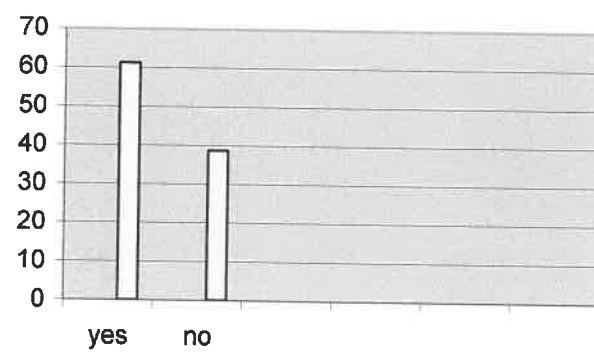


Males' knowledge of status

The results also show that out of 146 male students who responded to this question 56.8% claim to know their status and 43.2% did not know their status.

Knowledge of status by females

Figure 10



Females' knowledge of status

Figure 10 above indicate that out of 360 female students who responded to this question 61.3% females reported to know their status and 38.7% females do not know their status.

4.2.3.1.1 Association between knowledge of status and gender
Gender variable

Table 5

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.905 ^a	1	.341		
Continuity Correction ^b	.730	1	.393		
Likelihood Ratio	.900	1	.343		
Fisher's Exact Test				.382	.196
Linear-by-Linear Association	.904	1	.342		
N of Valid Cases	598				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 58.11.

A chi-square revealed no statistically significant association between knowledge of status and gender ($\chi^2=0.905$, $df = 1$, $p=0.341>0.05$).

4.2.3.1.2 Association between knowledge of status and Race

Race variable

Table 6

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.199 ^a	4	.000
Likelihood Ratio	23.417	4	.000
Linear-by-Linear Association	1.917	1	.166
N of Valid Cases	596		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.37.

		Crosstab						
		Race						
		African	White	Indian	Coloured	Other	Total	
Do you know your HIV status?	Yes	Count	98	148	94	15	4	359
		Expected Count	118.7	125.3	95.8	12.6	6.6	359.0
		Std. Residual	-1.9	2.0	-.2	.7	-1.0	
		Adjusted Residual	-3.7	4.0	-.3	1.1	-1.6	
	No	Count	99	60	65	6	7	237
	Expected Count	78.3	82.7	63.2	8.4	4.4	237.0	
	Std. Residual	2.3	-2.5	.2	-.8	1.3		
	Adjusted Residual	3.7	-4.0	.3	-1.1	1.6		
Total	Count	197	208	159	21	11	596	
	Expected Count	197.0	208.0	159.0	21.0	11.0	596.0	

Table 6 above depicts a significant association between race and knowledge of HIV status ($\chi^2=23.199$, $P=.000$, $df=4$). Results indicate that White students are significantly more likely to know their status (adjusted residual=4.0=>1.96) whereas Africans (adjusted residuals=-3.7), Indian students (adjusted residual=.3) are significantly less likely to know their status.

4.2.3.1.3 Association between knowledge of status and Residence

Residence variable

Table 7

Crosstab					
			Live in University Residence		Total
			Yes	No	
Do you know your HIV status?	Yes	Count	79	282	361
		Expected Count	95.9	265.1	361.0
		Std. Residual	-1.7	1.0	
		Adjusted Residual	-3.2	3.2	
	No	Count	81	160	241
		Expected Count	64.1	176.9	241.0
		Std. Residual	2.1	-1.3	
		Adjusted Residual	3.2	-3.2	
Total	Count	160	442	602	
	Expected Count	160.0	442.0	602.0	

Chi-Square Tests				
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	10.184 ^b	1	.001	
Continuity Correction ^a	9.592	1	.002	
Likelihood Ratio	10.059	1	.002	
Fisher's Exact Test				.002
Linear-by-Linear Association	10.167	1	.001	.001
N of Valid Cases	602			

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 64.05.

Table 7 shows an association between knowledge of status and residence. Chi-square test results revealed a significant association between knowledge of status and whether a person lives in residence or not ($\chi^2=10.184$, $p=0.001$, $df=1$). The table

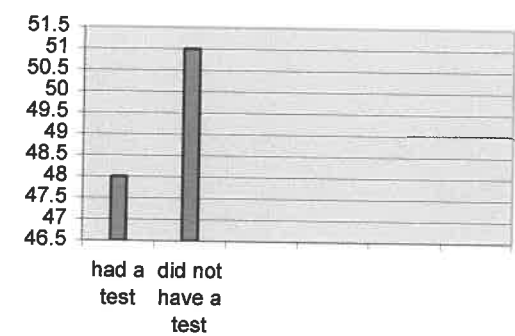
above shows those students who live in residence are less likely to know their status (adjusted residual = $-3.2 < -1.96$) than people who do live off campus.

4.2.4 HIV Testing

4.2.4.1 Did you have an HIV test?

Figure 11 shows responses to the question “Did you have an HIV test?”

Figure 11



During the study 60% (N=362) claimed to know their status (Figure 8) with 40% (N=241) of the respondents not knowing their status and 25 missing data points. However, when asked how many have had an HIV test there were only (48%)175 respondents who claim to have had an HIV test (see Figure 11). This means that there are (51%) 187 respondents (362-175) who know their status but have not had an HIV test. This discrepancy, as it is impossible to accurately know one’s status without having been tested, highlights a problem or inconsistency in the manner in which the respondents answered the questionnaire. Out of (N=362) that claimed to know their status a small proportion actually had a test.

4.2.5 HIV Testing in Relation to Demographic Variable

Figure 12 below (bar graph) and Table 8, 9, 10 presents results of an association between HIV testing and demographic variables of the sample.

4.2.5.1 Gender variable

Figure 12

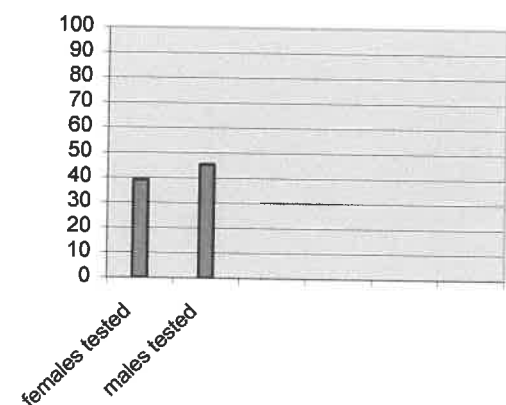


Figure 12 shows the proportion of each gender group that had an HIV test. Note that these proportions are calculated on the sub-sample that answered the question. A high proportion of missing values was evident on this variable. From the above figure 39.1% (N=124) females have had an HIV test and 45.5% (N=51) males had an HIV test.

4.2.5.2 Association between HIV testing and gender

Table 8

Chi-Square Tests				
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	1.412 ^a	1	.235	
Continuity Correction ^b	1.159	1	.282	
Likelihood Ratio	1.403	1	.236	
Fisher's Exact Test				.264
Linear-by-Linear Association	1.409	1	.235	.141
N of Valid Cases	429			

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 45.69.

The Chi-square test showed no statistically significant association between HIV testing and gender ($\chi^2=1.412$ df=1, p=0.235 P is >0.005).

4.2.5.3 Association between HIV testing and race

Table 9

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	37.269 ^a	4	.000
Likelihood Ratio	37.127	4	.000
Linear-by-Linear Association	24.560	1	.000
N of Valid Cases	426		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.44.

Crosstab

		Did you have a HIV test?		Total	
		Yes	No		
Race	African	Count	83	51	134
		Expected Count	54.4	79.6	134.0
		Residual	28.6	-28.6	
		Std. Residual	3.9	-3.2	
		Adjusted Residual	6.1	-6.1	
White		Count	51	107	158
		Expected Count	64.2	93.8	158.0
		Residual	-13.2	13.2	
		Std. Residual	-1.6	1.4	
		Adjusted Residual	-2.7	2.7	
Indian		Count	32	80	112
		Expected Count	45.5	66.5	112.0
		Residual	-13.5	13.5	
		Std. Residual	-2.0	1.7	
		Adjusted Residual	-3.0	3.0	
Coloured		Count	5	11	16
		Expected Count	6.5	9.5	16.0
		Residual	-1.5	1.5	
		Std. Residual	-.8	.5	
		Adjusted Residual	-.8	.8	
Other		Count	2	4	6
		Expected Count	2.4	3.6	6.0
		Residual	-.4	.4	
		Std. Residual	-.3	.2	
		Adjusted Residual	-.4	.4	
Total		Count	173	253	426
		Expected Count	173.0	253.0	426.0

A chi-square revealed a statistically significant association between HIV testing and race ($\chi^2=37.269$, $df=1$, $p=0.000$) P value is >0.05 (see Table 9 above). Results show that African students are more likely to have been tested than Whites, Indians and Coloureds (Adjusted residual= 6.1), yet results on the knowledge of status responses indicated that White students are more likely to report knowing their status.

4.2.5.4 Association between HIV testing and residence

Table 10

Chi-Square Tests

	Value	df	Asymp.Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	17.161(b)	1	.000		
Continuity Correction (a)	16.229	1	.000		
Likelihood Ratio	16.921	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	17.121	1	.000		
N of Valid Cases	428				

Computed only for a 2x2 table b 0 cells (.0%) have expected count less than 5. The minimum expected count is 42.85.

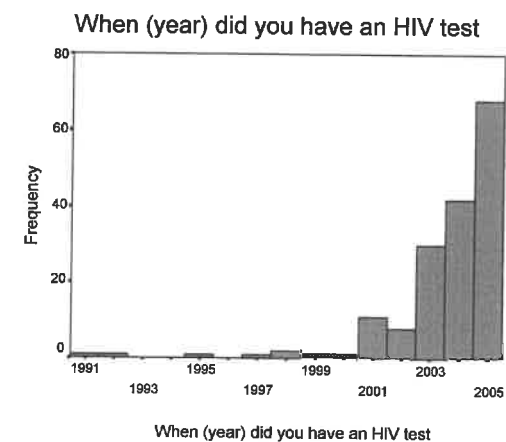
Crosstab

		Did you have a HIV test?		Total
		Yes	No	
Live in University Residence	Yes	Count 61	45	106
		Expected Count 42.8	63.2	106.0
		Residual 18.2	-18.2	
		Std. Residual 2.8	-2.3	
		Adjusted Residual 4.1	-4.1	
No		Count 112	210	322
		Expected Count 130.2	191.8	322.0
		Residual -18.2	18.2	
		Std. Residual -1.6	1.3	
		Adjusted Residual -4.1	4.1	
Total		Count 173	255	428
		Expected Count 173.0	255.0	428.0

It is noted from Table 10 above that there is a significant association between HIV testing and whether a person lives in residence or not ($\chi^2=17.161$, $df=4$, $p=0.000<0.05$). Results show that students who live in residence are more likely to have been tested (adjusted residual=4.1>1.96) than those who live outside campus (adjusted residual=-4.1).

4.2.6 Testing and time for testing

Figure 13



Of the 175 people who have had HIV tests 167 indicated the year in which they were tested. From the above results, it seems that nearly 60% (59.3%) of the people who had had an HIV test had done so in the last two years. 40.7% had had the test in the same year as the survey. 95.2% of the HIV tests were conducted in the new millennium (Figure 13).

4.2.7 Site of testing

Figure 14

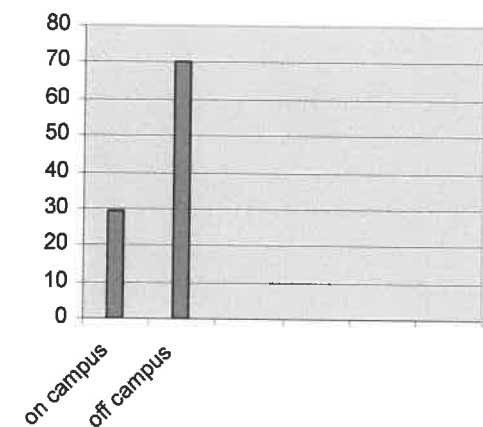
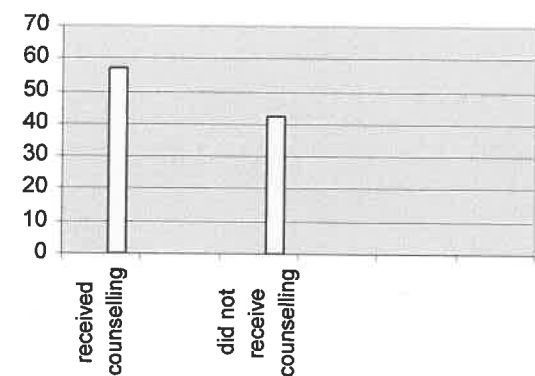


Figure 14 illustrates that 175 students responded “yes” to “Did you have an HIV test?” of these 50 had the test on campus, thus 29% of the students (50/175) who have had an HIV test had it on campus and 70% had a test outside campus. The five who did not indicate site were excluded from this calculation. 59 students claim to have

had an HIV test on campus but 9 of these had not responded, “yes” to the prior question of “Did you have an HIV test? These students’ responses were similarly excluded from this analysis.

4.2.8 Counselling before testing

Figure 15



Of the people who replied to “Did you receive counselling when tested?” with a prerequisite of answering positively to “Did you have an HIV test?” 57.4% (N=89) had received counselling and 42.6% (N=66) did not receive counselling (Figure 15). The problems associated with questionnaires can be seen that 99 people ticked “yes” for receiving counselling of which 10 of these had not had an HIV test.

4.2.9 Motivation for testing

Statistics on motivating factors were conducted for all those who indicated “yes” in response to the question “Have you been tested for HIV?” Students were asked to identify the reasons for seeking HIV testing.

Table 11 below, presents the percentage distribution of the main motivating factors to HIV testing.

4.2.9.1 Main motivating factors for testing

Table 11

Motivating Factors	Percentage of people who cited this factor as a motivator for testing
I had unprotected sex	22.9%
Someone I knew died of AIDS	16%
Someone I know has HIV	14.9%
I was advised by someone	14.9%
Mistrust partner	11.4%
I was pregnant	9.7%
Involuntary exposure	6.9%
I was physically ill	5.7%
Caring for a positive person	4.0%
My partner is/was HIV positive	1.7%

The total percentages added up to more than 100% because people had more than one factor that motivates them to be tested.

Table 11 shows that the greatest motivating factor for people getting tested was having unprotected sex, an item endorsed by 22.9% of the respondents. The next two most frequently cited motivating factors for testing can be seen to have a common theme in that they both involved being affected by close contact with a person affected by HIV or AIDS. By contrast, at a similar level of frequency, secondary referral or advice was cited as a motivating factor. This data will be further discussed in the next chapter.

4.2.10 Association between motivating factors and demographics

Further in depth analyses in the form of chi-squared tests were conducted to determine if there was any relationship between motivating factors and demographic variables of gender and residence.

Table 12-18 presents the results of the association of the demographic variables of the sample and motivating factors for testing

4.2.10.1 Gender variable

4.2.10.1.1 Association between gender and “pregnancy”

Table 12

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.933 ^b	1	.026		
Continuity Correction ^a	3.785	1	.052		
Likelihood Ratio	6.355	1	.012		
Fisher's Exact Test				.025	.018
Linear-by-Linear Association	4.905	1	.027		
N of Valid Cases	175				

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.95.

Crosstab					
Motivating factor for testing - pregnancy	Yes	Gender		Total	
		Male	Female		
	Count	1	16	17	
	Expected Count	5.0	12.0	17.0	
	Std. Residual	-1.8	1.1		
	Adjusted Residual	-2.2	2.2		
	Count	50	108	158	
	Expected Count	48.0	112.0	158.0	
	Std. Residual	.6	-.4		
	Adjusted Residual	2.2	-2.2		
Total	Count	51	124	175	
	Expected Count	51.0	124.0	175.0	

Table 12 shows a significant association between gender and “pregnancy” as a motivating factor ($\chi^2=4.933$, $df=1$, $p=0.026 < 0.05$.) Chi-square test results showed that the only motivating factor that gender is associated with is pregnancy. Females are more likely to view “pregnancy” as a motivating factor to testing (adjusted residual=2.2 > 1.96) see table above.

4.2.10.2 Race variable

4.2.10.2.1 Association between race and “knowing someone who has HIV”

Table 13

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.556 ^a	4	.049
Likelihood Ratio	11.136	4	.025
Linear-by-Linear Association	3.196	1	.074
N of Valid Cases	173		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .30.

		Race					Total
		African	White	Indian	Coloured	Other	
Motivating factor - Yes know someone	Count	19	2	4	1	0	26
	Expected Count	12.5	7.7	4.8	.8	.3	28.0
	Std. Residual	1.8	-2.0	-.4	.3	-.5	
	Adjusted Residual	2.8	-2.6	-.4	.3	-.6	
No	Count	64	49	28	4	2	147
	Expected Count	70.5	43.3	27.2	4.2	1.7	147.0
	Std. Residual	-.8	.9	.2	-.1	.2	
	Adjusted Residual	-2.8	2.6	.4	-.3	.6	
Total	Count	83	51	32	5	2	173
	Expected Count	83.0	51.0	32.0	5.0	2.0	173.0

From (Table13) above it appears that there is a significant association between race and “knowing someone who is HIV positive” as a motivating factor for testing ($X^2=9.556$, $df=4$, $p=0.049$). From the above results African students who “know someone who is HIV positive” are more likely to see this as a motivating factor (adjusted residual=2.8) whereas white students are less likely to see it as a motivating factor (adjusted residuals =-2.6).

