

**AN INVESTIGATION INTO THE PSYCHOSOCIAL FACTORS  
ASSOCIATED WITH WILLINGNESS TO TEST FOR HIV AMONG A  
SAMPLE OF FIRST YEAR PSYCHOLOGY STUDENTS AT A SOUTH  
AFRICAN TERTIARY INSTITUTION**

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### **Declaration**

This work was supervised by Mr. Vernon Solomon of the School of Psychology, University of KwaZulu-Natal, Pietermaritzburg. This dissertation is submitted in partial fulfillment of the requirements for the degree of Masters in Research Psychology in the School of Psychology, University of KwaZulu-Natal, Pietermaritzburg, 2006.

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## ABSTRACT

HIV/AIDS has exacted a devastating death toll on sub-Saharan Africa. Of the African countries South Africa has been the hardest hit by the epidemic. Young people between the ages 15-24 have been identified as the group most at risk for contracting HIV. The introduction of highly active antiretroviral therapy (HAART) has been shown to decrease opportunistic infections and increase lifespan and quality of life of HIV infected people. VCT is an entry point to accessing life saving treatment as well as psycho-emotional and social support. A concern is that not all people who are at risk for VCT get tested. It is important to examine which psychosocial factors affect the uptake of VCT. A questionnaire that measures willingness to test for HIV and various other psychosocial and socio-demographic factors affecting VCT uptake, was administered to a group of first year psychology students, (N=181). Chi Square ( $X^2$ ) analysis determined that knowledge of HIV transmission, knowledge of VCT, fear of testing, perceived social support and perceived social stigma were significantly associated with willingness to test for HIV ( $p<0.05$ ). Multiple logistic regression, revealed that high levels of knowledge of VCT was the strongest significant predictor of willingness to test (OR=0.44, CI-95%: 0.25 – 0.77). Future campus- based VCT initiatives need to be cognizant of the factors that hinder and enable VCT uptake. Increasing students' knowledge of the range of services that VCT has to offer could potentially enable the uptake of VCT among tertiary students.

## Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ARV	Antiretrovirals
CAPS	Center for AIDS Prevention Syndrome
HAART	Highly Active Antiretroviral Therapy
HBM	Health Belief Model
HIV	Human Immune Virus
HOT	Health Oakland Teen Survey
HTAS	HIV Testing Attitude Scale
IMB	Information-Motivation-Behavioral Skills Model
PEP	Post Exposure Prophylaxis
PLWA	People living with AIDS
PMTCT	Prevention of Mother to Child Transmission
STDs	Sexually Transmitted Diseases
TRA	Theory of Reasoned Action
VCT	Voluntary Counseling and Testing

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## **CHAPTER 1: BACKGROUND AND RATIONALE**

There is very little debate that southern African countries are the hardest hit by the HIV epidemic. Sub-Saharan Africa is home to the largest number of people living with HIV/AIDS (UNAIDS, 2002; UNAIDS, 2003; UNAIDS, 2005; Shisana, 2003; Department of Health (DoH), 2003; DoH, 2004). UNAIDS (2005) estimates that more than 60% of the people in sub-Saharan Africa are infected with HIV and an estimated 3.2 million people became newly infected in 2005. Young people and women appear to be the population groups most affected by the epidemic. The 15-24 year old age group has an estimated prevalence of 6.3% with women contributing to 4.6% of the prevalence rate and men 1.7%, UNAIDS (2005). In 2005 it was estimated that 2.4 million adults and children died as a result of AIDS, UNAIDS (2005).

(UNAIDS, 2002; UNAIDS, 2005) state that of the African countries, South Africa has some of the highest prevalence rates in Africa and in the world. South Africa's neighbor country, Zimbabwe, estimates that 1 in 5 pregnant women are HIV positive, whereas in South Africa it is estimated that 1 in 3 pregnant women are HIV positive, DoH (2004). UNAIDS (2005) tentatively stated that national prevalence rates among Zimbabweans could be on the decline and attribute this to changes in sexual behavior such as increased condom use. HIV prevalence rates in Harare fell from 35% in 1999 to 21% in 2004. In South Africa, the prevalence rates among people 15 years and older increased by 62% between the period of 1997-2002, Statistics SA (2005). Among pregnant women attending antenatal clinics in 2004, it was found that 29.5% of women were HIV positive, with the highest prevalence rates among the 25-34 year age group. To date there is no evidence of the epidemic abating in South Africa.

In South Africa the region worst effected by the epidemic has been the province of KwaZulu-Natal, where prevalence has reached 40%, HSRC (2002). Compared to the other provinces this is very high. The Eastern Cape, Free State, Mpumalanga, Gauteng and North West provinces also have high prevalence rates at between 27% -31%, Human Sciences Research Council (HSRC) (2002). Large scale surveys conducted in South Africa by the HSRC have attempted to assess the prevalence of HIV among children and adults. (HSRC, 2002; HSRC, 2004) estimates seroprevalence rates among age groups to be as follows: 2-4 years: 10.2% ; 5-9 years: 9% ; 10-14years: 3.4% ; 15-19years: 12.6% ; 20-24 years: 29.9% and 25-29 years: 45.4%. We find that South African prevalence rates reflect the same phenomenon found in most African countries in that young people are the worst effected by the pandemic.

A major concern is that women feature more prominently in HIV prevalence statistics than men in South Africa and this is also true for other African countries. There are many reasons for this phenomenon such as: women are a more vulnerable population as they are exposed to more sexual violence, sex work, trafficking and women in patriarchal societies may lack the skills and confidence to negotiate safe sex practices with their male partners, WHO (2000). Aside from these societal factors, women are more at risk of HIV infection due to biological factors, Jacobs (2003). According to Jacobs (2003) a woman's physiology increases the risk of HIV infection due the larger mucosal surface area of the female reproductive tract which is exposed to abrasions during sexual intercourse.

Women encounter more 'female friendly health care facilities' such as Antenatal clinics where HIV testing is carried out as the standard of care and thus official statistics may feature more women than men. The HIV prevalence rates among men may be higher than is reported HSRC (2002).



The devastating impact of the disease has spurred the South African government to develop the *Operational Plan for Comprehensive HIV and AIDS Care, Management and Treatment for South Africa* in 2003; a document that outlines the vision of the government to ensure that the highest available quality of care and treatment is provided to people infected with HIV and integrating prevention strategies into care and treatment programmes DoH (2003).

The South African Department of Health recognizes that HIV positive people require a holistic approach to care and treatment of their illness DoH (2003). HIV infection progresses from an asymptomatic stage in which the individual's physical functions and well-being is normal to a stage where the immune system has become so badly compromised that Antiretrovirals (ARVs) are critical to prolonging the life of the individual. In addition to deteriorating physical health, HIV positive individuals and their families often find themselves victims of the social stigma and misunderstandings that has become associated with HIV and AIDS (Kalichman & Simbayi, 2003; Nyblade, 2004; Ostrom, Serovich, Lim & Mason, 2006; Rankin, Schell, Laviwa & Rankin, 2005) Aside from the treatment and care of physical well-being, HIV positive people and their families also require emotional, social and psychological support, at every stage of their disease.

To date there is no cure for HIV or AIDS. Prevention of HIV through educational programmes is the best way of curbing or slowing down the spread of the virus, DoH (2003). One of the aims of the DoH is to integrate care and treatment programmes with prevention efforts. HIV infected individuals should be provided with a 'continuum of care' the components of which include: prevention-related interventions, voluntary counseling and testing (VCT), medical care and treatment, social support and if needed home-based care.

In order to access care, government has made available a wide range of HIV/AIDS-related services. These include: VCT, prevention of mother-to-child transmission (PMTCT) of HIV, TB and STI management and HIV post-exposure prophylaxis (PEP) for occupational exposures and survivors of sexual assault. All these services are points of entry into the continuum of care DoH (2003). The focus of this present study is on Voluntary Counseling and Testing. Voluntary Counseling and Testing (VCT) has become a key component to preventing or curbing the spread of the disease. Voluntary Counseling and Testing (VCT) provides a service to people who wish to know their HIV status and in addition those who come for HIV testing receive pre and post-test counseling. The counseling component of VCT services offers an opportunity for individualized attention where risky and safer behaviors can be discussed as well as an array of psychosocial and medical dimensions of infection Peltzer, Nzewi & Mohan (2004). Unlike other services, such as PMTCT, where HIV testing is the standard of care, VCT is client-initiated.

VCT functions on the principle that an individual has acknowledged their risk of HIV infection and perceives a need to learn their HIV status, hence taking the first steps towards treatment. The widespread success of highly active antiretroviral therapy (HAART) has been shown to decrease HIV opportunistic infections (Nachega, Stein, Lehman, Hlatshwayo, Mothopeng, Chaisson & Karsteadt, 2004). In addition to HAART, medical advances in PMTCT research, such as administering short courses of ARVs (zidovudine and lamivudine) to mothers during labor and postpartum has demonstrated reduced transmission of HIV to babies, SAINT (2003). Management of the illness through advances in medical technology can prolong the lives of people living with AIDS (PLWA) and these individuals can continue to live productive and relatively healthy lives. To access life saving treatment individuals first need to learn their HIV status, hence the success of VCT is heavily dependant on individuals or couples first deciding to undertake the HIV test.

A major concern is that uptake of VCT services in South Africa is very low. V. Solomon states that VCT contributes to only 30% of HIV testing done in South Africa (personal communication report of the DoH VCT Annual Technical meeting 25-27 January 2006, November 02, 2006). According to a study conducted by Peltzer and Mpofo (2002) at a South African university, the number of students going to get tested for HIV and the number of students that had already been tested for HIV were remarkably low. Of the 100 students that were in this study only 3.23% reported an intention to go for an HIV test. Only 22.4% of the students have already had an HIV test, however only 77.5% have received their HIV test results. Considering that young people (15-25 years old) are at high risk of HIV infection, it is of great concern that HIV testing in this age category is not higher. Thus, there is an urgent need to research what factors effect HIV testing behavior in this age group.

Clearly at the heart of VCT is its 'voluntariness'. Individuals are free to exercise their right to know or not know about their HIV status. Recently, there have been debates around the issue of routine or opt-out testing in state sector clinics. According to Alcorn (2006) routine or opt-out testing is a move toward making the HIV test a routine part of medical care, unless the individual explicitly states that an HIV test is not wanted. Opt-out testing aims to encourage more people to undertake the HIV test and increase the numbers of people testing for HIV, hence possibly reducing the stigma surrounding HIV testing.

This strategy has come under increasing criticism from community-based organizations, Alcorn (2006). There is a concern that people will feel coerced into taking the HIV test and the results of HIV tests may result in discrimination, violence and isolation in some settings, especially for women. Logistic constraints may accompany routine testing, in that increased numbers of people coming for testing may decrease the quality of counseling or there may not be enough counselors to provide pre and post test counseling services at clinics. Should

this be the case then the preventive aim of HIV testing is compromised and clients may form negative perceptions of care and treatment programmes. The success and acceptance of routine testing has yet to be established in South Africa, however, currently VCT is the standard and its uptake is client-initiated.

It is clear that young people are most at risk of HIV infection yet their uptake of VCT is low. The success of HAART in improving and prolonging the lives of HIV infected people is a major benefit to knowing one's HIV status so that life saving medication can be accessed as well as important psychosocial services which support and educate individuals throughout the course of their illness. Investigations into the factors that affect the uptake of VCT among young people are essential to understanding their HIV testing behavior. The outcomes of such studies have the potential to develop, build on and improve VCT programmes.

In this chapter the background and rationale for conducting the study was introduced. In Chapter 2 the relevant literature regarding VCT will be discussed specifically pertaining to the process and role of VCT; the efficacy of VCT in bringing about behavior change; VCT research in different population groups and psychosocial constructs that have been explored in past studies of VCT. The third chapter will outline the research methodology of the study, including the research questions, sampling methods, development and scoring of the questionnaire, data collection and analysis. Ethical considerations will also be discussed. In the fourth chapter, the results of the data analysis will be presented including the demographic profile of the sample, descriptive statistics and associations between variables. The fifth chapter is a discussion of the results with comparisons to other studies. The sixth and final chapter is a summary of the study and its limitations. Recommendations for future campus-based interventions and future research are also explored.

## **CHAPTER 2: LITERATURE REVIEW**

Voluntary counseling and testing is a service provided to people who wish to know their HIV status. Taking an HIV test can be a very traumatic and an emotionally overwhelming event for both HIV positive and HIV negative clients. It is essential that the testing is accompanied by counseling. The counseling component of VCT provides the counselor with an opportunity to deal with the extreme emotions felt by the client as well assess the client's life style and suggest safer behavior in the future or (if the client is found to be negative) to maintain their HIV negative status. The process of VCT has come under much investigation for its efficacy in changing behavior, financial cost to the patient and barriers that might affect its uptake. Furthermore, VCT is a client-initiated service and there have been many studies researching the characteristics of those individuals that seek this service. This chapter attempts to describe the different phases of VCT, the multidimensional role of VCT in supporting and educating HIV test goers, a review of past studies on VCT and lastly a theoretical framework for understanding health preventive behaviors such as going for an HIV test.

### **2.1 The process of Voluntary Counseling and Testing (VCT)**

According to (UNAIDS, 2001; Solomon, van Rooyen, Griesel, Gray, Stein & Nott, 2001) the concept of VCT is both multidimensional and complex, making it difficult to arrive at a concise definition. VCT has various roles and has recently come to be viewed as more than a mechanism for finding out one's HIV status. VCT is a process in which an individual learns his or her HIV status and at the same time gains support and education from a qualified HIV counselor. This section attempts to describe the process of VCT.

A common thread running through all constructions and definitions of VCT is that it is a process that allows an individual to voluntarily learn his or her HIV status and to receive individual counseling which is appropriate to the outcome of the HIV test. According to (Pool, Nyanzi and Whitworth, 2001;UNAIDS, 2001), VCT typically consists of three phases.

They are:

- Pre-test counseling;
- The HIV test and
- Post-test counseling

#### *2.1.1 Pre-test counseling*

The pre-test counseling is a phase in which an individual receives counseling before undergoing the HIV antibody test. During this phase the counselor reviews why the client has come for a test and attempts to gauge from the client what his or her risk of HIV is by asking questions about sexual history or drug abuse. A crucial aspect of this stage of VCT is the process of informed consent, Solomon et al. (2001). This phase of VCT demonstrates the 'voluntary' component of this service where clients receive knowledge and support that facilitates their decision about getting tested for HIV or not. Clients arrive at a VCT clinic either of their own accord or they are sometimes referred to a clinic by other health professionals. Should this latter situation be true, then the 'voluntariness' of the testing process can sometimes be compromised. It is the role of the counselor to communicate what the rights of the individual is before testing and what the consequences of testing positive could mean for the client.

### *2.1.2 The HIV test*

The HIV antibody test is a test for HIV. Some VCT services use the enzyme linked immunosorbent assay (ELISA) HIV antibody test, in which a sample of blood is taken from the individual and sent to a laboratory for analysis. Results are available to the client between one to three weeks. A major disadvantage of this mode of testing is that it gives the client an option to not return for the test results. However, more VCT services now offer Rapid HIV tests. Rapid HIV tests are administered by the HIV counselor and the results are made available within 15 – 20 minutes. This is the main mode of testing in public health clinics in South Africa and it is argued to eliminate the possibility of a client opting out of receiving the test results.

### *2.1.3 Post-test counselling*

Lastly, the post test phase consists of counselling that is directed towards dealing with the outcome of the HIV test. According to UNAIDS (2001) should the result of the test be negative, the individual should still undergo post test counseling. This is important for the following reasons:

- In the first 3-6 months of HIV infection antibodies formed by the body may not be detected by the HIV test. This is known as the window period. Clients are encouraged to retest in about 3 months depending on what their level of risk is for HIV infection.
- Clients should be encouraged to maintain their HIV negative status, by reinforcing risk reduction information and assessing knowledge of HIV prevention mechanisms.
- Emphasize that testing negative does not imply immunity to the disease.

Should the HIV test result be positive then individuals are counseled on:

- Medical Care (Antiretroviral therapy, treatment and prevention of opportunistic infections, vitamins and supplements )
- Family planning which includes counselling about reproductive choices.
- Emotional support
- Counselling for positive living which includes information on good nutrition, identification of support networks and issues of disclosure of status to partners, friends or family members.
- The individual is also encouraged to return for future counselling sessions as VCT aims to provide continuous and ongoing support and monitoring of HIV positive individuals.

## **2.2 The multidimensional role of VCT**

It is apparent in the description of VCT that it plays a multidimensional role in the treatment and care of HIV-infected individuals. VCT appears to be expected to function across all dimensions and according to Solomon et al. (2001) VCT is used as a preventive strategy, as health promotion, psychosocial support and as a mechanism of AIDS-related stigma reduction. This underscores the complexity of the public health aspirations for VCT as a health intervention in the public health sector. VCT is thought to function in terms of primary, secondary and tertiary interventions, i.e. to prevent new infections, to limit spread and to provide access to treatment, care and support as well as achieve extended social change goals such as stigma mitigation.



### *2.2.1 VCT as a preventative strategy*

One of the primary roles of VCT, and something which has wide spread consensus among many researchers (Peltzer and Mpofu, 2002; UNAIDS, 2001), is the view that VCT is primarily a prevention strategy meant to curb the spread of HIV. The preventative role of VCT is two-fold:

- People who have been diagnosed as HIV positive are given education and support in preventing the spread of the virus from one person to the next. The role of the counselor is to promote precautionary measures to reduce the risk of transmission and reinfection, encouraging the disclosure of sero- status, review simple infection control measures in the event of cuts, blood spills and hypodermic injections
- If the individual is diagnosed as sero-negative, then encouragement to maintain that negative status is given. Counseling is the mechanism through which prevention education is communicated to both sero-positive and negative individuals. However, according to Solomon et al. (2001) knowing one's HIV status is a preventive mechanism in itself, because individuals would be spurred on to take action to maintain their HIV status or prevent the further spread of HIV.

### *2.2.2 VCT as health promotion*

A second function of VCT is its role in health promotion. VCT is regarded as an entry point to treatment and care. For those living with HIV, early detection of the virus allows for early treatment of opportunistic infections, monitoring health status and thus leading to prolonged

life span and a better quality of life. By reducing the risk of opportunistic infections, the cost of future medical care is avoided and immune systems improved.

### *2.2.3 VCT as psycho-emotional support*

VCT thus far has been viewed from the perspective of medical health care, but it is also an entry point into mental health care. Many research studies have found that emotional and psychological support for those infected and effected by the HIV virus is an essential component of VCT. Learning of one's HIV positive status can come with many psychological burdens. According to Rankin et al. (2005) HIV infected people are often afflicted with depression, Castro and Farmer (2005), suggest that AIDS related stigma and social isolation compound the state in which HIV infected people live. According to Maman, Mbwambo, Hogan, Kilonzo and Sweat (2001) certain vulnerable groups, especially women, are faced with partner violence and in patriarchal societies women often have poor socio-economic status which in turn impacts on their ability to access vital resources such as ARVs. Aside from emotional support, VCT also serves as a resource for vulnerable groups to be referred to other support structures that aid with the financial and social problems faced by HIV infected individuals.

### *2.2.4 VCT and stigma reduction*

AIDS-related stigma has received much attention, from the start of the HIV epidemic. In much of the literature it is explained that HIV positive individuals are faced with social discrimination and fear of rejection, (Goffman, 1963; Nyblade, 2004; Ostrom et al., 2006; Rankin et al., 2005). One of the roles of VCT is to 'normalize' HIV/AIDS making it more like any other chronic illness that should be carefully managed.

