A Pilot Investigation into the Relationship between Suicide and HIV/AIDS

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ABSTRACT

This pilot study aimed to contribute to the development of a methodology for researching various aspects of the relationship between HIV/AIDS and suicide in South Africa. To date, few systematic studies into this relationship have been conducted in South Africa. Specifically this study investigated the aspect of suicidal ideation in relation to HIV seroposivity, CD4 cell counts and social support. Although this study did not find increased suicidality in this sample of people living with HIV, the findings highlighted variables that may need to be studied in greater depth and outlined suggestions for further research methodology. Further research could indicate the extent to which suicide assessment and counselling is needed for people living with HIV/AIDS. This in turn could inform policy makers as to the inclusion of suicide assessment into the protocol for Voluntary Counselling and Testing (VCT).

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DECLARATION

This thesis was undertaken at the School of Psychology, University of KwaZulu-Natal, Pietermaritzburg. Unless otherwise indicated, this thesis is a product of the author's own work.

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CHAPTER 1. INTRODUCTION

HIV/AIDS has had a devastating effect globally, challenging all aspects of modern life (Barnett & Whiteside, 2002). While sub-Saharan Africa has an estimated ten percent of the world's population, it is home to an estimated 70 percent of all people living with HIV (Centre for Disease Control and Prevention (CDC), 2006). It is estimated that 38.6 million people are living with HIV globally (UNAIDS, 2006). Approximately 5.5 million people are living with HIV/AIDS in South Africa making it the world's most affected region (UNAIDS, 2006).

Dealing with the many consequences of being HIV positive or having AIDS can cause great psychological and social distress (Schlebusch, 2005). Many suffer from depression and hopelessness among other psychological reactions (Barnett & Whiteside, 2002; Schlebusch, 2005; van Dyk, 2001).

Suicide is an increasingly serious phenomenon in both developed and developing countries. It has been recognized as a significant public health concern in South Africa (Schlebusch, 2005) with an estimated suicide rate of 15 in 100,000 (National Injury Mortality Surveillance System [NIMMS], 2005). During the years of apartheid, research into suicide did not consider black South Africans, which led to the misconception that black people had lower rates of suicide than the other populations (Schlebusch, 2000). More recent research suggests that suicidal behaviour in this group is increasing, following trends similar to those in other populations (Schlebusch, 2005; Wassenaar, Pillay, Descoins, Goltman & Naidoo, 2000).

In a review of the literature, Komiti et al. (2001) found that patients with chronic or life threatening diseases such as cancer, diseases of the central nervous system and Huntington's disease were at greater risk of committing suicide than the general population. They suggest that as HIV/AIDS, particularly AIDS, affects all systems of the body it would not be unreasonable to assume that it would similarly be associated with a higher risk of suicide.

Most research into the relationship between suicide and HIV/AIDS has been done in developed countries on male homosexual populations, and due to various methodological problems, there are contradictory results (Komiti et al., 2001; Schlebusch, 2005). This makes it difficult to extrapolate these results to South Africa where HIV/AIDS is primarily a

heterosexual phenomenon (Barnett & Whiteside, 2002; Schlebusch, 2005). The relationship between suicide and HIV/AIDS is generally not well researched in Africa (Komiti et al., 2001; Schlebusch, 2005). Some studies have shown a high risk in this population in South Africa (Schlebusch, 2005). Schlebusch (2005) suggests that suicidologists should see this as an important research area in South Africa.

As discussed above, the increase in suicidal behaviour and the high incidence of HIV/AIDS in South Africa suggests that there is an urgent need for research into the relationship between the two. Results from such studies could serve to inform the extent to which suicide assessment and counselling should be included in the standard Voluntary Counselling and Testing (VCT) process.

This study is based on the theory, derived from empirical studies of suicide in chronic illness, that people living with HIV/AIDS may experience feelings of hopelessness, as do others with chronic or life threatening illnesses (Komiti et al., 2001) Hopelessness is associated with a higher risk of suicidal behaviour (Beck, Kovacs & Weissman, 1975; Eyman & Eyman, 1992). Therefore, as hopelessness is associated with being HIV seropositive people who are living with HIV/AIDS may be at a greater risk of suicidal behaviour (Chandra, Desai, & Ranjan, 2005; Heckman, Millar, Kochman, Kalichman & Carlson, 2002).

This pilot study aims to contribute to the development of a methodology for researching various aspects of the relationship between HIV/AIDS and suicide in South Africa. Aspects of suicide range from suicidal ideation to suicide mortality and there is a spectrum of the progress of HIV infection from initial diagnosis to AIDS. This study will investigate suicidal ideation in HIV positive people and the link with CD4 cell counts. In addition, the relationship between social support and suicidal ideation will be explored.

A review of the relevant literature will be presented in Chapter Two. In this Chapter, the areas of HIV/AIDS and suicide will be contextualised and related research on each topic will be discussed. Relevant research on the relationship between HIV/AIDS and suicide will be discussed. Chapter Three will describe the aims of the research and the methods used in the study to investigate the questions posed by this research. In Chapter Four, the results of the analysis of the data will be presented. Interpretation and discussion of the results and any further analysis deemed necessary as will as the limitations of the study will be contained in

Chapter Five. In Chapter Six suggestions for further research and the conclusion will be presented.

CHAPTER 2. LITERATURE REVIEW

2.1 HUMAN IMMUNODEFICIENCY VIRUS (HIV) AND ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS)

AIDS is an acronym for Acquired Immune Deficiency Syndrome. It is referred to as acquired because it is not inherited but is caused by the Human Immunodeficiency Virus (HIV), which enters the body from the outside. Immunity refers to the human body's immune system, which enables it to defend itself against infection and disease. The word deficiency is used because the immune system is weakened by the HI virus and no longer has the ability to fight off infections that invade the body. A syndrome refers to a collection of specific signs and symptoms that occur together and are characteristic of a particular pathological condition (van Dyk, 2001). Although the term 'disease' is often used when referring to AIDS, it is not a specific illness and so it is more accurate to define AIDS as a syndrome of opportunistic diseases, infections and certain cancers which can be fatal in the final stages of HIV infection (Evian, 2000; van Dyk, 2001).

HIV is part of the family Retroviridae and the genus lentivirus. Lenti means slow and refers to the time taken from infection to disease (Morris & Cilliers, 2005). Like other retroviruses HIV is parasitic and can only reproduce inside a living cell (van Dyk, 2001). HIV infects and replicates mainly in human CD4 cells and white blood cells (macrophages) (Morris & Cilliers, 2005). 'Retro' refers to the fact that these viruses do the reverse of what other viruses do. Normally, genetic material is transcribed from Deoxyribonucleic acid (DNA) to Ribonucleic acid (RNA), however, the HI virus's genetic information is contained in RNA, not DNA (van Dyk, 2001). HIV has an enzyme, reverse transcriptase that enables it to enter a living cell and replicate itself. Outside of the cell it makes DNA copies of it's own RNA and once inside the cell it makes RNA copies of it's own DNA enabling it to replicate itself (Barnett & Whiteside, 2002; van Dyk, 2001). However, the HI virus is so dangerous because it can do what no other virus has ever done. It attacks the CD4 cells, which form part of the human immune system (van Dyk, 2001).

The CD4 cells are the most important cells of the human immune system and are vital to the human body's immune response. They protect the body from invasions by certain bacteria, viruses, fungi and parasites and destroy some cancer cells (National Institute of Allergy and

Infectious Diseases [NIAID], 2006). Although antibodies to HIV are formed during the process of infection, they are unable to rid the human body of the virus as it hides inside the CD4 cells. The antibodies will not attack and kill the CD4 cells, as this would leave the body defenceless.

The HI virus destroys CD4 cells causing them to be depleted over time. This weakens the body's immune response and it's ability to defend itself against external pathogens. When the CD4 cells are radically depleted, the body becomes susceptible to opportunistic infections that would not normally affect healthy people (Evian, 2000; NIAID, 2006; van Dyk, 2001). When HIV enters the macrophages the immune system displays the antibodies, which mobilise the T-cells to attack the virus. The macrophages are one of the few cells that are able to cross the blood brain barrier and in so doing the HI virus is able to enter the brain (Barnett & Whiteside, 2002; van Dyk, 2001).

A diagnosis of AIDS is made when the person is in the most advanced stages of HIV infection. The Centre for Disease Control's (CDC) definition of AIDS applies to all HIV infected people who have less than 200 CD4 cells per cubic millimetre of blood as compared to non-infected healthy people who have a count of 1,000 or more. A CD4 cell count of more than 350 indicates a low risk for opportunistic infection while a count of less than 350 indicates a weak immune system and increased risk for opportunistic infections. Antiretroviral treatment can be implemented when the CD4 cell count is between 200 and 350 (NIAID, 2006).

Today, two strains of virus have been identified that are associated with AIDS, HIV-1 and HIV-2. HIV-1 is found in most parts of the world while HIV-2 is mostly restricted to West Africa. HIV-2, while as life threatening as HIV-1, acts more slowly and therefore a person infected with HIV- 2 takes longer to develop symptoms than if infected with HIV-1 (Barnett & Whiteside, 2002; van Dyk, 2001; Williamson & Martin, 2005).

The genetic makeup of the HI virus shows that it has many different versions. This phenomenon of genetic diversity is apparent in most viruses but it is in an extreme form in HIV. To describe this diversity the HIV-1 strain has been classified into three groups based on genetic similarity called M (major), N (non-M and non-O), and O (outlier). The viruses in the M group mainly cause the global AIDS epidemic. Showing the extreme diversity of the

HI virus, the M group is further divided into 11 subtypes or clades (namely A1, A2, B, C, D, F1, F2, G, H, J, and K). These clades are not geographically uniform but different ones are dominant in different areas. HIV-1-C dominates the epidemic in South Africa while North America, Europe and Australia have mostly B clades. In some regions, notably western and central Africa many different clades are found.