4.2.10.2.2 Association between race and “knowing someone who died of AIDS”

Table 14

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.250 ^a	4	.001
Likelihood Ratio	21.513	4	.000
Linear-by-Linear Association	13.403	1	.000
N of Valid Cases	173		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .32.

Crosstab							
		Race					Total
		African	White	Indian	Coloured	Other	
Motivating factor for testing - someone died	Yes	Count	24	2	2	0	28
		Expected Count	13.4	8.3	5.2	.8	28.0
		Std. Residual	2.9	-2.2	-1.4	-.9	-.6
		Adjusted Residual	4.4	-2.8	-1.7	-1.0	-.6
	No	Count	59	49	30	5	145
		Expected Count	69.6	42.7	26.8	4.2	145.0
		Std. Residual	-1.3	1.0	.6	.4	.3
		Adjusted Residual	-4.4	2.8	1.7	1.0	.6
Total	Count	83	51	32	5	2	173
	Expected Count	83.0	51.0	32.0	5.0	2.0	173.0

The chi-square revealed a significant association between race and “knowing someone who died of AIDS”. Table 14 indicates that African students are more likely to view “knowing someone who died from AIDS” as a motivating factor for testing ($X^2 = 19.250$, $p = 0.001$, adjusted residual = 4.4), whilst white students (adjusted residual = -2.8), are less likely to view the above mentioned factor as an influence to HIV testing.

4.2.10.3 Residence variable

Results depict a significant association between people living in residence and being advised by someone, mistrusting partner, pregnancy and knowing someone who died of AIDS (living in residence is associated with an increase in all of these as motivating factors – the tables below show this)

4.2.10.3.1 Association between residence and “knowing someone who died of AIDS”

Table 15

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.907 ^a	1	.027		
Continuity Correction ^b	3.997	1	.046		
Likelihood Ratio	4.711	1	.030		
Fisher's Exact Test				.032	.024
Linear-by-Linear Association	4.879	1	.027		
N of Valid Cases	173				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.87.

Crosstab

			Live in University Residence		Total
			Yes	No	
Motivating factor for testing - someone died	Yes	Count	15	13	28
		Expected Count	9.9	18.1	28.0
		Std. Residual	1.6	-1.2	
		Adjusted Residual	2.2	-2.2	
	No	Count	46	99	145
		Expected Count	51.1	93.9	145.0
		Std. Residual	-.7	.5	
		Adjusted Residual	-2.2	2.2	
Total	Count	61	112	173	
	Expected Count	61.0	112.0	173.0	

Table 15 depicts a significant association between living in residence or not and “knowing someone who died of AIDS” as a motivating factor ($\chi^2=4.907$, $df=1$, $P=0.027$). From the result above, students who live in residence are more likely to view “knowing someone who died of AIDS” as a motivating factor to testing (adjusted residual=2.2). Whereas those who live outside campus are less likely to view “knowing someone who died of AIDS” as a motivating factor (adjusted residual=-2.2).

4.2.10.3.2 Association between residence and “pregnancy”

Table 16

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7.161 ^a	1	.007		
Continuity Correction ^b	5.802	1	.016		
Likelihood Ratio	6.790	1	.009		
Fisher's Exact Test				.014	.009
Linear-by-Linear Association	7.119	1	.008		
N of Valid Cases	173				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.99.

Crosstab

			Live in University Residence		Total
			Yes	No	
Motivating factor for testing - pregnancy	Yes	Count	11	6	17
		Expected Count	6.0	11.0	17.0
		Std. Residual	2.0	-1.5	
		Adjusted Residual	2.7	-2.7	
	No	Count	50	106	156
		Expected Count	55.0	101.0	156.0
		Std. Residual	-.7	.5	
		Adjusted Residual	-2.7	2.7	
Total		Count	61	112	173
		Expected Count	61.0	112.0	173.0

Table 16 shows an association between residence and pregnancy as a motivating factor for testing. Chi-square results show a significant association between living in residence or not and “pregnancy” as a motivating factor ($\chi^2=7.161$, $df=1$, $p=0.007$). From the above results students who live in residence are more likely to view “pregnancy” as a motivating factor to testing (adjusted residual=2.7) than students who live outside campus (adjusted residual=-2.7).

4.2.10.3.3 Association between residence and “mistrust of partner”

Table 17

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.064 ^a	1	.014		
Continuity Correction ^b	4.900	1	.027		
Likelihood Ratio	5.766	1	.016		
Fisher's Exact Test				.023	.015
Linear-by-Linear Association	6.028	1	.014		
N of Valid Cases	173				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.05.

Crosstab					
		Live in University Residence		Total	
		Yes	No		
Motivating factor for testing - mistrust partner	Yes	Count	12	8	20
		Expected Count	7.1	12.9	20.0
		Std. Residual	1.9	-1.4	
		Adjusted Residual	2.5	-2.5	
	No	Count	49	104	153
		Expected Count	53.9	99.1	153.0
		Std. Residual	-.7	.5	
		Adjusted Residual	-2.5	2.5	
Total		Count	61	112	173
		Expected Count	61.0	112.0	173.0

From Table 17 above, it is noted that there is a significant association between residence and “mistrust of partner” as a motivating factor ($\chi^2=6.064$, $df=1$, $p=0.014$). Students who live in residence view “mistrust of partner” as a motivating factor to testing (adjusted residual=2.5). Those who live outside campus are less likely to view “mistrust of partner” as a motivating factor to testing.

4.2.10.3.4 Association between residence and “being advised by someone else”

Table 18

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.256 ^a	1	.002		
Continuity Correction ^b	7.951	1	.005		
Likelihood Ratio	8.829	1	.003		
Fisher's Exact Test				.004	.003
Linear-by-Linear Association	9.203	1	.002		
N of Valid Cases	173				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.17.

Crosstab					
		Live in University Residence		Total	
		Yes	No		
Motivating factor for testing - advised by someone	Yes	Count	16	10	26
		Expected Count	9.2	16.8	26.0
		Std. Residual	2.3	-1.7	
		Adjusted Residual	3.0	-3.0	
	No	Count	45	102	147
		Expected Count	51.8	95.2	147.0
		Std. Residual	-.9	.7	
		Adjusted Residual	-3.0	3.0	
Total	Count		61	112	173
	Expected Count		61.0	112.0	173.0

Table 18 depicts an association between residence and being advised by someone else as a motivating factor. The chi-square revealed a statistically significant relationship between living in residence or not and “being advised by someone else” ($\chi^2=9.256$, $df=1$, $p=0.002$). It shows that students who live in residence are more likely to cite “being advised by someone” as a motivating factor to testing (adjusted residual=3.0>1.96) than the students who live outside campus.

4.2.11 Barriers to HIV testing

Statistics were conducted on factors that prevented people from knowing their status. Table 19 presents the percentage distribution of the barriers associated with HIV testing.

4.2.11.1 Main barriers to HIV testing

Table 19

Barriers to HIV testing	Distribution Percentage
Risk	37.3%
Abstinence	31.5%
Fear	14.9%
No benefit	7.5%
Accessing services	6.2%
Confidentiality	4.1%
Unreliable results	3.7%
No such thing as HIV	0.4%

The total percentage added up to more than 100% because people had more than one factor that prevents them having an HIV test. Awareness of HIV testing was prohibited by not seeing themselves at risk 37.3% followed by the belief that they are not involved in unprotected sex or practice abstinence, 31.5% of those who do not know their status (Table 19). The other significant factor cited was that of fear which was identified by 14.9% of the respondents in this category. All other barriers played a minor role and were cited by less than 10% of the respondents who did not know their status

4.2.12. Associations between barriers to HIV testing and demographics

We conducted chi-square tests for categorical variables and t-tests for continuous variables to examine potential associations or relationships between demographic variables and students’ reasons for not seeking HIV testing.

Table 20-28 present results of an association between barriers to HIV testing and demographic characteristics.

4.2.12.1 Gender variable

Three reasons for not seeking HIV proved to be significantly different for men than women. Results showed a significant association between gender and the following barrier to HIV testing - no benefit in knowing one’s status. The barrier, confidentiality of results, did not proof to be significant.

4.2.12.1.1 Association between gender and “confidentiality”

Table 20

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.969 ^a	1	.085		
Continuity Correction ^b	1.841	1	.175		
Likelihood Ratio	2.629	1	.105		
Fisher's Exact Test				.135	.092
Linear-by-Linear Association	2.957	1	.086		
N of Valid Cases	238				

a. Computed only for a 2x2 table
b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.65.

From Table 20 there does not seem to be a statistically significant association between gender and keeping the results confidential as a barrier ($\chi^2=2.969$, $df=1$, $p=0.085>0.05$).

4.2.12.1.2 Association between gender and “no benefit in knowing one’s status”

Table 21

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.987 ^a	1	.046		
Continuity Correction ^b	2.929	1	.087		
Likelihood Ratio	3.581	1	.058		
Fisher's Exact Test				.082	.048
Linear-by-Linear Association	3.970	1	.046		
N of Valid Cases	238				

a. Computed only for a 2x2 table
b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.50.

Crosstab						
			Gender		Total	
			Male	Female		
Not know status - no benefit	Yes	Count	8	9	17	
		Expected Count	4.5	12.5	17.0	
		Std. Residual	1.6	-1.0		
		Adjusted Residual	2.0	-2.0		
	No	Count	55	166	221	
		Expected Count	58.5	162.5	221.0	
		Std. Residual	-.5	.3		
		Adjusted Residual	-2.0	2.0		
	Total		Count	63	175	238
			Expected Count	63.0	175.0	238.0

Table 21 shows an association between gender and the belief that there is no benefit in knowing one's status as a barrier for testing. The chi-square revealed a significant association between gender and the belief that there is "no benefit in knowing one's status" ($\chi^2 = 3.987$, $df=1$, $p=0.046$). Significantly more men believe that there is "no benefit in knowing one's status" (adjusted residual=2.0 > 1.96) than females.

4.2.12.1.3 Association between gender and "no such thing as HIV"

Table 22

Crosstab					
			Gender		Total
			Male	Female	
Not know status - no such thing as HIV	Yes	Count	1	0	1
		Expected Count	.3	.7	1.0
		Std. Residual	1.4	-.9	
		Adjusted Residual	1.7	-1.7	
	No	Count	62	175	237
		Expected Count	62.7	174.3	237.0
		Std. Residual	-.1	.1	
		Adjusted Residual	-1.7	1.7	
Total	Count	63	175	238	
	Expected Count	63.0	175.0	238.0	

These results are not valid because there are less than 5 counts in half of the cells (Table 22). This means that we cannot conclude anything from this.

4.2.12.2 Race variable

4.2.12.2.1 Association between race and "fear of a positive result"

Table 23

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.973 ^a	4	.001
Likelihood Ratio	20.092	4	.000
Linear-by-Linear Association	7.735	1	.005
N of Valid Cases	237		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is .91.

Crosstab					
Race			Not know status - fear		Total
			Yes	No	
African	Count		28	73	99
	Expected Count		15.0	84.0	99.0
	Std. Residual		2.8	-1.2	
	Adjusted Residual		4.0	-4.0	
White	Count		4	56	60
	Expected Count		9.1	50.9	60.0
	Std. Residual		-1.7	.7	
	Adjusted Residual		-2.1	2.1	
Indian	Count		4	61	65
	Expected Count		9.9	55.1	65.0
	Std. Residual		-1.9	.8	
	Adjusted Residual		-2.4	2.4	
Coloured	Count		0	6	6
	Expected Count		.9	5.1	6.0
	Std. Residual		-1.0	.4	
	Adjusted Residual		-1.1	1.1	
Other	Count		2	5	7
	Expected Count		1.1	5.9	7.0
	Std. Residual		.9	-.4	
	Adjusted Residual		1.0	-1.0	
Total	Count		36	201	237
	Expected Count		36.0	201.0	237.0

Table 23 depicts an association between race and fear of a positive result as a barrier for testing. Results revealed a significant association between race and fear that the results could be positive ($\chi^2=18.973$, $df=4$, $p=.001$). It shows that African students who do not know their status are the most likely to view “fear” as a barrier to knowing one’s status (adjusted residual=4.0) Whites, Indian and Coloured students are less likely to view fear as a barrier to HIV testing.

4.2.12.2.2 Association between race and “not perceiving themselves to be at risk”

Table 24

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.524 ^a	4	.014
Likelihood Ratio	12.765	4	.012
Linear-by-Linear Association	3.027	1	.082
N of Valid Cases	237		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 2.25.

Crosstab					
Race			Not know status - risk		Total
			Yes	No	
African	Count		26	73	99
	Expected Count		37.2	61.8	99.0
	Std. Residual		-1.8	1.4	
	Adjusted Residual		-3.0	3.0	
White	Count		31	29	60
	Expected Count		22.5	37.5	60.0
	Std. Residual		1.8	-1.4	
	Adjusted Residual		2.6	-2.6	
Indian	Count		28	37	65
	Expected Count		24.4	40.6	65.0
	Std. Residual		.7	-6	
	Adjusted Residual		1.1	-1.1	
Coloured	Count		1	5	6
	Expected Count		2.3	3.7	6.0
	Std. Residual		-.8	.6	
	Adjusted Residual		-1.1	1.1	
Other	Count		3	4	7
	Expected Count		2.6	4.4	7.0
	Std. Residual		.2	-.2	
	Adjusted Residual		.3	-.3	
Total	Count		89	148	237
	Expected Count		89.0	148.0	237.0

It is evident from Table 24 above that there is a significant association between race and “not perceiving themselves to be at risk of getting HIV” ($\chi^2=12.524, df=4, p=0.014$). African students who do not know their status are less likely to view “not perceiving themselves to be at risk of getting HIV” as a barrier (adjusted residual=-3.0), whereas White students are more likely to view “not perceiving themselves to be at risk” as a barrier (adjusted residual=2.6). Indian and Coloured students are least likely to view themselves to be at risk of getting HIV.

4.2.12.2.3 Association between race and abstinence

Table 25

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.093 ^a	4	.007
Likelihood Ratio	14.187	4	.007
Linear-by-Linear Association	6.195	1	.013
N of Valid Cases	237		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.87.

Crosstab				
		Not know status - abstinence		Total
		Yes	No	
Race	African	Count	20	79
		Expected Count	30.9	68.1
		Std. Residual	-2.0	1.3
		Adjusted Residual	-3.1	3.1
	White	Count	22	38
		Expected Count	18.7	41.3
		Std. Residual	.8	-.5
		Adjusted Residual	1.1	-1.1
	Indian	Count	27	38
		Expected Count	20.3	44.7
		Std. Residual	1.5	-1.0
		Adjusted Residual	2.1	-2.1
	Coloured	Count	4	2
		Expected Count	1.9	4.1
		Std. Residual	1.6	-1.0
		Adjusted Residual	1.9	-1.9
	Other	Count	1	6
		Expected Count	2.2	4.8
		Std. Residual	-.8	.5
		Adjusted Residual	-1.0	1.0
Total		Count	74	163
		Expected Count	74.0	163.0

Chi-square results show a significant association between race and abstinence ($X^2=14.093$, $df=4$, $p=0.007$) see Table 25 above. From the above results it appears that African students who do not know their status are less likely to view “abstinence” as a barrier to HIV testing (adjusted residual=-3.1) whereas, Indian students who do not know their status are more likely to view “abstinence” as a barrier to HIV testing (adjusted residual=2.1).

4.2.12.3 Residence variable

4.2.12.3.1 Associations between residence and “fear of being HIV positive”

Table 26

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	14.345 ^a	1	.000		
Continuity Correction ^b	12.933	1	.000		
Likelihood Ratio	13.530	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	14.285	1	.000		
N of Valid Cases	241				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.10.

Crosstab				
		Live in University Residence		Total
		Yes	No	
Not know status - fear	Yes	Count	22	14
		Expected Count	12.1	23.9
		Std. Residual	2.8	-2.0
		Adjusted Residual	3.8	-3.8
	No	Count	59	146
		Expected Count	68.9	136.1
		Std. Residual	-1.2	.8
		Adjusted Residual	-3.8	3.8
Total		Count	81	160
		Expected Count	81.0	160.0

Table 26 shows a significant association between whether one lives in residence or not and “fear of being HIV positive” as a barrier in people knowing their status ($\chi^2 = 14.345$, $df=1$, $p=0.000$). The results indicates that students who live in residence are significantly more likely to see “fear that they may be HIV positive” as a barrier from finding out their status (Adjusted residual $3.8 > 1.96$).

4.2.12.3.2 Association between residence and “not perceiving themselves to be at risk of contracting HIV”

Table 27

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.798 ^a	1	.009		
Continuity Correction ^b	6.083	1	.014		
Likelihood Ratio	7.006	1	.008		
Fisher's Exact Test				.011	.008
Linear-by-Linear Association	6.770	1	.009		
N of Valid Cases	241				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 30.25.

Crosstab					
			Live in University Residence		Total
			Yes	No	
Not know status - risk	Yes	Count	21	69	90
		Expected Count	30.2	59.8	90.0
		Std. Residual	-1.7	1.2	
		Adjusted Residual	-2.6	2.6	
	No	Count	60	91	151
		Expected Count	50.8	100.2	151.0
		Std. Residual	1.3	-.9	
		Adjusted Residual	2.6	-2.6	
Total		81	160	241	
Expected Count		81.0	160.0	241.0	

A significant association was found between perception of risk as a barrier and residence ($X^2=6.798$, $df=1$, $p=0.009$) (Table 27). From the results above, students who live outside campus are more likely to view “perceived risk” as a barrier to HIV testing (adjusted residual=2.6). Whereas, students who live on campus are less likely to view “perceived risk” as a barrier.