There is an abundance of research studies that have been conducted on Voluntary Counseling and HIV Testing (Baggaley & Churchyard, 2003; Bond, Lauby & Batson, 2005; Boswell & Baggaley, 2002; Day, Miyamura, Grant, Leeuw, Munsamy and Baggaley, 2003; de Paoli, Manongi & Klepp, 2004; Downing, Reis, Vernon, Mulia, Ferreboeuf, Carroll & Vu, 2001; Falaye & Uwakwe, 2004; Flowers, Duncan & Knussen, 2003; Gage & Ali, 2005). What follows is an examination of past research studies conducted on VCT in terms of its efficacy in bringing about behavior change, the population groups that have been most studied with regard to HIV testing, psychosocial correlates of HIV testing which include findings from other African countries, western countries and in South Africa.

### **2.3 The efficacy of VCT in bringing about behavior change**

There is an abundance of research studies that have been conducted on VCT. The effectiveness of VCT and its ability to positively affect the lives of HIV positive people, in terms of prolonging their lives and of HIV negative people, in terms of, maintaining their HIV negative status has been well documented, (Flowers et al., 2003; Maman et al., 2001; Muller, Sarangbin, Ruxrungtham, Sittitrai & Phanuphak 1995; Pronyk, Kim, Makhubele, Hargreaves, Mohlala & Hausler, 2002).

The Voluntary HIV-1 Counseling and Testing Efficacy Study Group attempted to determine the efficacy of VCT in reducing risk behavior in three developing African countries: Kenya, Tanzania and Trinidad. The study consisted of 3120 individuals and 586 couples. Participants were randomly assigned to two groups: a group that received VCT and a group that received health information. Both groups were assessed at baseline on their level of HIV risk and no differences were found at baseline. There were two follow-up assessments of risky behavior

(at 7 months and then at 14 months). The investigation determined that those individuals who were assigned to the VCT group reported significantly less risky behavior (e.g. unprotected sex) than those assigned to the health information group. It was found that 35% of men in the VCT group reported a reduction in risky behavior as opposed to 13% of men in the health information group. With women 39% reported a reduction in risky behavior in the VCT group as opposed to 17% in the health information group.

This study concluded that VCT is efficacious in promoting behavior change. This is supported by other studies conducted in African countries. Allen, Meizen-Derr, Kautzman, Zulu, Trask, Fideli, Musonda, Kasolo, Gao & Haworth (2003) conducted a study on behavior change in couples enrolled into a VCT programme in Lusaka. On enrollment only 3% of discordant couples reported frequent condom use, however, a year later after VCT greater than 80% of the couples reported safer sex behavior. The study concluded that VCT lessens risky behavior and reduces the spread of Sexually Transmitted Diseases (STDs) such as gonorrhoea, syphilis and *Trichomonas vaginalis*.

Aside from its efficacy in bringing about positive behavior change, past research studies have also focused on the cost-effectiveness of VCT in developing countries (Sweat, Gregorich, Sangiwa, Furlonge, Balmer, Kamenga, Grinstead & Coates, 2000; Thielman, Chu, Ostermann, Itemba & Mgonja, 2006). Cost-effectiveness studies are an important part of researching VCT, especially in developing countries, considering that VCT requires skilled personnel and it takes up many resources. Sweat et al. (2000) demonstrated in two African countries (Kenya and Tanzania) that VCT was cost effective in averting HIV-1 infections. Thielman et al. (2006) propose that the cost-effectiveness of VCT is further enhanced because it is a point of entry into treatment programmes for sexually transmitted infections,

treatment of tuberculosis and initiation of highly active antiretroviral therapy. The cost of VCT has been reduced with the introduction of rapid HIV testing, which reduces the cost per test performed. Despite this, VCT is a service that is underutilized, especially, in poor and developing countries, Jha, Mills & Hanson (2002).

#### **2.4 VCT research on different population groups**

VCT is only one point of entry into care and treatment of HIV. There are other programmes and services that offer HIV tests as part of a 'package' of services. One such programme is the prevention of Mother to Child Transmission (PMTCT) programme. Ante-natal clinics offer pregnant women an HIV test as part of their standard of care. Female-friendly clinics such as these promote and facilitate HIV tests among women and we find that pregnant women are mostly the focus of HIV testing studies (Maman, Mbawambo, Hogan, Kilonzo, Sweat, 2001; de Paoli et al., 2004; Pool et al., 2001). It is possible that more studies exist on this subgroup of the population because they are more easily accessible in ante-natal clinics.

Most studies have researched the attitudes of pregnant women to undergo VCT (Cartoux, Msellati, Meda, Welffens-Ekra, Mandelbrot, Leroy, van de Perre, & Dabis, 1998; de Paoli et al., 2004; Pool et al., 2001) or studies have explored the challenges faced by women in VCT uptake and especially, in disclosing their HIV status to partners and other family members (Maman et al., 2001; Ransom, Siler, Peters & Maurer, 2005; Sethosa & Peltzer, 2005). The consensus reached by most of these studies is that women experience major barriers in uptake of HIV testing. Partner violence and fear of isolation are some of the major factors that impact negatively on the women's decisions to test for HIV, (Maman et al., 2001; Pool et al.,

2001). Factors that enable the uptake of HIV testing include a concern for one's health and the availability of antiretroviral therapy.

Aside from pregnant women, mine workers are also the focus of research on HIV testing, (Day et al., 2003; Smith, Busi and Weinman, 2000). According to Day et al. (2003) mining companies in South Africa are among those experiencing the worst impact of HIV and uptake of VCT among mineworkers is very low. A study conducted on gold mine workers in South Africa, Day et al. (2003) revealed that there are numerous deterrents to being tested for HIV and only a few enabling factors to the uptake of VCT. These researchers conducted a descriptive survey of 105 male participants, in which, 43% reported a fear of getting a positive result, 26% reported fear of their colleagues reactions, 22% reported fear of death or thinking about death and 19% reported that they don't fear HIV because they feel they are in good health, hence an HIV test is perceived as not necessary. Some enabling factors to the uptake of VCT included the availability of ARVs, rapid HIV testing and assurances that the HIV test results would remain confidential.

Lastly, injecting drug users (IDUs) have been the focus of many VCT studies because they are a high risk group for HIV infection (Bond et al., 2005; Deren, Beardsley, Coyle, & Singer, 1998; Downing et al., 2001; Stein & Nyamathi, 2000). The consensus reached by these studies is that fear of a positive result and denial of the high risk of contracting HIV, are some of the major factors that hinder the uptake of VCT among IDUs. However, in a large scale survey of HIV testing among drug abusers, Stein and Nyamathi (2000), found that adequate knowledge of modes of HIV transmission is a strong predictor of VCT uptake.

With much of the focus of HIV testing research directed at pregnant women, IDUs and other high risk groups, it was found that few studies have focused on young people (between the

ages of 15-25 years) and their barriers to HIV testing, (Mhlongo, Celani, Saib, Colville, Branlal, Slabbert, Kooverjee & Naidoo, 2003; Muganga, Bahemuka, Ariono & Buwembo, 2002; Norman & Gebre, 2005) . However, many studies have highlighted the need for more research on young people (people between the ages of 15 and 25) and their attitudes regarding HIV testing (Boswell & Baggaley, 2002; Gomes, Ferreira, Silva & Silva, 2000). (Pletzer & Mpfu, 2002; HSRC, 2002; UNAIDS, 2001) have identified young people between the ages of 15 and 29 as a population group most at risk for HIV infection. According to UNAIDS (2001) the prevention of HIV among young people in Sub-Saharan Africa is a particularly urgent matter, as they account for nearly 10% of the HIV prevalence rates and they make up nearly 30% of the population.

The effectiveness of VCT in curbing the spread of HIV among young people is highly dependent on young people coming forth to be tested for HIV. According to (Peltzer & Mpfu, 2002; UNAIDS, 2001) young people are faced with various challenges in the uptake of VCT. Some of these include: inadequate knowledge about HIV transmission, stigma of HIV testing, lack of social support, issues of confidentiality, self-efficacy, lack of information about HIV testing facilities and the lack of knowledge of the benefits of being tested for HIV. To facilitate the uptake of VCT among young people there have been suggestions that VCT clinics should be 'youth friendly', (Boswell & Baggaley, 2002; UNAIDS, 2004). Boswell and Baggaley (2002) explain that a 'youth friendly' clinic is one that addresses the broad range of HIV/AIDS-related needs that youth may have. These needs include counseling on: peer pressure, assertiveness and negotiation skills, risk-taking and experimentation with alcohol and drugs, and safe sex practices.

In order to fulfill the promises that VCT has to offer, it is important to identify the barriers that affect the uptake of VCT. What follows is an examination of what past research studies have found on young people's psychosocial correlates of HIV testing or what psychosocial factors studies have found in other population groups that affect the uptake of VCT.

## **2.5 Psychosocial constructs explored in VCT-related research**

On reviewing the literature it was discovered that past research studies have approached the problem of VCT uptake from different viewpoints. Studies that focus on psychosocial factors view the problem of uptake as either originating from the individual (lack of knowledge of VCT or fear of a positive result) or as interpersonal (lack of social support, fear of partner's reaction). There are a few studies that focus on environmental or structural factors that affect VCT, such as, access to VCT services, (Cohen, Scribner and Farley, 2000; van Dyk and van Dyk, 2003; Coovadia, 2000; Mabunda, 2006). Environmental factors refer to the context or conditions in which people live. While individual factors play a key role in influencing behavior, it is also important to be cognizant of structural factors, such as policies, laws, media messages and availability of services. Before examining the potential psychosocial correlates of HIV testing behavior, a brief look at some research that has been conducted on structural level factors that affect the uptake of VCT is explored below.

(Mabunda, 2006; van Dyk & van Dyk, 2003) have examined structural level factors that influence VCT in South Africa and found that the availability and accessibility of VCT services are major factors that affect uptake of VCT, especially in rural areas. Mabunda (2006) conducted a qualitative study in a rural South African village with the focus to identify themes related to VCT and found that the media (especially the radio) was a source



of information of VCT which people in deep rural areas are not able to access. Van Dyk & van Dyk (2003) conducted a large scale survey investigating the possible barriers to VCT services and found that problems such as long lines at clinics, not enough counselors, lack of privacy at the VCT clinic and lack of follow-up support after a diagnosis, to be some of the deterrents to uptake of VCT.

Environmental or structural factors set the conditions for individuals to undertake health-related behaviors and are integral to the success of programmes such as VCT. This present study does not focus on structural level factors that influence the uptake of VCT but rather on individual level and interpersonal factors. Cohen et al. (2000), suggest that more research needs to be conducted on whether the conditions or context in which people live is conducive to facilitating health-related behaviors.

There exists a large body of research which focuses on psychosocial factors that affect the uptake of VCT (Bond et al., 2005; Carrol, 1991; Chng, Eke-Huber, Eaddy & Collins, 2005; Day et al., 2003; Downing et al., 2001; Falaye & Ukwakwe, 2004; Flowers et al., 2003; Kalichman & Simbayi, 2003; Lance, 1999; Lee, Cheung, Kwong, Wan & Lee, 2005; Mabunda, 2006; van de Perre, 2000). On reviewing these studies it was found that while psychosocial factors have been explored emphasis is placed on one or two factors at a time. In most studies knowledge of HIV transmission (Eaton & Flisher, 2000; Lee, Cheung, Kwong, Wan & Lee, 2005; Mabunda, 2006) perceived susceptibility of HIV infection, Lance (1999) and stigma of HIV, Kalichman & Simbayi, (2003) are the primary focus of research and suggested predictors of VCT uptake.

Knowledge of HIV transmission is integral to one's understanding of the risk/susceptibility of contracting HIV/AIDS. According to (Kalichman & Simbayi, 2003; Lance, 1999; Samet, Winter, Grant & Hingson, 1997) there are high levels of knowledge among young people with regard to the modes of HIV transmission. In a survey study conducted by Lance (1999) on college students' perceptions and knowledge of HIV, in the United States, it was found that there were high levels of knowledge about sexual intercourse as a mode of HIV transmission. Similarly, in another U.S. study conducted by Samet et al. (1997), on a large scale survey of Massachusetts adolescents, it was found that young people generally have high levels of knowledge of modes of HIV transmission, identifying sexual intercourse as the primary mode of HIV transmission. However, while knowledge about HIV/AIDS was high, Lance (1999) noted that risky sexual practices (such as having unprotected sex) was still prevalent among college students and that good knowledge of HIV transmission is not a guarantee that safer sex practices will be adopted.

In studies focusing on HIV/AIDS knowledge among youth in South Africa, there are high levels of misconceptions about how HIV is contracted, (Aitken, 2005; Peltzer & Promtussananon, 2005; HSRC, 2002). In the study by Peltzer and Promtussananon (2005) it was found that South African youth differed in their levels of HIV knowledge in rural and urban areas. Unsurprisingly, urban youth have higher levels of knowledge than rural youth. There are a number of reasons for this; it could be that urban youth have been exposed to more information resources and more media campaigns on HIV prevention. Also it was found that White and Indian South African youth have more knowledge about HIV/AIDS than Coloured and African youth. According to Eaton & Flisher (2000) English speakers were better informed than other language groups probably because most public media campaigns on VCT were carried out/communicated in English.

Knowledge of HIV transmission is vital in informing individuals about what practices increase/expose one to becoming infected with HIV. The study conducted by Peltzer & Promtussananon (2005) also revealed that there were a number of misconceptions or 'do not know' answers when participants were questioned on HIV/AIDS transmission myths such as: AIDS can be transmitted through mosquito bites, sharing eating utensils, casual contact) Similarly, myths about the prevention of HIV by having sex with a virgin, disabled or old woman prevail in some settings.

In a qualitative study conducted in a South African tertiary institute by Mhlongo et al., (2003), it was interesting to note that some of the fears expressed by tertiary students are very similar to those expressed by working class folk and people in other countries. For example, fear of a positive result appears to be a common debilitating factor that hinders the uptake of VCT. It emerged that fear of a positive result spelt the beginning of a number of disturbing thought processes, some of which included, fear of: social isolation, disrupted studies, social stigma associated with HIV and a fear that the ensuing emotional distress would be overwhelming. Many of the concerns of students stated above, with regards to HIV testing, is supported by a few other studies that have been conducted on South African students, (Peltzer and Mpofu, 2002; Peltzer et al., 2004).

Another inhibiting factor that affected the uptake of VCT is a deep concern regarding the confidentiality of test results. This is closely related to fear of discrimination and is a major deterrent to HIV testing. A qualitative study conducted by Pool et al., (2001) explored the HIV testing attitudes of women attending maternity clinics in rural areas in Uganda. It was found that these women had serious concerns about the ability of VCT counselors to keep their HIV status confidential. In a community that was relatively small it was feared that staff

at the clinic would reveal their HIV status to other members of the community, family members and partners. Women also feared receiving poor quality of service from clinic staff if they were HIV positive.

In the study by Mhlongo et al. (2003) students made reference to the fact that statistics of HIV prevalence on their campus was made public knowledge and this caused feelings of insecurity among the students. In the focus group discussions it was revealed that students who are insecure about the campus clinic ability to maintain confidentiality would prefer professional people to undertake the VCT. Interestingly, a campus “Awareness Day” was found to be successful in alleviating some of the fears that students have about the confidentiality of HIV testing on campus.

One of the rarely studied aspects of willingness to test for HIV was social support, that is, the support of family and friends in one’s decision to undertake an HIV test Sethosa and Peltzer (2005). Social support is conceptualized in many ways. Duffy & Wong (1996) define ‘social support’ as an exchange of resources between two individuals perceived by the provider or recipient to be intended to enhance the well being of the recipient. Learning that one is HIV seropositive brings with it a great deal of stressors and one of the goals of VCT is to provide the individual with the necessary emotional support to cope with an HIV positive result. Studies dealt more with the social support that individuals receive after learning that they are HIV positive (Day et al., 2003; Gage & Ali, 2005) and not the support that individuals may get while contemplating going for the HIV test.

Despite overwhelming evidence to the contrary, women are often stigmatized as the main transmitters of HIV and bear much of the social stigma associated with HIV, Rankin et al.

(2005). Maman et al. (2001) have identified a variety of factors that impact on the uptake of VCT among men and women. According to their study at a VCT clinic in Dar es Salaam, women, and especially those in relationships, experience a myriad of barriers in their decision to test for HIV, however, there are also factors which enable the uptake of VCT.

AIDS –related stigma is one of the major factors that influences decisions to test for HIV. An individual can be hindered by stigmatizing beliefs of AIDS and their associated fears of discrimination could prevent them from seeking HIV testing and treatment services. According to Castro and Farmer (2005) the definition of ‘stigma’ remains unclear. However, when attempting to explain ‘stigma’ these authors and others Nyblade (2004) refer to Erving Goffman’s classic studies on stigma and mental illness, physical deformities and socially deviant behaviors. Goffman (1963) described stigma as ‘an attribute that is deeply discrediting and results in the reduction of a person or group from a whole and usual person to a tainted, discounted one’

Goffman (1963) noted that individuals who are stigmatized often accept the norms and values that label them as having differences. The danger in this is that individuals tend to internalize stigma and this could lead to self-isolation, self-hate and embarrassment. One of the characteristics of AIDS stigma that has been pervasive since the start of the epidemic has been associated with lifestyles that society disapproves of. For example, according to Castro and Farmer (2005), in the 1980’s the HIV epidemic swept through large numbers of the gay and lesbian community and injecting drug users. There was little help and support for infected people, as they were blamed for opting for a lifestyles that were considered immoral.

According to a study conducted by Kalichman and Simbayi (2003), AIDS-related stigma is socially and culturally pervasive in South Africa. These latter researchers conducted a study that examined the relation between HIV testing history, attitudes towards testing and AIDS stigmas using a large sample of 500 people in a Black township in Cape Town, South Africa. Kalichman and Simbayi (2003) reported that participants who had not been tested for HIV had significantly more negative attitudes toward people who had HIV than those who had been tested. People who had not been tested agreed that people with AIDS are dirty, should feel ashamed and should feel guilty, have done something wrong or immoral. In other studies, such as the HSRC (2002) household survey, 26% of respondents would not be willing to share a meal with a person living with AIDS, 6% would not talk to a person they knew to have AIDS, 18% were unwilling to sleep in the same room with someone who has AIDS. According to Rankin et al. (2005) stigma is of utmost concern to programs and interventions that aim to prevent or curb the spread of HIV because it is both the cause and effect of secrecy and denial that surrounds the disease and perpetuates the spread of HIV.

According to Maman et al. (2001) the perceived benefits of HIV testing and perceptions of risk for HIV were two of the most salient individual level factors that enabled or prompted the use of VCT among women and men. Women were primarily motivated to go for testing when their own illness or a child's death or the death of their partner raised their sense of personal risk.

On a relational or interpersonal level both men and women revealed the important role that friends, family and other trusted community members had on their decisions to be tested for HIV. However, women also stated that partner violence, fear of rejection and abandonment were major factors that inhibited the uptake of VCT. Maman et al. (2001) point out that the

decisions to go for VCT are made by weighing a number of individual and interpersonal factors. Men and women may perceive similar benefits to HIV testing, but the primary motivating factor for men is a perceived concern for their well being. Whether individuals actually know the benefits of finding out their HIV status is an aspect that is lacking in the literature. According to a report from the Canadian HIV/AIDS Legal Network (2000) aside from reducing risky behaviors, finding out one's HIV positive status can be beneficial in that mother-to-infant HIV transmission can be reduced, ART treatment can be initiated and this can prolong the individuals lifespan by reducing the risk of opportunistic infections.

On the other hand, some factors that prompted some men to take HIV tests was the availability of ARVs and the ability of ARVs to prolong lifespan. According to Peltzer & Mpopfu (2002) the recent developments of new treatments for HIV has brought improvements in the medical care of HIV. Early detection of the virus enhances the effectiveness of treatment. Hence there is a dire need to explore the failure of significant number of people who do not access VCT services with a particular focus on the youth. Some of the enabling factors that increased the uptake of VCT in the study was the knowledge that ARVs were going to be made available to students and students expressed a genuine concern for their own health and well being that would prompt them to overcome all the other barriers and go for HIV testing.