The HI virus is able to mutate rapidly as the viral replication enzyme, reverse transcriptase, produces many errors in the viral genome. This enzyme is unable to correct these errors and consequently every virus in an infected individual is different. This gives the virus the evolutionary advantage of becoming resistant to immune responses, both natural and vaccine induced, and Antiretroviral (ARV) treatment (Williamson & Martin, 2005).

Based on the present evidence on the mutation of the HI virus, it can be predicted that the high level of diversity will continue in the future. This presents an enormous challenge to any attempts to control the spread of HIV using vaccines or ARVs (Williamson & Martin, 2005).

2.1.1 THE TRANSMISSION OF HIV

HIV is mainly transmitted sexually. It can also be transmitted when HIV infected blood enters into the body of another person through blood transfusions, sharing needles to inject drugs, needle stick injuries or due to accidental contamination. In addition, an HIV positive mother can infect her baby during pregnancy, childbirth or breastfeeding. HIV is highly concentrated in blood, semen and vaginal fluids and found in very low concentrations in saliva, tears, sweat and urine (Evian, 2000; van Dyk, 2001).

2.1.2 PHYSIOLOGICAL RESPONSES TO HIV INFECTION

People respond in different ways to HIV infection, with some remaining healthy for years and others more rapidly developing AIDS (van Dyk, 2001). An individual living in a developed country who is not receiving ARV treatment but has access to good health care has an estimated time of eight to ten years from infection to AIDS. In Africa this time period may be one or two years shorter (Morris & Cilliers, 2005). This could be attributed to differences in clade subtypes, socioeconomic factors and the high rates of infectious diseases found in Africa (Morris & Cilliers, 2005).

Different responses to HIV infection may also be due the health status of the person, which can be linked to other issues such as poverty (Barnett & Whiteside, 2002; van Dyk, 2001). A high viral load predicts a faster progression of the disease (Morris & Cilliers, 2005). Most people experience a gradual decline of CD4 cells but some may have a rapid decline in their CD4 cell counts which will speed up the progression to AIDS (NIAID, 2006).

2.1.3 PSYCHOSOCIAL STRESSORS RELATED TO HIV/AIDS

It is well documented that people who are HIV seropositive or who have AIDS experience high levels of psychological distress (Au et al., 2004; Schlebusch, 2005; van Dyk, 2001). They face multiple stressors that fluctuate with the progression of the disease and continue to face widespread social stigma (Au et al., 2004). There are stressors that are unique to those with HIV/AIDS, such as the uncertainty about the progression of the disease and feelings of guilt and self-hatred at contracting HIV. They can also experience great anger at the person who infected them (Beckerman, 1995; Schlebusch, 2005; van Dyk, 2001).

People are afraid of being discriminated against by society as they may be rejected, victimized, shunned or even killed if they disclose their status (Rajs & Fugelstad, 1992; Schlebusch, 2005; van Dyk, 2001). People living with HIV/AIDS may experience discrimination in employment, life insurance, housing, health care, medical insurance and family and friends (Au et al., 2004; Beckerman, 1995; Noor- Mahomed & Karim, 2000; Schlebusch, 2005; van Dyk, 2001).

Those living with HIV/AIDS may experience many fears and anxieties about death and pain, of disfigurement and loss of control over one's body, the possible rejection by friends, loved ones and colleagues and the burden they may place upon them with their illness or death (Beckerman, 1995; Schlebusch, 2005; van Dyk, 2001). The experience of watching others suffer and die of AIDS can cause psychological distress in those infected and those not infected (Beckerman, 1995).

Research done on the mood and psychiatric changes associated with HIV infection indicates that adjustment reactions and depression occur in many of those newly diagnosed as seropositive (Fell et al., 1993). Dealing with the many consequences of being HIV positive or having AIDS can cause feelings of hopelessness that can be overwhelming and increase the

risk for suicidal behaviour (Barnett & Whiteside, 2002; Schlebusch, 2005; van Dyk, 2001). Hopelessness has been linked to an increased risk of suicidal behaviour (Beck, Kovacs & Weissman, 1975; Eyman & Eyman, 1992).

2.2. HISTORY AND BACKGROUND OF HIV/AIDS

2.2.1 ORIGINS OF THE HUMAN IMMUNODEFICIENCY VIRUS

There are many theories on the origins of the HI virus. Some have claimed that it was sent by aliens to destroy earth, that it was punishment from God, biological warfare or witchcraft (Barnett & Whiteside, 2002; Meredith, 2005; van Dyk, 2001). However, HIV is related to many Simian Immunodeficiency Viruses (SIV's) found in Africa and it is widely held that the virus crossed the species barrier from chimpanzees and sooty mangabey monkeys (Barnett & Whiteside, 2002; Meredith, 2005; van Dyk, 2001; Williamson & Martin, 2005). For this transmission to have occurred, contaminated animal blood must have entered open cuts on the human body. This may have happened while slaughtering HIV infected animals for food (Barnett & Whiteside, 2002; van Dyk, 2001).

2.2.2 THE DISCOVERY OF HIV AND AIDS

In the USA in 1981 a rare form of pneumonia, caused by the micro-organism Pneumocystis, and Karposi's sarcoma, a rare form of skin cancer, occurred in several patients at the same time. These patients, all of them young homosexual men, were the first recognised cases of AIDS in the United States of America (USA) (Barnett & Whiteside, 2002; Meredith, 2005; Van Dyk, 2001). As a result the disease was called Gay-related Immune Deficiency Syndrome (GRID). Scientists soon realised that they were dealing with a completely new phenomenon (Barnett & Whiteside, 2002).

Shortly after the above cases were observed, a new disease characterised by a compromised immune system, diarrhoea and weight loss, was identified in central Africa. However, it was only in 1983 that scientists discovered the virus that caused this new disease, which was named Human Immunodeficiency Virus in 1986 (Barnett & Whiteside, 2002; van Dyk, 2001). There is evidence that HIV infection occurred in Africa at least 20 years before it was discovered in the USA in 1981 (Meredith, 2005).

2.2.3 THE SPREAD OF HIV IN AFRICA

In October 1983 a team of American and European medical experts was sent to Rwanda and Zaire to investigate the possibility of AIDS occurring in Africa (Barnett & Whiteside, 2002; Meredith, 2005). Based on the cases in the USA and Europe it was presumed that AIDS was primarily seen in male homosexuals and intravenous drug users. However, in light of their findings in central Africa, these researchers concluded that homosexuality and intravenous drug use were not risk factors for HIV infection in Africa and that this was a new epidemiological setting where HIV transmission occurred, mainly in a heterosexual population (Meredith, 2005).

In January 1985 a team of doctors was sent by Uganda's ministry of Health to investigate an outbreak of deaths in Kansero on Lake Victoria. More than 100 people had died during the past four years from an unexplained wasting disease known by the local people as 'slim' (Meredith, 2005). Tests showed that the blood was infected with HIV and confirmed that AIDS had been the cause of the deaths (Barnett & Whiteside, 2002; Meredith, 2005). High incidence of HIV infection was found in Uganda in Rakai and in neighbouring Tanzania in Kagera. These areas became the first AIDS epidemic to affect a heterosexual population (Meredith, 2005).

The spread of HIV through central Africa and in all directions to Kenya (east), southern Africa and west Africa was probably exacerbated by truck drivers stopping off at brothels, migrant workers, armies and civil conflict, refugee movement and increasing numbers of women and girls forced into prostitution by poverty (Meredith, 2005).

As AIDS rose to epidemic proportions in Africa it had a devastating effect on society at every level. Households, communities and families battled to cope with the loss of many productive adults through illness or death. The epidemic depleted resources, which affected health and public services and productivity (Barnett & Whiteside, 2002; Meredith, 2005; van Dyk, 2001). Initially most African countries were slow to respond to the epidemic and many leaders claimed that AIDS was a Western attempt to reduce reproduction in Africans. In the 1980's only Uganda and Senegal introduced effective programmes in an attempt to curb the epidemic (Meredith, 2005).

In South Africa, the first large group of HIV positive cases was identified among migrant workers from Malawi employed by Rand Gold Mines in 1986 (Meredith, 2005). South Africa was not quick to respond to the epidemic, which continued to spread rapidly (Abdool Karim & Baxter, 2005; Meredith, 2005). It was estimated that 25,000 people died of AIDS and one in five adults was HIV positive in South Africa in 2000 (Meredith, 2005). The UNAIDS agency warned that if left to run its course AIDS would claim the lives of between 5 and 7 million people in South Africa by 2010 (Meredith, 2005).

South Africa has not yet felt the full impact of the AIDS epidemic due to the time between infection and AIDS-related illness and death (Colvin, 2005). It is predicted that this impact will be enormous and will negatively affect the economic growth of South Africa at both a macro and microeconomic level (Whiteside, 2005). As prevalence rates increase, work production will suffer, raising costs and reducing individual and business savings and profits (Whiteside, 2005). The already strained financial resources of families will be further depleted by AIDS-related illness and death (Frohlich, 2005; Whiteside, 2005).

The Lancet (in AVERT, 2006, p. 5) notes that authorities are largely to blame for the lack of containment of the HIV/AIDS epidemic. "Social stigma associated with HIV/AIDS, tacitly perpetuated by the Government's reluctance to bring the crisis into the open and face it head on, prevents many from speaking out about the causes of illness and deaths of loved ones and leads doctors to record uncontroversial diagnoses on death certificates. The South African Government needs to stop being defensive and show backbone and courage to acknowledge and seriously tackle the HIV/AIDS crisis of its people."

2.3 THE HIV/AIDS EPIDEMIC TODAY

2.3.1 THE GLOBAL IMPACT OF HIV/AIDS

According to UNAIDS (2006) most recent global estimations, 39.5 million [34.1-47.1 million] people are living with HIV. There are an estimated 4.3 million [3.6 -6.6 million] newly infected people with HIV and 2.9 million [2.5 -3.5 million] people have lost their lives to AIDS. A suggested 0.6% of the global population is living with HIV/AIDS (International Data Base, 2006). Globally there has been an increased effort to combat the epidemic. However, the number of people living with HIV and dying from AIDS continues to increase

(UNAIDS, 2006). There is an increase of new infections in young people aged 15 to 24 years. They account for 40% of new infections in people 15 years and older (UNAIDS, 2006).