4.2.12.3.3 Association between residence and “abstinence”

Table 28

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.287 ^a	1	.012		
Continuity Correction ^b	5.572	1	.018		
Likelihood Ratio	6.552	1	.010		
Fisher's Exact Test				.013	.008
Linear-by-Linear Association	6.281	1	.012		
N of Valid Cases	241				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 25.54.

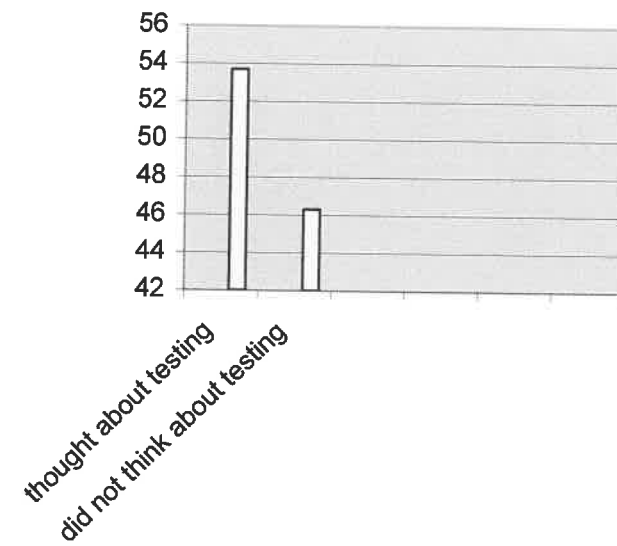
Crosstab					
			Live in University Residence		Total
			Yes	No	
Not know status - abstinence	Yes	Count	17	59	76
		Expected Count	25.5	50.5	76.0
		Std. Residual	-1.7	1.2	
		Adjusted Residual	-2.5	2.5	
	No	Count	64	101	165
		Expected Count	55.5	109.5	165.0
		Std. Residual	1.1	-.8	
		Adjusted Residual	2.5	-2.5	
Total		Count	81	160	241
		Expected Count	81.0	160.0	241.0

Table 28 shows an association between residence and abstinence as a barrier to testing. Chi-square revealed a significant association between residence and “abstinence” as a barrier ($X^2=6.287$, $df=1$, $p=0.012$). Students who do not live on campus are more likely to view “abstinence” as a barrier to HIV testing (adjusted residual= $-2.5<1.96$) than those who live on campus (see Table above).

4.2.13 Thought of testing

Figure 16 presents a bar graph of the percentage distribution of thinking about testing for those students who have not been tested.

Figure 16



Of the 241 that do not know their status, 229 replied to the question “Have you thought about having an HIV test?” 53.7% (N=123) of the respondents had thought about testing and 46.3% (N=106) had not thought about having an HIV test (Figure16).

4.2.14 Disclosure

In a closed ended question, students were asked, “Whom would you tell if you tested HIV-positive?” This was analysed in terms of both basic frequency counts and more complex associations, between parties to whom people would disclose and the demographic variables of the people disclosing.

4.2.14.1 Persons to whom the students would disclose their HIV status

Table 29 presents the percentage distribution of to whom the students would disclose their status.

Table 29

Would Disclose to	Percentage Distribution
Mother/father	70.5%
Partner	63.9%
Doctor/nurse	61.3%
Friend	51.9%
Former sexual Partner	37.6%
Minister/pastor	21.7%
Family friend	24.2%
Aunt/uncle	15.4%
Peer educator	7.3%
Teacher/lecturer	6.8%

In terms of frequency 70.5% of the students said that they would disclose their HIV positive status to their mother/father, while 63.9% would disclose to their partner (Table 29). Doctors and nurses were the most likely people besides close relatives, who an infected person would frequently disclose to. Distant relatives or non-relatives not involved in the medical or religious spheres were identified as people least likely to disclose to, these include teacher 6.8%, peer educator 7.3%, and aunt/uncle 15.4%.

4.2.15 Association between disclosure and demographics

Table 30-47 presents the association between disclosure and demographic characteristics.

4.2.15.1 Gender and disclosure variable

4.2.15.1.1 Association between gender and disclosing to peer educator

Table 30

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.113 ^a	1	.024		
Continuity Correction ^b	4.346	1	.037		
Likelihood Ratio	4.682	1	.030		
Fisher's Exact Test				.033	.022
Linear-by-Linear Association	5.104	1	.024		
N of Valid Cases	623				

- a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.59.

Crosstab					
			Peer Educator		Total
			Yes	No	
Gender	Male	Count	18	139	157
		Expected Count	11.6	145.4	157.0
		Std. Residual	1.9	-.5	
		Adjusted Residual	2.3	-2.3	
	Female	Count	28	438	466
		Expected Count	34.4	431.6	466.0
		Std. Residual	-1.1	.3	
		Adjusted Residual	-2.3	2.3	
Total	Count	46	577	623	
	Expected Count	46.0	577.0	623.0	

Table 30 shows an association between gender and disclosure to peer educator. Chi-square revealed a significant association between gender and disclosing to a peer educator ($\chi^2=5.113$, $df=1$, $p=0.024$). From the above results, more males would disclose to peer educators (adjusted residual=2.3) than females.

4.2.15.1.2 Association between gender and disclosing to aunt/uncle

Table 31

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.914 ^a	1	.015		
Continuity Correction	5.312	1	.021		
Likelihood Ratio	5.580	1	.018		
Fisher's Exact Test				.021	.012
Linear-by-Linear Association	5.905	1	.015		
N of Valid Cases	623				

- a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 24.44.

Crosstab				
		Aunt / Uncle		Total
		Yes	No	
Gender	Male	Count	34	123
		Expected Count	24.4	132.6
		Std. Residual	1.9	-.8
		Adjusted Residual	2.4	-2.4
	Female	Count	63	403
		Expected Count	72.6	393.4
		Std. Residual	-1.1	.5
		Adjusted Residual	-2.4	2.4
Total	Count	97	526	623
	Expected Count	97.0	526.0	623.0

From table 31 above, it appears that there is a significant association between gender and disclosing to aunt or uncle ($\chi^2=5.914, df=1, p=0.015$). Results also show that males are more likely to disclose to aunt/uncle (adjusted residual=2.4) and females are less likely to disclose to them.

4.2.15.1.3 Association between gender and disclosing to a friend

Table 32

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7.578 ^a	1	.006		
Continuity Correction	7.078	1	.008		
Likelihood Ratio	7.586	1	.006		
Fisher's Exact Test				.007	.004
Linear-by-Linear Association	7.566	1	.006		
N of Valid Cases	623				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 75.10.

Crosstab				
			Friend	
			Yes	No
Gender	Male	Count	67	90
		Expected Count	81.9	75.1
		Std. Residual	-1.6	1.7
		Adjusted Residual	-2.8	2.8
	Female	Count	258	208
		Expected Count	243.1	222.9
		Std. Residual	1.0	-1.0
		Adjusted Residual	2.8	-2.8
Total	Count	325	298	623
	Expected Count	325.0	298.0	623.0

In answering the question to whom would you disclose your status to, result showed that females are more likely to disclose their HIV status to a friend than males (adjusted residual = 2.8). These results showed a significant association between gender and disclosing to a friend ($\chi^2=7.578, df=1, p=0.006$) see Table 32 above.

4.2.15.2 Race and disclosure variable

4.2.15.2.1 Association between race and disclosing to the doctor/nurse

Table 33

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	32.722 ^a	4	.000
Likelihood Ratio	32.901	4	.000
Linear-by-Linear Association	6.934	1	.008
N of Valid Cases	621		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.27.

Crosstab					
			Doctor / Nurse		Total
			Yes	No	
Race	African	Count	97	110	207
		Expected Count	126.7	80.3	207.0
		Std. Residual	-2.6	3.3	
		Adjusted Residual	-5.2	5.2	
	White	Count	157	57	214
		Expected Count	131.0	83.0	214.0
		Std. Residual	2.3	-2.9	
		Adjusted Residual	4.5	-4.5	
	Indian	Count	108	59	167
		Expected Count	102.2	64.8	167.0
		Std. Residual	.6	-.7	
		Adjusted Residual	1.1	-1.1	
	Coloured	Count	12	10	22
		Expected Count	13.5	8.5	22.0
		Std. Residual	-.4	.5	
		Adjusted Residual	-.7	.7	
	Other	Count	6	5	11
		Expected Count	6.7	4.3	11.0
		Std. Residual	-.3	.4	
		Adjusted Residual	-.5	.5	
Total	Count	380	241	621	
	Expected Count	380.0	241.0	621.0	

Table 33 shows an association between race and disclosure to a doctor/nurse. Chi-square results show a significant association between race and disclosure to a doctor/nurse ($\chi^2=32.722$, $df=1$, $p=0.000$). From the above results African students are less likely to disclose to a doctor/nurse (adjusted residual=-5.2) than White students (adjusted residual=4.5). Other races are least likely to disclose to these people.

4.2.15.2.2 Association between race and disclosing to a family friend

Table 34

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.662 ^a	4	.002
Likelihood Ratio	17.110	4	.002
Linear-by-Linear Association	.250	1	.617
N of Valid Cases	621		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 2.66.

Crosstab					
		Family Friend		Total	
		Yes	No		
Race	African	Count	36	171	207
		Expected Count	50.0	157.0	207.0
		Std. Residual	-2.0	1.1	
		Adjusted Residual	-2.8	2.8	
	White	Count	70	144	214
		Expected Count	51.7	162.3	214.0
		Std. Residual	2.5	-1.4	
		Adjusted Residual	3.6	-3.6	
	Indian	Count	40	127	167
		Expected Count	40.3	126.7	167.0
		Std. Residual	-.1	.0	
		Adjusted Residual	-.1	.1	
	Coloured	Count	2	20	22
		Expected Count	5.3	16.7	22.0
		Std. Residual	-1.4	.8	
		Adjusted Residual	-1.7	1.7	
	Other	Count	2	9	11
		Expected Count	2.7	8.3	11.0
		Std. Residual	-.4	.2	
		Adjusted Residual	-.5	.5	
Total		Count	150	471	621
		Expected Count	150.0	471.0	621.0

Table 34 above depicts a significant association between race and disclosing one’s status to a family friend ($\chi^2=16.662$, $df=4$, $p=0.002$). The results indicate that White students are more likely to disclose their status to a family friend (adjusted residual=3.6) and African students are less likely to disclose to a family friend (adjusted residual=-2.8).

4.2.15.2.3 Association between race and disclosing to peer educator

Table 35

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.775 ^a	4	.044
Likelihood Ratio	11.068	4	.026
Linear-by-Linear Association	3.665	1	.056
N of Valid Cases	621		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is .78.

Crosstab				
Race	Peer Educator	Peer Educator		Total
		Yes	No	
African	Count	21	186	207
	Expected Count	14.7	192.3	207.0
	Std. Residual	1.7	-.5	
	Adjusted Residual	2.1	-2.1	
White	Count	15	199	214
	Expected Count	15.2	198.8	214.0
	Std. Residual	.0	.0	
	Adjusted Residual	-.1	.1	
Indian	Count	8	161	167
	Expected Count	11.8	155.2	167.0
	Std. Residual	-1.7	.5	
	Adjusted Residual	-2.1	2.1	
Coloured	Count	0	22	22
	Expected Count	1.6	20.4	22.0
	Std. Residual	-1.2	.3	
	Adjusted Residual	-1.3	1.3	
Other	Count	2	9	11
	Expected Count	.8	10.2	11.0
	Std. Residual	1.4	-.4	
	Adjusted Residual	1.4	-1.4	
Total	Count	44	577	621
	Expected Count	44.0	577.0	621.0

Table 35 presents an association between race and disclosure to peer educator. The Chi-square test results show a significant association between race and disclosing one's status to peer educator ($\chi^2=9.775$, $df=4$, $p=0.044$). The results above indicate that African students are more likely to disclose their status to peer educators (adjusted residual=2.1) whereas Indians are less likely to disclose their status to peer educators (adjusted residual=-2.1).

4.2.15.2.4 Association between race and disclosing to former sexual partner

Table 36

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.742 ^a	4	.000
Likelihood Ratio	26.874	4	.000
Linear-by-Linear Association	3.108	1	.078
N of Valid Cases	621		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.11.

Crosstab					
			Former Sexual Partner		Total
			Yes	No	
Race	African	Count	54	153	207
		Expected Count	77.3	129.7	207.0
		Std. Residual	-2.7	2.0	
		Adjusted Residual	-4.1	4.1	
	White	Count	107	107	214
		Expected Count	79.9	134.1	214.0
		Std. Residual	3.0	-2.3	
		Adjusted Residual	4.7	-4.7	
	Indian	Count	59	108	167
		Expected Count	62.4	104.6	167.0
		Std. Residual	-.4	.3	
		Adjusted Residual	-.6	.6	
	Coloured	Count	7	15	22
		Expected Count	8.2	13.8	22.0
		Std. Residual	-.4	.3	
		Adjusted Residual	-.5	.5	
	Other	Count	5	6	11
		Expected Count	4.1	6.9	11.0
		Std. Residual	.4	-.3	
		Adjusted Residual	.6	-.6	
Total	Count	232	389	621	
	Expected Count	232.0	389.0	621.0	

Table 36 above reveals a statistically significant association between race and disclosure to former sexual partner ($\chi^2=26.742$, $df=4$, $p=0.000$). Results also show that White students are more likely to disclose their status to a former sexual partner (adjusted residual=4.7) and African students are less likely to disclose their status to a former sexual partner (adjusted residual=-4.1).

4.2.15.2.5 Association between race and disclosing to a current partner

Table 37

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.532 ^a	4	.000
Likelihood Ratio	25.198	4	.000
Linear-by-Linear Association	.438	1	.508
N of Valid Cases	621		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.00.

Crosstab					
Race	Partner		Partner		Total
			Yes	No	
African	Count		118	89	207
	Expected Count		131.7	75.3	207.0
	Std. Residual		-1.2	1.6	
	Adjusted Residual		-2.4	2.4	
White	Count		163	51	214
	Expected Count		136.1	77.9	214.0
	Std. Residual		2.3	-3.0	
	Adjusted Residual		4.7	-4.7	
Indian	Count		99	68	167
	Expected Count		106.2	60.8	167.0
	Std. Residual		-.7	.9	
	Adjusted Residual		-1.4	1.4	
Coloured	Count		10	12	22
	Expected Count		14.0	8.0	22.0
	Std. Residual		-1.1	1.4	
	Adjusted Residual		-1.8	1.8	
Other	Count		5	6	11
	Expected Count		7.0	4.0	11.0
	Std. Residual		-.8	1.0	
	Adjusted Residual		-1.3	1.3	
Total	Count		395	226	621
	Expected Count		395.0	226.0	621.0

Table 37 above shows a significant association between race and disclosing one's status to current partner ($\chi^2=24.532$, $df=4$, $p=0.000$). From the above results White students are more likely to disclose to their current partners (adjusted residual=4.7) whereas African students are less likely to disclose to their current partners (adjusted residual=-2.4). Other races are least likely to disclose to their current partners, including Indians (adjusted residual=-1.4) and (Coloureds=-1.8).

4.2.15.2.6 Association between race and disclosing to mother/father

Table 38

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.274 ^a	4	.000
Likelihood Ratio	42.728	4	.000
Linear-by-Linear Association	5.785	1	.016
N of Valid Cases	621		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.28.

Crosstab					
Race			Mother / Father		Total
			Yes	No	
African	Count		116	91	207
	Expected Count		145.3	61.7	207.0
	Std. Residual		-2.4	3.7	
	Adjusted Residual		-5.5	5.5	
White	Count		181	33	214
	Expected Count		150.2	63.8	214.0
	Std. Residual		2.5	-3.9	
	Adjusted Residual		5.7	-5.7	
Indian	Count		117	50	167
	Expected Count		117.2	49.8	167.0
	Std. Residual		.0	.0	
	Adjusted Residual		.0	.0	
Coloured	Count		15	7	22
	Expected Count		15.4	6.6	22.0
	Std. Residual		-.1	.2	
	Adjusted Residual		-.2	.2	
Other	Count		7	4	11
	Expected Count		7.7	3.3	11.0
	Std. Residual		-.3	.4	
	Adjusted Residual		-.5	.5	
Total	Count		436	185	621
	Expected Count		436.0	185.0	621.0

Table 38 shows an association between race and disclosure to mother/father. Chi-square reveals a significant association between race and disclosing one's status to mother/father ($\chi^2=41.274$, $df=4$, $p=0.000$). The adjusted residual results show that White students are more likely to disclose their status to parents (adjusted residual=5.7) whilst African students are less likely to disclose their status to mother/father (adjusted residual=-5.5). Indians, Coloureds and other are least likely to disclose to parents

4.2.15.2.7 Association between race and disclosing to aunt/uncle

Table 39

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.039 ^a	4	.002
Likelihood Ratio	16.448	4	.002
Linear-by-Linear Association	.088	1	.755
N of Valid Cases	621		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.68.

Crosstab					
Race			Aunt / Uncle		Total
			Yes	No	
African	Count		24	183	207
	Expected Count		31.7	175.3	207.0
	Std. Residual		-1.4	.6	
	Adjusted Residual		-1.8	1.8	
White	Count		50	164	214
	Expected Count		32.7	181.3	214.0
	Std. Residual		3.0	-1.3	
	Adjusted Residual		4.0	-4.0	
Indian	Count		17	150	167
	Expected Count		25.5	141.5	167.0
	Std. Residual		-1.7	.7	
	Adjusted Residual		-2.1	2.1	
Coloured	Count		2	20	22
	Expected Count		3.4	18.6	22.0
	Std. Residual		-.7	.3	
	Adjusted Residual		-.8	.8	
Other	Count		2	9	11
	Expected Count		1.7	9.3	11.0
	Std. Residual		.2	-.1	
	Adjusted Residual		.3	-.3	
Total	Count		95	526	621
	Expected Count		95.0	526.0	621.0

Table 39 shows a significant association between race and disclosing one’s status to aunt/uncle ($\chi^2=17.039$, $df=4$, $p=0.002$). Adjusted residual shows that White students are more likely to disclose their status to aunt/uncle (adjusted residual=4.0) whereas Indian students are less likely to disclose to aunt/uncle (adjusted residual=-2.1). Other races are least likely to disclose their status to aunt/uncle that includes African students (adjusted residual=-1.8), Coloureds (adjusted residual=-.8) and other (adjusted residual=-.3).