It can be concluded from these studies that there are many factors that possibly hinder the uptake of VCT and just a few factors that appear to enable the uptake of VCT. Fear of testing, stigma, lack of social support, poor knowledge of HIV transmission, fear of isolation and rejection from partners and family members are some of the deterring factors to uptake of VCT. On the other hand, there are enabling factors such as concern for one's health and

availability of treatment that positively influence individuals to undertake an HIV test. A limitation of the studies reviewed is that one or two factors are investigated at a time. It is possible that individuals struggle with a host of factors which deter and enable their decisions of uptake of VCT. These factors have yet to be examined together in model that could give an indication as to which are the strongest predictors of HIV testing behavior.

## **2.6 Attitudes of a group of South African students on VCT**

On reviewing the literature on VCT, it was found that past studies mostly adopt qualitative methods to investigate HIV testing behavior (Day et al., 2003; de Paoli et al., 2004; Downing et al., 2001; Flowers et al., 2003; Mhlongo et al., 2003). These qualitative methods include focus group discussions or in depth individual interviews exploring concerns about HIV testing. While qualitative methods are advantageous in that they render rich, first hand accounts of individual experience, the results of qualitative studies is often not generalisable because of the small sample sizes used in qualitative research. Indeed, focus group discussions and interviews with young people in South Africa have been very useful in eliciting the concerns that young people have about HIV testing. An examination of a qualitative study conducted by Mhlongo et al. (2003) was very useful in generating items for the development of the questionnaire in this present study.

Mhlongo et al. (2003) report a host of reasons and motivations for tertiary students choosing or not choosing to use their campus VCT services. Their investigation used focus group discussions among students attending a VCT clinic, in a tertiary institute, with the focus to explore what students' fears and concerns are regarding HIV testing. The salient themes that emerged from this qualitative study included: the fear of an HIV positive result, fear of



partner violence, perceived stigma and discrimination of a seropositive result, concerns over privacy and confidentiality over who has access to information about one's HIV status. On the other hand, many individuals reported that a concern for one's own health and well-being and familial or friends' support was an enabling factor in their decisions to be tested for HIV. It would appear that thus far psychosocial factors are mostly mentioned, indeed there could be other factors, economical/financial or environmental that could prevent or hinder the uptake of VCT but for purposes of this study the focus is mainly on psychological and social influences.

One of the strengths of the study conducted by Mhlongo et al. (2003) was that the researchers had the opportunity to focus on the counselling component of VCT and managed to elicit some of the concerns that students have with regards to the interaction with the HIV counselor during pre and post-test counselling sessions. As opposed to many studies that focus primarily on HIV testing without giving attention to the counselling component of VCT, (Day et al., 2003; Peltzer & Mpopu, 2002; Pool et al., 2001).

Mhlongo et al. (2003) highlighted that students appreciated the emotional support that would be present if a professional HIV counselor were to conduct the VCT process. The students did, however, express concerns regarding the race and age of the counselor as being a factor that affects the counseling process. It would appear that issues of fear and support are relevant barriers or motivating factors that influence HIV testing. However, considering that HIV testing is incorporated within the context of a counseling framework it is also necessary for studies to elicit the fears and concerns of students with respect to the counseling components of VCT.

## 2.7 Rationale for the study

In reviewing the literature it became apparent that HIV testing behavior is a well researched subject, however, there are many gaps in the literature. Studies have focused on a few aspects of VCT and the research methods used to elicit the fears and concerns regarding testing have been mostly qualitative (de Paoli et al., 2004; Maman et al., 2001; Mhlongo et al., 2003). There is a gap in the literature regarding how psychosocial factors act together to impact on willingness to test. As mentioned the most salient factors that emerged from the literature that affect HIV testing behavior is perceived risk of HIV, AIDS-related stigma and knowledge of HIV transmission. Other psychosocial factors have been overlooked, such as an individual's self-efficacy in going for an HIV test, social support, knowledge of the process and function of VCT and the influence of media campaigns or awareness campaigns in influencing HIV testing behavior.<sup>1</sup> Race as a socio-demographic factor has also been overlooked in past studies. These reasons coupled with the low rates of HIV testing among young people have led to the principal aim of this study being a focus on psychosocial and socio-demographic factors (gender and race) on influencing willingness to test for HIV.

A concern is that not all individuals who are at risk of HIV infection choose to be tested. Uptake of VCT among young people is still very low. In the HSRC (2005) report on HIV prevalence and behavior it was found that knowledge about VCT services was very high. Of the 11 838 participants surveyed in the study, it was found that those participants who were 15 years and older, just under a third had had an HIV test. Of those respondents who were between the ages of 15-24 only 20.8% had undergone an HIV test, of those who were between the ages of 25-49, 43% had had an HIV test. Considering that HIV prevalence rates

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<sup>1</sup> This is not a psychosocial construct, however, the Health Belief Model contains a 'Cues to Action' construct which states that having some sort of prompt is important for individuals to engage in health preventive behavior.

are very high among the 15-24 year old age group it is a concern that rates of HIV testing is not higher for this category. An examination of the whole group had revealed that females were more likely to have tested for HIV than males. The low uptake of VCT among young people is supported by other studies conducted in South Africa, Peltzer et al. (2004).

The majority of studies reviewed had placed an emphasis on or focused mainly on perceived susceptibility of HIV and risk of HIV infection as the main determinants that prompt individuals to go for an HIV test. While these two factors are undeniably important very little emphasis has been placed on other individual and interpersonal level factors such as awareness campaigns on VCT or individual perceived level of competence or self-efficacy in going for an HIV test.

This study argues that more investigation is needed on HIV testing behavior on account of the low uptake of VCT and the relative lack of information on some psychosocial variables that affect VCT uptake.

On closer inspection, it comes to light that different groups of people have more difficulties in accessing VCT services than others. The focus of this study is on young adults (18 – 20 years), an age group that has been identified as high in HIV prevalence. It is important to know what the social and psychological difficulties are for this particular age group in deciding to go for HIV testing. On the other hand it is also important to know what social and psychological factors encourage and support HIV testing, so this can be maintained, built on or improved.

## **2.8 A theoretical framework for understanding health preventive behavior.**

HIV is communicated largely by the exchange of infected blood and body fluids Fisher, Fisher, Williams & Malloy (1994). Unprotected sexual intercourse remains the primary mode by which HIV is transmitted, HSRC (2004). As HIV is communicated behaviorally, it is possible that it can also be prevented behaviorally, Fisher et al. (1994). To understand this health preventive behavior, several highly generalisable models/theories of health behavior have been developed, Fishbein, Bandura, Triandis, Kanfer, Becker & Middlestadt (1991). This section briefly reviews some of the theories that are used to explain health related behavior.

### *2.8.1 Transtheoretical or stages of change model*

The transtheoretical model is based on the assumption that individuals pass through stages in considering a health-related behavior, Prochaska & DiClemente (1992). These stages include pre-contemplation, (no intention to change the behavior in the foreseeable future); contemplation (considering change in the foreseeable future); preparation (intending to change in the foreseeable future and have come up with a specific plan to change the intended behavior; action (actively engaging in changing the behavior) and maintenance (sustaining the change and preventing relapse), Prochaska, DiClemente & Norcross (1992). Prochaska et al. (1992) explain that progress from one stage to the next is not necessarily linear but cyclical in nature. Individuals might relapse to early stages or revisit decisions.

A criticism of the transtheoretical model is that it does not take into account the mediating roles of social networks, the media, culture and gender roles in bringing about behavior

change, Brug, Conner, Harre, Kremers, McKellar & Whitelaw (2005). This model also seeks to only ask individuals to make changes that they are ready for and is used mostly in behaviors concerning weight control, smoking and exercise, Ramsoomar (2005). The focus of the present study was not to identify at which stage an individual is in their decision to undergo the HIV test. This study seeks to identify the enabling or disabling psychosocial factors that affect this decision. In light of this, the transtheoretical model was inadequate to explain HIV testing behavior.

### 2.8.2 *Information-motivation-behavioral skills model (IMB)*

The IMB proposes that HIV prevention, information, motivation and behavioral skills are critical factors in HIV preventive behavior, Fisher et al. (1994). According to Fisher et al. (1994) HIV risk behavior is generally caused by weaknesses in an individual's level of HIV prevention information, motivation and behavioral skills. The main tenet of the IMB is that to increase HIV preventive behavior one has to increase the HIV prevention information, motivation and behavioral skills of the individual. While this theory provides an excellent framework for understanding HIV preventive behavior, it is used more successfully in designing intervention strategies, Fisher et al. (1994). Furthermore the present study aimed to zone in more on the 'motivational' factors that affect behavior – which are psychosocial in nature.

As behavior is influenced both by individual, interpersonal and structural factors, the Health Belief Model (HBM) and The Theory of Reasoned Action (TRA) were selected as appropriate models to explain the psychosocial constructs that effect HIV testing behavior. The HBM best addresses psychosocial constructs on an individual level whereas the TRA takes into account the interpersonal dynamics involved in making health-related decisions.

Used together, these two theories offer a framework for understanding the many factors (individual and interpersonal) that influence a decision to test for HIV.

### 2.8.3 *The Health Belief Model (HBM) and its relation to HIV testing*

The Health Belief Model (HBM) is one of the most widely used theoretical frameworks, which attempt to explain and predict people's health-related behaviors. The Health Belief Model has been used to understand why people take certain health preventive behavior such as: the use of condoms, wearing seat belts and the breast-self exam. According to Strecher & Rosenstock (1997), the primary assumption of the health belief model is that an individual is motivated to take positive health actions in order to avoid negative health consequences.

The HBM consists of six main concepts. Each of these concepts can be applied to a particular health behavior.

#### Concepts and Application of the Health Belief Model

1. *Perceived susceptibility* -- This refers to one's belief of the chances of acquiring a disease. For example, if an individual believes that he/she has been exposed to HIV, this might prompt them to undertake a particular health preventive behavior.
2. *Perceived Severity* – This refers to an individual's belief about the seriousness of a condition and its consequences. For example, if an individual believes that HIV is serious enough to warrant health preventive behavior, it is likely to that the individual will undertake some health preventive behavior.

3. Perceived Benefits – An individual’s belief in the efficacy of an advised action. If the individual believes that the recommended action of going for VCT will be beneficial to him/her then the individual might undertake the action.
4. Perceived Barriers – One’s belief in the tangible and psychological costs of the advised action. An assumption of the HBM is that individuals generally weigh the perceived costs and barriers of VCT and then take some action.
5. Cues to Action - This refers to strategies that activate action or provide reminders. The HBM assumes that in order for people to be prompted to take action they require “how to” information and reminders.
6. Self-efficacy - This refers to one’s ability to take action. An individual’s self-efficacy would generally depend on the guidance they receive and the knowledge that one has.

These six concepts function on an individual level. Some of the shortcomings of the HBM are that it assumes that people are rational beings who are responsible for their own actions that carefully weigh their options and come to their own decisions. Clearly, one of the shortcomings of this reasoning is that it does not take into consideration external factors (e.g. social support, influence of significant others or social stigma) that may contribute to an individual’s decision to go for an HIV test or not. It was felt that in order to explain the complexity involved in the decision to test for HIV the HBM should be supplemented with another theory that includes interpersonal factors.

#### 2.8.4 *Theory of Reasoned Action (TRA)*

Developed in the 1980’s the Theory of Reasoned Action provides a framework to explain many health-related behaviors (condom use, engaging in premarital sex) in order to explain or predict an individual’s motivation for engaging in a particular action, Azjen & Fishbein

(1980). TRA postulates that the most important determinant of an individual's behavior is behavioral intent. Intent to perform a behavior is a combination of:

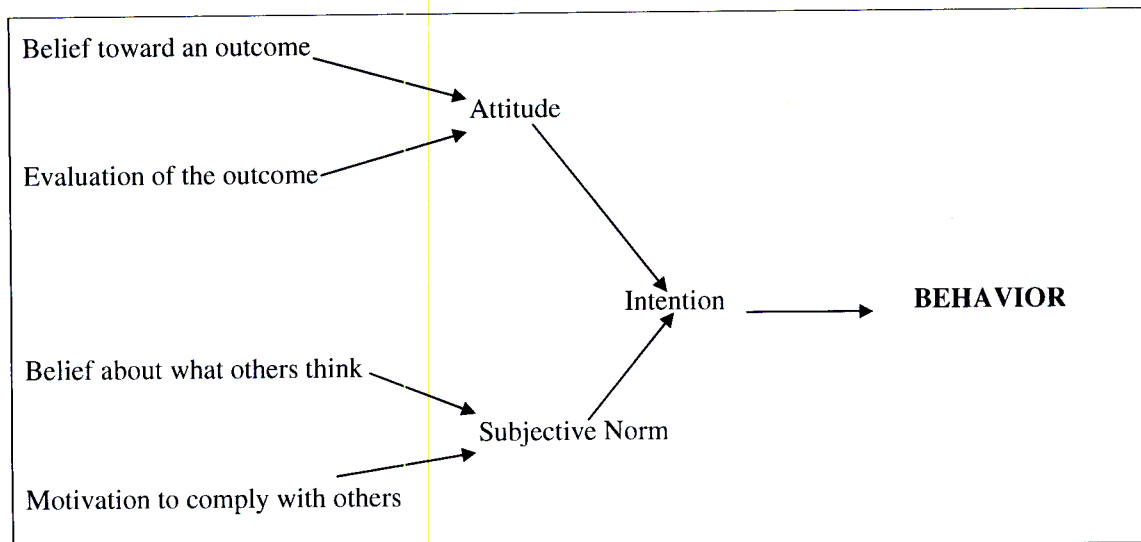
1. Attitude toward that behavior
2. Subjective norms of behavior

According to Azjen and Fishbein (1980) attitude is one of the first determinants of behavioral intention. Attitude is an individual's positive or negative belief about performing a specific behavior .When an individual perceives that an outcome of a behavior has positive consequences then he/she will have a positive attitude toward performing that behavior and the converse is also true.

Subjective norms refer to an individual's beliefs about how significant others might approve or disapprove of a behavior. These 'significant others' could be friends, family members, spouses or a physician. If important 'others' view a behavior as positive and the individual is motivated to meet the expectations of those 'others' , then a positive subjective norm is expected. On the other hand, if those significant 'others' have negative perceptions of that activity and the individual wants to meet the expectations of those others then a 'negative' subjective norm is expected. According to Azjen and Fishbein (1980) subjective norms are assessed by asking respondents to judge what the likelihood is of relevant others approving or disapproving of their performing a behavior/action. It is a combination of the attitude of the individual and the subjective norm that influence behavior (See figure 1 below for a diagrammatic representation of the TRA)



**Figure 1 : Theory of Reasoned Action**



TRA works best when it is applied to behaviors that are the volitional control of the individual. TRA makes certain assumptions of people (as does the HBM). It assumes that human beings are rational and make systematic use of information and that people consider the implications of their actions before they decide to engage in a certain behavior.

The TRA supplements or compensates for the HBM in that it takes into account the role of those 'significant others' and their importance in enabling or disabling the individual toward an action. The role of significant others in HIV/AIDS related behaviors as well as individual perceptions are important factors that are interrelated and work together to bring about action.

As mentioned before the role of structural level factors is integral to understanding health related behavior, however, this study does not explore environmental factors that influence HIV testing. The closest we come to examining the context in which the participants make a decision to test for VCT is a short subscale on VCT awareness on campus.

The HBM and TRA were used in conjunction with the literature and a focus group discussion, to develop the questionnaire used in this study. In addition these theories were used to explain some of the findings from this investigation.

## CHAPTER 3 METHODOLOGY

### 3.1 Aims and objectives of the study

#### 3.1.1 Principle aim

To determine the psychosocial factors that affect the willingness of a sample of psychology students to go for Voluntary Counseling and HIV-1 testing (VCT).

#### 3.1.2 Specific objectives

- a) To determine the willingness of students to undertake HIV testing;
- b) To determine if there is an association between willingness to test and gender;
- c) To determine if there is a relationship between willingness to test and race;
- d) To determine which race group is more likely to test for HIV;
- e) To determine which psychosocial factor(s) best predict willingness to test .

### 3.2 Hypotheses to be tested

It is hypothesized that there will be an association between willingness to test and gender and race in the bivariate (Chi Square) analysis. Fear of a HIV testing will be the strongest predictor of willingness to test and perceived social stigma , perceived social support, self – efficacy, benefits of knowing one’s HIV status, knowledge of HIV transmission , knowledge of VCT and awareness campaigns on campus would be significant predictors of willingness to test (Multiple logistic regression).

### **3.3 Study location and sample**

The study was conducted at a South African tertiary institution in September 2005. A convenience sample of 200 first year psychology students was the target sample for this study. This group of students was easily accessible and it was not within the scope of this Masters study to obtain a representative sample of the entire campus population. First year psychology is an elective course taken by many students on the campus and it was assumed that most of the students in the first year course would be in the same age category (that is between 18-20 years) and this is an age category that has some of the highest HIV prevalence rates.

#### *3.3.1 Sample size*

When administering the final and adapted questionnaire psychology tutorial classes were selected to administer the questionnaires in. Permission was obtained from the Head of School of Psychology. The target sample was 200 students. On completion of the data collection it was found that 181 students had completed the questionnaire.

### **3.4 Data collection tool**

The primary method of data collection was a self-administered questionnaire. This questionnaire was developed by the researcher (see Appendix 2). The questionnaire consisted of 11 short subscales, each of which contained items that measured some psychosocial aspect of HIV testing. What follows is a description of the steps that were taken to develop the subscales in the questionnaire.

### **3.5 Development of the questionnaire**

**There were 3 phases to the present study:**

- Exploratory stage
- Pilot stage
- Main questionnaire administration

#### *3.5.1 Exploratory stage*

During this stage of the study, an active search was undertaken to identify appropriate data collection tools that could measure psychosocial correlates of HIV testing. There is an abundance of questionnaires that attempt to measure an individual's attitudes to HIV testing, knowledge of HIV and attitudes toward people living with AIDS (PLWA), however very few instruments have been designed to measure young people's attitudes to voluntary counseling and testing. Bosahamer and Bruce (1999) developed and validated a reliable scale to assess the attitudes about HIV antibody testing. This scale is known as the HIV Antibody Testing Attitude Scale (HTAS) (See Appendix 6). The HTAS is a 32- item scale that can be used to discern the salient beliefs and attitudes that individuals have with regards to HIV testing. However, a serious limitation of the questionnaire is that it tends to focus more on the actual HIV tests and the perceived social consequences of the test and did not have any items relating to the counseling component of the HIV test. Furthermore, the HTAS did not ask questions relating to campus awareness campaigns and benefits of knowing one's HIV status. The present study borrowed from the HTAS but much of the questionnaire had to be adapted. Permission to use the HTAS was obtained via e-mail from K. Bruce, one of the developers of the instrument, via e-mail. See appendix 5.

In order to develop items for the instrument a focus group discussion was conducted with 5 first year students at a tertiary institution in South Africa. These students had never been tested for HIV. The aim of the focus group was to gain an understanding of what fears and concerns students might have regarding HIV testing. Participants in the focus group consisted of 4 females and 1 male.