2.3.2 THE IMPACT OF HIV/AIDS IN AFRICA

Africa is considered to be the global epicentre of the AIDS pandemic with sub-Saharan Africa being the worst affected (UNAIDS, 2006). This region, while it has only 10% of the world's population has more than 70% of the world's HIV/AIDS cases (Meredith, 2005). In sub-Saharan Africa it is estimated that 24.7 million [21.8-27.7 million] people are living with HIV/AIDS and 2.8 million [2.4-3.2 million are newly infected with HIV. The adult prevalence rate is estimated to be 5.9% [5.2%-6.7%] (UNAIDS, 2006). There have recently been declines in national HIV prevalence in Kenya and Zimbabwe. In the rest of sub-Saharan Africa the prevalence rates are still very high (UNAIDS, 2006).

2.3.3 THE IMPACT OF HIV/AIDS IN SOUTH AFRICA

UNAIDS (2006) estimates that there are 5.5 million [4.9million – 6.1 million] people living with HIV in South Africa and 18.8% [16.8%-20.7%] of these are adults aged 15-49 years. The total population in South Africa is estimated to be 47,432,000 (World Health Organisation [WHO], 2006). The epidemic in this country is one of the fastest growing in the world and shows no evidence of a decline (Gouws & Abdool Karim, 2005; Meredith, 2005). South Africa is home to approximately 10% of the world's HIV infections (Gouws & Abdool Karim, 2005). Prevalence rates vary by demographic factors such as age, gender and geographic area (Gouws & Abdool Karim, 2005). The progression of HIV prevalence in KwaZulu-Natal (KZN) follows similar patterns to those found nationally (Gouws, 2005).

South Africa has a very diverse population making it difficult to measure rates of HIV and AIDS which may show variation depending on the type of research conducted. It is important to recognise the limitations of each study when interpreting the results (AVERT, 2006). Infection rates differ between groups of people and so the data from antenatal clinics cannot be extrapolated directly to other groups such as men, newborn babies and children. It is therefore important that surveys are also conducted on the general population (AVERT, 2006).

In order to understand the progression of an epidemic over time it is essential to be able to measure prevalence and incidence rates (Gouws & Abdool Karim, 2005). Prevalence rates yield information about the proportion of people who are infected at a given time and incidence rates give information about the occurrence of new cases of infection in a defined time period (Gouws & Abdool Karim, 2005). However, logistical problems, ethical issues and stigma associated with AIDS make HIV incidence rates and mortality rates more difficult to measure than prevalence rates (Bradshaw & Dorrington, 2005; Gouws, 2005).

AIDS- related mortality data are limited but a survey conducted by the South African Medical Research Council shows a rise in deaths in both men and women in the age groups most affected by HIV/AIDS. In addition there are marked differences in age and gender in mortality rates similar to the patterns found in HIV infection and AIDS-related deaths. This suggests that the increase in mortality rates observed since 1998 is AIDS-related (Gouws & Abdool Karim, 2005).

Many HIV seroprevalence surveys have been conducted in South Africa over the last 15 years such as: antenatal clinic surveys (the Western Cape district wide HIV surveillance survey; annual anonymous antenatal clinic surveys in rural KZN); population-based surveys (population-base surveys in KZN, Mandela Foundation/HSRC population-based survey, Carletonville/urban population survey) (Gouws & Abdool Karim, 2005).

Based on these studies it is estimated that from 1990 to 2000, HIV prevalence rates increased from 0.8% to 24.5%. Although data collected from 1999 to 2000 indicates that the epidemic is reaching a plateau, this must be interpreted with caution. This is unlikely to be attributable to effective interventions but is more likely to be due to the natural progression of the epidemic towards saturation. However mortality rates continue to rise and the incidence of new infections balances the deaths. AIDS-related death rates may exceed HIV incidence, which may result in a slow decline in HIV prevalence (Gouws & Abdool Karim, 2005). According to the model of population dynamics of HIV as the number of infected people increases the number of those susceptible to infection decreases causing the prevalence rates to level off (Gouws & Abdool Karim, 2005).

The South African Department of Health Study estimated that 30.2% of pregnant women were living with HIV in 2005. This study was based on a sample of 16,510 women attending 399 antenatal clinics across all nine provinces. The highest HIV rates were in KZN, Mpumalanga and Gauteng (AVERT, 2006).

Table 1

Estimated HIV prevalence among South Africans aged 2 years and older, by sex, race and province (The South African National HIV Survey, 2005, in AVERT, 2006).

Sex and Race	Number Surveyed	Prevalence
Male	6,342	8.2
Female	9,509	13.3
African	9,950	13.3
White	1,173	0.6
Coloured	3,382	1.9
Indian	1,319	1.6
National	15,851	10.8

Table 1 (continued)

Province	Number Surveyed	Prevalence
KwaZulu-Natal	2,729	16.5
Mpumalanga	1,224	15.2
Free State	1,066	12.6
North West	1,056	10.9
Guateng	2,430	10.8
Eastern Cape	2,428	8.9
Limpopo	1,570	8.0
Northern Cape	1,144	5.4
Western Cape	2,204	1.9
Total	15,851	10.8

As seen in Table 1 the prevalence of HIV in females (13.3) is higher than that in males (8.2) and is highest among the African population. KwaZulu-Natal, Mpumulanga and Free State have the highest HIV prevalence (AVERT, 2006).

Infection rates are highest in the east and lowest in the west coast of South Africa (Gouws & Abdool Karim, 2005). HIV prevalence as seen in antenatal studies increased from 1.6% in 1990 to 37.5% in 2003 in KZN while the increase in the same time period in the Western Cape was from 0.06% to 13.1%. When interpreting the geographic distribution of HIV prevalence it is important to consider the uneven population distribution in South Africa (Gouws & Abdool Karim, 2005).

Table 2 shows that among females, HIV prevalence is highest in those between 25 and 29 years old whereas among males, the peak is in the group aged 30-39 years (AVERT, 2006). Antenatal data show that in 2001 prevalence rates reached a high of 30.5% among women aged 23.4 years (Gouws & Abdool Karim, 2005).

Table 2.

Estimated HIV prevalence among South Africans, by age and gender (The South African National HIV Survey, 2005, in AVERT 2006).

	Male Prevalence	Female Prevalence
Age (years)		
2-4	4.9	5.3
5-9	4.2	4.8
10-14	1.6	1.8
15-19	3.2	9.4
20-24	6.0	23.9
25-29	12.1	33.3
30-34	23.3	26.0
35-39	23.3	19.3
40-44	17.5	12.4
45-49	10.3	8.7
50-54	14.2	7.5
55-59	6.4	3.0
60+	4.0	3.7
Total	8.2	13.3

Incidence rates can be estimated indirectly using dynamic models developed by Williams and Gouws (cited in Gouws, 2005). Nationally the incidence rate increased from 0.71% in 1991 to 5.81% in 2001. The national incidence rate peaked in 1977 at 6.46%. The highest peak incidence rate of 9.8% was in KZN (Gouws, 2005). Based on the incidence estimates, Gouws (2005) concluded that the HIV epidemic in South Africa might be levelling off although the incidence rates are still very high.

Using the model referred to above and data from an urban mining community in Carletonville in 1998, incidence rates by gender and age were estimated (Gouws, 2005). In the age range of 15 to 49 years the incidence rate for men (9.6%) was lower than for women (13.5%). The incidence rate for women peaked at 22.8% among women aged 24 years and at 16.4% among men aged 30 years (Gouws, 2005). The high incidence rate in young women is of major concern and is seen to be contributing to the spread of the epidemic (Gouws & Abdool Karim, 2005).

2.4 HIGHLY ACTIVE ANTIRETROVIRAL TREATMENT (HAART)

The introduction of highly active retroviral treatment (HAART) in many industrialized countries has extended longevity and increased viral loads making AIDS a manageable disease. This has given people with HIV/AIDS new hope for the future and should contribute to reducing HIV/AIDS related psychosocial stressors and mortality (Abdool Karim & Abdool Karim, 2005; Au et al., 2004; Bonnet et al., 2002).

These drugs were not easily accessed in South Africa until 2003 when the government announced that it would make antiretroviral treatment available to the public sector (Williams, 2005). However political influences, indecisive leadership and financial issues have hampered this process. Consequently, many South Africans still do not have easy access to the drugs (Meredith, 2005; Williams, 2005).

2.5 SUMMARY

The AIDS epidemic is one of the most destructive and deadliest in human history (Abdool Karim & Baxter, 2005; UNAIDS, 2006). It has caused devastation globally affecting all aspects of society. UNAIDS (2006) has strongly recommended that consistent leadership is needed to implement strategies to combat the epidemic that move away from the crisis-management approach of the past to a more strategic response.

It is clear that there is an exceptionally severe epidemic of HIV/AIDS in South Africa. This affects all parts of the population, though women are more likely to be infected than men and infection is highest among the black population (Schlebusch, 2005). The government's

response to the epidemic has been controversial, giving contradictory messages about the nature of HIV/AIDS and denial of the extent of the epidemic (Heywood, 2005).

South Africa is therefore faced with many challenges to stem the HIV/AIDS epidemic and needs to respond by involving all sectors of society in a cohesive partnership with a common goal (Abdool Karim, S., & Abdool Karim, Q. 2005; UNAIDS, 2006). One of the primary challenges facing South Africa in the future is to stop the incidence of HIV infections. Also of importance is to rapidly improve HIV education, to provide adequate health care for those already infected and to counter the devastating impact on communities, families, the elderly and orphans (Whiteside, 2005; UNAIDS, 2006).

"We know what needs to be done to stop AIDS. What we need now is the will to get it done" (UNAIDS, 2006, p. 24).

In the next section the history, nature and extent of suicidal behaviour will be discussed. The impact of suicide globally and in South Africa will be examined. This will be done so that links between HIV/AIDS and suicide can be investigated.