4.2.15.2.8 Association between race and disclosing to a friend

Table 40

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.909 ^a	4	.001
Likelihood Ratio	18.086	4	.001
Linear-by-Linear Association	.073	1	.788
N of Valid Cases	621		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.30.

Crosstab					
			Friend		Total
			Yes	No	
Race	African	Count	95	112	207
		Expected Count	107.3	99.7	207.0
		Std. Residual	-1.2	1.2	
		Adjusted Residual	-2.1	2.1	
	White	Count	136	78	214
		Expected Count	111.0	103.0	214.0
		Std. Residual	2.4	-2.5	
		Adjusted Residual	4.2	-4.2	
	Indian	Count	76	91	167
		Expected Count	86.6	80.4	167.0
		Std. Residual	-1.1	1.2	
		Adjusted Residual	-1.9	1.9	
	Coloured	Count	10	12	22
		Expected Count	11.4	10.6	22.0
		Std. Residual	-.4	.4	
		Adjusted Residual	-.6	.6	
	Other	Count	5	6	11
		Expected Count	5.7	5.3	11.0
		Std. Residual	-.3	.3	
		Adjusted Residual	-.4	.4	
Total		Count	322	299	621
		Expected Count	322.0	299.0	621.0

From Table 40 above, it appears that there is a significant association between race and disclosing one’s status to a friend ($\chi^2=17.909$, $df=4$, $p=0.001$). The results show that White students are more likely to disclose their status to a friend (adjusted

residual=4.2) whereas African students (adjusted residual=-2.1) and Indian students (adjusted residual=-1.9) are less likely to disclose to a friend.

4.2.15.2.9 Association between race and disclosing to minister/pastor

Table 41

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.069 ^a	4	.000
Likelihood Ratio	20.768	4	.000
Linear-by-Linear Association	.508	1	.476
N of Valid Cases	621		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.39.

Crosstab				
		Minister / Pastot		Total
		Yes	No	
Race African	Count	38	171	207
	Expected Count	45.0	162.0	207.0
	Std. Residual	-1.3	.7	
	Adjusted Residual	-1.9	1.9	
White	Count	64	150	214
	Expected Count	46.5	167.5	214.0
	Std. Residual	2.6	-1.4	
	Adjusted Residual	3.6	-3.6	
Indian	Count	23	144	167
	Expected Count	36.3	130.7	167.0
	Std. Residual	-2.2	1.2	
	Adjusted Residual	-2.9	2.9	
Coloured	Count	8	14	22
	Expected Count	4.8	17.2	22.0
	Std. Residual	1.5	-.8	
	Adjusted Residual	1.7	-1.7	
Other	Count	4	7	11
	Expected Count	2.4	8.6	11.0
	Std. Residual	1.0	-.5	
	Adjusted Residual	1.2	-1.2	
Total	Count	135	486	621
	Expected Count	135.0	486.0	621.0

Table 41 above depicts a significant association between race and disclosing one’s status to a minister/pastor ($\chi^2=21.069$, $df=4$, $p=0.000$). The results also show that White students are more likely to disclose their status to minister/pastor (adjusted residual=3.6) whereas Indian students (adjusted residual=-2.9) and African students (adjusted residual=-1.9) are less likely to disclose their status to minister/pastor.

4.2.15.3 Residence variable

4.2.15.3.1 Association between residence and disclosing to doctor/nurse

Table 42

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.610 ^a	1	.010		
Continuity Correction ^b	6.141	1	.013		
Likelihood Ratio	6.526	1	.011		
Fisher's Exact Test				.012	.007
Linear-by-Linear Association	6.599	1	.010		
N of Valid Cases	626				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 64.17.

Doctor / Nurse * Live in University Residence Crosstabulation					
		Live in University Residence		Total	
		Yes	No		
Doctor / Nurse	Yes	Count	88	296	384
		Expected Count	101.8	282.2	384.0
		Adjusted Residual	-2.6	2.6	
	No	Count	78	164	242
		Expected Count	64.2	177.8	242.0
		Adjusted Residual	2.6	-2.6	
	Total	Count	166	460	626
		Expected Count	166.0	460.0	626.0

Table 42 depicts a significant association between living in residence or not and disclosing to a doctor/nurse ($\chi^2=6.610$, $df=1$, $p=0.010$). The above results also show that students who live in residence are less likely to disclose to a doctor/nurse (adjusted residual=-2.6) than those who live outside campus.

4.2.15.3.2 Association between residence and disclosing to a family friend

Table 43

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.518 ^a	1	.034		
Continuity Correction ^b	4.078	1	.043		
Likelihood Ratio	4.714	1	.030		
Fisher's Exact Test				.035	.020
Linear-by-Linear Association	4.509	1	.034		
N of Valid Cases	626				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 40.04.

Crosstab				
		Family Friend		Total
		Yes	No	
Live in University Residence	Yes	Count	30	136
		Expected Count	40.0	166.0
		Std. Residual	-1.6	.9
		Adjusted Residual	-2.1	2.1
	No	Count	121	339
		Expected Count	111.0	349.0
		Std. Residual	1.0	-.5
		Adjusted Residual	2.1	-2.1
Total	Count		151	475
	Expected Count		151.0	475.0

Table 43 illustrates an association between residence and disclosing to a family friend. Chi-square test results show a significant relationship between living in residence or not and disclosing to a family friend ($\chi^2=4.516$, $df=1$, $p=0.034$). It is interesting to note that those who live on campus are less likely to disclose their status to a family friend (adjusted residual=-2.1). Results also show that students who live outside campus are more likely to disclose to a family friend (adjusted residual=2.1).

4.2.15.3.3 Association between residence and disclosing to former sexual partner

Table 44

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.304 ^a	1	.021		
Continuity Correction ^b	4.882	1	.027		
Likelihood Ratio	5.415	1	.020		
Fisher's Exact Test				.025	.013
Linear-by-Linear Association	5.295	1	.021		
N of Valid Cases	626				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 62.32.

Crosstab				
		Former Sexual Partner		Total
		Yes	No	
Live in University Residence	Yes	Count	50	116
		Expected Count	62.3	103.7
		Std. Residual	-1.6	1.2
		Adjusted Residual	-2.3	2.3
	No	Count	185	275
		Expected Count	172.7	287.3
		Std. Residual	.9	-.7
		Adjusted Residual	2.3	-2.3
Total	Count		235	391
	Expected Count		235.0	391.0

From Table 44 above, it appears that there is a significant association between residence and disclosing to former sexual partner ($\chi^2=5.304$, $df=1$, $p=0.021$). Results also show that those who live outside campus are more likely to disclose to their

former sexual partner (adjusted residual=2.3) than those who live on campus (adjusted residual=-2.3>1.96).

4.2.15.3.4 Association between residence and disclosing to current partner

Table 45

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.332 ^a	1	.012		
Continuity Correction ^b	5.866	1	.015		
Likelihood Ratio	6.228	1	.013		
Fisher's Exact Test				.014	.008
Linear-by-Linear Association	6.322	1	.012		
N of Valid Cases	626				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 59.66.

Crosstab					
			Partner		Total
			Yes	No	
Live in University Residence	Yes	Count	93	73	166
		Expected Count	106.3	59.7	166.0
		Std. Residual	-1.3	1.7	
		Adjusted Residual	-2.5	2.5	
	No	Count	308	152	460
		Expected Count	294.7	165.3	460.0
		Std. Residual	.8	-1.0	
		Adjusted Residual	2.5	-2.5	
Total		Count	401	225	626
		Expected Count	401.0	225.0	626.0

Table 45 shows an association between residence and disclosure to current partner. Looking at the Chi-square test results there is a significant association between residence and disclosing to current partner ($\chi^2=6.332$, $df=1$, $p=0.012$). The adjusted residual show that those who live outside campus are more likely to disclose to their current partners (adjusted residual=2.5) than those who live on campus (adjusted residual=-2).

4.2.15.3.5 Association between residence and disclosing to mother /father

Table 46

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	16.131 ^a	1	.000		
Continuity Correction ^b	15.342	1	.000		
Likelihood Ratio	15.525	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	16.105	1	.000		
N of Valid Cases	626				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 48.79.

Crosstab					
			Mother / Father		Total
			Yes	No	
Live in University Residence	Yes	Count	97	69	166
		Expected Count	117.2	48.8	166.0
		Std. Residual	-1.9	2.9	
		Adjusted Residual	-4.0	4.0	
	No	Count	345	115	460
		Expected Count	324.8	135.2	460.0
		Std. Residual	1.1	-1.7	
		Adjusted Residual	4.0	-4.0	
Total	Count		442	184	626
	Expected Count		442.0	184.0	626.0

Table 46 shows a statistically significant association between residence and disclosure to mother/father Chi-square test results=($\chi^2=16.131$, $df=1$, $p=0.000$). Students who live outside residence are more likely to disclose to their parents (adjusted residual=4.0) than those who live in residence (adjusted residual=-4.0).

4.2.15.3.6 Association between residence and disclosing to aunt/uncle

Table 47

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.918 ^a	1	.015		
Continuity Correction ^b	5.325	1	.021		
Likelihood Ratio	6.425	1	.011		
Fisher's Exact Test				.017	.009
Linear-by-Linear Association	5.908	1	.015		
N of Valid Cases	626				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 25.72.

Crosstab					
			Aunt / Uncle		Total
			Yes	No	
Live in University Residence	Yes	Count	16	150	166
		Expected Count	25.7	140.3	166.0
		Std. Residual	-1.9	.8	
		Adjusted Residual	-2.4	2.4	
	No	Count	81	379	460
		Expected Count	71.3	388.7	460.0
		Std. Residual	1.2	-.5	
		Adjusted Residual	2.4	-2.4	
Total	Count	97	529	626	
	Expected Count	97.0	529.0	626.0	

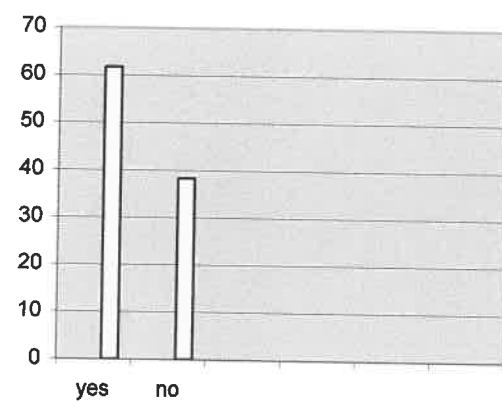
Table 47 illustrates an association between residence and disclosure to aunt/uncle. The chi-square revealed a significant association between residence and disclosure to aunt/uncle ($\chi^2=5.918$, $df=1$, $p=0.015$). Results reveal that students who live outside campus are more likely to disclose their status to aunt/uncle (adjusted residual=2.4) than those who live in residence (adjusted residual=-2.4)

4.2.16 Safety of disclosure on campus and in the community

Figure 17 & 18 presents a bar graph of the percentage distribution of disclosure on campus and in the community.

4.2.16.1 Disclosure on campus

Figure 17



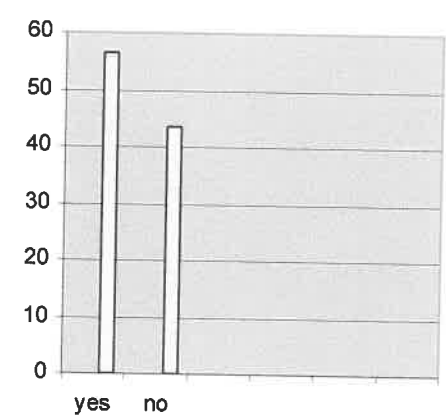
Disclosure on campus

Figure 17 above depicts the results of where people feel comfortable disclosing.

In answer to the question regarding the disclosure of their HIV positive status on campus, 61.7% (N=361) of students said that they would disclose their HIV positive status on campus, while 38.3% said that they would not disclose their status on campus. Location appears to be a factor in disclosure.

4.2.16.2 Disclosure in the community

Figure 18



Disclosure in the community

Figure 19 above indicate that 56.5% would disclose their status in the community, whilst 43.5% would not disclose their status in the community.

4.2.16.3 Gender and community disclosure

Table 48

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.333 ^a	1	.037		
Continuity Correction ^b	3.936	1	.047		
Likelihood Ratio	4.309	1	.038		
Fisher's Exact Test				.041	.024
Linear-by-Linear Association	4.325	1	.038		
N of Valid Cases	544				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 63.34.

Crosstab					
			Do you think it is safe for someone to be open about their HIV status in his/her community?		Total
			Yes	No	
Gender	Male	Count	72	74	146
		Expected Count	82.7	63.3	146.0
		Std. Residual	-1.2	1.3	
		Adjusted Residual	-2.1	2.1	
	Female	Count	236	162	398
		Expected Count	225.3	172.7	398.0
		Std. Residual	.7	-.8	
		Adjusted Residual	2.1	-2.1	
Total	Count		308	236	544
	Expected Count		308.0	236.0	544.0

Table 48 reflects an association between gender and safety disclosing of one's status in the community ($\chi^2=4.333$, $df=1$, $P=0.037$). The results indicate that male students see the community as less safe to disclose in than the female students (adjusted residual=-2.1) and females think it is safe to disclose in the community (adjusted residual=2.1).

Given the extensive preliminary presentation of the results, the main significant findings will be discussed in the next chapter.

CHAPTER FIVE

DISCUSSION

This study examined a range of psychosocial and situational variables and their association in respect of barriers and facilitators for testing for HIV.

5.1 Introduction

HIV is a generalized epidemic in South Africa that affects all races, age groups and all genders. Since there is no cure for HIV, behaviour change has been identified as an effective way to prevent the spread of infection. VCT also plays an important role in the HIV prevention (Ford et al, 2004). Previous studies show that VCT is effective in inducing behavioural change, for example, in reducing unprotected sex and increasing condom usage (Baggeley, 1994; Kaleeba, et.al 1997; The Efficacy Study Group, 2000). Despite this, there appear to be factors that prevent individuals from undertaking an HIV test, such as fear of disclosing their status, breach of confidentiality, discrimination, inability to handle positive results and lack of benefits in knowing one's status (van Dyk & van Dyk, 2003).

Individuals undertake an HIV test for various reasons. Previous studies have indicated that many individuals do not voluntarily go for HIV testing. According to Beevor & Catalan, 1993) individuals go for testing because they display certain HIV symptoms or they are forced by an insurance company to be tested. Previous research found that individuals undertake HIV testing because they perceive themselves to be at risk and by acknowledging their risky behaviours (Hou & Wisenbaker, 2005). This may suggest that individuals took an HIV test voluntarily because they acknowledged the risk of vulnerability. The HBM posits that perceptions of being at risk of contracting HIV result in the decision to undertake an HIV test (Beevor and Catalan, 1993).

The objective of this study was to:

- Identify factors affecting the decision to undertake/not to undertake an HIV test.
- Identify the context within which individuals undertake the decision to have a test.
- Lastly, to explore the relationship between various factors that inhibits and promotes VCT, such as demographic variables, barriers to and motivation for testing and disclosure of HIV status.

A conceptual framework for the study was drawn from the health belief model. This model was used because it is claimed to predict behaviour in health context. It is hoped that the HBM will predict the conditions under which students decide to undertake and not to undertake an HIV test.

5.2 Descriptive statistics

5.2.1 Demographic characteristics

In attempting to develop a profile of barriers among university students that promote and inhibit HIV testing, we studied a sample with the following characteristics: the sample was dominated by 74.8% females and 25.2% males, the mean age was 20.95. This sample over represented the total female student population at the university by 55% and under represented the total male student population by 44%. 73% lived off campus and 26.6% lived on campus. The average age of the students who participated in the study was 20.9. The majority of the age range of the sample fell within the range outlined in the literature as being the most likely age group to be exposed to risky behaviours and HIV infection (HSRC, 2002).

Most of the students who participated were in their third year (38.8%) followed by 36.3% first years, 22.8% second years, 1.4% forth years and .6% fifth year. Distribution of the sample by year of study was not explored because it was not the primary concern of this study.

Our sample indicates that 26% students were from Campus A, 24.7% from Campus B, 18.7% Campus C 15.6% Campus D and 15% were from Campus E. The whole university population composition indicates that Campus A was underrepresented by 6%, Campus B was 43% over represented, Campus C was underrepresented by 5%, Campus D was 18% over represented and Campus E was 28% over represented.

The distribution of this sample is not representative of the population of the tertiary institution studied. This is unfortunate and was primarily because of the pressures under which the data collection took place. This pressure related to two factors. Firstly, delays in obtaining ethical approval for the study held up data collection. Secondly, it was necessary to collect the data on this component of the study as well as the data for the larger study within which this is located before students started examinations. The larger study specifically depended on collecting data by the end of the academic year because it measured student responses to HIV and AIDS communication campaigns held at the institution in the second semester. These factors severely constrained the sampling strategy that could be employed.