A content analysis was performed on the interviews and various concerns and fears surrounding VCT was noted. These included:

- Uncertainty of the confidentiality of the VCT process.
- Fear that the HIV counselor might be a known individual
- Fear of being seen at the campus clinic
- Concerns about the age of the counselor – there was consensus in the group that an older counselor would be judgmental
- Concerns about race – it was felt that the race of the counselor should be different from that of the VCT client
- Social stigma regarding HIV testing
- Negative stereotypes associated with females who go for HIV testing.
- Fear of parents and partners reactions to HIV testing

Items for the questionnaire were generated from the themes identified in focus group discussions, the available literature on HIV testing behavior and a few of the constructs that make up the HBM and TRA. The questionnaire has 11 sub scales. These subscales measure psychosocial constructs of : Willingness to test for HIV (outcome variable) and predictor variables included: Knowledge of HIV transmission, knowledge of VCT , social stigma of

HIV, VCT context, confidentiality of VCT, personal fear, self –efficacy, social support of friends and family, the perceived benefits of knowing one’s HIV status and awareness of VCT on campus. While the last factor is not a psychosocial variable, it is an important construct present in the health belief model believed to be necessary for prompting health – related behaviors

### 3.5.2 *Piloting*

Prior to administering the questionnaire, it was piloted on a group of first year students (n=33). The purpose of piloting the questionnaire was to gather information from the pilot group about the relevance, clarity and presentation of the questionnaire. Questionnaires were distributed to 33 first year psychology students toward the end of a tutorial. The pilot group was given approximately 15 minutes to complete the questionnaire. Before answering the questionnaire the group was given a short summary of the aims of the research by the researcher. The researcher then informed the group that their participation was voluntary.

It was explained that the function of the group would go beyond mere answering of the questionnaire but also to comment on the questionnaire and how it could be improved. The pilot group was also encouraged to write short notes/comments next to items should they deem it necessary. Once the pilot group had answered the questionnaire an in depth discussion was held with regard to the items in the questionnaire. The group was asked to comment on the clarity of instructions both in the cover letter which also doubles as an informed consent form.

The pilot group first commented on the informed consent form, stating that the letter was clear and concise, and gave the relevant information about what the study entailed. With

regard to the demographic section of the questionnaire, participants suggested that providing age categories for respondents to mark was not necessary and age could be asked in a simpler way. Questions that dealt with sexual activity were found to be intimidating and personal, especially considering that students were in a classroom setting. Students commented that there were some questions in the instrument that were repetitive (asked the same thing but phrased in a different way). It was suggested that a question about going for testing with a partner be added into the questionnaire.

The pilot group commented on ambiguity, clarity, redundancy of questions and the length of the questionnaire. It was found that the items in the questionnaire were clear and unambiguous, aside from the few questions that were thought to be redundant which were subsequently rephrased or excluded. The length of the questionnaire was considered satisfactory (15 minutes)

The questionnaire underwent a major transformation subsequent to the discussion with the pilot group. Some of the items had to be rearranged in the questionnaire such that groups of items formed subscales that measure a particular construct. For example, questions on fear of testing were placed together to form a 'Fear of testing' subscale. The pilot group stated that direct questions of sexual behavior should be excluded from the questionnaire hence a section that tested students' willingness to test was introduced into the questionnaire, containing the hypothetical questionnaires on decisions to test given a particular scenario. In addition to this a section that tested students knowledge of voluntary counseling and testing was introduced into the questionnaire.



### *3.5.3 Main questionnaire administration*

Administration of the revised and final questionnaire was conducted in psychology tutorial classes. This decision was based on the fact that during this time the students would be in smaller groups and the administration and collection of questionnaires would be much easier in tutorials than in a lecture theatre.

The researcher had met with the tutors and it was explained what instructions should be given to the students in their tutorials before completion of the questionnaire. The tutors were instructed to explain to respondents to first read the informed consent form attached on the front of the questionnaire (see Appendix 1) and to make it clear that participation in the study is voluntary. Toward the end of normal tutorial sessions students were given 15-20 minutes to complete the questionnaire. On completion of the questionnaire students were requested to place their questionnaires into an envelope which was then handed to the tutor. All questionnaires were completed anonymously.

### **3.6 Likert scales**

Items 25 – 64 of the questionnaire (refer to Appendix 2) required that respondents rate statements on a 4 point likert scale, ranging from Strongly Agree to Strongly Disagree. According to Neuman (1997) likert scales were developed in 1932 by Rensis Likert, and have become a popular scale that attempts to get respondents to agree or disagree with a statement or approve/disapprove. The advantage of using likert scales is that it is an easy and quick scale for respondents to use, which was a necessity in this project as participants were approached in their psychology tutorials and time was limited. Likert scales are also easy to score and to perform statistical analyses on. The disadvantage of likert scales are that giving

respondents too many choices could possibly confuse them. According to Neuman (1997) one of the problems with answering likert scales is the problem of respondent bias. Respondent bias is the tendency for some respondents to answer a large amount to questions in the same way (usually choosing to agree or strongly agree) as this may be considered by the respondent as a socially desirable response. To address the problem of respondent bias some of the questions in the questionnaire were negatively phrased.

### **3.7 Description of the subscales in the questionnaire and scoring of items**

This section describes the subscales in the questionnaire and gives the internal reliability alpha coefficient (Cronbach's Alpha) for each subscale. The scoring of each subscale is also explained.

#### *3.7.1 Scoring of the willingness to test and knowledge subscales*

##### Willingness to test subscale

This subscale consisted of 5 items which attempt to measure the respondents' willingness to be tested for HIV given a particular scenario (refer to Appendix 2, items 7-11). The purpose of this subscale was to obtain an idea of what the respondent would do given a particular scenario. Neuman (1997) is opposed to hypothetical questions being asked because they are future-related and that respondents do better in answering questions on recent and current behavior. However, there is strong consensus on the notion that when measuring sex-related behavior or sensitive issues (Catania, 1999; Fenton, Johnson, McManus & Erens, 2001) respondent bias in reporting and recall of sexual behavior is a major barrier in sexual surveys.

According to Fenton et al. (2001) one of the key challenges for research that deals with issues of sex and sex-related behavior is to generate unbiased and precise information on sexual behavior. There are a number of problems or types of biases that could be introduced into a questionnaire as a result of the nature of the questions. According to Copas, Johnson and Wadsworth (1997) item response bias is one such problem where respondents can refuse to answer a question because of its sensitive nature. This refusal could be due to age, embarrassment or problems in understanding the question. For example, in the HTAS respondents are asked recall when last they engaged in sexual relations with a partner (For e.g. in the last 3 months, 3-6 months). If respondents fail to recall this they could simply move on without answering the question. Reporting on sensitive questions such as sexual intercourse could be hindered by recall bias, especially when questionnaires tend to focus on the frequency of sexual activity, such as number of partners or frequency of sexual intercourse (Catania, Binson & Van Straten, 1995; James Bignell & Gillies, 1991). Fenton et al. (2001) also report that in terms of gender, men tend to over – report frequency of sexual intercourse and women underreport sexual activities. In using hypothetical questions in this category, it was expected that individuals would not feel judged by their responses.

Items in this subscale required a YES/NO response. An answer of 'NO' was allocated a score of 1 and YES was allocated a score of 0. An answer of NO to any of the questions was an indication of poor/no willingness to test. Participants' responses were scored and each participant was allocated a score out of 5. This score was converted to a percentage (multiplied by 20). The willingness to test variable was then dichotomized creating two groups of respondents: those who were willing to test and those who demonstrated poor/no willingness to test for HIV. If a respondent scored 20% and less on the scale then that was an indication that only 1 item in the set of hypothetical scenarios was answered as 'NO'. This

was considered as an acceptable score, hence, all respondents scoring 20% and below were labeled as the 'Willing to test group'; the not willing to test group scored greater than 20%.

#### Knowledge of HIV transmission subscale

It was important to determine the knowledge that respondents have with regard to how HIV is transmitted. In the majority of studies on VCT, knowledge of HIV transmission is key to one's decision to be tested for HIV, (Lance, 1999; Peltzer & Promtussananon, 2005). The knowledge of HIV transmission scale consisted of 5 items (refer to Appendix 2, items 12-16). The items were adapted from the Healthy Oakland Teen Survey (HOT) (1994), conducted by the Center for AIDS prevention Studies (CAPS) at the University of California. The Knowledge of HIV transmission subscale assesses one's knowledge of how HIV can be transmitted. The items are simple statements to which a 'True', 'False' or 'I do not know' is required. The scale includes statements on the role of condoms in HIV transmission and HIV transmission from casual contact. Correct responses were allocated a score of 2, an "I do not know" response was allocated a score of 0 and an incorrect response was allocated a 0 (zero). Each individual was allocated a score out of 10 (maximum score). These scores were converted into a percentage and the variable was categorized into three levels. Items in this subscale contained basic questions on HIV transmission. It was felt that an incorrect answer on 1 or 2 of the items was an indication of poor knowledge.

Those that scored between 0%-80% were labeled as having low HIV transmission knowledge (about 2 items were answered incorrectly), those that scored between 81- 90% (only 1 item was answered incorrectly) demonstrated Good knowledge and a score of 100% was regarded as excellent knowledge (all items were answered correctly).

### Knowledge of VCT

The knowledge of VCT subscale is an 8 item sub scale that attempts to assess the respondents knowledge of the role of VCT (refer to Appendix 2, items 17-24). The items were adapted from the National Sexual Health Survey (1996) conducted by CAPS based at the University of California. The knowledge of how VCT is beneficial is an important factor for uptake of VCT. The sub scale assesses questions of the role that VCT plays in support, treatment and psycho-education. Similar to the knowledge of HIV transmission subscale correct responses were allocated a score of 2, and “I do not know” response was allocated a score of 0 and an incorrect response was allocated a 0 (zero). Each individual was allocated a score out of 8(maximum score). These scores were converted into a percentage and the variable was categorized into 3 levels. Those respondents that answered approximately 4 of the items incorrectly or who did not know an answer were considered as having poor knowledge. Those respondents that answered 3 of the items incorrectly were regarded as having adequate knowledge and those that answered 2 or 1 of the items incorrectly were regarded as having good knowledge. Those who scored between 0-50% were regarded as having low knowledge, between 51%-75% was regarded as adequate knowledge and those that scored greater than 75% were regarded as having excellent knowledge.

#### *3.7.2 Scoring of the likert scales*

Each of the scales henceforth contained items that were rated on a 4-point likert scale (1=Strongly Agree to 4=Strongly Disagree). Some of the items were negatively phrased to avoid respondent bias. Agree and Strongly Agree categories were collapsed and similarly Disagree and Strongly Disagree were collapsed for ease of analysis. Each item of each sub scale was scored such that if a response indicated that there was more of the variable being measured then that item was assigned a value of 1.

**For example:**

Admitting that you have been tested for HIV means that you have engaged in immoral behavior

<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>

If a respondent answered “Strongly Agree” or “Agree” then a score of 1 was allocated whereas if a respondent answered disagree or strongly disagree then a score of 0 was allocated.

Social stigma of HIV testing

Social stigma is a major barrier, identified by many research studies, as a factor which disables or hinders the uptake of VCT. The social stigma sub scale is a 7-item subscale (refer to Appendix 2, items 25-31). According to the Theory of Reasoned Action individuals often assess what opinion significant others might have about a particular action and this impacts on health preventive behavior. The perceived social consequences of going for an HIV test had to be established in order to understand how this affects the individuals’ willingness to test. The likert scale was scored and each individual received a score out of 7. This was converted into a percentage and categorized into 3 levels. A score of 0 (zero) was labeled as no perceived social stigma, a score greater than zero but less than 30 was categorized as low perceived social stigma (the respondent agreed to at least 2 items measuring perceived social stigma) and a score greater than 30% (respondent agreed to more than 2 items measuring perceived social stigma) was categorized as high perceived social stigma .

### VCT Context

VCT context scale assesses participants perceptions of the counseling context (refer to Appendix 2, items 32-36). Very few studies addressed this aspect of VCT testing and it would have been interesting to see if there is a link between willingness to test for HIV and one's anticipation of the HIV counseling. This section had a reliability coefficient of 0.321 and was unfortunately not used in the analysis as this score is too low and no inferences could be made using this subscale in the questionnaire. In the focus group discussion many concerns were raised about the age of the counselor being a factor in how comfortable the group would feel, race was another factor that would determine if they went through with the HIV test.

### Confidentiality of testing

Confidentiality of the testing process and the HIV status is a major factor that has been shown to affect the uptake of VCT. Aside from the many research studies that highlight confidentiality as a major concern affecting VCT uptake this issue also arose in the focus group discussion. The focus group participants expressed concerns that the HIV counselor would reveal their HIV status to partners or parents/family. This subscale was a 4-item (refer to Appendix 2, items 37-40). Participants were allocated a score out of 4 and this was converted into a percentage. This variable was then categorized into 3 levels: 0%= High level of trust in the confidentiality of HIV test results, between 0% and less than 25% =low levels of trust (2 items in the subscale were agreed to indicating some level of insecurity in the confidentiality of HIV testing) and greater than 25% = no trust in the confidentiality of HIV testing (More than 2 items were agreed to , indicating high levels of insecurity).

### Personal Fear

Arising from the focus group interview and the literature Peltzer et al. (2004) is the construct of personal fear. Personal fear is an individual's fear of a positive result or fear of being overwhelmed at or during the HIV testing. In a large scale survey of 600 first year tertiary students conducted by Peltzer et al. (2004) in South India, South Africa and America, it was found that 25% of students reported fear as a barrier that hinders HIV testing. The personal fear subscale consists of 5 items that attempt to assess the level of fear attached to going for an HIV test. Respondents were required to rate statements about their emotional state with regard to HIV testing. This was a 5-item likert scale (refer to Appendix 2, items 41-45). The variable was categorized into 3 levels: 0%=No fear of testing; between 0 and 40%=low personal fear (at least 2 items in the subscale was agreed to indicating some level of fear) and greater than 40%=high levels of personal fear (more than 2 items were agreed to indicating high levels of fear).

### Self-Efficacy

The self-efficacy subscale was a measure of the individual's perceived competence to carry out a decision on HIV testing on their own. The concept of self-efficacy was first introduced by Bandura in 1977, he defined self-efficacy as 'the conviction that one can successfully execute the behavior required to produce the outcomes'. According to Strecher & Rosenstock (1997) lack of self-efficacy is a barrier to taking a recommended health action and is a key construct of the health belief model. Self-efficacy has been explored in many HIV related topics, including self-efficacy and sero-status disclosure Kalichman & Simbayi (2001), self-efficacy and condom use Olley & Rotimi (2003). The relationship between self-efficacy and HIV testing among tertiary students is lacking in research. The self-efficacy subscale is a 4-item scale (refer to Appendix 2, items 46-49). A score of 0% = no self-efficacy (all items on



the scale was agreed to), between 0 and 25% =low self-efficacy (1 item on the scale was agreed to) and a score greater than 25%=high self-efficacy (more than 2 items was agreed to).

#### Awareness of VCT on campus

The subscale was a 4 item subscale (refer to Appendix 2, items 50-53) used to gauge what public cues/media messages the tertiary students have to prompt them to take an HIV test. Samet et al. (1997) suggest that there is still a need to determine if cues to action play a role in the decision to test for HIV. This subscale contained 4 items (refer to Appendix 2, items 50-53). A score of 0-25%=low awareness on campus (only 1 item on the scale was agreed to); 26-50%=adequate campus awareness (at least 2 of the items was agreed to) and between 51-100%=Good campus awareness (more than 2 of the items was agreed to).

#### Social Support

The social support subscale included 6 items (refer to Appendix 2, items 54-59) which attempt to assess the perceived level of support that an individual would get if deciding to go for an HIV test. One of the limitations of most studies on HIV testing is the narrow focus on individual related factors that affect the uptake of voluntary counseling and testing with little attention being paid to how interpersonal factors play a role in one's willingness to test for HIV. A number of studies have reported that women in particular lack social support from family, friends and partners in matters of HIV testing (de Paoli et al., 2004; Maman et al., 2001; Sethosa & Peltzer, 2005). In the focus group discussions the fear of parents and partners reactions was a barrier to going for HIV testing and the uncertainty of getting support for the decision to go for HIV testing often leads to the continued secrecy of HIV. Scores on this subscale were categorized as: 0-16%=High perceived social support (only 1 item was agreed to), 17%-33%=moderate perception of social support (only 2 items were

agreed to) and greater than 33% was low perception of social support (more than 2 items were agreed to).

#### Benefits of knowing HIV status

A number of researchers have pointed out the benefits of knowing the HIV test results. Early detection of HIV positive status can lead to more effective management and care for HIV positive individuals. According to Sethosa & Peltzer (2005) it is less likely that people who know their HIV positive status would continue to spread the virus and those who are HIV negative can adopt strategies to maintain their HIV negative status. This subscale in the instrument focused on individuals perceived benefits of knowing HIV positive status. According to a large scale survey study conducted by Norman & Gebre (2005) on Jamaican tertiary students it was reported that those people who are willing to test for HIV, perceive more benefits to knowing their HIV status. The widespread success of HAART has now increased the benefits of knowing one's HIV status and according to Solomon et al. (2001) knowing one's HIV status is itself a prevention strategy, in that, individuals will not unknowingly spread the virus to others.

This subscale contains 5 items (refer to Appendix 2, items 60 -64) . Scores out of 5 were converted to percentages. Scores on this subscale were categorized as 0= No benefits to knowing HIV status (none of the items were agreed to), between 0-20%=Low/moderate benefits to knowing status (1 of the items were agreed to) and scores between 20 and 100%=High perceived benefits to knowing HIV status (more than 2 of the items were agreed to).

### 3.7.3 Internal reliability alpha coefficient

**Table 1: Internal reliability alpha coefficients of the subscales**

Subscale	Alpha scores
Willingness to test	0.68
Knowledge of HIV transmission	0.89
Knowledge of VCT	0.93
Perceived social stigma	0.77
VCT context	0.32
Confidentiality of HIV tests	0.64
Personal Fear	0.79
Self-efficacy	0.74
Awareness of VCT on campus	0.53
Perceived social support	0.67
Benefits of HIV testing	0.64

SPSS Version 13 was used to calculate the internal alpha coefficients of each of the subscales. By convention, alpha scores that are greater than 0.6 are generally considered to be good reliability scores, Wolfaardt (2001). Generally all the subscales had good alpha coefficient scores, except the subscale measuring VCT context. As explained this subscale was not used in any of the analyses.

### **3.8 Analysis of the data**

Univariate and bivariate analyses were conducted on the demographic characteristics of the sample. A descriptive analysis of students' performance on the different subscales is given. Bivariate analysis was used to determine if there were associations between willingness to test and the difference psychosocial variables (predictor variables). Thereafter, the variables were entered into a multiple logistic regression model, with willingness to test as the outcome variable. SPSS version 13 was the statistical software package used to analyse the data.

### **3.9 Ethical considerations**

The following ethical considerations were undertaken to ensure the rights of the participants was protected.

1. Permission was obtained from the appropriate University authorities before the administration of the questionnaires for both the pilot and the main study.
2. The Head of the School of Psychology was approached for permission to access the first year psychology students (see Appendix 4).
3. Ethical approval for the study was obtained from the University of KwaZulu Natal Social Science and Humanities Ethical Review board.
4. Students were asked to read an informed consent form before answering the questionnaire (see Appendix 1)
5. Students were instructed **not** to write their names or student numbers on the questionnaire.
6. The questionnaire assured students of the anonymity of answering the questionnaire.

7. It was also necessary to obtain permission from the developers of the HIV Antibody Testing Scale (HTAS). Permission was obtained from one of the test developers to use the instrument (See Appendix 5)

## **CHAPTER 4: RESULTS**

This chapter describes the outcome of this investigation. It begins with a demographic profile of the research participants. Descriptive analysis will be used to describe how participants performed on each of the subscales. Bivariate analysis (Chi square) will be used to determine if there is an association between students' willingness to test and each predictor variable such as social stigma, personal fear, campus awareness, benefits of knowing HIV status etc as well as if there is an association between willingness to test and gender and race. The Chi square statistics is a test of association between two variables; it does not give an indication of the strength and direction of the association. Odds ratios will be used in addition to the Chi square analysis to determine the probability/odds of an event occurring. Odds ratios will be used to determine which gender will be most likely to test for HIV and similarly odds ratios will be used to determine which of the race groups will be most likely to test. Multiple logistic regression will be used to determine which psychosocial variables best predict willingness to test.

### **4.1 A demographic profile of participants in the study**

The total number of participants in the study was N=181. The sample was drawn from a group of first year psychology students using the tutorial sessions.