2.6 SUICIDAL BEHAVIOUR

2.6.1 HISTORY AND BACKGROUND OF SUICIDE

In classical Rome before the Christian era suicide was reportedly seen as acceptable and even laudable, often associated with martyrdom. The Christian church found this attitude towards suicide unacceptable and in an attempt to change it introduced the notion that suicide is a crime or a sin (Maltsberger & Goldblatt, 1996). By the 5th century in the time of St Augustine the Catholic Church condemned suicide as a sin. The rationale behind this was that suicide usurps God's power over human life and death and violates the 6th commandment (Maltsberger & Goldblatt, 1996; Schlebusch, 2005).

Following the doctrines of the church, civil legislation was implemented, adding material penalties to religious ones. The property of the deceased and his/her family was often confiscated and the body subjected to various atrocities such as hanging, being dragged through the town or public burning (Maltsberger & Goldblatt, 1996).

The first article on suicide entitled 'Self-Murder' was published in the *Encyclopedia Britannica* in 1777. The actual word suicide was used in the *Encyclopedia Britannica* in 1788 and was entitled "Suicide, the crime of self murder, or the person who commits it" (Schneidman, 1998/1999). Schneidman (1998/1999) described the articles as conveying punitive and judgmental opinions that make no mention of any need for the prevention of suicide. The opinions in these articles reflected the religious and legal beliefs about suicide at the time. Since then society's views on suicide have changed from labeling suicide as sinful, illegal and shameful to looking for methods of detection and prevention (Schneidman, 1998/1999).

The search for the answer to the question of where the locus of blame is situated for taking one's own life became paramount and has become a major theme in suicide research today. It has been debated whether the responsibility lies with the individual or with society (Schneidman, 1998/1999).

The French philosopher, Jean Jaques Rousseau (1712-1778) emphasised the innocence of man transferring the responsibility onto society. David Hume (1711-1776), a British philosopher put forward the notion that suicide should not be seen as either a sin or a crime (Schneidman, 1998/1999). Jean Esquirol (1772-1640), a French psychiatrist, promoted a medical understanding of suicide (Maltsberger and Goldblatt, 1996). Emile Durkheim (1868-1917) turned the locus of control back to society maintaining that the amount of integration and regulation in a society directly affects the way people think and feel (Maltsberger and Goldblatt, 1996; Schneidman, 1973/1999). In the twentieth century, Freud and his colleagues argued strongly that the locus of control is situated in the human unconscious and disputed that suicide could be reduced to sin or crime (Schneidman, 1973/1999).

2.7 DEFINITION OF TERMS

Throughout the world suicidal behaviours are complex, wide-ranging, multidimensional and multifactorial events with different behavioural characteristics and outcomes (Schlebusch, 2005). While there has been much research on suicidal behaviour there is still no consensus on what terminology should be used (Schlebusch, 2005). Suicidal behaviour can be seen as a continuum that includes suicidal ideation, indirect self-destructive behaviour, non-fatal and fatal suicide with varying levels of suicide intent and outcomes. Suicidologists also refer to

many other forms of suicide that complicate the defining of suicide (Schlebusch, 2005; Shea, 1999).

The lack of consistent definitions of suicidal behaviour across studies has led to confusion in the field of suicidology, making comparison across studies problematic (Rudd, 2003; Shea, 1999; Schlebusch, 2005). This in turn makes it difficult to extrapolate findings and apply them to diagnosis and identification of suicidal behaviour (Shea, 1999).

The word suicide has Latin and Greek origins and has been traced back to 1642 (Schlebusch, 2005). Schneidman (1971/1999, p. 152) claims to have first used the term suicidology in 1964 and defines it as "the scientific and human study of human self-destruction'.

Durkheim (1952, p. 42) defines suicide as "any death, which is the direct or indirect result of a positive or negative act accomplished by the victim himself" but admits that this is incomplete, as it does not take into account that there are different types of suicide deaths.

Schneidman (1985/1999, p.155) defines suicide as a "conscious act of self-induced annihilation, best understood as a multidimensional malaise in a needful individual who defines an issue for which suicide is perceived as the best solution". According to Schneidman (1985/1999) suicide has an adaptive and self-serving function.

The following definitions are taken from Schlebusch (2005):

Suicidal Behaviour: "a wide range of self-destructive or self-damaging acts in which people engage, owing to varying degrees of levels of distress, psychopathology, motive, lethal intent, awareness and expectations of the deleterious consequences or outcome of the behaviour" (p. 6).

Fatal Suicide Behaviour: "self committed, completed suicidal behaviour that embodies the victim's intent or aim to die and where that person managed to achieve that predetermined goal" (p. 6).

Non-Fatal Suicide Behaviour: "suicidal behaviour that did not succeed in ending the actions of life, and which embodies several manifestations such as those seen in attempted suicide and parasuicide" (p. 6).

Attempted Suicide: "where there is a fortuitous survival of the intended suicide. In such instances the person tried but failed to end their life" (p. 6).

Parasuicide: "Non-Fatal Suicidal Behaviour without the intention to die, it is more a cry for help" (p. 6).

Suicidal Ideation: "is not restricted to just thinking about committing suicide, it can also include a person writing or talking about and or planning his or her suicidal behaviour" (p. 6).

Assisted Suicide: "helping someone, who has indicated fatal intention, to end his life" (p. 6).

The terms suicidal behaviour, suicidal ideation, fatal and non-fatal suicide and attempted suicide will be used throughout this thesis.

2.8 EPIDEMIOLOGY OF SUICIDE

2.8.1 GLOBAL ESTIMATES

The World Health Organisation (WHO) (2006) estimates a global mortality rate from suicide as 16 per 100,000. Suicide has become one of the top ten causes of death in many countries around the world with an approximate 60% increase across demographic categories in the last 50 years in both developed and developing countries (WHO, 2006). Suicide rates are generally higher in metropolitan areas than in rural areas. However, this could be due to fewer autopsies and more incorrect reporting of the cause of death in the latter areas (Westefeld et al., 2000). Each suicide has a serious impact on at least six other people and consequently the psychological, social and financial impact of suicide on the family and community is immense (WHO, 2000).

Non-fatal suicides may be 20 to 40 times more frequent than fatal suicides (WHO, 2000). More males commit suicide than females with a ratio of 3.6:1 in 1995 and a predicted ratio of

3.9:1 in 2020 (Schlebusch, 2005). More females than males attempt suicide across all ages (Sadock & Sadock, 2003). These gender differences could be due to the reluctance of relatives of the deceased women to classify their deaths as suicide (Garrison, 1992). Suicide attempts may be underreported in men as they may be less inclined to communicate their distress to anyone (Westefeld et al., 2000).

While suicide rates have been generally higher in older people, there is a trend towards rising rates in younger people aged 15 to 24, particularly males (Sadock & Sadock, 2003; Schlebusch, 2005; WHO, 2006). Westefeld et al. (2000) suggest that the increase of suicides among adolescents in the past two decades could be due to increased substance abuse, easier access to lethal methods, breakdown of family structures and a de-emphasis on religious practices.

Suicide rates may be underestimated in many cases due to the underreporting and misclassification of suicide as the cause of death (Garrison, 1992).

2.8.2 SOUTH AFRICAN ESTIMATES

In 2004, accidental non-natural deaths accounted for 39.8% of fatal injuries, with violence or homicide accounting for 39.3% of fatal injuries. Suicide accounted for 11.24% of these (NIMSS, 2005). Similar to global trends, there has been an increase in suicide among the younger population (Schlebusch, 2005). The highest rates of suicide were found among the 20-34 year age group (NIMSS, 2005). It was estimated that in 2001 nearly five times more males than females committed suicide nationally (Schlebusch, 2005). A NIMSS report suggested that from 1999 to 2000 suicide was the third major cause of death after homicide and unintentional deaths for Asians, blacks and coloureds while it was the second leading cause of death after unintentional deaths for whites (Schlebusch, 2005). In a study by Prinsloo (cited by Schlebusch, 2005) it was found that the highest percentage of suicide was among whites (26.7%), followed by Asians (18.09%), blacks (7.6%) and coloureds (6.8%).

There is very little reliable data available on non-fatal suicidal behaviour in South Africa (Schlebusch, 2005). According to Schlebusch (2005) there is some evidence to suggest that the ratio of non-fatal suicides to fatal suicides may be at least 20:1.

The KwaZulu-Natal (KZN) Epidemiological Bulletin reports that suicide contributes to three percent of the total deaths from non-natural causes in KZN. However, it is suggested that this may be three times lower than expected for this province due to the fact that those dying from suicide are often assigned to undetermined causes resulting in underreporting of suicide rates (KwaZulu-Natal Epidemiological Bulletin, 2003).

2.9 THEORIES OF SUICIDE

2.9.1 SOCIOLOGICAL THEORY

The French sociologist Emile Durkheim, (1858-1917) is widely known as one of the founders of the scientific study of suicide and renowned for his influential work, '*Le Suicide*' (1897). The book has been much cited in the literature as the first sociological formulation of suicide (Maris, 1992b).

Durkheim (1952) postulated that suicide is a result of humankind's relationship with society. He emphasised that as societal values break down, so the rate of suicide increases (Schlebusch, 2005). He viewed suicide as a sociological phenomenon unrelated to demographic or psychological factors (Hastings, Northman & Tangney, 2000). Durkheim (1952) conducted a statistical analysis of the relationship between suicide rates and social factors and concluded that the suicide rate can only be explained sociologically.

Durkheim saw the individual's degree of social integration and regulation as the main etiological factor in suicide (Hastings et al., 2000). Based on his research he proposed three types of suicide that result from the tensions between people and society: egoistic suicide; altruistic suicide and anomic suicide (Durkheim, 1952). A fourth, fatalistic suicide, was added later.

Egoistic suicide is the most widespread in society. This is caused by excessive individuation, that is, the individual feels insufficiently integrated into society. As the individual becomes more and more detached from society he or she loses his or her will to live as his or her individual existence without society becomes meaningless (Durkheim, 1952).

Altruistic suicide occurs when social integration is too strong and society is able to compel the individual to commit suicide under certain circumstances. This cohesion to collective life is seen in many societies where there is strong religious or political control (Durkheim, 1952).