Across all campuses, 48% were African students, 32% were Indians, 15% were White, 3% were Coloureds and about 2% were from other ethnic groups. Our sample under represents African students and Indian students and over represents White students. The participants represented most of the major ethnic groups in South Africa, with 34% being White students, 33% Africans, 27% Indians, 4% Coloureds and 2% representing Other ethnic groups. The nature of the sample means that generalization to comparable settings cannot be made, the discussion can however, speculate with this caution.

5.3 Inferential Statistics

5.3.1 Age Variable

Because the age range was so narrow, the results are not meaningful and although some statistical significance was found, it is not meaningful and therefore not reported and discussed.

5.3.2 Knowledge of HIV status

In an attempt to investigate students' level of knowledge of their HIV status, results of this study showed that 60% of students claimed to know their status and 40% did not know their status. The study done by Sangiwa et al., (2000) in Tanzania showed that 93% of the respondents went for VCT because they wanted to know their status.

It is interesting to note that although 60% claimed to know their status only 48% actually had an HIV test and 51% reported that they did not have an HIV test. This may suggest that students claim to know their status without needing an HIV test. We can assume individuals may not want to know their status because they may negatively anticipate a positive result as being a death sentence, since they believe there is no cure for HIV/AIDS. The results of this study show that students do not get tested because they do not perceive themselves to be at risk of being infected.

HIV/AIDS creates numerous effects to individuals, including psychological problems (Temoshok & Baum, 1990). These perceptions could often lead to depression. These perceptual features together with others may impact on the decision to test for HIV.

The study done by Marelich & Clark, (2004) with college students assessing factors that motivate individuals to report negative HIV results without having been tested, showed that 5% of participants had previously told their partners that they were HIV negative without having been tested. Those individuals did so because HIV negative results might help them negotiate sexual intimacy, needs fulfillment (need for affiliation, need for sex and need for dominance). This is of concern because it may constitute a high risk for spread of infection.

The study done by Ford et al. (2004) on drug users identifies factors related to the motivation for voluntary HIV testing. This study showed that drug users undertook an HIV test because they wanted to know their status to protect their health and the health of others. Knowledge about personal risk for HIV infection, the belief that HIV testing is beneficial as an entry point to care and knowledge that treatment is available can be a motivator for HIV testing (Perceived Benefit).

A study done with sex workers showed that they were willing to be tested, but did not want to be told about a positive result. These women believed that knowledge of a positive result would cause mental suffering, threaten their relationship with steady partners and they would lose their clients and income (van Dyk & van Dyk, 2003).

It appears therefore, that there are various motivating factor that promote or inhibit people from voluntarily being tested for HIV/AIDS. Many students in this study claimed to know their status without having been tested. Possible explanations for this will be discussed later under the HIV testing section.

5.3.3 Knowledge of status in relation to demographic variables

HIV is a known epidemic worldwide which affects all age groups, race groups and both genders. Opt & Loffredo, (2004) state that gender and ethnic background influences students' level of concern about HIV infection.

This study found very little literature on the influence of demographic variables on knowledge of HIV/AIDS status specifically. This therefore, made it difficult to discuss these results with reference to literature.

5.3.3.1 Gender composition

5.3.3.1.1 Association between knowledge of status and gender

The results of the analysis (chi-square) between the association of gender and knowledge of status showed no significant relationship ($p=0.341>0.05$). The results showed that 56.8% male students claimed to know their status and 43.2% did not

know their status. Furthermore, the results under gender variable (see 4.2.3.1) showed that 61.3% females reported to know their status and 38.7% do not know their status. A significant difference on this variable might have been expected given the higher levels of HIV prevalence for women. This was not the case here in respect of self-report of knowledge of HIV status. Some factors that support this unsubstantiated expectation relate to the unique position of women in the epidemic. Samet et al. (1997) found that antenatal care was a primary motivation factor for women to undertake an HIV test. The results of this study showed that pregnancy was a significant motivating factor for testing among females ($p=0.026$). There was however an overall lack of literature on the influences of gender differences on knowledge of status.

Further possibilities could be that women may acknowledge the factors that influence them to assess their personal risk for contracting HIV/AIDS. For the women perceived risk could be associated with, sexual risk behaviour (unprotected sex) and caring for an HIV positive person. Young women often engage in unsafe sexual practices because they need money (Petersen, Bhagwanjee, Roche, Bhana & Joseph, 2002).

Previous studies have shown that lack of employment, lack of financial autonomy, negotiating condom use; partner's alcohol consumption and low education of partner are positively associated with women's risk of violence (Maman et al, 2002). This may increase a women's risk of contracting HIV through forced sexual intercourse and prevent negotiating about condom use. Women who are in violent relationships may be reluctant to undertake an HIV test because they fear the abuse. These kinds of factors might also have been expected to yield a significant difference albeit in the other direction.

Despite this, there were no significant gender differences in these results. It may be possible that HIV communication campaigns have had some success in promoting awareness and that the results here indicate an equivalent level of awareness of exposure and risk amongst male and female students. These issues will be discussed in more detail under the HIV testing section.

5.3.3.1.2 Association between knowledge of status and race

The results showed a significant association between knowledge of status and race ($p=0.000$). In addition, the results show that more ($n=148$) white students claimed to know their HIV/AIDS status than African ($n=98$) and Indians ($n=94$). It was interesting to note that the results indicate a huge inconsistency of both ($n=51$) White and ($n=32$) Indian students who indicated that they knew their status without having been tested for HIV/AIDS. Possible explanations for these findings will be discussed more comprehensively under the association between HIV testing section of this discussion. This needs further research. The results coincide with previous research, which shows that more Africans go for testing and have the highest HIV prevalence rate (HSRC, 2002).

While information is available about the rates of HIV testing among racial group, there is little information on knowledge of status and racial groups. Less knowledge of HIV status among African students could be due to low levels of education about HIV testing or that they are honest about knowledge of their results. The high levels of knowledge about HIV status among White students could be due to the fact that they do not perceive themselves to be at risk of contracting HIV or they have donated blood and their blood was accepted and therefore assume to know their status. Knowledge of status may also be a byproduct of testing for insurance policy purposes and it is possible that this may be more prevalent in higher socio-economic status groups. No data for this however exists in this study, and the above is speculative.

5.3.3.1.3 Association between knowledge of status and residence

The results showed a significant association between residence and knowledge of status ($p=0.001$). The results also show that students who live off campus claim that they know their HIV/AIDS status, whereas those living in residence do not. The literature on HIV testing does not reflect much on knowledge of status and residence. This variable was included because it may hold significance for the South African student population.

These differences are difficult to understand. A possible explanation could be that, students who live off campus are more exposed to VCT services, which encourage knowledge of status. In addition, students outside the residence may be more exposed to social conditions that make them vulnerable to HIV infection. Furthermore, despite the points made above, the effects of University based HIV awareness campaigns may not be evidenced in higher levels of knowledge of HIV status amongst its resident students. These results contrast strongly with the results on testing and the residence variable.

Perhaps further research of these variables might offer an in-depth understanding of the results. It would be interesting to conduct further research in this area and compare rates of knowledge of status with residence and race since in general more Indian and White students live off campus. Although White students seem to be more likely to know their status results show that African students are more likely to be tested than other racial groups. This could explain why students who live off campus are more likely to know their HIV status. If residence is consonant with race then explanations and the discussion above concerning knowledge of status and race should apply here as well.

5.3.4 Testing for HIV

48% of the sample said that they had an HIV test and 51% were not tested for HIV. This contrasts with the results found for knowledge of HIV/AIDS status. As mentioned above 60% of students claimed to know their status without having been tested and 40% reported not knowing their status. A possible explanation may be that students who claimed to know their status may have acknowledged the importance of knowing ones status and therefore indicated that they knew their status without having a test. HIV testing and knowledge of status showed a few discrepancies, which included puzzling results on race where White and Indian students claimed to know their status without having been tested for HIV. The factors that underlie the personal inference of HIV status in the absence of a test need more research and deliberation.

Individuals get tested for various reasons. This will be discussed further later when testing in relation to the race variable is discussed.

The results of students who had had an HIV test on this study are much higher as compared to the results found at Rand Afrikaans University (RAU). The study done by Ichharam and Martin (2002) with RAU students investigating the low rate of HIV prevalence, results showed that 27.4% of students who are sexually active know their HIV test results

Earlier studies done on HIV testing, argue that previous high-risk behaviour was not associated with the decision to have an HIV test (Sahlu et al, 1999; Machekano, Mac Farland, Mbizvo, Bassett, Katzenstein & Latif cited in Solomon et al, 2004).

Individuals do not go for testing despite the assumption that awareness of risk is one of the primary motivators for individuals to get tested. Fear of social rejection and isolation is a factor that often weighs heavier than the acknowledgment of risk when individuals reflect on the decision to be tested for HIV/AIDS. Research states that communities, friends and families have isolated people living with HIV/AIDS. This can result in societal hostility and harassment (Herek & Glunt, 1988). Stigmatization of HIV positive people extends to discrimination, which tends to be the barrier towards HIV testing (Miller, et al, 1990). The study done by Siegel, Levine and Brooks (1989) on motives of gay men for undertaking or not undertaking an HIV test, found that gay men did not undertake an HIV test because they feared discrimination.

In this study, HIV testing varied significantly by age, race, gender and residence. There is no indication that those who were not tested were HIV positive or negative, which could lead to an increased risk of spreading HIV. According to the HBM, this may suggest that those students who had been tested perceive HIV/AIDS to be a serious disease and also perceive themselves to be at risk of contracting HIV. The HBM may also suggest that students did not go for testing because of perceived vulnerability, which could be the probability of a positive test result. Fear of having an HIV test could be due to knowledge of being at high risk of infection and not wanting to know one's status. The results show fear as a strong barrier to testing. According to Ebrahim et al, (2004) individuals do not undertake an HIV test because

they fear a positive HIV test result. This factor will be discussed later in the barriers to HIV testing section.

5.3.5 Association between HIV testing and Demographic variables

5.3.5.1 Association between HIV testing and Gender

Although the data analysis (chi-square) did not reveal any significant differences ($p=0.235$) between gender and testing (see Table 8), results of the percentage distribution of males and females show that slightly more males (45.5%) had been tested for HIV/AIDS than females (39.1%) (See Figure 12.). This must be seen in the context of a sample that is heavily skewed by a high proportion of females. The literature in fact would support an expectation of a significant difference with females more likely to test than males. This was not the case with this sample.

Carpenter et al., (1999) and Salus, (1991) indicate that women are more likely to become infected than males. Women's vulnerability to HIV infection leads to HIV testing. Females view HIV as a severe threat and this may in turn contribute to increasing the likelihood of HIV testing. This supports previous research that indicates that women are tested more than men. Females are often exposed to regular use of reproductive health care services, for example, family planning, gynecological problems and pregnancy. These health care facilities often offer HIV testing and education about HIV/AIDS (Zak-Place & Stern, 2004). The literature review suggests that men undergo testing to confirm that they are negative (Solomon et al, 2004). Other literature shows that men undertake HIV testing because they are concerned about their past risk behaviour or they wanted advice and education to change their behaviour (Sangiwa et al., 1999). Ford et al., (2004) found that pregnancy was a motivation factor for HIV testing for women. These results could suggest that the females may have acknowledged factors that made them to assess their personal risk for HIV infection. This will be discussed later under motivation for testing. It is expected from the literature that women would be more likely to test because they have a perception of personal susceptibility and therefore will undergo testing to find out if they are HIV positive or not. According to the HBM the likelihood of an individual undertaking a particular action is seen as a function of the individual's

perception of their susceptibility to the disease, the seriousness of the disease, and the potential benefits and costs involved in undertaking that particular action (Naidoo & Willis, 2000). In this sample, the absence of a significant difference on the gender and tested for HIV variable is interesting and may reflect some success of population wide communication campaigns concerning testing for HIV. Whereas the HSRC (2002) data does identify gender differences, the tertiary student sample may be different and possibly more receptive to media messages concerning uptake of VCT. This may explain the absence of a gender difference here. This is an encouraging result for the VCT programme if this is the case. Other factors specific to the sample may however account for this finding and further research is warranted here. The result must however be interpreted cautiously given the nature of the sample discussed earlier.

5.3.5.2 Association between HIV testing and Race

Table 9 shows a significant association between HIV testing and race ($p=0.000$). Compared to Whites, Coloureds, Indians, and Other, Africans seem to be more likely to be tested for HIV. These results may suggest higher perception of vulnerability and susceptibility amongst African students. It could be argued that Africans are more likely to be tested for HIV because they perceive themselves to be at risk of contracting the disease. This may suggest that HIV/AIDS could be perceived as more of a reality within the black communities. Anecdotal and media accounts appear to represent HIV/AIDS as most affecting the black communities. It is possible that the media has focused more on black communities and the reality of HIV has not been reinforced in the other communities as much as in black communities. These assumptions are confirmed by the HSRC (2002) results, which indicate that Africans have the highest prevalence rate of HIV infection as compared to other racial groups. However, the prevalence rates of 6% reported by the HSRC (2002) for white and coloured population groups suggest that targeted campaigns focusing on black population groups is problematic. The prevalence rate in the white and coloured groups indicates clearly that the epidemic is dynamic and the 6% rate while small relative to that amongst the black population is in fact extremely high when compared with North American and European rates.

The results on knowledge of status showed that more White students claimed to know their status, which is in contrast to the results on testing. The results suggest that White students claimed to know their HIV status yet very few have been tested. A possible explanation could be that they perceive themselves to be at low risk of contracting HIV (do not associate themselves with perceived risk of vulnerability). Research shows that population groups that have lower levels of HIV prevalence may not perceive themselves to be at risk for contracting HIV and are therefore, not likely to opt for HIV testing (Ebrahim et. al., 2004). The HSRC (2002) results showed that for those individuals who would not opt for an HIV test, 71.7% reported that they were at low risk of being infected.

5.3.5.3 Association between HIV testing and residence

The results of the analysis of the association between demographic variables and HIV testing indicate that residence tends to be significantly ($p=0.000$) associated with individuals' decision to undertake an HIV test (see Table 10). There is evidence of higher likelihood of HIV testing among students who live on campus compared to those living off campus. This contrast strongly with the finding above that students off-campus are more likely to claim knowledge of their HIV status.

Previous research shows that college students are in a stage of development whereby sexual experimentation and peer pressure is high (Zak-Place & Stern, 2004). As also mentioned earlier, college/tertiary students are amongst the most vulnerable age group to contract HIV and those under 25 years of age have high HIV prevalence rates. This may suggest that students who live on campus are away from parental supervision and may be less restricted in socio-sexual exploration including risky sexual behaviour. Their behaviour could possibly make them perceive HIV as a threat and opt for HIV testing.

When comparing the results, we could observe that more African students are likely to have an HIV test and that more African students live on campus. Most White and Indian students live outside campus. This could be one possible explanation for the higher likelihood of being tested amongst students who live on campus than those

who live off campus. The other reason could be because more African students have been for actual tests than White and Indian students.

5.3.5.4 Summary

The high number of students that have been tested for HIV/AIDS indicates that the university's VCT services seem to be effective in reaching the wider student population. Knowledge of one's HIV status has implications for the control of the spread of HIV infection (Nefale, 1999). Given high levels of education on campuses, health care settings and through the media, there still seem to be students who are not aware of their HIV status. A concerning factor is that there are students who claim that they know their status but have not had an HIV/AIDS test. The question that remains is what is the ideal process or method that can be used to encourage a more accurate and higher level of knowledge of status. The proportion of students who were not tested could indicate a degree of certainty that their results would be negative. This may be due to their belief that they are at a low risk of being exposed to HIV.

Although most students seem to assess their risk of contracting HIV/AIDS as well as their vulnerability to contracting the disease, there are barriers that inhibit them from undertaking an HIV test. Race seems to play a major role in predicting HIV testing and knowledge of status and unexpectedly, gender was not a significant variable associated with testing in this sample.

5.3.6 Testing and time for testing

Nearly 60% (59.3%) of the people who had had an HIV test had done so in the last two years. 40.7% had had the test in the same year as the survey. The majority of students were tested in the new millennium. Firstly most of the students in this study may have been too young to have considered HIV/AIDS testing in the past and secondly, the university, have in recent years conducted different AIDS programmes to guide the development of the strategic approach to dealing with HIV/AIDS at all the campuses of the university where this study was conducted. At the time when most students indicated having an HIV test, VCT was at an implementation stage in

the university. It is therefore, possible that testing was a response to both the university's and government media promotion of VCT.

5.3.7 Site of testing

From the results of the analysis, it seems as if 70.6% of students were tested outside campus and 29.4% had a test on campus. The results of this study are consistent with previous research. The study done by Anastasi et al. (1999) with college students showed that more students would prefer testing outside campus. Anastasi however also found that some students preferred testing on campus because of convenience. Students who are at high risk of infection and perceiving themselves to be HIV positive may seek HIV testing outside campus. The students who seek HIV testing on campus could be labeled as being at low risk for HIV infection. Further research on this population is needed to understand this finding.

Site of testing may influence whether an individual feels comfortable or uncomfortable about having an HIV test. The literature indicates that knowledge of a comfortable site for an HIV test is the strongest predictor of HIV testing (Mashburn et al, 2004). Therefore, acknowledging characteristics of the place for testing that make an individual feel uncomfortable about taking an HIV test may possibly have an influence on promoting HIV testing among high-risk groups.

Previous studies have shown that individuals prefer to be tested where they are not known and the selection of testing site is accompanied by these elements; lack of trust of the VCT services close to them, violation of confidentiality, rejection, embarrassment and discrimination (van Dyk and van Dyk, 2003). We can therefore hypothesise from the percentage of students who were tested outside campus that there is a possibility that some of the negative characteristics associated with HIV/AIDS testing services for example, confidentiality and stigma problems are attributed to university testing sites. Further research specifically examining students' perceptions of site acceptability is needed.