#### 4.1.1 Age

**Table 2: Age of students in the sample**

Age	N	%
17-19	115	63.5%
20-22	60	33.1%
23-26	6	3.3%

The students in the study ranged between 17 and 26 years of age. The mean age was 19 years and the standard deviation was 1.48. The majority of students were between the ages of 17 and 19 with 63.5% of students falling in this category. Thirty-three percent of students were between the ages of 20 to 22 and 3.3% were between the ages of 23-26.

#### 4.1.2 Gender

**Table: 3 Male and female students in the study**

	N	%
<b>Female</b>	109	60.2
<b>Male</b>	72	39.8
<b>Total</b>	<b>181</b>	<b>100</b>

From the data it is apparent that females form the majority of the sample. This is in keeping with the enrollment statistics of psychology students which shows that females form a large part of psychology students. Female students constituted 60.2% of the sample whereas male

students constituted 39.8% of the sample. This distribution of female and male students is somewhat similar to the enrollment statistics of psychology students for the 2005 academic year. Female students constituted nearly half of the psychology students that enrolled (52.7%) and male students constituted 47.2%.

#### 4.1.3 Race

**Table 4 : Description of race groups in the sample**

<b>Race</b>	<b>N</b>	<b>%</b>
African	57	31.5
Coloured	8	4.4
Indians	48	26.5
White	61	33.7
Other	7	3.9

Of the 181 participants African students constituted 31.5% of the sample; Indian students constituted 26.5% and White students represent 33.7%. There were only 4.4% (n=8) Coloured participants in the sample and those participants categorized as 'other' in the sample constituted 3.9% (n=7). These latter two groups had extremely small numbers and as a result it was felt that when performing analyses that compared the different race groups they should be excluded from such comparisons. The distribution of race groups in the sample was relatively evenly distributed. In terms of the enrollment statistics of first year psychology students for 2005, the number of African and Indian students are relatively similar, 40% and 38% respectively. White students constituted 19% of first year psychology



students enrolled, whereas in the sample the number of White participants is relatively similar to that of Indian and African participants. Coloured students in the sample and those enrolled for the psychology course were very small in numbers; 3% of psychology students enrolled were Coloured.

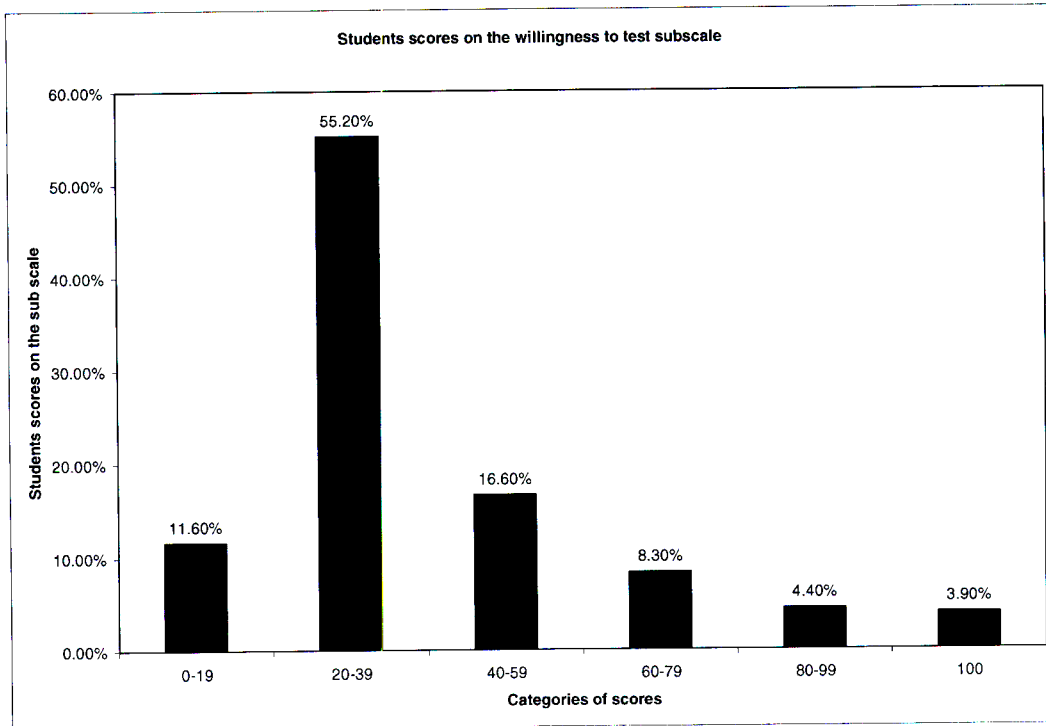
## **4.2 Students' performance on the subscales used in the questionnaire**

Each subscale was scored and each student was allocated a score out of the maximum score for that scale. This section describes students' performance on each of the subscales.

### *4.2.1 Students performance on the willingness to test subscale*

Students' willingness to test scores ranged from 0 (Willing to test) to 100 (Not willing to test). It was heartening to note that the majority of students scored low on this scale. Only 16.6% of students scored above the groups mean and the majority of students scored at the 20<sup>th</sup> percentile. A score of 20% on the subscale was indicative of someone who answered 'no to testing' for one of the given scenarios.

**Figure 2 : Students performance on the willingness to test scale**



In order to analyze students' willingness to test , the variable was dichotomized placing students into two groups, further more the students scores were positively skewed (Skewness score was 1.35) and categorizing the scores gave a better representation of the students' willingness to test.

Below is the table illustrating the recategorisation.

**Table 5:** Students willingness to test scores dichotomized

	N	%
Students willing to test	121	66.9
Poor/no willingness to test	60	33.1
	181	100

The willingness to test variable dichotomized was used in this form for all the analyses as the outcome variable. Seventy per cent of the students show a willingness to test whereas only a third of students show a poor/no willingness to test. Further analysis of this variable was conducted using Chi Square, with the p-value set at 0.05, to look for associations between willingness to test and other variables. Table 5 gives the performance of students on the various subscales.

**Table 6: Students Performance on the subscales in the study**

<b>Subscale</b>		<b>N</b>	<b>%</b>
1. Knowledge of HIV transmission	Poor knowledge	56	31.1
	Average knowledge	27	15
	Good Knowledge	97	53.9
2. Knowledge of VCT	Poor knowledge	24	13.3
	Average knowledge	63	35
	Good knowledge	93	51.7
3. Perceived social stigma	No perceived social stigma	34	19.2
	Low perceived social stigma	89	50.3
	High perceived social stigma	54	30.5
4. Personal fear	No personal fear	68	37.6
	Low personal fear	71	39.2
	High personal fear	42	23.2
5. Confidentiality/Level of trust in confidentiality of HIV tests	Low levels of trust	116	19.3
	Moderate levels of trust	30	16.6
	High levels of trust	35	64.1
6. Social support	Low	67	37
	Moderate	80	44.2
	High	34	18.8
7. Awareness of VCT	No campus awareness	60	33.1
	Low	33	18.2
	High	88	48.6
8. Benefits of testing	No perceived benefits	16	8.8
	Some/little perceived benefits	30	16.6
	Good benefits	135	74.6
9. Self –efficacy	No self-efficacy	82	45.3
	Low self-efficacy	54	29.8
	High self-efficacy	45	24.9

#### 4.2.2 Perceived social stigma associated with HIV testing

A total of 177 students answered this subscale. Scores ranged from 0 (No perceived social stigma) to 100 (High perceived social stigma). The mean score was 29.5. Scores were

categorized into three levels. Half of the students in the sample demonstrated low levels of perceived social stigma (50.3%). A third of the sample displayed high perceived social stigma concerning HIV testing and less than 20% had no perceived social stigma. It can be concluded that a large number of the sample, 80.8%, have some level of perceived social stigma around HIV testing.

#### *4.2.3 Confidentiality: Participants' level of trust in campus staff*

The entire sample of 181 participants answered this subscale. Students scores ranged from 0 (High levels of trust) to 80 (Low levels of trust). Possible scores ranged from 0 to 100. The mean score obtained was 13.1. Overall students performed well on this scale, with the majority of students (64.1%) displaying high levels of trust in campus clinic staff. Seventeen per cent of participants showed a little distrust in campus clinic staff and a 19.3% displayed very low trust in campus clinic staff. This has serious implications for HIV testing; trust in the confidentiality of test results is a major factor that affects HIV testing behavior.

#### *4.2.4 Personal fear*

The total sample of 181 participants completed this subscale. Students scores ranged from 0 (no personal fear) to 100 (strong personal fear). The mean score was 28.6. Students' scores were relatively evenly distributed through each of the three categories. However, we find that a vast majority of the students displayed some fear of going for an HIV test, 62.4%.

#### *4.2.5 Self-efficacy*

The total of 181 participants completed this subscale. Scores ranged from 0 (Low self-efficacy) to 100 (high perceived self efficacy). The mean score was 25. The majority of students scored below the mean and fell into the category of having no self-efficacy (45.3%). Only a third of the sample displayed having a low self-efficacy and a quarter of the sample displayed having a high level of perceived self-efficacy. Participants demonstrated some problems with their ability to carry out the action of going for an HIV testing (75.1%). This has severe implications for uptake of VCT. According to the Health Belief Model self-efficacy is a key component of health related behavior and is dependent on the knowledge that the individual has as well adequate prompts for initiating behavior.

#### *4.2.6 Campus awareness*

The entire sample of 181 students answered this subscale. The scores ranged from 0 to 100, the mean score was 55.9. A third of students did not find the advertising of VCT to be adequate on campus whereas 18% had noticed some awareness of VCT around campus. The majority of students (48.6%) found awareness campaigns for VCT to be highly visible and felt that the campus clinic was making a good effort to promote VCT awareness. Despite adequate media messages on the campus, self efficacy and levels of trust in the confidentiality of HIV results were still poor in the sample.

#### *4.2.7 Social support*

A total of 181 students answered this subscale. The scores ranged from 0 (High social support) to 66.4% (Low social support). Possible scores ranged from 0 to 100. The mean

score was 29.6. A small percentage of students (18.8) perceived high amounts of support from family and friends regarding HIV testing. A large number of students (44.2%) felt that support from family and friends would be adequate or moderate and 37% felt that support would be very low. According to the Theory of Reasoned Action, the perceived support and opinion of significant others is important in bringing about action. The majority of the participants perceived some level of social support from family and friends. This is an encouraging finding, however, we do not know what the actual support of family and friends would be. In order to find this out we would have to follow up participants over a period of time, to discover if they did go for an HIV test and if so, what was the level of support from family and friends during the pretest phase.

#### *4.2.8 Benefits of knowing status*

Students performed well on this scale. An overwhelming majority of students perceived the benefits/advantages of knowing one's HIV status (74.6%). There were very few participants who perceived no benefit to knowing an HIV positive status (8.8%) and 16.6% perceived some or little benefit to testing. The ability of participants to identify the benefits of knowing HIV status is a good indicator of VCT uptake.

#### *4.2.9 Knowledge of HIV transmission*

A total of 181 participants answered this subscale. Scores ranged from 0 (No knowledge) to 100 (Very good knowledge) and the mean was 88.2%. The majority of students scored above the mean, 53.9% (n=97) of the sample scored very high on the subscale in fact these 97 students answered correctly on all questions in the subscale. On the other hand a third of the students in the sample (n=56) displayed very poor knowledge and 15 percent of the sample

scored 'average' on the scale. Although most students performed very well on the subscale 46.1% displayed some inadequacies in their knowledge of how HIV spreads. Knowledge of HIV transmission has been demonstrated to be a major factor enabling the uptake of VCT and the questions making up this subscale were basic questions regarding HIV transmission. It is a concern that scores on this subscale were not higher.

#### *4.2.10 Knowledge of VCT*

A total of 181 students answered this subscale. Scores ranged from 0 (Poor Knowledge) to 100 (Good Knowledge), the mean score was 72.6%. Half the students (51.7%) displayed excellent knowledge of VCT. About a third of students displayed average knowledge of VCT and 13.3% displayed very poor knowledge of VCT. Overall students did have a good idea as to what VCT entailed, however, knowledge of VCT services could be better. A follow up study would have to be conducted to determine what the actual uptake of VCT.

### **4.3 Associations between willingness to test and socio-demographic variables**

The Chi square statistic was used to test whether there was a relationship between students' willingness to test and gender and similarly with race. Table 15 displays the cross tabulation between students willingness to test and gender.



**Table 7: Performance of Male and Females on the willingness to test subscale**

Willingness to test	Female (n)	Male (n)	Chi	Df	p-value	OR	CI – 95%
Willing to test	80 (73.4%)	41 (56.9%)	5.29	1	*0.025	**2.09	1.11-3.92
Poor/not willing to test	29 (26.6%)	31 (43.1%)					
Total	109	72					

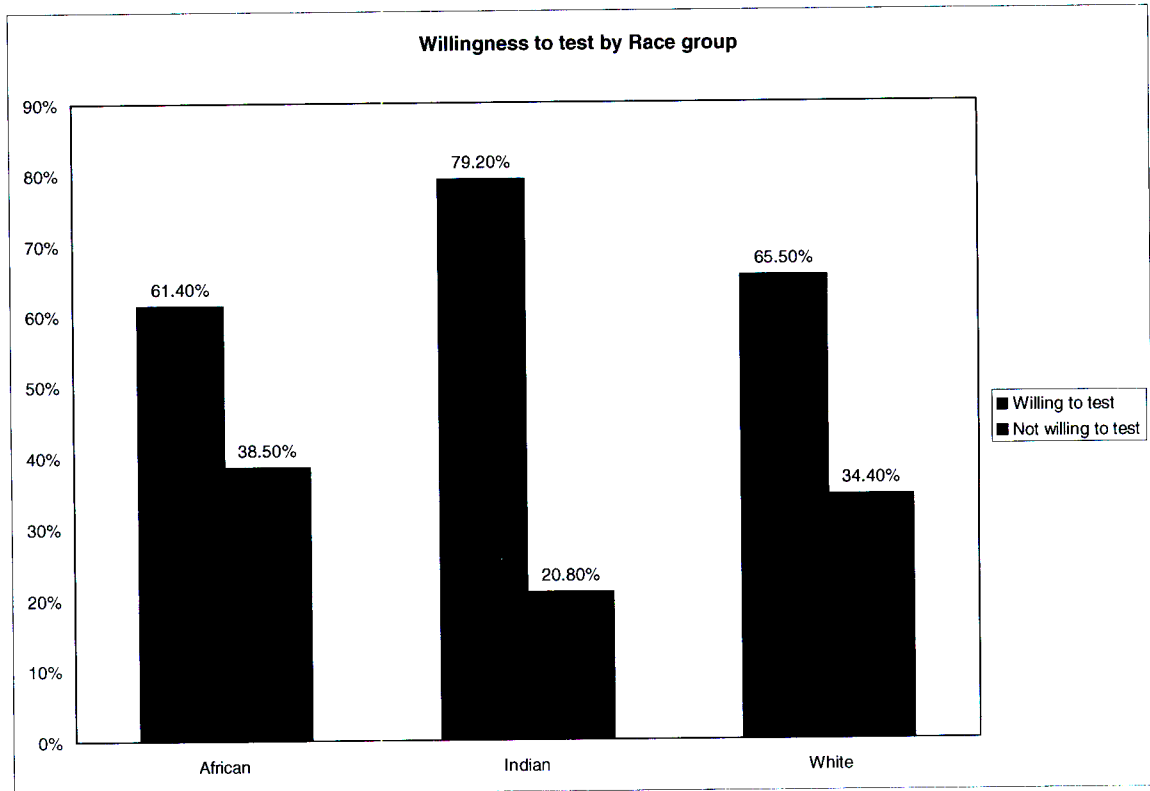
\*Significance level was set at 0.05. Two- tailed test of independence.

\*\* Females as the reference group

There were 109 female students in the sample and 72 male students. Of the female and male students 73.4% and 56.9 % of students respectively displayed a willingness to test. It would appear that females show more of a willingness to test than males. A chi square test revealed that there is a significant difference between gender and willingness to test. Females were twice as likely to test than males (OR=2.09; CI: 1.11-3.92).

When analyzing if there was a significant association between willingness to test and students in the different race groups it was felt that only 3 race groups could be compared (African, Indiana and White). Students who fell into the Coloured and ‘other’ race groups were unfortunately too small in numbers to be used in the analysis of race groups. With the removal of these race groups only 166 participants were used for the chi square analysis to look for associations between race and willingness to test. Figure 2 illustrates how the 3 different race groups performed in the willingness to test scale.

**Figure 3: Performance on the willingness to test subscale by race**



Willingness to test among the race groups was fairly evenly distributed. There was no significant association between race groups and willingness to test ( $X^2=4.1$ ,  $p=0.131$ ,  $df = 2$ ).

Odds ratios was used to determine what the probability was of African, Indian and White. Each time the race variable was recode one of the groups was made the reference group. Table 5 illustrates the OR for each group. It was found that Indian students were 0.44 times more likely to be willing to test. Whites were 1.4 more likely to be willing to test but this was not significant similarly the African group was 1.4 times likely to be willing to test but again this was not significant .

**Table 8: Odds Ratios of willingness to test by race group**

<b>Reference category</b>	<b>OR</b>	<b>p</b>	<b>CI-95%</b>
<b>White</b>	1.4	0.292	0.73 – 2.74
<b>Indian</b>	0.44	0.037	0.21 – 0.95
<b>African</b>	1.4	0.29	0.74 -2.74

#### **4.4 Associations between willingness to test for HIV and psychosocial factors**

In this section of the analysis we examine whether there is an association between willingness to test and individual level variables such as Knowledge of HIV transmission and VCT, personal fear self-efficacy and environmental/relational factors such, perceived social stigma, perceived social support, campus awareness, level of trust of campus clinic nurses.

**Table 9: Association between willingness to test and psychosocial variables**

Predictor variables of willingness to test	X <sup>2</sup>	df	p-value	OR	95% CI
Perceived social stigma	6.07	2	*0.048	1.08	0.69-1.71
Personal fear	7.56	2	*0.023	1.72	1.14-2.60
Perceived social support	6.81	2	*0.033	1.77	1.14-2.74
Knowledge of HIV transmission	17.7	2	*0.0001	0.64	0.45-0.9
Knowledge of VCT	17.4	2	*0.0001	0.39	0.25-0.62
Confidentiality	3.29	2	0.192	1.3	0.88-1.9
Self-efficacy	2.02	2	0.365	1.31	0.89-1.92
Awareness campaigns on campus	1.62	2	0.445	1.02	0.72-1.45
Perceived benefits	4.32	2	0.115	1.55	0.96-2.40

\*p-value was set at the 0.05 significance level. All tests are two-sided.

Chi square analyses of willingness to test with other predictor variables found that perceived social stigma, personal fear, perceived social support, knowledge of HIV transmission and knowledge of VCT were significantly associated with willingness to test. Perceived social stigma was only marginally significant however knowledge of HIV transmission and knowledge of VCT were highly significant and show a strong positive relationship with willingness to test.

Level of trust, self-efficacy, awareness of VCT and perceived benefits of knowing one's status was not significantly associated with willingness to test.

#### 4.5 Multiple logistic regression

One of the aims of this study was to determine which of the psychosocial factors predictors of willingness to test. To do this all the psychosocial variables that were significant in the bivariate analyses were entered into a multiple logistic regression.

**Table 10: Multiple logistic regression**

Variable (reference category)	OR	B	Std error	Chi square	p	CI – 95%
Gender (female)	1.4	0.33	0.36	0.83	0.36	0.68 - 2.89
Social stigma (No perceived social stigma)	1.07	0.07	0.25	0.07	0.78	0.65 – 1.78
Personal fear (No perceived fear)	1.39	0.33	0.24	1.84	0.17	0.86 – 2.26
Social support (High social support)	1.57	0.45	0.24	3.29	0.06	0.96 – 2.55
HIV transmission knowledge (High levels of knowledge)	0.92	0.086	0.21	0.15	0.69	0.59 – 1.41
VCT knowledge (High levels of knowledge)	0.44	0.81	0.28	8.33	*0.003	0.25 – 0.77

When entered into a logistic regression it was found that knowledge of VCT was the only significant variable. Even when adjusted for by gender and all other psychosocial variables VCT knowledge appears to be the best predictor of willingness to test. Students were 0.44 times more likely to test if knowledge of VCT was high. Social support and knowledge of HIV transmission was just marginally not significant.