Anomic suicide results from an abrupt disruption of an individual's normal life, which could be due to financial crises or windfalls, divorce or the death of a spouse (Durkheim, 1952).

Fatalistic suicide occurs due to an excessive regulation of an individual by society such as seen in a prison setting (Maris, 1992b).

Most suicides have egoistic and anomic traits, as pure altruistic and fatalistic suicides are rare (Maris, 1992b).

2.9.2 PSYCHOANALYTIC THEORY

Sigmund Freud (1917-1957) proposed a psychoanalytic theory of suicide (Maris, 1992b). His ideas were discussed with his colleagues at meetings of the Vienna Psychoanalytical Society (Zilboorg, 1975/1996). Freud conceptualised suicide as being essentially an unconscious act (Schneidman, 1973/1999). He proposed that hate, depression/hopelessness and guilt are three dimensions common to all suicides. Freud theorised that suicide is aggression, originally directed at an ambivalently loved other, and turned inward. He maintained that suicide would not happen without an earlier repressed desire to kill someone else (Maris, 1992b; Sadock & Sadock, 2003).

2.9.3 PSYCHOLOGICAL THEORY

Schneidman emphasises the importance of phenomenology in understanding suicide (Sadock & Sadock, 2003). He maintains that the most important aspect of understanding suicide is psychological pain. Schneidman (1999) refers to this psychological pain as 'psychache' and proposes that it involves negative emotions such as anger, despair, fear, grief, loneliness and loss. Psychache is caused by the frustration of psychological needs and suicide is a practical way of stopping this unbearable pain (Schneidman, 1992).

Schneidman (1985/1999) also believed that suicide is multidimensional, incorporating in varying degrees biological, cultural, sociological, interpersonal, intra-psychic, logical, conscious and unconscious, and philosophical factors. However, he postulates that in every suicide event a psychological element is essential, that is, that suicide occurs in the mind of the individual.

2.9.4 RECENT THEORY

Today, suicidologists use a biopsychosocial framework to understand suicidal behaviour as multidimensional, resulting from a complex interaction of biological, genetic, psychological, social, cultural and environmental factors (Schlebusch, 2005; WHO, 2000).

2.10 EMPIRICAL RISK FACTORS IN SUICIDAL BEHAVIOUR

2.10.1 PREDICTING SUICIDE

Suicidal behaviour is a complex biopsychosocial phenomenon influenced by many variables, making the identification of risk factors difficult (Schlebusch, 2005; Shea, 1999). "World wide it has been shown that these risk factors are wide ranging and include psychiatric, psychological, biological, sociological, genetic, cultural, somatic, personality, substance abuse, family dynamics, interpersonal problems, stress and other variables" (Schlebusch, 2005, p. 93). Single predictors of suicide do not occur in isolation and can differentially affect an individual's suicide risk over time (Maris, 1992a).

Although many suicidal people have common traits, each act of suicide can be seen to be unique containing many different variables. Different stages on the continuum of suicidal behaviour are associated with different risk factors (Maris, 1992a; Motto, 1992; Schlebusch, 2005). Researchers suggest that those who attempt suicide are different to those who think about suicide and both groups are different to those who have never thought about suicide (Clark & Fawcett, 1992; Westefeld et al., 2000). Many who attempt suicide do not necessarily go on to complete suicide and so there are different demographic and clinical predictors for non-fatal and fatal suicide (Clark & Fawcett, 1992; Maris, 1992c).

The high rate of comorbid factors associated with suicidal behaviour is critical to the study of suicide. It is difficult to make inferences about suicidal behaviour from research that does not take this into consideration (Davila & Daley, 2000; Lester, 1992). Because of the complexity of suicidal behaviour, current psychometric instruments do not have the sensitivity required to predict suicide risk in an individual Clark & Fawcett, 1992; Maris, 1992a; Shea, 1999; Westefeld et al., 2000).

Maris (1992a, p. 4) defines prediction as " to make known beforehand or to foretell" implying an exact measurement of suicide risk. However, assessment is " to set an estimated value on something" (Maris, 1992a, p. 4). Assessment requires estimates of the probability of suicidal behaviour and is therefore more easily carried out than the prediction of suicidal behaviour (Westefeld et al., 2000). Some researchers therefore, often prefer to use the term assessment rather than prediction (Maris, 1992a; Motto, 1992; Westefeld et al., 2000). Considering the many variables associated with suicide, Maris (1992a, p. 3) suggests, "One might cynically conclude that only suicide 'predicts' suicide".

The predominant method of predicting suicide is to identify groups of people who are at an elevated risk of suicide. These groups are then compared with groups of non-suicidal people in order to provide insight into general and specific suicide risk factors (Westefeld et al., 2000; Clark & Fawcett, 1992). However, there are problems with this method as the groups are never totally comparable and many variables are left uncontrolled (Westefeld et al., 2000). The data obtained from group comparisons do not yield more subjective information about the meaning of suicidal behaviour to the individual (Motto, 1992; Westefeld et al., 2000). When applying the findings from studies using this method, it is important to remember that within group differences are greater than between group differences (Westefeld et al., 2000).

A retrospective method used is the psychological autopsy. This refers to the reconstructing of " an individual's psychological life after the fact, particularly the person's lifestyle and those thoughts, feelings, and behaviours manifested during the weeks preceding death, in order to achieve a better understanding of the psychological circumstances contributing to a death' (Clark & Horton-Deutsch, 1992, p. 144). This is achieved by gathering information from people who were around the deceased for several months before the suicide, any previous records describing the deceased and case formulations conducted by professionals (Clark &

Horton-Deutsch, 1992). As suicide is a rare event retrospective studies are limited by small sample sizes. Other limitations include informant hindsight and interviewer biases and the lack of the perspective of the deceased (Clark & Horton-Deutsch, 1992; Tanney, 1992; Westefeld et al., 2000).

As suicidal behaviour is a highly complex phenomenon, most studies can only find gross correlations and associations between comorbidity and suicidal behaviour (Davila & Daley, 2000; Tanney, 1992).

2.10.2 PSYCHOPATHOLOGY

There is strong evidence to suggest that attempted suicide and fatal suicide rarely occur without the presence of a mental disorder, in particular mood disorders (usually major depression) (Clark & Fawcett, 1992; Sadock & Sadock, 2003; Schlebusch, 2005; Tanney, 1992; Westefeld, et al., 2000). Also associated with suicidal behaviour are substance abuse disorders, schizophrenia, (particularly the paranoid type), personality disorders (particularly Borderline Personality Disorder), anxiety disorders and eating disorders (Clark & Fawcett; Schlebusch, 2005; Tanney, 1992; Westefeld et al., 2000). However, although the association between mental disorders and suicide is strong, causality cannot be inferred (Clark & Fawcett, 1992).

In a review of the literature, Bertolote, Fleischman, De Leo and Wasserman, 2004, (cited in Schlebusch, 2005), concluded that in 98% of completed suicides a diagnosis of at least one mental disorder was made. Mood disorders accounted for 30.2%, substance abuse disorders 17.6%, schizophrenia 14.1% and personality disorders 13%. When a diagnosis of more than one of these disorders is made the risk of suicidal behaviour is further elevated (Davila & Daley, 2000; Tanney, 1992). It is important to remember that while they may be at an elevated risk for suicide, not all people with these diagnoses commit suicide (Clark & Fawcett, 1992; Schlebusch, 2005; Shea, 1999).

Hawton, Houston, Haw, Townsend, & Harris (2003) studied 111 patients who had been admitted to a general hospital for suicide attempts. Those who had major psychopathology (ICD10 diagnoses) were compared to those who did not. Compared to the control group, the patients with the comorbid psychopathology had more previous suicide attempts (84% versus

45%) and more subsequent suicide attempts (51% versus 15%). Those diagnosed with psychopathology were also more hopeless, more aggressive, more impulsive, had lower self-esteem and poor problem solving skills compared to those without psychopathology. The authors concluded that comorbidity might increase the risk of suicidal behaviour.

As people come out of a serious depression their risk for suicidal behaviour often increases (Schlebusch, 2005; Shea, 1999). This has been attributed to an increase in energy levels and motivation as the depression lifts but the person is not yet fully recovered (Clark & Fawcett, 1992).

Research shows that rates of attempted suicide are higher than rates of completed suicide among those with personality disorders (Clark & Fawcett, 1992; Tanney, 1992). Davila and Daley (2000) point out that one of the diagnostic criteria for Borderline Personality Disorder (BPD) is suicidality and so the association between this disorder and suicidal behaviour may be confounded by its definition. Eating disorders have also been associated with attempted suicides rather than completed suicides and are often comorbid with BPD, substance abuse disorder and major depression (Tanney, 1992).

Many studies have consistently shown that substance abuse is higher in people who attempt or complete suicide than in their non-suicidal peers (Clark & Fawcett, 1992; Schlebusch, 2005; Lester, 1992; Westefeld et al., 2000). Research has shown that alcoholism raises the risk of suicidal behaviour (Maris, 1992a). Schlebusch (2005) cites recent NIMMS statistics showing that alcohol was a comorbid factor in approximately one third of all suicides in South Africa. The comorbid existence of depression increases the alcoholic's risk of suicide (Clark & Fawcett, 1992).

Alcoholics experience increased disruption of interpersonal relations and social support. They are therefore less likely to communicate their suicidality to others, thereby reducing their chances of being rescued (Maris, 1992a). Chronic alcoholics have reduced ability to use effective problem solving strategies, increased feelings of hopelessness and lack impulse control. All of these factors are associated with an elevated risk of suicidal behaviour (Shea, 1999; Westefeld et al., 2000).

Suicidal people tend to be more anxious than their non-suicidal peers (Westefeld et al., 2000). Those diagnosed with panic disorder may be at higher risk of suicidal behaviour than the general population (Schmidt, Woolaway-Bickel & Bates, 2000; Tanney, 1992). The presence of panic attacks without a formal diagnosis of panic disorder has also been found to increase the risk of suicidal behaviour (Schmidt et al., 2000). However, there are discrepancies in the literature suggesting that until more reliable research is done, these factors should be considered to be a more indirect risk factor. Depression is often a comorbid factor in panic disorder (Schmidt et al., 2000).