Confidentiality is another strong characteristic of the place of testing that is related to HIV testing. A testing site should guarantee confidentiality and this allows the

individual to feel more comfortable about the testing process. The study done by van Dyk & van Dyk, (2003) showed that individuals prefer to be tested in a place where they are convinced that confidentiality is guaranteed. According to the HBM this may suggest that individuals will not undertake HIV testing if they do not see potential favourable costs - benefits ratio in opting for a test despite awareness of susceptibility (Naidoo & Willis, 2002).

This study's data show that 48% have been tested and of those 52% who have not been tested are thinking about it. This gives some indication of demand, although the discussion will show that demand is primarily reactive. Testing services on campus should be acknowledged because; in the absence of such services, those students who feel comfortable about having a test on campus might forego testing. The existence of testing services on campus affords the opportunity to reinforce safer sex practices and discussing the risks of HIV infection and other sexually transmitted diseases and also to identify high-risk students.

5.3.8 Counselling before testing

Students who had an HIV test were asked if they had received counselling when tested. 57.4% received counselling and 42.6% did not receive counselling. It is important to note that 10 of the students received pre-test counselling but decided not to have the test. Reasons for this could be:

- They do not perceive themselves to be at risk of contracting HIV.
- They have abstained
- They fear dealing with the process of a positive results.

Testing without counselling could create problems towards coping with the results and achieving the prevention outcome of testing and counselling. Miller, (1987); Miller & Bor, (1991, 1993); Winiarsk (1991) state that counselling plays an integral role in firstly helping people to accept and deal with HIV positive results and secondly to cope with their status.

Individuals are able to make an informed decision regarding HIV testing after receiving counselling (Solomon et al, 2004). HIV counselling with or without testing

can play a significant role in the care and support of people living with HIV and AIDS and their families (UNAIDS, 2001). VCT also helps those who are sero - negative to remain negative. Counselling enables individuals to have an opportunity to discuss sexual issues, safe sex practices and planning for the future. Through counselling, individuals' beliefs and perceptions about HIV can influence behaviour change and making informed choice about being tested for HIV. According to Lie & Biswalo (1996) counselling plays an important role in helping infected people accept and cope with their status and the psychosocial effects associated with being HIV positive.

In summary, counselling is integral to VCT intervention in terms of promoting prevention of HIV/AIDS, testing for HIV/AIDS and coping with the HIV/AIDS process.

5.3.9 Motivation Factors for HIV Testing

Among those who were HIV positive and aware of their status, the major motivational factors for testing were:

- Unprotected sex (22.9%)
- Knowing someone who died of AIDS (16%)
- Advised by someone else (14.9%). (See Table 11).

People do not go for an HIV/AIDS tests unless there are perceived positive cost – benefits ratios for undertaking that decision. The above factors were found in this study to be strong motivators for having an HIV/AIDS test. Previous research has shown us that individuals undertake an HIV test because they wanted to know their status (Ford et al, 2004). Motivational factors mentioned are that they had sex without a condom, or for pregnancy care (Samet et al, 1997). Some factors related to HIV testing were similar to those obtained in other studies, for example, a study done by Ford et al, (2004) where the results showed that 10% of drug users went for testing because they had unprotected sex and 65% wanted to know their status. Therefore we can conclude from the literature that high-risk behaviour is a strong motivational factor for an HIV/AIDS test. Previous studies indicate that individuals who perceive themselves to be at high-risk of HIV infection are more likely to undertake an HIV test (Fichtner et al., 1996 in Stein & Nyamathi, 2000).

5.3.9.1 Motivation factors for HIV testing and Demographic variables

The results of the analysis of HIV testing and some of the motivation factors in association with demographic variables showed significant associations. Awareness of HIV status among those who tested positive or negative was associated with pregnancy, knowing someone who died of AIDS, mistrust of partner and being advised by someone else. The results are in accordance with the HBM, which states that individuals are influenced by how vulnerable they perceive themselves to be to an illness (susceptibility) and how serious they consider it to be (severity). Although these are reactive reasons, this may suggest that students perceive themselves to be at risk of contracting HIV because of the motivation factors which acted as a cue to taking action that is health related (HIV testing). For example, living with a person who is HIV positive or having AIDS can change one's beliefs, behaviour and attitudes about the disease, how it is contracted and about the person infected. There were many factors that were found to be associated with the uptake of HIV testing. These factors were mentioned above (also refer to Table 11). These factors are relevant to the HBM constructs; they included perceived risk and susceptibility to the disease. This will be discussed later in the discussion.

5.3.9.1.1 The association between gender and motivation factors

The results show a significant association between gender and some of the motivation factors. The association between gender and pregnancy as a motivational factor for HIV testing was found to be significant ($p=0.026$). HIV testing is common among pregnant women and is usually a routine procedure. It has been mentioned earlier in the discussion that women are exposed to HIV testing when they attend antenatal clinics or for gynecological examinations (Zak-Place & Stern, 2004). Our finding is consistent with the work of Samet et al, (1997), in which pregnancy was stated as a reason for testing. HIV testing during pregnancy is important because it could result in communication between partners with regards to decision making to HIV testing; talking about sexually transmitted infection and also helps with access to prevention of mother to child transmission.

The literature indicates that women are more often at risk of contracting HIV than men for various reasons mentioned earlier in the chapter (HSRC, 2002).

5.3.9.1.2 Association between race and motivation factors

The analysis of the results between race and motivation factors showed significant associations. The correlation between race and knowing someone who is HIV positive is significant at the 0.049 level and the results indicate that African students are more likely to view this as a motivation factor. The correlation between race and knowing someone who died of AIDS is significant at 0.001 level and African students are also more likely to view this as a motivation factor.

Our finding is consistent with the work of van Dyk & van Dyk, (2003), in which 50.3% Africans as opposed to 29.1% White said they knew somebody who was HIV positive. Africans with higher HIV prevalence may perceive themselves to be at increased risk for HIV infection, and therefore are likely to seek HIV testing. Other racial groups see themselves to be at low risk of infection. The literature shows that differences in HIV prevalence are due to social, economic and behavioral reasons, for example, living in informal settlements, being poor, and knowing people who have HIV/AIDS or died from AIDS, knowledge about HIV prevention and multiple partners (The HSRC, 2002).

White and Indian students may not at this stage of their lives have had any experience with any one they know that has died of HIV/AIDS. It is possible that they perceive HIV/AIDS happening to people they don't know. Therefore, they either do not bother testing for HIV or perceive themselves to be at low risk of contracting HIV. People who know someone who had or have HIV/AIDS were more willing to change their sexual behaviour when tested negative, than people who did not know somebody with HIV/AIDS. The possible explanation for this could be that African people have the highest HIV prevalence rate (HSRC, 2002). HIV/AIDS is therefore, more of a reality in this ethnic group. This factor may contribute to higher motivation for testing.

5.3.9.1.3 Association between residence and motivation factors

The results of the analysis illustrate a significant association between residence and motivation factors. From the results of the analysis, it seems that there is a significant ($p=0.027$) association between living in residence and knowing someone who died of AIDS and the decision to undertake an HIV test. On the other hand, living in residence and mistrust of partner seems to be significantly ($p=0.014$) associated with HIV testing. The correlation between living in residence and pregnancy seems to be significantly ($p=0.001$) associated with HIV testing. Living in a closed social environment, for example, mixed racial groups can mean more dynamics and social integration. This could mean more sexual partners and higher risk of casual sexual partners and increased rates of pregnancy. It is hard to understand this significance because there is no literature that justifies the relationship between pregnancy and residence and it needs further investigation. One explanatory possibility may lie in the relatively free unrestricted social environment that residences afford students at an experimental phase of personal development in their lives.

The results of the analysis of the relationship between residence and motivation factors indicates that living in residence and being advised by someone else tends to be significantly ($p=0.002$) associated with the decision to undertake an HIV test.

Living on campus also means more opportunity for communication between a lot more people; therefore advice by someone else may be more likely. Access to campus health services and the associated advice away from observation by community and family members may account for this finding as well. VCT programmes run on campuses and residence, posters and more exposure to HIV vulnerability and risk could be the motivators for HIV testing. These results show that the decision to undertake an HIV test is significantly associated with living in residence and knowing someone who died of AIDS, mistrust of partner, pregnancy and being advised by someone else as motivation factors.

The reasons mentioned above seem to be secondary referral and reactive responses, which could be late in the cycle of infection. These individuals did not go voluntarily; therefore programmes that will encourage proactive participation are needed to prevent infection and spread of infection. However, these motivation factors may

indicate communication and knowledge about the disease. It is hoped that this kind of communication will reduce stigmatization, fear and encourage need for HIV testing.

5.3.9.1.4 Summary

It has already been indicated that the students perceive HIV/AIDS to be a serious disease as well as perceive themselves to be at risk for contracting HIV. However, it seems as if anticipated feelings (fear) towards HIV testing, tend to affect the individuals decision to undertake an HIV test. On the other hand, lack fear and anticipated feelings of relief towards HIV testing, affects the individuals' decision to undertake an HIV test. The main motivating factor for the decision to undertake an HIV test seems to be "knowing someone who died of AIDS". Although 48% had a test, these results are promising because it also shows some willingness to be responsible for protecting one's self and others. This further shows that people communicate about this sensitive topic of HIV/AIDS; it also indicates knowledge about the disease and HIV testing. It is assumed that testing with comprehensive and effective counselling should lead to prevention of the spread of HIV/AIDS. Studies done in Africa point out that VCT is associated with decreased risk behaviour and reduced rates of sero-positive couples (Painter, 2001). It is hoped that this kind of communication will reduce stigmatization, fear (which was evident as a barrier to HIV testing among students who live outside campus and among African students) and encourage the need for HIV testing. This also provides important support for the need for pre and posttest HIV counselling. VCT is an important tool in treatment, care and support (UNAIDS, 2001); VCT also provides information about HIV testing, which assists people in making informed decisions and assessing the risk of possible HIV infection (Evian, 2000). A vital component of VCT is stressing the importance of antiretroviral medication for prolonging life of individuals who are HIV positive, healthy eating habits and ways of boosting the immune system. Focusing on positive treatment and coping mechanisms might alter the perception of individuals regarding HIV testing.

However, it seems that acquiring knowledge about HIV/AIDS through being advised by others tends to have an influence on the individual's decision to have/not have an HIV test. These results are consistent with the HBM. We can infer from our results

that beliefs about susceptibility and severity are associated with seeking HIV testing. Unprotected sex, knowing someone that has died from HIV/AIDS and being advised by someone about the importance of testing were found to be significant motivators for testing which may encourage students to reflect on their susceptibility to and the severity of being HIV positive.

A major finding in this study was that perceived benefit - a component of the HBM was significantly and positively related to HIV testing. It could be argued that the students who perceived themselves to be at risk of contracting HIV were more likely to recognize the benefits of having an HIV test. A further key finding was the fact that reactive responses and secondary referral were prominent amongst the motivators for testing. A strong emphasis on promoting a proactive testing approach is key to fulfilling the prevention aims of VCT.

It is worth noting that the only motivating factor that gender is associated with, is pregnancy. These are expected results since pregnant women are often tested for HIV for various reasons. HIV testing during pregnancy is important because it could encourage communication between partners with regards to decision making to HIV testing.

5.3.10 Barriers to HIV testing

Amongst those who did not have an HIV test, 37.3% reported that the reason was that they felt that they were at low risk of infection, 31.5 % said that they have abstained, 14.9 % fear a positive result and 7.5% thought there was no benefit in knowing their results.

Other obstacles include difficult access to services, confidentiality, unreliable results and denial of HIV. This is consistent with previous findings, which indicated that respondents, who anticipated feelings of fear with undertaking the HIV test, were less willing to undertake an HIV test. This is consistent with Ford et al (2004) findings that 55% did not want to know their HIV status because they feared positive results, 15% confidentiality, 2.5% unreliable results and 7% access to various services.

As mentioned earlier, students perceive HIV/AIDS to be a serious disease as well as perceive themselves to be at risk for contracting HIV. However, it seems as if low risk, abstinence, fear of a positive result and no benefit in knowing one's results tend to affect the individual's decision to undertake an HIV test.

Those students who did not go for HIV testing do not perceive themselves as engaging in risky behaviors that would require HIV testing. This needs to be carefully investigated as it may be masking inaccurate personal risk assessments, lack of knowledge and/or denial. This may also be associated with self-perceptions of invulnerability associated with the developmental processes in late adolescence and young adulthood.

These misconceptions could be a strong inhibitor to HIV testing. These results are consistent with previous research, which indicates common factors that inhibit individuals from undertaking HIV testing are; they fear receiving positive results (Ford et al, 2004), confidentiality, access to services and perceived and actual risk (Irwin, 1993, cited in Ford et al, 2004). Fear can encourage negative attitudes towards HIV testing and even an intention to change the behaviour. Fear could also lead to denial and avoidance of testing because of the knowledge that there is no cure for the disease. Fear, associated with possible stigmatization, knowledge of personal risk and anxiety about survival if infected with HIV, all have direct impact on the individual's decision to test.

5.3.10.1 Barriers to HIV testing and Demographic variables

5.3.10.1.1 Association between gender and barriers to HIV testing

The association between gender and confidentiality as a barrier shows no significant association ($p=0.085$). The results show a significant association between gender and no benefit in knowing one's status ($p=0.046$). Males are more likely to see this as a barrier. This implies that the decision not to undertake an HIV test is significantly associated with no benefit in knowing one's status. These results are consistent with those of disclosure where men were more inclined to keep their results a secret (van

Dyk & van Dyk, 2003). These results indicate the position of men when it comes to HIV testing. This may suggest that men avoid undertaking an HIV test because they see no positive benefit of doing it. When we compare these results with those of disclosure, we could see that men fear disclosing their HIV status, which indicates their discomfort with this topic (HIV testing).

5.3.10.1.2 Association between race and barriers to HIV testing

The association between race and fear of a positive result as a barrier is significant at the $p=0.001$ level, and African students are more likely to view this as a barrier. This implies that the more/less fear students have regarding HIV results, the more/less the chances of undertaking an HIV test. These results are consistent with the previous findings, which indicated that respondents who anticipated feelings of fear associated with undertaking an HIV test were less willing to be tested. It is possible that the students who have feelings of fear are concerned about their HIV/AIDS status, and therefore want more information about the disease. African students who know someone who has HIV/AIDS and have been exposed to the realities of the disease may have fears of taking an HIV test. This confirms the desirability for emotional support (counselling) prior to HIV testing for people who have fear or are anxious about the test.

The correlation between race and not perceiving one's self to be at risk is significant at the $p=0.046$ level and White students are more likely to view this as a barrier. This also implies that the more/less individuals do not perceive themselves to be at risk of contracting HIV the more/less the chances of undertaking an HIV test. Possible reasons for this have been discussed in the previous sections.

The association between race and abstinence is significant at the $p=0.007$ level and Indian students were more likely to endorse this item as a barrier to testing. The word barrier here is used for consistency but it is recognized that in a context of abstinence, barrier misrepresents this appropriate absence of a driver for testing. The implication for this is that the more/less individuals abstain, the more/less the chances of undertaking an HIV test. Abstinence should be associated with perceptions of low risk and consequently people in this category are unlikely to seek an HIV test. The

findings seem to indicate that barriers have an influence in the decision to undertake an HIV test. The results confirm van Dyk & van Dyks' (2003), study, which shows that significantly more Africans than Whites were prepared to go for HIV testing. The reasons for not being willing to undertake an HIV test were in contrast with these results. van Dyk & van Dyk's (2003) results showed the following barriers: no point of knowing because there is no treatment, fear rejection, will be exposed to depression and death, would not know how to care for themselves and knowledge of status will lead to acting on myths in communities.

5.3.10.1.3 Association between residence and barriers to HIV testing

The results of the analysis of the relationship between residence and fear of a positive result indicate a significant association ($p=0.000$); on the other hand the association between residence and not perceiving self to be at risk is significant ($p=0.009$). The association between race and abstinence is significant at the $p=0.012$ level. The findings imply that the more/less individuals perceive themselves not to be at risk, fear a positive result and abstain indicate that the more/less chances to undertake an HIV test.

The barrier in respect of fear of a positive result is of great concern because this can be interpreted as an indicator of not taking responsibility for self and partner protection.

5.3.10.1.4 Summary

In summary, the relationship between reported risk of contracting HIV/AIDS and perceived benefits of undertaking the HIV test is important. This may suggest that the individual's perception of being at risk will determine how they associate HIV test with its benefits. Despite these findings, this does not imply a positive influence to undertaking an HIV test, regardless of fears. The results seem to suggest that sufficient knowledge regarding HIV/AIDS the students possess empowers them with the ability to recognize the seriousness of the disease and to assess their level of risk of contracting HIV/AIDS. Fear could reflect self-evaluation of not being ready for an HIV test. Results indicate that perception of HIV severity may be a predictor towards

the decision to undertake an HIV test because decision to undertake an HIV test raises concerns about the disease itself as a health threat.

Despite having engaged in a number of risky behaviours, 53.7% of students who do not know their status thought about having an HIV test. This may suggest that HIV education and prevention programmes have had a positive impact since more than half of those students who did not have an HIV test have at least thought about being tested. Perceived risk was significant. Students who perceived higher risk of infection were more likely to have an HIV test. Those students who have never been tested perceived themselves to be at low risk of infection. According to Opt & Loffredo, (2004) students' knowledge about HIV/AIDS does not necessarily mean that they will take precautions in preventing infection and they seem to have little personal concern about becoming infected. Because of the HIV prevalence among the university age group population and their low perceived risk of getting the virus, students may believe that they will test negative; hence they do not get tested. The results may suggest that students tend to underestimate their risk due to sexual behaviours.