In terms of socio-demographic factors, gender is significantly associated with willingness to test with females being more willing to test than males. Bivariate analysis revealed that there is a significant association between perceived social stigma, personal fear, social support,

knowledge of HIV transmission, knowledge of VCT services and willingness to test. These psychosocial variables that were significant in the bivariate analysis were then entered into a logistic multiple regression. Knowledge of VCT was the only significant predictor of willingness to test when placed into the regression model. The next chapter is a discussion of the results with comparisons made to other studies.

## CHAPTER 5 :DISCUSSION

The aim of the present study was to determine the psychosocial factors that affect the willingness of a sample of students to undertake VCT. Specifically, we examined which psychosocial and socio-demographic factors are predictors of willingness to test. The Health Belief Model (HBM) and the Theory of Reasoned Action (TRA) were theoretical frameworks used to understand the health preventive behavior of individuals. This chapter is a discussion of the findings of this research. Past studies as well as the HBM and TRA are used to explain or compare the results of this study

### 5.1 Willingness to test versus actual testing behavior

In this study the majority of students demonstrated a positive attitude toward testing, with 66.9% showing a willingness to test for HIV and a third of students demonstrating either poor or no willingness to test. This present study asked hypothetical questions to assess willingness to test given a set of scenarios. It was felt that participants would render more honest answers if they were asked about their testing behavior in less direct manner. Thus, the actual prevalence of HIV testing among the participants is not known. It could be that in reality that less than 66.9% of students might go for testing. Most studies have approached participants in VCT clinics where the decision to be tested has already been made or studies have assessed the prevalence of HIV testing among young students by asking them how many have already been for an HIV test (Norman and Gebre, 2005; Peltzer et al., 2004).

A study conducted by Norman and Gebre (2005) attempted to estimate the prevalence of HIV testing among students at a Jamaican university. Of the 1252 students in the study, it was found that less than half of the students (41.8%) reported having been for an HIV test.

In another study conducted by Peltzer et al. (2004) using a sample of 600 first year university students from 3 universities (200 respondents in each site) in different countries (1 South African, 1 Indian university, 1 United States university) it was found that 9.8% Indian students, 22.4% South African students and 24.5% United States students reported having been for an HIV test. We can conclude that while the majority of students in the present study demonstrated a strong intention or willingness to test for HIV, this is not necessarily an indicator that they will test for HIV.

The TRA offers a possible explanation for the discrepancy that sometimes arises between attitude toward a particular action and the actual carrying out of that action. The TRA stipulates that an individual's behavior or an action is determined by:

- Attitudes toward an action (belief about an outcome and evaluation of the outcome)
- Subjective norms – Belief about what others think and the motivation to comply with others.

We find that participants in this study held positive attitudes toward HIV testing. We can deduce this because participants scored well on the willingness to test subscale and on the subscale measuring the perceived benefits of knowing one's HIV status (74% of participants demonstrated high levels of perceived benefits of HIV testing). According to the TRA, individual behavior is also influenced by beliefs about what others think about a particular action. While an individual can hold a positive attitude to HIV testing, negative beliefs about what significant others might think could be a possible barrier to carrying out the action to test. This study explored several psychosocial constructs and the possible associations of each of these constructs with willingness to test.



## **5.2 The impact of knowledge of HIV transmission and knowledge of VCT services on willingness to test**

It was found in the analysis that several psychosocial variables, when analyzed individually, were significantly associated with willingness to test. Knowledge of VCT and knowledge of HIV transmission were highly significantly associated with willingness to test. Odds ratios between knowledge of HIV transmission and willingness to test reflect that students were 0.6 times more likely to test if knowledge of HIV transmission is high. Knowledge of HIV transmission was very good in this study and this is in keeping with other studies that have focused on tertiary students. (Carrol, 1991; Lance, 1999; Lee et al., 2005) have found that tertiary students generally have very good knowledge of the modes of HIV transmission. The implications of having good knowledge of HIV transmission for testing has been explored by Lee et al. (2005).

In a large scale survey of patients attending a public health clinic in Hong Kong, Lee et al. (2005) determined that participants were ten times more likely to test for HIV if knowledge was good. About half the participants in the present study demonstrated very good knowledge of VCT (51.7%). This was also highly significantly associated with willingness to test. Odds ratios revealed that students were 0.39 times more likely to be willing to test if knowledge of VCT was good. Very few studies have examined knowledge of VCT services among students. Most studies have focused on knowledge of HIV transmission and its association with HIV testing, Falaye & Ukwakwe (2004). According to Gage & Ali (2005) knowledge of an HIV test site is significantly associated with willingness to test. Knowledge of VCT services has yet to be explored among tertiary students

More research has to be conducted on the dissemination of information on VCT services to young people. Cohen, Scribner and Farley (2000) explain that the media messages are powerful tools that influence norms, and behavior and can increase or decrease the consumption of a product or service. A tertiary institute is an ideal setting for disseminating information to large masses of young people and more research on tertiary students' HIV testing behavior is needed to improve and direct the focus of these initiatives.

### **5.3 Significant psychosocial correlates associated with willingness to test**

Fear of an HIV positive result has been the most prominent factor that many studies have reported when assessing the barriers to testing (Bond et al., 2005; Day et al., 2003; Falaye et al., 2004; Maman et al., 2001). In this study, bivariate analysis (Chi square) demonstrated that fear is significantly associated with willingness to test. Participants were about two times more likely to be willing to test if they had no fear of a positive result. This fear is explained by the HBM as a perceived barrier to testing, where individuals weigh the psychological costs of an action against the benefits and then decide on the action to take. Mhlongo et al. (2003) reported that students feared being emotionally overwhelmed during the testing process and mostly they feared a positive result. In order to encourage testing it is important to find mechanisms to alleviate this fear of HIV testing. Past studies have found that this factor is an enabling factor to uptake (Bond et al., 2005; de Paoli et al., 2004; Day et al., 2003) and the HBM has an important construct (Perceived benefits) which suggests that individuals weigh the cost of an action against the benefits before undertaking a health related behavior.

By promoting the benefits of HIV testing to the individual we may find that the psychological cost of testing is outweighed by the benefits. In a cross-sectional study of 1268 people in Botswana, it was found that 66% of people felt encouraged to test knowing that treatment was available, Weiser, Heisler, Leiter, de Korte, Tlou, DeMonner, Phaladze, Bangsberg & Iacopino (2006). According to Bond et al. (2005) the initiation of antiretroviral therapy in the early stages of HIV has been shown to improve and increase the lifespan of individuals. Knowledge of this nature could possibly enable HIV testing behavior.

Social support from family and friends is also an important factor that influences testing. One of the reasons why individuals disclose results is to generate support. Sethosa and Peltzer (2005) argue that social support (from friends and family) is the most effective form of intervention for HIV infected persons. Aside from close family and friends, support can also be drawn from health professionals and even the media. There was a silence in the literature regarding individuals' perceived levels of social support during their pretest phase (when contemplating going for the HIV test) rather on what support they were getting after disclosing their status. In this present study, it was found that the majority of students (63%) felt that their friends or family would be supportive of their decision to be tested for HIV, of these 19% perceived high levels of social support while 44% demonstrated moderate / low levels of perceived social support. Students were 1.7 times more likely to show an intention to test if perceived social support is high.

This has implications for campaigns that aim to promote VCT services. Campaigns may try to promote individuals at risk of HIV to go for testing, perhaps it is also necessary to encourage people to be supportive of others who need to go for testing or who approach them about HIV testing.

Social stigma is perhaps one of the most important barriers to HIV prevention and treatment programmes, (Maman et al., 2001; Ostrom et al., 2006; Peltzer & Mpofu, 2002; Rankin et al., 2005; Smith et al., 2005). Participants in the present study were assessed on their *perceived* social stigma and it was found that the majority of students demonstrated low levels of perceived stigma (50.3%). Students were 1.08 times more likely to be willing to test if there was no perception of social stigma. These findings are consistent with other studies conducted in South Africa. According to a study conducted among youth in an African township Kalichman & Simbayi (2003) demonstrated that AIDS-related stigmas were highly associated with individuals being unwilling to test for HIV. The reason for individuals fearing stigmatization is a phenomenon that has come under increasing investigation.

According to (Alcorn, 2006; Weiser et al., 2006) routine testing may be the answer to reducing stigma of HIV testing. The rationale behind routine testing is that if greater numbers of people tested for HIV then the stigma of HIV testing would be reduced. While routine testing may decrease the stigma of HIV testing there are concerns that people attending clinics will feel coerced into testing. Although, the policy of routine testing states that individuals do have the right not to be tested, if they explicitly refuse it could be that many people will not be aware of their rights, Alcorn (2006). Feeling undue pressure or feeling coerced into testing for HIV might ultimately defeat the purpose of prevention and treatment programmes in that people will have a lack of trust in these initiatives. Weiser et al. (2006) state that for routine testing to be successful in increasing HIV testing numbers and reducing stigma, all patients should receive adequate information about HIV testing and be informed of their right to refuse.

Although confidentiality of HIV testing, self-efficacy, VCT awareness on campus and perceived benefits of knowing HIV status were not significant in the bivariate or regression analysis, this should not negate their importance or their impact on intention to test. Contrary to this present study other studies have found that these factors have had significant associations with students intentions to test. In a survey of 760 African tertiary students (Nigeria, South Africa, Uganda and Zimbabwe) concerning the factors that affect VCT uptake it was determined that confidentiality regarding HIV test results was significantly associated with HIV testing Muganga et al. (2002). Concerns about confidentiality of the HIV test result are not unique to students. de Paoli et al. (2004) assessed 500 pregnant women and determined that confidentiality was an integral part of willingness to test. In the study conducted on mineworkers, Day et al. (2003) determined that guaranteed confidentiality of HIV test results increased the participants willingness to test for HIV.

Hou & Wisenbaker (2005) found similar results to this study, where self-efficacy was not significantly associated with students' willingness to test. Instead other factors such as perceived risk and benefits of HIV testing were highly significantly associated with intention to test. The current study did not focus on perceived risk, but contrary to the study by Hou & Wisenbaker, perceived benefits of an HIV test was found to be not statistically significant. The Hou study determined that students were almost two times more likely to test for HIV if perceived benefits was high. (OR=1.79,  $p<0.005$ ). In the present study bivariate analysis showed that participants were 1.5 times more likely to test if perceived benefits of testing was high (OR=1.5,  $p>0.05$ ).

It would appear from the bivariate analysis that both individual and interpersonal factors are associated with willingness to test. Alleviating fear of HIV testing and improving the dissemination of knowledge of HIV transmission and VCT services could be a possible focus for future campus –based VCT initiatives. If these factors are currently being targeted by VCT campaigns, then this study can affirm that they are indeed important factors that require attention. Addressing issues of social stigma and improving social support for HIV test goers, are important factors that affect HIV testing. Decreasing stigma is a challenge that has accompanied the HIV/AIDS pandemic from the beginning; a campus-based initiative would need to create a ‘culture of HIV testing’ where going for a test is ‘normalized’. This could potentially increase testing numbers and decrease stigma.

Confidentiality, benefits of knowing one’s HIV status, self –efficacy and VCT awareness campaigns were not significantly associated with willingness to test. However, students scored high on the social support scale and demonstrated low levels of social stigma. Furthermore, students did well on knowledge of HIV transmission and knowledge VCT subscales. It is possible that in this particular sample the social aspects of HIV testing (social support and social stigma) and knowledge are more important determinants of behavior to these students. It is possible that, this particular sample of students is more reliant on external support structures which influence their behavior. It is still recommended that campus-based initiatives continue to assure students of the confidentiality of test results as well as the increasing benefits of knowing one’s HIV status. Similarly, campus- based VCT campaigns should disseminate more information to students on how to go about getting tested for VCT. According to the Health Belief Model, knowing how to carry out a particular action can positively affect self-efficacy.

#### **5.4 Associations between willingness to test and socio-demographic factors**

In this study the bivariate analysis shows that females were about two times more likely to be willing to test. Support for this can be found in other studies, for example, (Peltzer & Promtussananon, 2005; Sethosa & Peltzer, 2005; Ransom et al., 2005) found that while women do encounter many barriers to testing, they can be motivated to test for HIV as a result of rape, illness of a partner and the need to have a child. For females in the latter study, witnessing a partner becoming ill raised their concerns about their own personal risk. The other motivating factor that women reported was the need to become pregnant. This suggests that VCT can be viewed or promoted as an important part of the suite of family planning tools.

When gender was placed into the multiple regression model with social stigma, personal fear social support, HIV transmission knowledge and knowledge of VCT and using females as the reference group, it was found that knowledge of VCT was the only factor that appeared significant. Females were 0.44 times more likely to test for HIV if VCT knowledge was good.

It would appear that willingness to test is independent of gender when adjusted for by social stigma, personal fear, social support, knowledge of HIV transmission and knowledge of VCT. In this study it was hypothesized that personal fear would be the strongest predictor of willingness to test, however, knowledge of VCT was the strongest predictor of willingness to test. There is a consensus that access to VCT services increases HIV testing (Coovadia, 2001; Mabunda, 2006; Lee et al., 2005). However, we find that these past studies focus on the

physical accessibility of HIV testing services and not on the knowledge that people have regarding the role of these services in treatment and care of HIV. In a study conducted among youth in Uganda, it was discovered that 81% of youth had knowledge of VCT services but only 28% had undergone the HIV test, Muganga et al. (2002). While accessibility to VCT services maybe excellent it is not necessarily a predictor of uptake of VCT. It is possible that people need more information on the 'package' of care that VCT services have to offer (such as psychosocial support, family planning, medical treatment and referrals to social services) in order to promote the acceptability of VCT.

In this study, about half the participants (51.7%) had good knowledge of the role of VCT services and a third of the participants had an average knowledge. As mentioned, bivariate analysis shows that knowledge of VCT services was highly associated with willingness to test ( $X^2=17.4$ ,  $p<0.05$ ) and odds ratios revealed that participants were 0.39 times more likely to test for HIV if knowledge of VCT services was good. More research needs to be undertaken to determine if media messages are delivering adequate information on the role of VCT services in treatment and care of HIV infected individuals.

There were no studies found that examined differences between race groups. In this study it was found that there was no significant difference between race and willingness to test. However, in a 2002 report on VCT uptake conducted at the university (the site of this study) it was found that White and African students were more likely to request VCT services and that Indian students were the least likely to request VCT services. Coloured students and international students were a small number and were grouped as 'other' (similar to how the present study dealt with these race groups). Clearly more investigations are needed to



determine if there are differences in willingness to test between race groups. It is possible that campus-based initiatives need to be more cognizant of cultural and language differences in their students which could impact on how information is disseminated.

Clearly, there are many factors at play which impact on willingness to test. Perceived social stigma, social support, fear of testing and knowledge of VCT and HIV transmission are possible themes that campus-based initiatives should focus on or be mindful of when designing VCT or HIV awareness campaigns. More research is needed regarding the HIV testing behavior of male students and possible differences that might exist among students in different race groups. Knowledge of VCT services among tertiary students is an aspect of VCT research that requires more exploration. The significance of knowledge of VCT in the regression model is a surprising finding. It was initially hypothesized that personal fear would be the strongest predictor of willingness to test and there were many studies that supported this, (Bond et al., 2005; Day et al., 2003; Falaye et al., 2004; Maman et al., 2001). The limitations of this research in terms of sample size may have influenced the final outcome however, more research and attention is needed to determine whether tertiary students are aware of the range of services to which they have access.

## **CHAPTER 6 : CONCLUSION**

HIV prevalence rates among youth are a growing concern in South Africa (HSRC, 2004; Mhlongo et al., 2003; Peltzer & Mpofu, 2002; Peltzer et al., 2004). The success of ART in prolonging the life span of HIV infected people is a benefit to knowing one's HIV status. ART is most effective when HIV is detected in its early stages, Peltzer & Mpofu (2002). In order for youth to access this life saving treatment, testing for HIV is a critical entry point into treatment and care. This study attempted to determine the psychosocial factors that affect the willingness of young people to undertake a HIV test.

Bivariate analysis determined that perceived social stigma, personal fear, social support and knowledge of HIV transmission and knowledge of VCT services are significantly associated with willingness to test. It was also determined that females are more willing to test for HIV than men and race is not significantly associated with willingness to test. When all these factors are placed into a multiple logistic regression it was determined that the strongest predictor of willingness to test was knowledge of VCT services. This study suggests that willingness to test for HIV can be influenced and strengthened if one has more knowledge of VCT services. A suggestion arising from this research is that Campus-based VCT initiatives should attempt to increase students' knowledge of VCT and its benefits in order to promote HIV testing behavior.

While the study rendered important findings it has its limitations.

### **6.1 Limitations of the study**

This section points out the limitations of the present study

- A limitation of the present study is that it measured a hypothetical construct “Willingness to test” and not “actual” testing behavior. While using hypothetical questions to measure willingness to test may have had its advantages in obtaining somewhat honest answers from participants, it is possible that measuring actual testing behavior among students could have rendered a very different view of students attitudes toward HIV testing. We would have to follow up the cohort over a period of time in order to determine the actual rate of HIV testing in the sample
- First year psychology students were used in the study instead of a representative sample of the entire tertiary institution. It was not within the scope of this Masters dissertation to acquire a representative sample of the entire institution. Thus, the findings of this sample can not be generalized to the population of the entire institution.
- Essentially, VCT consists of 3 phases (pre-test counselling, the HIV test and post- test counselling). This study was not able to measure students’ attitudes toward the counselling component of VCT due to the low reliability alpha coefficient.

## **6.2 Implications for campus-based interventions and future research**

We found that while students demonstrate a strong intention to test for HIV there are clearly other factors that hinder the uptake of VCT, such as, personal fear, social stigma, social support, knowledge of HIV transmission and knowledge of VCT services. Future research should focus on the content of media messages and examine if these are appropriate in alleviating people’s fears of HIV testing. In addition more research regarding routine or opt out testing is needed to determine if this strategy is successful in reducing social stigma and increasing testing numbers.

Past research studies have revealed that females encounter more barriers to HIV testing than males. On the other hand females also encounter more 'female friendly' clinics which enables HIV testing. A possible suggestion to HIV testing services could be to design male friendly clinics as well as youth friendly clinics. Small communities such as a tertiary institute are an ideal location to educate individuals on HIV testing. Media messages that disseminate information on HIV testing services should be made more visible to students through out the campus. Information on the range of services that VCT has to offer should be included in media messages which might increase acceptability of VCT and hence its uptake. The Health Belief Model states that individuals require 'cues to action', that is, prompts that encourage people to undertake a particular action and giving 'how to' information. It is possible that this information could increase self-efficacy or the individual's perceived level of competence to undertake the HIV test.

Perceived social support of friends and family is an important determinant of intention to test as demonstrated in the bivariate analysis in this study (OR=1.77; CI: 1.14-2.74). Media messages should attempt to encourage individuals to test and in addition encourage people to be supportive of others who are contemplating testing. Media messages need to include more information on the benefits of HIV testing and stress the success that HAART and other prophylactic drugs have on prolonging and enhancing the quality of life of individuals. Future research studies should focus on the relationship between ART availability and students' attitudes to testing.