2.10.3 SUICIDAL IDEATION AND COMMUNICATION OF INTENT

Suicidal ideation is a strong predictor of suicidal behaviour (Clarke & Fawcett, 1992; Maris, 1992a). Most suicidal people communicate their suicidal thoughts and possibly plans to family and friends before attempting or committing suicide (Clark & Fawcett, 1992; Schlebusch, 2005). Maris, 1992a (p.11) states, "sometimes the best predictor of suicide is simply to *ask* people whether they are thinking about killing themselves". The more detailed the suicide plan, the higher the risk of suicide (Clark & Fawcett, 1992; Maris, 1992).

2.10.4 CONSULTING A HEALTH PRACTITIONER

Research shows that a significant number of people visited their health care practitioners for psychological disorders (usually depression) within approximately a month before a suicidal act (Clark & Fawcett, 1992; Schlebusch, 2005). However, Clark & Fawcett (1992) suggest that the practitioners often saw the depression as situational, not recognising it as a disorder requiring specific treatment, and consequently the person's suicidality was not contained. Clark & Fawcett (1992) also found that few who had attempted or committed suicide had consulted a mental health practitioner before the act. They propose that this might be because people who are suicidal are often unaware of their depression, which can manifest in somatic symptoms, hence their consultation with a medical practitioner.

2.10.5 HISTORY OF SUICIDE ATTEMPTS

Many people who commit suicide have a past history of suicide attempts (Westefeld et al., 2000; Sadock & Sadock, 2003; Schlebusch, 2005). The more recent and the higher the degree of lethality of the past suicide attempt, the higher the risk of current suicidality (McIntosh, 1992; Sadock & Sadock, 2003; Westefeld et al., 2000). Clark and Fawcett (1992) conclude that a history of non-fatal suicide is a stronger indicator of future non- fatal suicides but less so for completed suicides.

2.10. 6 FAMILY HISTORY OF SUICIDAL BEHAVIOUR

Research has shown that a family history of suicidal behaviour increases the risk of suicidal behaviour (Clark & Fawcett, 1992; Sadock & Sadock, 2003). However it is uncertain whether this is due to genetics or modelling. It may also be that a family history of mood disorders and not suicidal behaviour could account for these findings (Clark & Fawcett, 1992).

2.10.7 SOCIAL SUPPORT

According to Westefeld et al. (2000) lack of social support is highly predictive of suicidal behaviour. When in a crisis people who lack social support may not reveal their suicidality to others thus reducing their chances of receiving assistance (Maris, 1992a; Westerfeld et al., 2000). Social isolation increases the risk of suicidal behaviour in those diagnosed with a mood disorder (Sadock & Sadock, 2003).

2.10.8 OCCUPATION

Higher social status seems to be associated with an increased risk of suicidal behaviour but so does a sudden drop in social status (Sadock & Sadock, 2003). People who are unemployed or facing financial problems may become suicidal (Sadock & Sadock, 2003; Wasserman, 1992; van Dyk, 2001). Being employed may be a protective factor against suicide although problems at work may raise the risk of suicidal behaviour (Maris, 1992a; Sadock & Sadock, 2003).

2.10.9 PHYSICAL OR SEXUAL ABUSE

Those who are suicidal are more likely to have a history of physical and sexual abuse than non-suicidal people (Sadock & Sadock, 2003; Schlebusch, 2005; Westefeld et al., 2000).

2.10.10 PHYSICAL HEALTH

Physical illness, particularly life threatening, chronic or involving pain, is strongly linked to an increased risk of suicidal behaviour especially among the elderly (Komiti et al., 2001; Maris, 1992c; Sadock & Sadock, 2003). Diseases of the Central Nervous System, such as epilepsy, multiple sclerosis, head injuries, cardiovascular disease, Huntington's disease and dementia are associated with suicidal behaviour (Sadock & Sadcok, 2003). Also associated with suicide are cancers, HIV/AIDS, endocrine conditions, gastrointestinal problems and musculoskeletal disorders (Komiti et al., 2001; Sadock & Sadock, 2003; Schlebusch, 2005). Exposure to the death by suicide of someone may also increase the risk of suicidal behaviour (Shea, 1999).

2.10.11 ANGER AND SHAME

The act of suicide involves violence suggesting underlying aggression (Schlebusch, 2005). Suicidal people are more angry, aggressive, irritated, anxious and dissatisfied than their non-suicidal peers (Hawton et al., 2003; Westefeld et al., 2000; van Dyk, 2001). Hastings et al. (2000) propose that shame may be a prominent feeling among those who are suicidal. They define shame as "a painful, global and crippling experience because the self as a whole, not just the behaviour, is painfully scrutinised and denigrated" (p. 68). A shamed person is overwhelmed by feelings of worthlessness, powerlessness, and their situation seems hopeless.

2.10.12 FAMILY FUNCTIONING

Family functioning can play a role in increasing the risk of suicidal behaviour. People who are suicidal are more likely to come from dysfunctional or disrupted families or be experiencing marital problems (Sadock & Sadock, 2003; Schlebusch, 2005). People who are divorced, separated or single, particularly if they are living alone, have elevated risk for

suicidal behaviour (Sadock & Sadock, 2003). Marriage seems to be more protective for males than females (Shea, 1999).

2.10.13 PERSONAL LOSS

An early loss of, or separation from parents or a recent loss or rejection by a significant other can contribute to a higher risk of suicidal behaviour (Davila & Daley, 2000; Maltsberger, 1992; Sadock & Sadock, 2003; Schlebusch, 2005; Shea, 1999; Westefeld et al., 2000).

2.10.14 LIFE EVENTS

A recent catastrophic event can trigger suicidal behaviour (Shea, 1999). Over time life events can be overwhelming leading to suicidality (Westefeld et al., 2000). Acute life crises seem to be more indicative of a risk for suicide attempts than completed suicides (Westefeld et al., 2000; Schlebusch, 2005). Stress, whether acute or chronic, is an important comorbid suicide risk factor (Schlebusch, 2005; Westefeld et al., 2000).

2.10.15 COGNITIVE FUNCTIONING

People who are suicidal often have dysfunctional cognitive styles when compared to non-suicidal people (Weishaar, 1996/2000; Westefeld et al., 2000; Schlebusch, 2005). They tend to have irrational beliefs and to use rigid, dichotomous ('all or nothing') thinking (Weishaar, 1996/2000; Schlebusch, 2005). They are inclined to exaggerate their problems and minimise the resources available to them (Schlebusch, 2005). Compared to their non-suicidal peers suicidal people have negative self concepts, a lack of reasons for living and an attraction to death (Weishaar, 1996/2000; Westefeld et al., 2000). They tend to have poor problem solving skills and may not be open to more effective strategies (Schlebusch, 2005; (Weishaar, 1996/2000; Westefeld et al., 2000). Suicide may be perceived to be the only option to ending psychological distress. In this way suicidal behaviour is used as an inappropriate problem solving strategy (Schlebusch, 2005; Westefeld et al., 2000). Weishaar (1996/2000) proposes that suicidality in people with these cognitive risk factors is exacerbated by exposure to stressful conditions.

Research has shown hopelessness to be a strong predictor of suicidal behaviour (Beck, Kovacs & Weissman, 1975; Schlebusch, 2005; Weishaar, 1996/2000). This study will be measuring the degree of hopelessness in order to evaluate suicidal ideation. The concept of hopelessness is therefore discussed in more detail below.

2.11 THE ROLE OF HOPELESSNESS IN SUICIDE

Historically, evidence of the link between suicide and hopelessness can be seen on the recorded histories of the "Jews of antiquity", the ancient Greek and Romans, and the Middle ages. These records show that many suicides were based on the belief of being trapped in an impossible situation (Beck, Kovacs & Weissman, 1975).

Beck is known as the father of cognitive therapy, which he developed in the early 60's as a short-term structured psychotherapy for depression (Beck, 1995). Since then, Cognitive Therapy has been empirically validated and successfully applied to many different psychiatric disorders and populations (Beck, 1995). The cognitive model assumes that distorted or dysfunctional thinking underlies all psychological disturbances and that this way of thinking affects the person's mood and behaviour (Beck, 1995). When Beck began studying depression he observed that depressive patients had negative views of themselves, their present experiences and their futures. Beck proposed a cognitive negative triad (a negative view of the self as a failure, the world as harsh and overwhelming, and the future as hopeless) as a framework for understanding the phenomenon of depression (Sadock & Sadock, 2003; Weishaar, 1996/2000).

Beck's pioneering research and application of his cognitive model to the field of suicide has contributed to the understanding of the risk factors in suicide (Weishaar, 1996/2000). Beck et al. (1975) provided empirical evidence that hopelessness is more closely correlated to suicide than depression and that it is one of the best predictors of a wide range of suicidal behaviour, irrespective of diagnosis. This association has been well documented in the literature (Abramson et al., 2000; Eyman & Eyman, 1992; Schlebusch, 2005; Weishaar, 1996/2000).

Hopelessness is defined as a system of negative expectations a person has about the future and who then anticipates a negative outcome for any plans or goals for the future (Beck, Weisman, Lester & Trexler, 1974). According to Beck et al., (1975) there is a specific

sequence to suicidal behaviour in that hopelessness leads to a decreased desire to live which in turn leads to increased suicidal ideation. Hopelessness has been described as the missing link between depression, cognitive rigidity, poor problem solving and suicidal behaviour (Beck et al., 1975; Schlebusch, 2005; Wieshaar, 1996/2000). It can be seen as both an acute and chronic risk factor for suicidal behaviour (Wieshaar, 1996/2000). Beck et al. (1974) developed the Beck Hopelessness Scale (BHS) to measure the role of hopelessness in many psychopathological disorders including suicide.

Without hope, there is no future and if there is no future and no possibility of change there cannot seem to be any reason to continue living and to take one's own life seems to be the only option (Shea, 1999).