In conclusion, although 48% of students who had a test perceive HIV as a threat, the majority (51%) demonstrated an unrealistically low perception of vulnerability to HIV infection. However, some of them thought about testing which could indicate some perception of vulnerability. Perceived HIV vulnerability was identified as a significant predictor of HIV testing. From these results, it can be concluded that the HBM succeeded to predict the students' intentions to undertake/not undertake an HIV test.

5.3.11 Thought about testing

53.7% of the sample students said they had thought about having an HIV test and, 46.3% did not think about it. The results may suggest that although self perceived risk and high-risk behaviour were positively associated with thought of testing, they were not associated with actual decision to undertake an HIV testing. According to the HBM these individuals do not see the threat of the disease (do not feel the need to change), which could be beneficial to them. According to the HBM, they are not ready to carry out the change (test taking). People's behaviour is guided by

consequences. If these are positive, then the person is more likely to engage in that behaviour (Naidoo & Willis, 2000).

The results for the students who have not been tested and have not thought about it could indicate their certainty about being negative. The assumed negative status could be motivated by their perceptions that they have a slim chance of being exposed to HIV.

Results of those who have not been tested but have thought about it could indicate a strong denial of the importance of testing, fear of the unknown together with other reasons mentioned. These results could suggest that despite the perceived risk of infection and higher levels of knowledge, individuals still do not go for testing. The results could also suggest that the students may have acknowledged their sexual risk behaviours but were avoiding testing due to fear of negative attitudes towards HIV/AIDS. According to Solomon et al. (2004) acceptance of the disease does not mean that the individual will be tested. Individuals who go for counselling and testing do not always come back for results, and that may indicate that willingness to test does not always mean willingness to know one's status. To improve this, rapid testing is needed to ensure HIV testing and coming back for post-test counselling (includes knowing one's results). Waiting for the result could cause psychological problems for some individuals and because of the fear of a positive result people may not return for their test results. The study done by Grinstead et al. (2000) showed that motivation for testing was related to whether or not clients would return for the test results. The results of this study showed that individuals who were forced by relatives or others and those who were just curious were less likely to return for the test results.

VCT could also function as an effective means of secondary prevention for those who test positive. VCT increases awareness and knowledge of preventive and care measures for the person infected and others, plan for the future (plan to have children) and promote behaviour change (Sangiwa et al., 1999).

5.3.12 Disclosure

Disclosing ones HIV positive status seems to be one of most difficult things that a Sero-positive person has to do. Negative attitudes, stigmatization and beliefs that individuals hold towards HIV positive individuals increases the fear of having an HIV test and makes disclosure difficult (Solomon et al., 2004). Although the students were not asked if they would disclose their HIV positive results, the findings from other variables tested (disclosure in the community or campus and to whom would they disclose to) are not consistent with the literature. The findings show that most of the students reported that they would disclose their status. Significant number of students 70.5%, in the current study said that they would disclose their HIV status to mother/father, followed by 63.9% who would disclose to partner, 61.3% who would disclose to the doctor/nurse, friend 51.9% and former sexual partner 37.6%. The least percentage of students, would disclose to distant relatives or friends see Table 29. This is difficult to interpret but suggests a pattern of a circle of intimacy for disclosure with less likelihood of disclosure the further from the centre. Health professionals are included within this. Therefore we might infer that disclosure of status is largely based on trust.

The findings are in accordance with research on disclosure to sexual partner about HIV positive status (Marelich and Clark, 2004), disclose to physician, relatives and friends (Ford et al 2004). According to Marelich & Clark (2004) individuals disclosed to their partners because they wanted to know their partners status. The students who said that they would not disclose their status could be high risk to others especially if they had never been tested for HIV or were indeed HIV positive.

5.3.12.1 Association between disclosure and demographic variables

5.3.12.1.1 Disclosure and gender

Males were found to be more likely than females to disclose to both peer educators and aunt/uncle. By contrast, females were more likely to disclose to a friend. The results of the study are consistent with van Dyk & van Dyk, (2003) who found that 15.9% females would disclose their HIV positive status to a good friend only. Friends usually play a significant role in supporting each other. It is common for females not to disclose their HIV status to sexual partners. Females do not often disclose their status to sexual partners because of fear (van Dyk & van Dyk, 2003). Their fear of disclosure may be associated with being powerless, fearing rejection and the possibility of violence.

The results could also suggest that students have preconceived perceptions about disclosing their status. Perceptions may be associated with disclosure having a negative impact on their studies and future. These findings are consistent with other studies, which found that females, rather than men, preferred to keep their results a secret from their partners because they are always blamed for bringing the disease to their partners, (Campbell, et al in van Dyk and van Dyk, (2003). Men do not often disclose their status because they fear that nobody will look after them if they get sick and also fear losing their sexuality and sex appeal to women (van Dyk & van Dyk, 2003).

It is hoped that disclosing your status could have positive effects on the individuals in dealing with their HIV positive status, reducing stigma and undertaking an HIV test. The results suggest that disclosure is based on trust, support and expected help from the person disclosed to. These results concerning disclosure preferences could be useful in designing disclosure support programmes taking into account the gender based preferences suggested by this data. These gender preferences also warrant more exploratory research to generate understanding that might inform strategies to promote safe disclosure.

5.3.12.1.2 Disclosure and race

Significant differences emerged when analyzing the data concerning disclosure by race. The results of the analysis indicate that White students are more likely to disclose their HIV status to all the categories but one. These include, doctor/nurse, family friend, former and current sexual partner, parent, aunt/uncle, friend and minister. African students are more likely to disclose to peer educators. The results may suggest that White students have a greater expectation of acceptance and emotional support across almost all the categories. According to the HBM, these students may have a strong view of the benefits of disclosing their HIV status. By contrast the very narrow arena for disclosure as indicated by the significant difference for African students is of clear concern for post-test support and secondary prevention.

5.3.12.1.3 Disclosure and residence

In all instances, students who live outside campus were more likely to disclose to each of the following; doctor/nurse, family friend, former sexual partner, partner, mother/father and aunt/uncle.

Given the discussion above concerning testing and race, it might be possible to argue that results concerning “residence” are confounded with “race”. This suggests that these results need to be read with the disclosure – race significant differences in mind. This clearly is infused with cultural issues concerning disclosure and the perception of HIV positive persons in society.

The impression gained from this data is that residence students are isolated from support and do not perceive any of the categories as sources of support including the health professionals. This is of serious concern and warrants programmatic attention. By contrast the wide range of disclosure opportunities perceived by off-campus students is encouraging. Again, this may be confounded by race and cultural variables. Furthermore, it is possible that this question, given its hypothetical nature, is not accurately measuring perceptions concerning disclosure. This warrants further research given the importance of disclosure in follow-up care and prevention.

5.3.13 Safety of disclosure on campus and in the community

It is interesting to note that 61.5% students would feel comfortable disclosing their HIV status on campus and 56.5% chose community contexts. The findings are in accordance with previous research on non-disclosure of HIV status where individuals preferred not to disclose their status in the community (Ford et al, 2004). Reasons mentioned were fear of rejection, discrimination and stigmatization by the community. This might offer some suggestion that the campus is perceived as a relatively safe context in which disclosure can occur. The difference in these figures is however not significant. The results are worth considering though in respect of reflecting on how to promote the conditions that are likely to normalize disclosure and provide access for HIV positive persons to acceptance, support and the continuum of care.

The results on non-disclosure to the community raise interesting questions when compared to site of testing. Results showed that 70.6% were tested outside campus and 61.5% would feel comfortable disclosing their status on campus. This is interesting because we would have expected them not to disclose on campus because they did not feel comfortable having an HIV test on campus. These results need further investigation to understand better the students' choices.

5.3.13.1 Gender and community disclosure

The results of the analysis indicate that there is a significant association between gender and community based disclosure ($p=0.037$). It is especially men who indicated that they would not be willing to disclose their HIV positive status in a community context. According to van Dyk & van Dyk, (2003) men feared losing their manhood and sex appeal to women. The results confirm those of van Dyk & van Dyk, (2003) study, which showed that men would not disclose their HIV status to anyone. Fear of disclosure could be related to the impact of HIV positive results on their relationships, discrimination and stigmatization.

5.3.13.2 Summary

Disclosing one's status may be perceived as an overwhelming experience. This may also prevent students from undertaking an HIV test. Despite this, the results show that students state they are willing to disclose their status. Encouraging individuals to disclose their status would have a positive effect on VCT programs and the social dimensions of the epidemic. The reasons provided for their willingness to disclose their status were largely based on issues of trust, support and help. This suggests a close association between the decision to undertake an HIV test and perceptions and belief concerning disclosure, or more broadly, on perceptions of life after an HIV positive test result. Discrimination and stigmatization that may result from disclosure may decrease the chances of having an HIV test. Powerful programmes are needed to promote uptake of testing and social interventions to create safe social spaces for disclosure of status are crucial if destigmatizing and normalizing HIV is to be achieved.

5.3.14 Summary of the chapter

In this study, an attempt was made to identify the factors that promote and prohibit the uptake of HIV testing. The results of this study reaffirmed much of the previous research about barriers and inhibiting factors to HIV testing. It is evident from the results as presented in chapter 4 that there was a significant association between barriers, promotive, demographic variables and HIV testing in relation to the decision to have/not to have an HIV test. This study has confirmed that a number of factors relevant to the HBM were associated with HIV testing. From these results we can infer that there was a significant relationship between the students undertaking an HIV test or not, in relation to perceived vulnerability (contracting HIV), perceived seriousness of the disease and perceived costs and benefits involved in undertaking an HIV test.

CHAPTER 6

SUMMARY OF THE STUDY

6.1 Conclusion of the present study

This study has tried to investigate the factors that promote and inhibit the uptake of HIV testing. This study has also adding in the dimension of HIV testing, which other studies had neglected. That includes investigating the factors that promote and inhibit HIV testing among tertiary students. An attempt to use the HBM in understanding the occurrence of the behaviour was implemented.

The findings provide important insights into understanding the factors that prevent and promote the uptake of HIV testing. The findings also provide guidelines in promoting HIV testing. The study confirms findings made in other studies that have examined the uptake of VCT and the factors that motivate and prohibit individuals from having an HIV test. In the recommendations, guidelines to overcome the challenges facing the uptake of VCT and HIV testing are mentioned.

From this study, it became clear that social and psychosocial barriers and incorrect perceptions about the importance of VCT will continue to be a problem which could impact on VCT programs in this large South African university studied and South Africa as a whole.

Factors found to be associated with HIV testing included perceived HIV risk and acknowledging risky behaviours, for example, unprotected sex, knowing someone who died of HIV, knowing someone who is HIV positive, advised by someone else, and mistrust of partner, pregnancy. Whereas, not perceiving self to be at risk, abstinence, fear of a positive result, not perceiving benefits from knowing one's status and confidentiality were associated with low acceptance of HIV testing. This may suggest that low acceptance of undertaking an HIV test was due to a lack of awareness of the implications of the test or results.

Key demographic variables were found to be significantly associated with motivation and preventive factors. A large percentage of tertiary students fall within this high-risk age group and are therefore at risk of contracting HIV. This is a major concern, which is also the reason why this study was conducted. The tertiary student population therefore is an important age grouping to target for testing. Researching students' attitudes towards VCT may contribute to better understanding of students' HIV/AIDS knowledge and their attitudes towards being tested for HIV/AIDS. Better understanding could contribute to more effective VCT programmes that are based on the perceptions of those that the programmes are trying to reach.

Results regarding race and knowledge of status and HIV testing proved more interesting. More White students reported to know their HIV status without having been tested and the majority of Black students actually had an HIV test. VCT policy is aimed at universal accessibility of HIV testing and the promotion of high rates of uptake in order to achieve both primary and secondary prevention outcomes as well as the social changes associated with high levels of disclosure. Therefore, it would be important for VCT programmes to target and motivate everyone to know their status (through HIV testing) including those who perceive themselves to be at low risk of contracting HIV.

Ethnic background appeared to influence perceptions of personal concern about HIV testing, with African students reporting higher levels of concern than the other groups. African students knew someone who is HIV positive and knew someone who died of AIDS. This seems to be a strong motivator among this race group to be tested for HIV/AIDS. White students claimed to know their status without having been tested. Despite the inhibiting and motivating factors, only 48% had an HIV test and 60% reported to know their status, 53.7% had thought about testing. It is evident from these results that gender and culture play a major role towards the decision to undertake an HIV test. African students were more likely to have been tested for HIV. White students claimed to know their status without having been tested. Students who perceived more benefits of testing were more likely to think about having an HIV test. Similarly, students who perceived higher risk were also more likely to have intention for testing. An interesting point that emerged from this study is that student

perceptions of contracting the HIV/AIDS virus appear to match current statistics of prevalence rates within various race groups. HIV/AIDS is more prevalent amongst Africans. The HIV/AIDS testing rate in this study indicates that Africans students are more likely to go for an HIV/AIDS tests than any of the other race groups involved in this study.

The quantitative differences found between knowledge of status, testing for HIV in relation to race showed different shifts, which was a major finding of the study. It does, therefore, appear likely that these differences can be attributed to low perceived risk of susceptibility of contracting HIV.

The results did not find a significant relationship between gender and either knowledge of status or likelihood of having been tested. This was unexpected as has been discussed but may be an artifact of the skewed sample, this presents a major finding for the study. Females were more likely to disclose their HIV status to the community than men.

Despite the existence of barriers, nearly half the sample was tested, albeit it is noted that those who had been tested were tested for reactive reasons. There was an assessment that having an HIV test was important even though most of the students have not chosen to be tested. It is interesting to note that those students who had not been tested actually thought about it and were aware of the inhibiting factors but did not take any action. This may suggest that there is always going to be a threat amongst individuals as long as perceived susceptibility and perceived severity are high and the perceived threat of contracting HIV will be low if the perceived susceptibility and perceived severity are low which could lead to individuals not taking action (testing for HIV).

Amongst the students who had been tested, the majority of them received counselling. It would appear that availability alone of the counselling component of VCT is not effective in promoting/encouraging HIV testing, increasing knowledge about HIV testing and reducing anxiety among students who were not tested. Counselling is important for care, support and education to those who had been tested and not tested. Counselling is further a central concept in the whole VCT process. Fear of testing

could indicate that brief/no counselling undermined the possibility of reaching emotional issues.

Many students would not disclose their status to the community. They preferred to disclose their status on campus, which is interesting because most of them were tested outside campus. Students preferred to disclose to mother/father, partner, doctor/nurse and former sexual partner. This may suggest increased emotional support from these people.

It was interesting to note that on the issue of ethnicity, White students were more likely to disclose their status to almost everyone mentioned in the questionnaire. A few significant differences were recognized among gender in this study. Results suggest that female students rather than male students prefer to disclose their HIV status to people close to them but not to their partners for various reasons mentioned earlier in the discussion as compared to men.

The HBM states that motivation for testing stems from an individual's perception of the threat of undesired consequences and the possibility of being able to reduce/minimize the threat, through action. In this study some of the students were aware of the fact that HIV is real and that they are at risk of contracting the disease and others were not. It was evident that most students seem to possess sufficient knowledge of HIV/AIDS and testing, which makes them able to assess their risk of contracting HIV/AIDS as well as their level of vulnerability to contracting the disease. With this assessment, it becomes easier for students to weigh up the costs and benefits involved in having an HIV test.

In identifying factors that promote and prohibit HIV testing among tertiary students, the HBM predicted some of the factors that are related to motivation for testing. However, two HBM factors showed to be significant and related to HIV testing (perceived risk and susceptibility). Students who perceived higher risk of infection were more likely to have high intentions for testing. Those who had never been tested for HIV perceived themselves to be at low risk of contracting HIV.

There are a number of barriers that inhibit the increase of HIV testing amongst students of the University studied. University students seem to perceive HIV as an unlikely health risk to them. The results suggest that students who have high-perceived benefits and high-perceived susceptibility would have higher intentions to undertake an HIV test in the future.

The results of this study of university students at a large South African university confirm previous research results about student's knowledge and perceptions of HIV/AIDS. The consistency is that although students are knowledgeable about the risks and transmission of HIV, they are neither very concerned, personally about becoming infected nor do they take precautions and go for HIV testing in large numbers.

If university VCT programmes stress the important benefits of HIV testing for those who test negative or positive, students might have a different attitude towards HIV testing. In the study done by Wilson, Jaccard & Minkoff (1996) on the beliefs affecting the consistency between women's behavioural intentions and behaviour regarding the HIV test, they found that if testing would be beneficial for treatment women would undergo testing.

The conclusion that can be drawn from this study is that knowledge about the risk of contracting HIV with anticipated feelings towards HIV testing influences individuals' decisions to undertake/not to undertake an HIV test. If individuals view HIV testing as beneficial, they are likely to have an HIV test. On the other hand, if individuals do not see any benefits in taking an HIV test, they are less likely to have an HIV test. Therefore, a decision to undertake an HIV test seems to depend largely on perceived risks and benefits and on how one views HIV testing.

We can conclude that, knowledge about one's HIV status could contribute to the determination to remain negative if results are negative. In addition accurate HIV/AIDS education can encourage HIV/AIDS positive people to aim at keeping healthy and protect others and self from further infection if HIV positive.