There is a need for research to focus on possible differences in attitudes to testing among the different race groups. It is possible that media campaigns need to design their messages such that it appeals to all races. As suggested by Eaton & Flisher (2000) most HIV testing

campaigns are carried out in English. As such those races with English as a first language may benefit more from these media campaigns. Tertiary institutions should attempt to educate students about HIV testing using different languages as the medium of communication. Lastly, campus-based VCT services should encourage couples to test for HIV together. In doing so, the VCT service should have the capabilities to counsel and support couples that come for testing together.

## REFERENCES

- Aitken, L. (2005). *The influence of HIV knowledge, beliefs, and religiosity on sexual risk behaviors on private school adolescents*. University of the Western Cape, Belville.
- Alcorn, K. (2006). Routine or opt-out counselling and testing. In: *HIV & AIDS Treatment in Practice*. Aidsmap, July 27, 2006. Retrieved November 3, 2006 from <http://hivinsite.ucsf.edu/InSite?page=pa-hatip-71>
- Allen, S., Meinzen-Derr, J., Kautzman, M., Zulu, I., Trask, S., Fideli, U. Musonda, R. Kasolo, F. Gao, F. & Haworth, A. (2003). Sexual behavior of HIV discordant couples after HIV counseling and testing. *AIDS*, 17, 733-740.
- Azjen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, New Jersey: Prentice Hall.
- Bandura, A. (1997). *Social Learning Theory*. Englewood Cliffs, New Jersey: Prentice Hall
- Bond, L., Lauby, J., & Batson, H. (2005). HIV testing and the role of individual -and structural -level barriers and facilitators. *AIDS Care*, 17(2), 125-140.
- Bosahamer, C. B., & Bruce, K. E. (1999). A scale to measure attitudes about HIV-Antibody Testing: Development and psychometric validation. *AIDS Education and Prevention*, 11(5), 400-413.

Boswell, D., & Baggaley, R. (2002). *Voluntary Counseling and Testing (VCT) and Young people: A summary overview*: Family Health International.

Brug, J., Conner, M., Harre, N., Kremers, S., McKellar, S., & Whitelaw, S. (2005). The Transtheoretical Model and stages of change: a critique: observations by five commentators on the paper by Adams, J. and White, M. (2004) why don't stage-based activity promotion interventions work? *Health Education Research*, 20(2), 244-258.

Canadian HIV/AIDS Legal Network (2000). HIV Testing and Confidentiality. Retrieved 26 January 2006, from [www.aidslaw.ca](http://www.aidslaw.ca)

Cartoux, M., Meda, N., Van de Perre, P., Newell, M. L., de Vincenzi, I., & Dabis, F. (1998). Acceptability of voluntary HIV testing by pregnant women in developing countries: an international survey. Ghent International Working Group on Mother-to-Child Transmission of HIV. *Aids*, 12(18), 2489-2493.

Carrol, L. (1991). Gender, knowledge about AIDS, reported behavioral change, and the sexual behavior of college students. *Journal of American College Health*, 40(1), 5-12.

Castro, A., & Farmer, P. (2005). Understanding and Addressing AIDS-Related Stigma: From anthropological theory to clinical practice in Haiti. *American Journal of Public Health*, 95(1), 53-59.

Catania, J. (1999). A Framework for Conceptualizing Reporting Bias and its Antecedents in Interviews Assessing Human Sexuality. *The Journal of Sex Research*, 36(1), 25-39.

Catania, J. A., Binson, D., & Van der Straten, A. (1995). Methodological research on sexual behavior in the AIDS era. *Annual review of sex research, 6*, 77-125.

Center for AIDS Prevention Studies (CAPS) (1994). *Healthy Oakland Teen Survey*. San Francisco : University of California

Center for AIDS Prevention Studies (CAPS) (1996). *National Sexual Health Survey*. San Francisco: University of California.

Chng, C. L., Eke-Huber, E., Eaddy, S., & Collins, J. R. (2005). Nigerian college students : HIV knowledge, perceived susceptibility for HIV and sexual behaviours. *College Student Journal, 1-11*

Cohen, D. A., Scribner, R. A., & Farley, T. A. (2000). A structural model of Health Behavior: A pragmatic Approach to Explain and Influence Health Behaviors at the Population Level. *Preventive Medicine, 30*, 146-154.

Coovadia, H. M. (2000). Access to Voluntary Counseling and Testing for HIV in Developing Countries. *Annals New York Academy of Sciences, 918*, 57-63.

Copas, A., Johnson, A. M., & Wadsworth, J. (1997). Assessing participation bias in a sexual behavior survey: implications for measuring HIV risk. *AIDS, 11*, 783-790.



- Day, J. H., Miyamura, K., Grant, A. D., Leeuw, A., Munsamy, J. & Baggaley, R. (2003). Attitudes to HIV voluntary counselling and testing among mineworkers in South Africa: will availability of antiretroviral therapy encourage testing? *AIDS Care*, 15(5), 665-672.
- De Cock, K., Marum, E., & Mbori-Ngacha, D. (2003). A serostatus-based approach to HIV/AIDS prevention and care in Africa. *The Lancet*, 362, 1847-1849.
- de Paoli, M. M., Manongi, R., & Klepp, K. I. (2004). Factors influencing acceptability of Voluntary counselling and HIV testing among pregnant women in Northern Tanzania *AIDS Care*, 16(4), 411-425.
- Deren, S., Beardsley, M., Coyle, S. & Singer, J. (1998). HIV serostatus and risk behaviours in a multisite sample of drug users. *Journal of Psychoactive Drugs*, 30, 239-245.
- DoH. (2003). *Operational Plan for Comprehensive HIV and AIDS Care, Management and Treatment for South Africa*. Pretoria: DoH.
- DoH. (2004). *National HIV and Syphilis Antenatal Sero-Prevalence Survey in South Africa*. Pretoria: DoH.
- Downing, M., Knight, K., Reiss, T. H., Vernon, K., Mulia, N., Ferreboeuf, M., Carroll, A. & Vu, C. (2001). Drug users talk about HIV testing: motivating and deterring factors. *AIDS Care*, 13(5), 561-577.
- Duffy, K. G., & Wong, F. Y. (1996). *Community Psychology*. London: Allyn and Bacon.

Eaton, L. & Flisher, A. J. (2000). HIV/AIDS Knowledge among South African Youth. *South African Journal of Child and Adolescent Mental Health* 12(2), 97-124.

Falaye, A. O., & Uwakwe, C. B. (2004). *Assessing the uptake of VCT services among Nigerian undergraduates*. Paper presented at the International conference on AIDS 2004, Bangkok.

Fenton, K. A., Johnson, A. M., McManus, S., & Erens, B. (2001). Measuring sexual behavior: Methodological challenges in survey research. *Journal of Sexually Transmitted Infections*, 77, 84-92.

Fishbein, M., Bandura, A., Triandis, H. C., Kanfer, F. H., Becker, M. H., & Middlestadt, S. E. (1991). *Factors influencing behavior and behavior change*. Unpublished manuscript. University of Illinois

Fisher, J. D., Fisher, W. A., Williams, S. S., & Malloy, T. E. (1994). Empirical tests of an information-motivation-behavioral skills model of AIDS-preventive behavior with gay men and heterosexual university students. *Health Psychology*, 13(3), 238-250.

Flowers, P., Duncan, B., & Knussen, C. (2003). Re-appraising HIV testing: An exploration of the psychosocial costs and benefits associated with learning one's HIV status in a purposive sample of Scottish gay men. *British Journal of Health Psychology*, 8, 179-194.

Gage, A. J. & Ali, D. (2005). Factors associated with self-reported HIV testing among men in Uganda. *AIDS Care*, 17(2), 153-165.

Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity*. New York: Simon and Schuster Inc.

Gomes, M., Ferreira, M., Silva, C., & Silva, S. (2000). *Testing and Counseling Adolescents - Rio de Janeiro*. Paper presented at the XIII International AIDS Conference Durban, South Africa.

Hou, S. I., & Wisenbaker, J. (2005). Using a web-based survey to assess correlates of intention towards HIV testing among never-been-tested but sexually experienced college students. *AIDS Care*, 17(3), 329-334.

HSRC. (2002). *The Nelson Mandela/HSRC Study of HIV/AIDS*. Cape Town: HSRC Press.

HSRC. (2004). *The National Household HIV Prevalence and Risk Survey of South African Children*. Cape Town: HSRC Press.

Jacobs, T. (2003). *Domestic Violence and HIV/AIDS: An area of urgent intervention*: Institute of criminology , University of Cape Town, South Africa.

James, N. J., Bignell, C. J., & Gillies, P. A. (1991). The reliability of self reported sexual behavior. *AIDS*, 5, 333-336.

Jha, P., Mills, A., & Hanson, K. (2002). Improving the health of the global poor. *Science*, 295, 2036-2039.

Kalichman, S. C., & Simbayi, L. C. (2003). HIV testing attitudes, AIDS stigma, and voluntary HIV counselling and testing in a black township in Cape Town, South Africa. *Journal of Sexually Transmitted Infections*, 79, 442-447.

Lance, L. M. (1999). *HIV/AIDS perceptions and knowledge heterosexual college students within the context of sexual activity: suggestions for the future*. Paper presented at the Annual Meeting of the Eastern Sociological Society in Boston, Boston, Mass.

Lee, K., Cheung, W. T., Kwong, V. S. C., Wan, W. Y., & Lee, S. S. (2005). Access to appropriate information on HIV is important in maximizing the acceptance of the antenatal HIV antibody test. *AIDS Care*, 17(2), 141-152.

Mabunda, G. (2006). Voluntary HIV counselling and testing: Knowledge and practices in a rural South African village. *Journal of transcultural nursing*, 17(1), 23-29.

Maman, S., Mbwambo, N., Hogan, N. M., Kilonzo, G. P., & Sweat, M. (2001). Women's barriers to HIV-1 testing and disclosure: challenges for HIV-1 voluntary counselling and testing. *AIDS Care*, 13(5), 595-603.

Mhlongo, S., Celani, H., Saib, S. C., Colville, N., Branlal, P. & Slabbert, S., (2003). *The development of a program to increase uptake of VCT at UDW*. University of Durban Westville, Durban.

- Muganga, A. M., Bahemuka, M. E., Ariono, C. O., & Buwembo, D. R. (2002) *Knowledge and acceptability of HIV voluntary counseling and testing (VCT) among Ugandan urban youth*. Paper presented at the 14th International AIDS Conference, Barcelona, Spain.
- Muller, O., Sarangbin, S., Ruxrungtham, K., Sittitrai, W., & Phanuphak, P. (1995). Sexual risk behavior reduction associated with voluntary HIV counselling and testing in HIV infected patients in Thailand. *AIDS Care*, 7(5), 567-572.
- Myers, K., & Winters, N. C. (2002). Ten-Year Review of Rating Scales: Overview of Scale Functioning, Psychometric Properties, and Selection. *Journal of American Academic Child and Adolescent Psychiatry*, 41(2), 114-122.
- Nachega, J. B., Stein, D. M., Lehman, D. A., Hlatshwayo, D., Mothopeng, R., Chaisson, R. E., & Karsteadt, A.S. (2004). Adherence to Antiretroviral Therapy in HIV-infected Adults in Soweto, South Africa. *AIDS Research and Human Retroviruses*, 20(10), 1053-1056.
- Neuman, W. L. (1997). *Social Research Methods: Qualitative and Quantitative Approaches*. Boston: Allyn and Bacon.
- Norman, L. R., & Gebre, Y. (2005). Prevalence and Correlates of HIV Testing: An analysis of University Students in Jamaica.
- Nyblade, L. (2004). *Measuring HIV stigma: Existing knowledge, gaps, challenges and moving forward*. Paper presented at the Research workshop on Health-related stigma and discrimination, Soesterberg: The Netherlands.

Olley, B. O., & Rotimi, O. J. (2003). Gender Differences in Condom Use Behaviour among Students in a Nigerian University. *African Journal of Reproductive Health*, 7(1), 83-91.

Ostrom, R. A., Serovich, J. M., Lim, J. Y., & Mason, T. L. (2006). The role of stigma in reasons for HIV disclosure and non-disclosures to children *AIDS Care*, 18(1), 60-65.

Peltzer, K. & Mpofo, E. (2002). The Factor Structure of the HIV Antibody Testing Attitude Scale in Four African Countries. *Eastern Journal of Medicine*, 7(2), 27-30.

Peltzer, K., Nzewi, E., & Mohan, K. (2004). Attitudes towards HIV-Antibody testing and people with AIDS among University students in India, South Africa and United States. *Indian Journal of Medical Sciences*, 58(3), 95-108.

Peltzer, K., & Promtussananon, S. (2005). HIV/AIDS Knowledge and Sexual behavior among Junior Secondary School students in South Africa. *Journal of Social Sciences*, 1(1), 1-8.

Petra Study. (2002). Efficacy of three short-course regimens of zidovudine and lamivudine in preventing early and late transmission of HIV-1 from mother to child in Tanzania, South Africa and Uganda (Petra study): a randomized, double-blind, placebo-controlled trial. *Lancet*, 359, 1178-1186.

Pool, R., Nyanzi, S., Whitworth, J. A. G. (2001). Attitudes to voluntary counselling and testing for HIV among pregnant women in rural south-west Uganda. *AIDS Care*, 13(5), 605-615.

Prochaska, J. O., & DiClemente, C. C. (1992). Stages of change in the modification of problem behaviors. *Progress in Behavior Modification*, 28, 183-218.

Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1992). In search of how people change: Application to addictive behaviors. *American Psychologist*, 47, 1102-1114.

Pronyk, P. M., Kim, J. C., Makhubele, M. B., Hargreaves, J. R., Mohlala, R., & Hausler, P. (2002). Introduction to voluntary counselling and rapid testing for HIV in rural South Africa: from theory to practice. *AIDS Care*, 14(6), 859-865.

Ramsoomar, L. (2005). *The relationship between readiness to change, decisional balance and self-efficacy among substance abuse patients*. University of KwaZulu-Natal, Durban

Rankin, W. W., Brennan, S., Schell, E., Laviwa, J., & Rankin, S. H. (2005). The Stigma of being HIV positive in Africa. *Plos Medicine*, 2 (8), 1-3

Ransom, J. E., Siler, B., Peters, R. M., & Maurer, M. J. (2005). Worry: Women's experiences of HIV testing. *Qualitative Health Research*, 15(3), 382-393.

SAINT study. (2003). A multicenter randomised controlled trial of nevirapine versus a combination of zidovudine and lamivudine to reduce intrapartum and early postpartum

mother-to-child transmission of human immunodeficiency virus Type 1. *Journal of Infectious Diseases*, 187, 725-735.

Samet, J. H., Winter, M. R., Grant, L., & Hingson, R. (1997). Factors associated with HIV testing among sexually active adolescents: A Massachusetts Survey. *Pediatrics*, 100(3), 371-377.

Sethosa, E. & Peltzer, K. (2005). Evaluation of HIV counselling and testing, self-disclosure, social support and sexual behavior change among a rural sample of HIV reactive patients in South Africa. *Curationis*, 28(1), 29-41

Shisana, O. (2003). The current situation of HIV/AIDS in South Africa. In M. Freeman (Ed.), *Mental Health and HIV/AIDS in South Africa: report on a round-table discussion March 2003* (pp. 1-9). Cape Town: HSRC Publishers.

Smith, P. B., Buzi, R. S., & Weinman, M. L. (2005). HIV testing and counselling among adolescents attending family planning clinics. *AIDS Care*, 17(4), 451-456.

Solomon, V., Van Rooyen, H., Griesel, R., Gray, D., Stein, J., & Nott, V. (2001). *Critical Review and Analysis of Voluntary Counselling and Testing Literature in Africa* (A report prepared for the Health Systems Trust, No. 286/01).

Statistics South Africa (Stats SA) (2005). *Mortality and causes of death in South Africa 1997-2003*. Pretoria: Statistics South Africa.



- Stein, J. A., & Nyamathi, A. (2000). Gender differences in behavioral and psychosocial predictors of HIV testing and return for test results in a high-risk population. *AIDS Care*, 12(3), 343-356.
- Strecher, V. J., & Rosenstock, I. M. (1997). The Health Belief Model. In K. L. Glanz, F. M. & Rimer, B. K. (Eds.), *Health Behavior and Health Education: Theory, Research and Practice* (2 ed.). San Francisco: Jossey-Bass.
- Sweat, M., Gregorich, S., Sangiwa, G., Furlonge, C., Balmer, D., Kamenga, C., Grinstead, O., & Coates, T. (2000). Cost-effectiveness of voluntary HIV-1 counselling and testing in reducing sexual transmission of HIV-1 in Kenya and Tanzania. *The Lancet*, 357(9224), 113-121.
- Thielman, N. M., Chu, H., Ostermann, J., Itemba, D. K., & Mgonja, A. (2006). Cost-Effectiveness of Free HIV Voluntary Counseling and Testing through a community-based AIDS service organization in Northern Tanzania. *American Journal of Public Health*, 96(1), 1-6.
- UNAIDS. (2001). *The impact of Voluntary Counselling and Testing: A global review of the benefits and challenges*. Geneva: UNAIDS.
- UNAIDS. (2002). *Fact Sheet 2002: Sub-Saharan Africa*. Retrieved November 5, 2006, from [http://www.unaids.org/worldaidsday/2002/press/factsheets/FSAfrica\\_en.doc](http://www.unaids.org/worldaidsday/2002/press/factsheets/FSAfrica_en.doc) .
- UNAIDS. (2003). *HIV/AIDS: It's your business*. Geneva: UNAIDS

UNAIDS. (2004). *UNAIDS/WHO Policy Statement on HIV Testing*. Geneva: UNAIDS.

UNAIDS. (2005). *AIDS Epidemic Update*. Geneva: UNAIDS.

Van de Perre, P. (2000). HIV voluntary counselling and testing in community health services. *Lancet*, 356, 86-87.

van Dyk, A. C., & van Dyk, P. J. (2003). "To know or not to know": service-related barriers to voluntary HIV counseling and testing (VCT) in South Africa *Curationis*, 26(1), 4-10.

Voluntary HIV-1 Counselling and Testing Efficacy Study Group (2000). Efficacy of Voluntary HIV-1 Counselling and Testing in individuals and couples in Kenya, Tanzania and Trinidad: A randomised trial. *Lancet*, 356, 103-112.

Weiser, S. D., Heisler, M., Leiter, K., Percy-de-Korte, F., Tlou, S., DeMonner, S. Phaladze, N., Bangsberg, D. R., & Iacopina, V. (2006). Routine HIV Testing in Botswana: A population-based study on attitudes, practices, and human rights concerns. *Plos Medicine*, 3(7), 1013-1022.

WHO. (2000). *Violence against Women and HIV/AIDS: Setting the Research Agenda*. Geneva: WHO.

Wolfaardt, J. B. (2001). Basic concepts. In C. Foxcroft & G. Roodt (Eds.), *An introduction to psychological assessment in the South African context*. Cape Town: Oxford University Press.

## APPENDICES

### Appendix 1: Covering letter to participants



Faculty of Human and Management Sciences. P.O. Box X01, Scottsville, 3209, South Africa

Dear Learner

My name is Santhana Gengiah and I am a Masters Student in the School of Psychology in the University of KwaZulu Natal (PMB). I am extremely interested in research concerning aspects of HIV. I would like to explore some of the concerns and fears that students may have concerning HIV testing. It would be of tremendous help to me if you would kindly fill out the questionnaire that follows. Your answers will allow me to understand how students feel about HIV testing and this could in turn help improve HIV services on campus. This questionnaire should take you between 15-20 minutes to complete. However, please note the following:

- **Your participation in this questionnaire is completely voluntary.**
- **You may decline to answer this questionnaire without fear of reprisal.**
- **The information that you provide in this questionnaire is confidential.**
- **This is an anonymous questionnaire.**
- **Do not write your student number on the questionnaire**
- **Do not write your name on the questionnaire**

**Please tick the appropriate box**

I have read and understood the above letter.

*(Please tick one)*

I hereby consent to answering the questionnaire	<input type="checkbox"/>
I decline to answer the answer the questionnaire	<input type="checkbox"/>

Should you have any further queries, please feel free to contact me at the telephone number below or send an e-mail to me.