2.12 SUICIDAL BEHAVIOUR IN THE SOUTH AFRICAN CONTEXT

The apartheid era in South Africa has left many people traumatized by severe human rights violations and susceptible to other stress related psychological disorders, particularly depression, which puts them at risk for suicidal behaviour (Schlebusch, 2000). In addition, people are experiencing high levels of crime and violence, acute and chronic stress, family violence, socioeconomic difficulties, high unemployment, acculturation and political transformation, urbanisation and globalisation which are considered to be risk factors for suicidal behaviour in South Africa (Schlebusch, 2000; Schlebusch, 2005). The high rates of cancer and especially HIV/AIDS, which are chronic and life threatening diseases add to the increased risk of suicidal behaviour in this country (Meel, 2003; Noor-Mahomed, 2000; Noor-Mahomed & Karim, 2000; Schlebusch, 2005).

In certain subgroups, such as the police, Post Traumatic Stress Disorder is also a common predicative factor. Young black South Africans are being subjected to high levels of stress as they face increasing competitiveness in education and employment. They may have expectations due to political changes that are not always realized and are moving away from traditional roles and value systems towards Western lifestyles and norms (Schlebusch, 2005).

During apartheid, research into suicide did not consider black South Africans, which led to the misconception that black people had lower rates of suicide than the other populations (Schlebusch, 2000). More recent research suggests that suicidal behaviour in this group is

increasing, following trends similar to those in other populations (Schlebusch, 2005; Wassenaar et al., 2000).

Schlebusch (2005) suggests that in light of these suicide risk factors that are specific to South Africa it is important to understand suicidal behaviour in the socio-historical context of the country and not only as a manifestation of individual psychology. It is imperative that research into suicidal behaviour in South Africa, which has many diverse cultures, is ongoing and culturally sensitive (Schlebusch, 2000; 2005).

2.13 THE LINK BETWEEN HIV/AIDS AND SUICIDE: SUICIDE AND OTHER CHRONIC OR LIFE THREATENING DISEASES

There is general consensus in the literature that people suffering from a chronic or life threatening disease or a disease that affects the central nervous system (CNS) are at greater risk of suicidal behaviour than the general population (Kishi, Robinson & Kosier, 2001; Komiti et al., 2001). These include cancer, heart disease, diabetes, renal and liver disease, Huntington's chorea, rheumatoid arthritis and Multiple Sclerosis, epilepsy, spinal and brain injuries, and HIV (Cochand & Bovet, 1998; Komiti et al., 2001; WHO, 2000). HIV infection is a chronic and potentially terminal disease, which at various stages affects all the systems in the body (Maj, 1990; van Dyk, 2001). In the later stages when AIDS is diagnosed the CNS may be affected (Cochand & Bovet, 1998; Komiti et al., 2001; Maj, 1990).

Psychological reactions to the diagnosis of HIV infection are often very similar to the reactions to the diagnosis of other chronic or life threatening diseases (Marzuk, Tierney & Gross, 1988; Noor-Mahomed, 2000). For example in response to a diagnosis of cancer, many people experience psychological problems and suicidal ideation (Noor-Mahomed, 2000). However, as sexually transmitted diseases have always been stigmatised in society, these responses are exacerbated in HIV infection (Maj, 1990; Noor-Mahomed & Karim, 2000; van Dyk, 2001).

It has been suggested that it is therefore not unreasonable to assume that HIV/AIDS could be associated with an elevated risk of suicidal behaviour (Catalan & Pugh, 1995; Cochand & Bovet, 1998; Komiti et al., 2001; Pugh & O'Donnell, 1993; Schlebusch, 2005).

2.14 RESEARCH INTO THE RELATIONSHIP BETWEEN SUICIDE AND HIV/AIDS

2.14.1 STUDIES IN DEVELOPED COUNTRIES

There has been much research in the Western world on the relationship between suicide and those diagnosed with HIV/AIDS but these have yielded conflicting results and are fraught with methodological problems (Schlebusch, 2005). Therefore, while research does suggest an increased rate of suicidal behaviour in those with HIV/AIDS, it is important to interpret the results cautiously (Komiti et al., 2001)

This section will discuss the research conducted in the 1980s when HIV/AIDS was a relatively new phenomenon and little was known about the relationship between HIV/AIDS and suicide. Most of the studies were done in developing countries and many researchers during this time concluded that people with AIDS are at significantly higher risk of suicide than the general population (Komiti et al., 2001; Schlebusch, 2005). Some of the later research looked at possible factors that could confound this relationship (Komiti et al., 2001). Much of the research used male homosexual samples, as this was the population with the highest HIV infection rate. Therefore, the findings are not easily extrapolated to developing countries where the highest occurrence of HIV/AIDS is mostly among the heterosexual population (Komiti et al., 2001). Little research has been done on the relationship between HIV/AIDS and suicide in South Africa (Schlebusch, 2005).

2.14.1.1 High risk of suicide in people with AIDS

A study by Marzuk et al. (1988) was the first epidemiological study to provide evidence of an increased risk of suicide among people with AIDS. Marzuk and his colleagues reviewed all the cases of suicide occurring in New York City (NYC) from January 1, 1985 to December 31, 1985 and identified 12 men who had AIDS. The suicide rate in people with AIDS was 66.15 times higher than the estimates of the general population. They found that the risk of suicide in men with AIDS aged 20–59 was 36.3 times higher than men of the same age group without AIDS. They concluded that AIDS is a significant risk factor for suicide (Marzuk et al., 1988). The authors suggested that the high incidence found in this study may be an underestimate due to the hidden nature of AIDS and other confounding factors such as the

under-reporting of suicide, especially those due to drug overdose which may be missed inadvertently because of certification bias.

Following the study by Marzuk et al. (1988) other researchers found a higher risk of suicidal behaviour in those with AIDS (Komiti et al., 2001). In California, Kizer, Green, Perkins, Doebbert and Hughes (1988) studied death certificates in 1986 and found that the relative rate for suicide in men with AIDS was 17.02 times that of men without AIDS. Men aged 20 to 39 had a suicide rate 21.36 times that of men of the same age without AIDS. The authors concluded that this subgroup of men was particularly at risk of suicidal behaviour. Similarly, a study conducted in the USA using data from death certificates from 1987 to 1989 reported that men who had AIDS had a 7.4 times higher suicide rate than in a demographically similar population (Cote, Bigger & Dannenberg, 1992). A significant increase in suicide among men with AIDS compared with the general population between 1985 and 1989 was found in Dade County, Florida (Copeland, 1993).

Frierson and Lippmann (1988) conducted a case study of three people who attempted suicide due to AIDS- related issues. One reported that he had attempted suicide to "decide when and how I die" (p. 227). They point out that AIDS-related suicides are not necessarily limited to sufferers of the disease but can be associated with the fear of contracting the disease and witnessing a loved one's suffering or death from AIDS-related illnesses.

Research continued into the 1990s and many studies supported the earlier findings that people with AIDS are at a higher risk of suicidal behaviour than the general population. In Stockholm, Rajs and Fugelstad (1992) investigated 16,938 autopsy medico-legal reports of deaths that occurred as a result of violence, poisoning or in suspicious circumstances. Their findings suggested that the number and proportion of suicide among HIV seropositive deaths increased from 1985 to 1990, particularly in the homosexual and bisexual population. They propose that suicide risk is correlated with the duration of infection and becomes manifest with the onset of AIDS symptoms.

In the 1990s Alfonso et al. (1994) concluded from their case report study that AIDS-related dementia increases the risk of suicidal behaviour. Mancoske, Wadsworth, Dugas and Hasney (1995), conducted a secondary analysis of death certificates between 1987 and 1991 in

Louisiana. They found that the suicide rate in a sample of people with AIDS (175 per 10,000) was 134.6 times that of the general population (1.3 per 10,000).

Marzuk et al. (1997) investigated suicide in NYC from 1991 to 1993. Their findings suggested that there is only a very moderate increase in suicide risk associated with HIV seropositive status. They concluded that there is a stronger relationship between AIDS and suicide than being HIV seropositive and suicide.

2.14.1.2 Suicide risk in those HIV seropositive and asymptomatic

Much less is known about the risk of suicidal behaviour in HIV infected individuals who are asymptomatic as opposed to those who have AIDS (Perry, Jocobsberg & Fishman, 1990; Rabkin, Remien, Katoff & Williams, 1993). However, Cohen (1990) sees suicidal ideation as a natural response to a diagnosis of HIV infection. There is some evidence that suggests that there is a much lower suicide risk in people with AIDS than those who are HIV positive and asymptomatic (Komiti et al., 2001, McKegney & O'Dowd, 1992; Rabkin et al., 1993; Perry et al., 1990). Beckerman (1995) describes suicide in the early stages of HIV infection when the person is asymptomatic and relatively healthy as pre-emptive suicide. According to her the person commits suicide in an attempt to avoid the illness and the suffering and pain that they expect from the disease.

Holtby (1999) reports that he has seen many HIV infected people who are asymptomatic and present with suicidal behaviour. In a retrospective study, Alfonso et al. (1994) reviewed 2,363 psychiatric consultations done in 1989 to 1990 at a New York City (NYC) hospital. The authors concluded that HIV seroposivity could be a risk factor for suicide in the general hospital population.

In a sample of patients referred for inpatient psychological services at a hospital in New York, McKegney and O'Dowd (1992) found an increase in suicidality among the HIV infected patients compared to the HIV negative patients. The authors are confident that this difference was a direct consequence of HIV status, as they do not think that any confounding factors were involved.

Some research has shown that people with AIDS have shown less emotional distress and suicidal behaviour than a-symptomatic and symptomatic HIV infected patients (McKegney & O'Dowd, 1992). Rabkin et al. (1993) studied a sample of 53 homosexual men from the Gay Men's Health Crisis Centre in NYC with AIDS who were long- term AIDS survivors. They report that contrary to other findings, the men had a positive attitude to life and strong morale and did not show signs of depression or suicidal ideation. Yalom and Greaves (as cited in McKegney & O'Dowd, 1992) refer to "cancer cures neurosis" and suggest that when a person has AIDS they face and master many of their fears of death, turning their focus away from trivial matters which enables them to have a fuller appreciation of their lives.