Finally, the researcher hopes that this study will offer suggestions to the studied University in ways and means to deal with the barriers to HIV testing on campuses and preventing the spread of HIV infection, since it has attempted to provide some of the factors that inhibit and promote HIV testing. It is also hoped that the universities' VCT services will provide students with a safe atmosphere in which to voice concerns, receive support and ask questions that might and always seem unanswered. This study will help the university to offer opportunities to enforce safe sexual behaviours, assess and discussing risky behaviours of HIV transmission that have an impact on the decision to undertake and not to undertake an HIV test. It also hoped that the results of this study will help the university to identify and reach the students who might be at "high risk" than those currently being tested and thereby offer them the opportunity to determine their HIV status. For HIV to be controlled, it is important to know one's status and have full knowledge of the disease.

6.2 Limitations of the study

Some responses were biased, in the sense that it consisted of a group of students who were worried about their status, and therefore, seemed to want to find out more about the disease through participation in the study. This was evident in the way they responded to some of the questions. Some questions were left unanswered or they referred the question back to the interviewer. Sometimes they asked each other for suggestions and answers despite repeated instructions.

Inadequate completion of the questionnaire was a major limitation, thereby resulting in many items being incomplete. The omission of certain questions may be a result of perceptions of the questions as too sensitive. This resulted in a serious obstacle for the relevance of conclusion made.

Although the total sample size was reasonable, lack of randomisation and the non-representative nature of the sample make it difficult to generalize the findings.

The ethical clearance from the Social Science Research Ethics Committee was delayed and data was collected a week before the exams. It was difficult to find

students since they were away from campus preparing for exams. The study obtained an insufficiently representative sample on gender from which accurate analysis was difficult and biased. The study would have benefited from collecting data from more or less the same percentage of representative sample to allow for comparative analyses across all groups. A larger sample would have offered better statistical power.

In some responses, respondents came up with inappropriate responses and those responses were not included in the questionnaire. In some sections respondents came up with irrelevant and contradictory answers, which made it difficult to analyze. Respondents answered questions that were not asked and had written their own comments or suggestions instead of answering the questions. It was difficult to get accurate responses since some of the students were reluctant in responding to questions, which they perceived as too personal.

The question pertaining to the status of students was not included. This question was excluded as it was considered too personal for the questionnaire context. Including this question could have had a poor response and biased further the findings of the study.

More questions on sexual behaviour could have been included. Information relating to questions about high-risk behavior, for example, abstinence, if sexually active, condom usage, number of partners and how many times have they been tested, would have allowed for better understanding of the results.

Limited literature on the barriers towards HIV testing among tertiary students in South Africa was a major limitation. The best available literature used relies on interpreting the HSRC and the Department of Health surveys. It is hoped that this study could contribute to the limited literature on this topic.

6.3 Recommendations

It should be noted that this study did not answer all questions concerning attitudes and knowledge of HIV/AIDS. It has, however, attempted to unfold some of the factors that may have been the barriers to HIV testing and these factor needs attention. The limitations of the study indicate the need for greater methodological rigour in further research. Barriers to HIV testing need to be considered when addressing HIV/AIDS prevention and behavior change.

It is encouraging that the significant motivators for HIV testing were generally similar for both male and females. Therefore, focus should be on interventions that encourage more HIV testing for both men and women. The generally reactive and secondary referral nature of the motivations however undermines a prevention goal of VCT however. Promotion of VCT campaigns should address this issue. It is advisable also that generic gender problems, such as female vulnerability and fear of disclosure to male partners are carefully integrated into HIV/AIDS prevention programmes.

It would be useful for the universities to be given feedback on the findings of this study. Factors that motivate and inhibit students from having an HIV test on campus should be highlighted, as this is vital information in preparation for future intervention.

Researchers are faced with the challenge of developing models that will help change individuals perception towards HIV testing. The university needs to increase advertising of HIV testing and better clarification of VCT services. In addition the university needs to provide more accurate information about HIV/AIDS and testing. HIV testing is important in the fight against HIV/AIDS. Therefore, it is important that VCT sites on campuses encourage knowledge of status through testing from low risk group students as well. Regular HIV testing would be beneficial for HIV prevention.

The survey results indicate that educational and prevention programmes aimed at encouraging testing should continue to increase awareness and help students see the benefits of early knowledge of their HIV status.

Intervention programs that emphasize a distinction between pre-test counselling and testing are perhaps needed, in order to address clients' concerns about proactive decisions concerning personal risk assessment and testing.

It is also recommended that the university repeat this study every year or as often as possible to observe the factors that prevent and promote the uptake of HIV testing for future prevention of the disease. This will also help to develop programmes that will encourage HIV testing.

Increase in HIV testing within the 15-49 would be advisable, given that tertiary students' sexual activities can be risky with multiple partners, attitudes towards condom use and substance abuse. HIV testing should be framed in a positive and encouraging way where students will see benefits from doing it. But VCT programmes at university do have some impact; 48 % actually went for the test and 54% of those not tested had thought about testing.

Reinforcing VCT services and working on specific areas that were found to be barriers and motivators for HIV testing could serve as an effective approach for increasing HIV/AIDS testing. A comprehensive strategy inclusive of all the problems outlined in this study is needed. This strategy should include a number of components, for example, campaigns that educate the community about VCT services (that includes programs to increase the acceptance of HIV-positive persons in the community, and disseminate information about availability of antiretroviral medication).

6.4 Further Research

Further research is needed to examine more closely the effects of motivational and prohibiting factors on students' level of personal concern, especially given that the finding that the main motivation factors are due reactive reasons rather than proactive.

The analysis suggests that VCT programs should focus on overcoming the most occurring reasons for delaying HIV testing cited by this study.

The majority of students reported that they were tested outside campus. Although many students were tested outside campus, the majority reported that they would disclose their status on campus. This raises the question of why would they choose to be tested outside campus if they prefer to disclose their status on campus. Further research in this area may perhaps lead to improved on-campus testing rates.

Considering the relatively high number of students that were tested, it would be interesting to explore whether campus campaigns focusing on HIV/AIDS prevention were indeed reaching students, regardless of the students preference to test off campus. Research is also needed to establish the objectives of the university HIV testing program? If the objective is to prevent the spread of infection and encourage HIV testing, this study recommends more effective interventions are needed. Successful interventions should aim at increasing accurate knowledge of the students' HIV/AIDS status, which can only be done through testing.

Perceived risk for HIV infection seemed to be high, with 51% of students not tested for HIV, which could possibly be because they perceive themselves to be at low risk of infection. An interesting question that is raised is whether students who seek HIV testing are really at high risk for contracting HIV? Or are they engaged in behaviours that might make them to be seen as high-risk group, proactive or simply concerned about their HIV status. Further research is needed to answer this question.

More research is needed to further investigate the role of other HBM factors in relation to a decision to take an HIV test.

Lack of limited questions on sexual behaviour (abstinence, if sexually active and condom usage) was a problem in trying to understand some of the results. Further research is recommended to allow for more clarity of the results and students behaviour.

Research should evaluate the effectiveness of HIV education and testing services on educating students and increasing their awareness about the impact of HIV/AIDS on their age group, to assess more closely the students' level of personal concern about HIV/AIDS and testing.

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APPENDIX A

The questionnaire (in English):

Please note:

The research was conducted during final year examination period at different campuses investigated.

The questionnaire evaluates the self-reported experiences regarding the HIV/AIDS Campaign co-coordinated by the larger university of South Africa AIDS Programme. The information that you will provide will be kept confidential, and will be used for the evaluation of the campaign only. You are free not to participate; however we encourage you to participate. Your completion of the questionnaire indicates your consent to participate in this evaluation. **Please do not write your name on the questionnaire.**

Read each of the following questions carefully and answer all questions. There is no right or wrong answers.

Sex ☐ M ☐ F Age University Residence ☐ Yes ☐ No Year of Study

Race ☐ African ☐ White ☐ Indian ☐ Coloured ☐ Other

Faculty

Campus ... ☐ Pmb ☐ Howard ☐ Edgewood ☐ Westville ☐ Medical School

1. Did you attend any HIV/AIDS Campaigns on Campus this semester?..... ☐ Yes ☐ No

IF YES:

Which campaign did you attend? _____

How did you find out about the campaign?

- ☐ Friends ☐ Flyers
☐ Posters ☐ Peer Educators
☐ Other (please specify) _____

List the three best events you attended.

- i) _____
ii) _____
iii) _____

2. Does the University offer free HIV testing? ☐ Yes ☐ No

3. Which of the following Centres / Departments offer HIV Voluntary Counselling and Testing?

- ☐ Campus Health Clinic ☐ Student Counselling Centre
☐ HIVAN ☐ AIDS Programme
☐ Other (please specify) _____

4. Does the University offer psychological support for students living with HIV? ☐ Yes ☐ No

IF YES:

Where could you go for this support?

- ☐ Campus Health Clinic ☐ Student Counselling Centre
☐ HIVAN ☐ AIDS Programme
☐ Other (please specify) _____

5. Does the University offer medical support for students living with HIV?

Yes	No
-----	----

IF YES:

Which of the following services are offered?

- | | | |
|-------------------------------------------------------|------------------------------------------|------------------------------------------|
| <input type="checkbox"/> CD4 Counts | <input type="checkbox"/> Viral Loads | <input type="checkbox"/> Antiretrovirals |
| <input type="checkbox"/> Nutritional Counselling | <input type="checkbox"/> Vitamins | <input type="checkbox"/> Antibiotics |
| <input type="checkbox"/> Treatment for infections | <input type="checkbox"/> Family Planning | |
| <input type="checkbox"/> Other (please specify) _____ | | |

6. Do you know your HIV status?.....

Yes	No
-----	----

IF NO:

Have you thought about having a HIV test?

Yes	No
-----	----

Which of the following factors (if any) have stopped you going for a HIV test?

- ☐ Fear that I may be HIV positive
- ☐ I do not perceive myself to be at risk of getting HIV
- ☒ The results are not reliable
- ☐ Difficult accessing services
- ☐ I have never had sex before/ abstinence
- ☐ There is no such thing as HIV
- ☐ I do not trust the Clinic to keep the result confidential
- ☐ There is no benefit to knowing my status
- ☐ Other (please specify) _____

IF YES:

Did you have a HIV test?

Yes	No
-----	----

Which of the following factors (if any) motivated you to have an HIV test?

- ☐ Someone I know has HIV
- ☐ Someone I knew died of HIV
- ☒ My partner is / was HIV positive
- ☒ I am / was physically ill
- ☐ I had unprotected sex
- ☐ Pregnancy
- ☐ Mistrust of partner
- ☐ I was advised / sent by someone else
- ☐ Accidental / involuntary exposure
- ☐ I am caring for a HIV positive person
- ☐ Other (please specify) _____

Did you have the HIV test on campus?

Yes	No
-----	----

Did you receive counseling?

Yes	No
-----	----

When (year) did you have an HIV test?

--

7. Do you think it is safe for someone to be open about their HIV status?
on Campus?
Please elaborate:

Yes	No
-----	----

8. Do you think it is safe for someone to be open about their HIV status in
his / her community?
Please elaborate:

Yes	No
-----	----

9. Please indicate which of the following people you would tell if you were HIV positive:

- ☐ Doctor / Nurse ☐ Partner ☐ Aunt / Uncle
☐ Family friend ☐ Mother / Father ☐ Friend
☒ Peer Educator ☐ Teacher / Lecturer ☒ Minister / Pastor
☐ Former sexual partners
☐ Other (please specify) _____

10. Please indicate which of the following (if any) behaviours you would engage in if you
were HIV positive:

- ☐ Become more religious
☐ Quit my studies
☒ Encourage other students to go for a HIV test
☐ Commit suicide
☒ Start eating more healthily
☒ Ask my partner to go for a HIV test
☐ Start using a condom whenever having sex

11. Do you think the University is doing enough in preventing HIV infections on
Campus?.....
Please elaborate:

Yes	No
-----	----

12. Do you think the University is doing enough in caring for persons infected
with HIV on Campus?
Please elaborate:

Yes	No
-----	----

13. Read each statement and decide whether it is true or false. Indicate your answer by placing a cross in the appropriate block.

		True	False
1	Young people between the ages of 15-24 are particularly at risk of contracting HIV.		
2	You need to be infected with HIV before you can develop AIDS.		
3	HIV cannot live longer than a few hours outside the human body.		
4	You need to have unprotected sex more than once to contract HIV.		
5	Free government condoms are just as good as condoms that are bought.		
6	Alcohol and drugs (like dagga and ecstasy) are risk factors in HIV transmission.		
7	A HIV test can be wrong.		
8	If your HIV test is positive, but you feel fine and have no symptoms, you cannot pass the virus to others.		
9	Sexually transmitted infections (STIs) can be prevented.		
10	When you are with someone you really love, its OK to have unprotected sex as a sign of your trust.		
11	Drugs like antiretrovirals (ARVs) cure people who have HIV.		
12	Women are more at risk of contracting HIV than men.		
13	There is no cure for HIV/AIDS.		
14	Oral sex can transmit the virus.		
15	If you use two (male) condoms at once you are more protected from getting HIV.		
16	Anitretrovirals (ARVs) prolong the lives of everyone who has HIV.		
17	You cannot get HIV by having anal sex between a male and female.		
18	The University has the right to ask you to have a HIV test.		
19	If you have been raped, you can have access to 'emergency' antiretrovirals.		
20	Your boyfriend often buys you gifts (like jewelry) in exchange for sex –but this is OK because he says he loves you, and besides, this is just how the world works.		

APPENDIX B

Re-Ethical Clearance

Ethical clearance was obtained in November 2004 from the University's Ethical Committee. Electronic confirmation will be available through e-mail.

APPENDIX C

1. Association between knowledge of status and Age

Tables below show knowledge of status by age among students who responded to this question.

ANOVA

Age					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.732	1	3.732	.326	.568
Within Groups	6610.020	578	11.436		
Total	6613.752	579			

		Age	
		Mean	Std. Deviation
Do you know your HIV status?	Yes	21	3
	No	21	3

2. Association between HIV testing and age

		Age	
		Mean	Std. Deviation
Did you have a HIV test?	Yes	22	5
	No	20	2

3. Age variable

3.1 Association between age and "pregnancy"

Group Statistics

Motivating factor for testing - pregnancy		N	Mean	Std. Deviation	Std. Error Mean
Age	Yes	16	24.31	5.919	1.480
	No	151	21.84	4.301	.350

Independent Samples Test

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Age	Equal variance assumed	6.033	.015	2.102	165	.037	2.47	1.176	.150	4.793
	Equal variance not assumed			1.625	16.720	.123	2.47	1.520	-.741	5.683

3.2. Association between age and “being advised by someone else”

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Age	Equal variances assumed	5.488	.020	-1.471	165	.143	-1.41	.961	-3.310 .484
	Equal variances not assumed			-2.456	83.694	.016	-1.41	.575	-2.558 -.269

4. Motivation for testing

4.1 Age variable

4.1.1 Association between age and “no risk of contracting HIV”

Group Statistics					
Not know status - risk		N	Mean	Std. Deviation	Std. Error Mean
Age	Yes	87	20.26	1.973	.212
	No	143	21.32	3.735	.312

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Age	Equal variance assumed	9.787	.002	-2.440	228	.015	-1.06	.433	-1.911 -.203
	Equal variance not assumed			-2.803	224.248	.006	-1.06	.377	-1.801 -.314

4.1.2 Association between age and “abstinence”

Group Statistics					
Not know status - abstinence		N	Mean	Std. Deviation	Std. Error Mean
Age	Yes	72	19.85	1.701	.200
	No	158	21.41	3.614	.287

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Age	Equal variances assumed	12.905	.000	-3.497	228	.001	-1.56	.447	-2.445 -.683
	Equal variances not assumed			-4.463	227.741	.000	-1.56	.350	-2.255 -.874

5. Association between thought about testing and age

Table below presents the association between age and thought about testing.

		Age	
		Mean	Std. Deviation
Have you thought about having an HIV test?	Yes	21	4
	No	21	3

6. Age and disclosure variable

6.1 Association between disclosure to doctor/nurse and age

Group Statistics				
Doctor / Nurse	N	Mean	Std. Deviation	Std. Error Mean
Age Yes	376	21.23	3.547	.183
No	229	20.59	2.911	.192

Independent Samples Test									
		Levene's Test for equality of Variance		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
Age	Equal variance assumed	1.903	.168	2.303	603	.022	.64	.278	.094 1.188
	Equal variance not assumed			2.415	552.261	.016	.64	.265	.120 1.162

6.2 Association between age and family friend

Group Statistics				
Family Friend	N	Mean	Std. Deviation	Std. Error Mean
Age Yes	148	21.55	4.473	.368
No	457	20.80	2.850	.133

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Age	Equal variance assumed	13.974	.000	2.377	603	.018	.75	.314	.130 1.363
	Equal variance not assumed			1.909	187.169	.058	.75	.391	-.025 1.518

6.3 Association between age and teacher/lecturer

Group Statistics					
teacher / Lecturer		N	Mean	Std. Deviation	Std. Error Mean
Age	Yes	40	22.48	4.385	.693
	No	565	20.88	3.224	.136

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Age	Equal variance assumed	8.436	.004	2.948	603	.003	1.60	.542	.533 2.661
	Equal variance not assumed			2.261	42.038	.029	1.60	.707	.171 3.023

6.4. Association between age and minister/pastor

Group Statistics					
Minister / Pastot		N	Mean	Std. Deviation	Std. Error Mean
Age	Yes	129	21.62	3.405	.300
	No	476	20.81	3.295	.151

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Age	Equal variances assumed	.968	.326	2.457	603	.014	.81	.329	.162 1.458
	Equal variances not assumed			2.410	197.760	.017	.81	.336	.147 1.471

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