Telephone : 031 242 5426

E-mail : [204507742@ukzn.ac.za](mailto:204507742@ukzn.ac.za)

Alternatively, you could contact my supervisor (a lecturer at the School of Psychology in PMB) :

Mr Vernon Solomon (Clinical Psychologist)

E-mail : [Solomon@ukzn.ac.za](mailto:Solomon@ukzn.ac.za) Tel : 033 260 5680 (office)

Thank you for giving up your time to fill out this questionnaire. Good Luck with your future studies.

Yours sincerely,

---

Santhana Gengiah (Research Masters Student)

## Appendix 2: Primary data collection tool

Some information about yourself

1. How old are you? \_\_\_\_\_
2. Gender (*Please Tick one*) : Male \_\_\_\_ Female \_\_\_\_
3. What is your Race? (*Pleas tick one*)

Black	Coloured	Indian	White	Other

If other please indicate what that is?

\_\_\_\_\_

4. What was the name of the high school you attended? \_\_\_\_\_
5. Where was your school? Town/City \_\_\_\_\_ and  
Province \_\_\_\_\_
6. What degree are you registered for  
\_\_\_\_\_

### Willingness to test for HIV

Consider the following hypothetical scenarios and answer Yes or No to the following questions

Would you get tested for HIV.....

- 7... if you had unprotected sex with a person you did not know very well? \_\_\_\_\_
- 8... if you had unprotected sex with a person with whom you have been involved in serious relationship with for a period of about 3 months)? \_\_\_\_\_
- 9...if you discovered that your partner had been unfaithful to you? \_\_\_\_\_
- 10...if it was a requirement for insurance purposes? \_\_\_\_\_
11. Have you ever been tested for HIV, for reasons other than insurance purposes? \_\_\_\_\_

**Please read the following statements and say whether you think they are true, false or if you do not know.**

12. A person can get HIV even if he or she has sexual intercourse just one time without a condom?
- True      False      I do not know
13. You can get HIV by touching or hugging someone with HIV?
- True      False      I do not know
14. You can get HIV by having anal sex without a condom?
- True      False      I do not know
15. You can get HIV by having unprotected sex with someone who uses shared drug needles.
- True      False      I do not know
16. You can get HIV by kissing someone who has HIV.
- True      False      I do not know

**Please read the following statements about Voluntary Counselling and Testing (VCT) and say whether you believe they are true or false or if you do not know.**

17. VCT allows you learn your HIV status?
- True      False      I do not know
18. VCT allows you to speak to a professional HIV counselor about how to cope with being HIV positive
- True      False      I do not know
19. VCT allows you to learn how to prevent the transmission of HIV from one person to another.
- True      False      I do not know
20. VCT provides emotional support for people who are HIV positive.
- True      False      I do not know

21. VCT provides HIV positive individuals with Antiretrovirals?

True      False      I do not know

22. VCT is not a free service.

True      False      I do not know

23. VCT provides people with information about HIV

True      False      I do not know

24. An HIV counselor gives you counseling before and after the HIV test.

True      False      I do not know

**PLEASE READ THE FOLLOWING QUESTIONS AND SAY TO WHAT EXTENT YOU AGREE OR DISAGREE WITH THE STATEMENT BY MARKING AN (X) IN THE APPROPRIATE BLOCK.**

25. Admitting that you have been tested for HIV means that you have engaged in immoral behavior.

Strongly Agree	Agree	Disagree	Strongly Disagree

26. My friends would look down at me if were tested for HIV.

Strongly Agree	Agree	Disagree	Strongly Disagree

27. People assume that everyone who is tested for HIV is infected with HIV.

Strongly Agree	Agree	Disagree	Strongly Disagree

28. I would not want anyone to know that I had been tested for HIV.

Strongly Agree	Agree	Disagree	Strongly Disagree

29. I would be embarrassed if anyone found out I had been for an HIV test.

Strongly Agree	Agree	Disagree	Strongly Disagree

30. If people saw me at the campus clinic they would immediately think I am sick?

Strongly Agree	Agree	Disagree	Strongly Disagree

31. People think negatively of those who have diseases.

Strongly Agree	Agree	Disagree	Strongly Disagree

32. I would feel more comfortable speaking to an HIV counselor who is my own age.

Strongly Agree	Agree	Disagree	Strongly Disagree

33. I would not want to speak to an HIV counselor who has a different race from mine.

Strongly Agree	Agree	Disagree	Strongly Disagree

34. I do not need counseling , I just want the HIV test results

Strongly Agree	Agree	Disagree	Strongly Disagree

35. I am afraid that the counselor may be someone I know

Strongly Agree	Agree	Disagree	Strongly Disagree

36. I wish I knew more about what happens during Voluntary counseling and testing.

Strongly Agree	Agree	Disagree	Strongly Disagree

37. HIV antibody testing is not really confidential.

Strongly Agree	Agree	Disagree	Strongly Disagree

38. I trust the HIV counselors on campus to keep my information confidential.

Strongly Agree	Agree	Disagree	Strongly Disagree

39. I am afraid that the nurses at the campus clinic would contact my family about my HIV status.

Strongly Agree	Agree	Disagree	Strongly Disagree

40. I am afraid that the nurses would tell my partner the results of my HIV test.

Strongly Agree	Agree	Disagree	Strongly Disagree

41. I am afraid to be tested for HIV because the result could be positive.

Strongly Agree	Agree	Disagree	Strongly Disagree

42. Being tested for HIV would be a very frightening experience for me.

Strongly Agree	Agree	Disagree	Strongly Disagree

43. I would prefer not knowing what my HIV status is.

Strongly Agree	Agree	Disagree	Strongly Disagree

44. I would be emotionally overwhelmed during the HIV test.

Strongly Agree	Agree	Disagree	Strongly Disagree

45. I would be very afraid to tell my partner that I have been for an HIV test.

Strongly Agree	Agree	Disagree	Strongly Disagree

46. I am not able to make a decision about HIV testing on my own.

Strongly Agree	Agree	Disagree	Strongly Disagree

47. I would not know how to go about being tested for HIV.

Strongly Agree	Agree	Disagree	Strongly Disagree



48. I need to have someone with me when I get tested for HIV

Strongly Agree	Agree	Disagree	Strongly Disagree

49. I do not have enough money to go for an HIV test.

Strongly Agree	Agree	Disagree	Strongly Disagree

50. I feel that the University campus clinic provides us with enough encouragement to go for HIV testing.

Strongly Agree	Agree	Disagree	Strongly Disagree

51. It would be good to have more information from the campus clinic about how to get tested for HIV

Strongly Agree	Agree	Disagree	Strongly Disagree

52. There are not enough ad campaigns around the campus about HIV testing.

Strongly Agree	Agree	Disagree	Strongly Disagree

53. It would be good to have more HIV awareness programmes/campaigns on the campus.

Strongly Agree	Agree	Disagree	Strongly Disagree

54. My family would support me if I decided to be tested for HIV.

Strongly Agree	Agree	Disagree	Strongly Disagree

55. I can easily discuss HIV testing with my Parents/ Guardian

Strongly Agree	Agree	Disagree	Strongly Disagree

56. I would feel more confident going for an HIV test if my partner agreed to come with me

Strongly Agree	Agree	Disagree	Strongly Disagree

57. My partner would become extremely violent if he/she knew that I had been tested for HIV.

Strongly Agree	Agree	Disagree	Strongly Disagree

58. I would need to ask my partner's permission first, before I could be tested for HIV.

Strongly Agree	Agree	Disagree	Strongly Disagree

59. I can easily talk to my parents about HIV testing.

Strongly Agree	Agree	Disagree	Strongly Disagree

**Finding out that you are HIV positive can be extremely distressing. How would you rate the following statements about people who find out that they are HIV positive.**

60. It is good that they know their HIV positive status.

Strongly Agree	Agree	Disagree	Strongly Disagree

61. By knowing their HIV positive status they can now seek treatment to prolong their lives.

Strongly Agree	Agree	Disagree	Strongly Disagree

62. Knowing their HIV positive status they can now make certain that they always have protected sex.

Strongly Agree	Agree	Disagree	Strongly Disagree

63. By knowing that they are HIV positive they can start taking better care of their health so as to prolong their lives.

Strongly Agree	Agree	Disagree	Strongly Disagree

64. There is no benefit to them knowing their HIV status, as there is no cure for the virus.

Strongly Agree	Agree	Disagree	Strongly Disagree

-----**END**-----

Thank you for participating in this questionnaire. Good luck with the rest of your studies.

### Appendix 3: Letter requesting permission to use HTAS



Faculty of Human and Management Sciences. P.O. Box X01, Scottsville, 3209, South Africa

Dear Prof. Bruce

#### Request permission to administer HIV – Antibody testing attitude Scale

My name is Santhanalakshmi Gengiah and I am a student at the University of KwaZulu-Natal, in South Africa. I am studying for a Masters degree in Research Psychology. As part of my degree I have to complete a Research Thesis within two years. I have taken a keen interest in the field of HIV/AIDS and for my thesis I have chosen to focus on the factors that effect tertiary students' decisions to go for Voluntary counseling and HIV testing (VCT). While searching for literature on this topic I was pleased to come across The *HIV-Antibody testing attitude Scale*. I feel that this instrument would be appropriate for my study and I would like to gain your permission to administer the instrument to students at a tertiary institution in South Africa

Briefly, my thesis will attempt to explicate the factors that enable or disable students' decisions to go for Voluntary counseling and HIV testing (VCT). My sample will be selected from the campus that I am currently studying at and will consist of 700 students. I am interested in collecting demographic information such as age, race and gender and making comparisons between different groups of students. For example, I would like to compare factors that affect the uptake of VCT between male and female students, as well as factors that may arise between students of different race groups. Thus far I have conducted several interviews with students on campus and I have tried to gain some insight as to what their

difficulties and concerns are with regards to HIV testing as well as the counseling aspect of testing. Should I gain permission to use the *HIV – Antibody testing attitude scale*, it is my intention to try and adapt the instrument to include questions on the counseling aspect of VCT and thus make it more appropriate for my study.

I wish to re assure you that should I get permission to use the scale in question, I will treat the administration of the questionnaire and any rules or ethical guidelines that you may stipulate with regards to its use with the utmost respect. I would be grateful for your permission to use the scale and look forward to your response.

Should you require further information from me I can be reached via e-mail at [204507742@ukzn.ac.za](mailto:204507742@ukzn.ac.za)

The details of my supervisor are also as follows:

Vernon Solomon (Clinical Psychologist)

University of Kwa-Zulu Natal

School of Psychology

[solomon@ukzn.ac.za](mailto:solomon@ukzn.ac.za)

Thank you for your time.

Kind Regards

S. Gengiah.

#### Appendix 4: Letter of request to Head of School of Psychology



Faculty of Human and Management Sciences. P.O. Box X01, Scottsville, 3209, South Africa

S. Gengiah  
750 Francois Road  
Intuthuko Junction  
Cato Manor  
Durban  
4001

31 May 2005

Private Bag X 54001  
Durban  
4000

Dear Professor

#### Request to access students in tutorial classes

My name is Santhanalakshmi Gengiah and I am a Research Intern at the Human Sciences Research Council. Concurrently with my internship I am also in the second year of my Research Masters at the University of Kwa-Zulu Natal (PMB). As part of my Research Masters I have to complete the Dissertation component of my degree. I have taken a keen interest in researching Voluntary Counseling and HIV testing (VCT) and the Research Title for my Dissertation is *Factors that effect the uptake of Voluntary Counselling and Testing among students at a Tertiary Institute*. Essentially, I am interested in what factors serve to inhibit the uptake of VCT among students as well as those factors that serve to enable the uptake of VCT.

Higher Degrees approved my Research Proposal last year in 2004. I will fax the appropriate document from Higher Degrees verifying this shortly. The data collection for my study comprises of a pilot study and the main study. The pilot study will require a small group of first year psychology students (15-20 students) to whom I will administer the questionnaire and have a short discussion thereafter about the content of the questionnaire and how it can be improved, which questions seems ambiguous, or if more clarity is needed. Once I have refined the questionnaire, I would like to administer it to a much larger sample (200 –250 first year psychology students).

I estimate that the questionnaire itself takes approximately 15-20 minutes to complete. Each questionnaire has attached to it a short letter explaining the purpose of the study and informing the student that his or her participation is voluntary. In order to access the first year students I would like to approach them in their lecture theatres or tutorial groups. Before doing so, I would need to obtain the permission of the lecturer or tutor for that period and negotiate with that individual as to when would be the most appropriate time/day to administer the questionnaire.

I realize that at this point in the year the students will be preparing for their exams and lectures have come to an end. If I do get permission to carry out this study it would start at the beginning of August when the second semester begins.

I would like to take this opportunity to assure you that should I be given permission to carry out this study I would treat the learners and the valuable data that they are giving me with the utmost respect. I feel that this study has the potential to contribute to the understanding of

students' attitudes with regards to Voluntary Counselling and Testing and would really appreciate the opportunity to carry out my investigation on your campus.

Mr Vernon Solomon is the supervisor for my Dissertation. The details of my supervisor are as follows:

Vernon Solomon (Clinical Psychologist)

University of Kwa-Zulu Natal

School of Psychology

[solomon@ukzn.ac.za](mailto:solomon@ukzn.ac.za)

My contact details are as follows :

Human Sciences Research Council

750 Francois Road

Intuthuko Junction

Cato Manor

Durban

4001

031 242 5426 (Tel)

031 242 5401(fax)

e-mail :sgengiah@hsrc.ac.za

Yours sincerely

S. Gengiah.

## Appendix 5: E-mail correspondence from Prof. K. Bruce

Santhanalakshmi Gengiah - RE: Request permission to use HIV antibody testing attitude scale

Page 1

**From:** "Bruce, Katherine" <bruce@uncw.edu>  
**To:** "Santhanalakshmi Gengiah" <204507742@ukzn.ac.za>  
**Date:** Sat, Oct 23, 2004 9:13 PM  
**Subject:** RE: Request permission to use HIV antibody testing attitude scale

Dear Ms. Gengiah

You are very welcome to use the HIV antibody testing attitude scale and best wishes in your research! Just be sure to cite the original scale and indicate how you have revised it.

Yours truly, Kate Bruce

-----Original Message-----

From: Santhanalakshmi Gengiah [mailto:204507742@ukzn.ac.za]  
Sent: Thursday, October 21, 2004 1:55 AM  
To: Bruce, Katherine  
Subject: Request permission to use HIV antibody testing attitude scale

Dear Pof Bruce

Please would you read the attached document. It is a letter of request to obtain permission to use the HIV antibody testing attitude scale.

Kind Regards

Santhanalaksmi Gengiah (Ms)  
204507742@ukzn.ac.za

-----  
Please find our disclaimer at <http://www.ukzn.ac.za/disclaimer>  
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<<<<gwavasig>>>>

**CC:** <solomon@ukzn.ac.za>



**Appendix 6: HIV-Antibody Testing Attitude Scale**

Please turn over to view the HIV-Antibody Testing Attitude Scale.

This scale is presented for informational purposes only. It may be copyrighted, and use should be authorized by the author(s).

# HIV-ANTIBODY TESTING ATTITUDE SCALE

Program:

Project sub-site:

Today's Date (MM/DD/YY):

 /  / 

Unique ID number:

   **SAMPLE**  

Sexual orientation:

- gay/lesbian
- bisexual
- heterosexual
- undecided/don'tknow
- prefer not to answer

Date of Birth: (MM/DD/YY)

 /  / 

Gender:

- male
- female
- transgender (M>F)
- transgender (F>M)
- refused

first letter of the first name  
third letter of the first name  
first letter of the last name  
third letter of the last name  
month of birth (2 digits)  
day of birth (2 digits)  
year of birth (2 digits)  
gender code: 1=male, 2=female, 3=transgender, 6=client refused, 9=unknown

Tribe:

Tribal Affiliation:

What would be your most likely exposure category to HIV:

- male sex with another male
- injected drugs
- male sex w/ another male AND injected drugs
- heterosexualcontact
- heterosexual AND injected drugs
- blood trans, blood components, or tissue
- mother to child
- other

What are your intentions toward being tested for HIV?

- will be tested in the next three months
- will be tested between the next three and six months
- will be tested in more than six months
- no intentions to be tested, ever

What is your perceived knowledge of HIV/AIDS?

- no knowledge
- somewhat knowledgeable
- very knowledgeable

When were you last tested for HIV?

- in the previous three months
- between the previous three and six months
- more than six months ago
- never been tested

Please answer the following questions using the scale below.

**SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree.**

1. HIV-antibody testing is not really confidential.  SA  A  N  D  SD
2. HIV test information is kept very confidential by the medical staff who do the testing.  SA  A  N  D  SD
3. My family would support me if I decided to be tested for HIV.  SA  A  N  D  SD
4. I would not want anyone to know if I got an HIV test.  SA  A  N  D  SD
5. My friends would not look down on me if I were tested for HIV.  SA  A  N  D  SD

Please GO TO PAGE 2

8111034682

Unique ID number:

SAMPLE

## HIV-ANTIBODY TESTING ATTITUDE SCALE

Please answer the following questions using the scale below.

**PAGE 2**

**SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree.**

6. Anyone who is tested for HIV is disgusting.  SA  A  N  D  SD
7. I would be afraid to get an HIV test because people who test positive cannot get health insurance.  SA  A  N  D  SD
8. People assume that everyone who is tested for HIV is infected with HIV.  SA  A  N  D  SD
9. My parents would be upset if they knew I was planning to get tested for HIV.  SA  A  N  D  SD
10. Admitting that you should be tested for HIV means that you have engaged in immoral behavior.  SA  A  N  D  SD
11. My friends would support my decision to get an HIV test.  SA  A  N  D  SD
12. I am afraid that if I were tested for HIV, my name would go into public records.  SA  A  N  D  SD
13. HIV tests give accurate results.  SA  A  N  D  SD
14. Anyone who is tested for HIV is dirty.  SA  A  N  D  SD
15. It would be embarrassing to get tested for HIV.  SA  A  N  D  SD
16. I would not consider getting an HIV test because I would be asked about things I have done that could get me into trouble.  SA  A  N  D  SD
17. I can talk to my friends about making medical decisions.  SA  A  N  D  SD
18. I would be comfortable talking to an HIV counselor about personal behaviors that place me at risk for HIV infection.  SA  A  N  D  SD
19. People would assume I have HIV if I decided to get tested.  SA  A  N  D  SD

Please GO TO PAGE 3

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Unique ID number:

SAMPLE

## HIV-ANTIBODY TESTING ATTITUDE SCALE

Please answer the following questions using the scale below.

**PAGE 3**

**SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree.**

20. I could talk to my friends about making the decision to get an HIV test.  SA  A  N  D  SD
21. My friends would look down on me if I were tested for HIV.  SA  A  N  D  SD
22. My friends would not treat me any differently if I were tested for HIV.  SA  A  N  D  SD
23. I am afraid someone would find out I was tested for HIV.  SA  A  N  D  SD
24. Anyone who is tested for HIV is smart.  SA  A  N  D  SD
25. I would be embarrassed if my friends found out I had decided to have an HIV test.  SA  A  N  D  SD
26. I would not get tested for HIV because I would be asked information that was too personal.  SA  A  N  D  SD
27. I trust the HIV test counselors and nurses to keep my information confidential.  SA  A  N  D  SD
28. I do not have time to get an HIV test.  SA  A  N  D  SD
29. It would not bother me if someone I know sees me going to get an HIV test.  SA  A  N  D  SD
30. My friends would treat me badly if I were tested for HIV.  SA  A  N  D  SD
31. I could easily discuss HIV-antibody testing with my family.  SA  A  N  D  SD
32. My job would be in danger if my boss found out I was tested for HIV.  SA  A  N  D  SD

**Thank you for your participation.**