2.14.2. SOUTH AFRICAN STUDIES

While there has been little research on the relationship between HIV/AIDS and suicide in South Africa, some hospital-based studies have shown that there is a higher risk for suicidal behaviour in HIV positive patients compared to the general population (Schlebusch, 2005).

A retrospective study investigated a sample of HIV positive patients presenting with suicidal behaviour. It was found that more of these patients had suicidal ideation than had attempted suicide. The authors concluded that this was consistent with international studies, which report that while few HIV positive people commit suicide, they are at a greater risk than the general population (Noor-Mohamed & Karim, 2000). For example, Beckerman (1995) cites health care practitioners who find that although many patients who are HIV positive may not follow through with suicide, suicidal ideation is a common experience for these individuals.

2.15 METHODOLOGICAL PROBLEMS

The subjects of suicide and HIV/AIDS are traditionally problematic to research as they involve many ethical issues (Noor-Mohamed & Karim, 2000; Schlebusch, 2005). Most research into the relationship between suicide and HIV/AIDS has been done in developed countries using male homosexual samples (Komiti et al., 2001). This makes it difficult to generalise the results to developing countries where HIV is most prevalent among the heterosexual population (Barnett & Whiteside, 2002; Komiti et al., 2001; Schlebusch, 2005).

Starace (1995) states that methodological problems and issues in definitions of suicidal behaviour contribute to the different rates of suicide reported among individuals with HIV/AIDS. True prevalence is difficult to assess and many studies investigate only completed suicide and do not consider the range of suicidal behaviour such as suicidal ideation and attempted suicide (Sherr, 1995). Variability across studies in the types of questions or scales used makes it difficult to compare results (Komiti et al., 2001). Although case report studies can yield rich material and generate hypotheses for testing, they have reduced representativeness and conclusions must not be overgeneralised (Pugh & O'Donnell, 1993).

Many studies are retrospective and use small samples without appropriate control groups (Maj, 1990; Sherr, 1995). Because suicide is a relatively rare event, prospective studies are not easily implemented, as a large cohort size would be needed (Pugh & O'Donnell, 1993; Sherr, 1995).

The problems with retrospective studies are further compounded by a lack of adequate registrations of causes of death in mortality statistics and the difficulty of identifying HIV/AIDS cases (Starace, 1993). Errors in obtaining and recording information for data in a retrospective study can therefore be problematic when establishing the reliability of the study. Another limitation is that suicidal behaviour cannot be assessed objectively when data are collected retrospectively (Starace, 1995).

In addition the many variables involved in HIV/AIDS and suicide also make it difficult to draw consistent findings from research literature (Beckerman, 1995). There are several risk factors involved that increase the risk of suicidal behaviour in people with HIV/AIDS that may confound the study (Starace, 1995). These are discussed below.

2.16 EMPIRICAL SUICIDE RISK FACTORS

There are many variables involved that are believed to increase the risk of suicide in HIV/AIDS that can cause confounding factors in studies on this relationship, making it difficult to draw consistent findings from the literature (Beckerman, 1995; Komiti et al., 2001; Schlebusch, 2005; Starace, 1995). Pugh and O'Donnell (1993) suggest that their case

studies of six individuals who committed suicide illustrate that a wide range of factors contribute to suicide in people who are HIV positive.

2.16.1 PSYCHIATRIC DISORDERS

Research suggests that a history of psychiatric disorder, especially depression, is a salient and consistent predictor of suicide risk in those who are HIV seropositive (Fell et al., 1993; Heckman, Miller, Kochman, Kalichman & Carlson, 2002; Mateos & Lastra, 1999; Pugh & O'Donnell, 1993; Rundell, Kyle, Brown & Thomason, 1992). According to Frierson & Lippmann (1988), pre-existing psychopathology may adversely affect the ability to tolerate stress and increase suicidal behaviour in HIV seropositive individuals.

Gala et al. (1992) examined the range of suicidal behaviour in a cohort of HIV seropositive homosexuals, HIV seropositive heterosexuals and HIV seropositive intravenous drug users who were all asymptomatic. They found that a previous psychiatric history was a stronger predictor of suicide than HIV seropositive status alone. In a study of patients referred for psychiatric consultation in Spain, Mateos & Lastra (1996) indicates that the presence of suicidal behaviour is related to previous psychopathology in this group.

It has been suggested that there is a stronger link between AIDS and suicide as the symptoms of AIDS are more closely linked to psychiatric illness that are themselves risk factors for suicidal behaviour such as depression and psychosis. The brain is more likely to be involved through encephalitis and opportunistic infections, which could cause impulsive behaviour (Marzuk et al., 1997).

Olley et al. (2003) conducted a study at Tygerberg Hospital in Cape Town and reported that psychiatric disorders were common in patients recently diagnosed with HIV infection. They found that the most prevalent psychiatric disorder was depression. This was found to be higher than previously seen in developed countries and the authors suggest that this may reflect the high levels of stigmatisation and stress faced by people living with HIV/AIDS in South Africa.

2.16.2 STAGES OF HIV INFECTION

It is unclear what influence the progression of HIV illness has on the risk of suicide (Komiti et al., 2001). Many researchers claim that there is increasing evidence that there may be different patterns of suicidal behaviour depending on the stage of HIV infection (Kelley et al., 1998; Perry et al., 1990; Rajs & Fugelstad, 1992). It is important to distinguish between psychological reactions to HIV infection and organic causes of mood changes, as this will inform treatment (Fell et al., 1993). Starace (1995) proposes that in order to provide data with a higher degree of reliability, a standardised, cross-culturally tested system for staging the progression of AIDS should be used.

An increased risk of suicide is associated with testing and diagnosis of HIV infection, the diagnosis of AIDS and again in the later stages of the disease (Glass, 1988; Kirchener, 1995; Schlebusch, 2005; Sherr, 1995). The latter has been associated with biological factors such as delirium or dementia from CNS complications (Cochand & Bovet, 1998; Maj, 1990; Schlebusch, 2005). Gala et al. (1992) found HIV specific events such as the diagnosis of HIV infection, AIDS diagnosis and a sudden deterioration in health were triggers for suicidal behaviour.

In New Mexico the Health Department implemented state-wide HIV testing and counselling programmes. It was expected that the rate of suicide might increase due to people being diagnosed as HIV seropositive. However there was no such increase in the rate of suicide coinciding with the expansion of the HIV testing and counselling programmes (Hull et al., 1988). Perry et al. (1990) propose that their study indicates that there is no significant difference in suicide risk pre and post HIV testing. They used a sample of injecting drug users and did not find an increased rate of suicide risk. A possible explanation for this is that the pre and post-test counselling they received enabled them to cope with a seropositive diagnosis more effectively.

However in a later study conducted by Rundell, Kyle, Brown, and Thomason (1992) a higher risk for suicidal behaviour in the week following a diagnosis of HIV infection was found. Other researchers have shown this increased risk at one to three months after HIV antibody testing (Bower, 1990; Kelley et al., 1998; Noor-Mohamed & Karim, 2000). A study by Gala

et al. (1992) suggested that the risk of suicidal behaviour was greater within six months of testing and again after three years.

It has been suggested that suicidal behaviour can be related to the stress and uncertainty of HIV testing and not the serostatus in asymptomatic individuals, as even when tested negative some people show high levels of psychological distress around HIV antibody testing (Frierson & Lippmann, 1988; Pugh, 1995; Sherr, 1995; van Dyk, 2001).

These findings highlight the importance of pre and post HIV testing and ongoing counselling at all stages of the progression of the illness for those infected (Rundell et al., 1992; van Dyk, 2001). The data further suggests that suicide assessment should also be incorporated into the VCT process at these stages.

2.16.3 HISTORY OF SUICIDE ATTEMPTS

As with non HIV/AIDS-related suicidal behaviour, a history of suicide attempts can be seen as a risk factor in people with HIV/AIDS (Gala et al., 1992; Heckman et al., 2002; Mateos & Lastra, 1996; Pugh & O'Donnell, 1993). Kelley et al. (1998) report that a family history of suicide attempts is also a risk factor for this group.

2.16.4 SEXUAL ORIENTATION AND LIFESTYLE

Homosexuality and bisexuality are more frequent among people with AIDS than in the general population (Starace, 1995). This group often face many specific psychological problems such as identity confusion and the stress of disclosing their orientation. In addition they tend to be stigmatised by society as they are seen to be immoral and may be blamed for becoming infected with HIV (Westefeld et al., 2000). As a consequence they may engage in substance abuse to deal with the stigma. These lifestyles are known to be associated with an increased risk of psychiatric problems and suicidal behaviour. It is therefore possible that many who are living with HIV/AIDS already belong to populations who are at higher risk for suicidal behaviour (Starace, 1995).

However, Chochand and Bovet (1998) studied a sample of Swiss male HIV seropositive and HIV seronegative homosexuals to investigate degree of suicidal ideation. An increased risk of

suicidal behaviour was found among those who were HIV seropositive. They thus concluded that this could be attributed to their seropositive status and not to their sexual orientation.

2.16.5 GENDER

Females have been neglected in many studies on suicide and HIV/AIDS (Komiti et al., 2001; Olley et al., 2003; Simoni, Nero & Weinberg, 1998). A study by Simoni et al. (1998) indicated that there was a high risk of suicide attempts in HIV seropositive women and that further research was needed.

Brown and Rundell (1989) investigated gender issues in HIV- related suicidal behaviour. They found that the infection rate for females was approximately a quarter of that of the active-duty males at an Air Force Base in the USA. Suicidal ideation was found to be higher (21%) in infected men than in women (6.7%). This is the reverse of what is normally the gender-related suicide trend in the general population (Schlebusch, 2005).

Morrison and Petitto (2002) found that HIV seropositive women had a significantly higher rate of Major Depressive Disorders and symptoms of depression and anxiety than women who were HIV seronegative. Olley et al. (2003) found that women who were HIV seropositive might be at higher risk of Major Mood Disorders than HIV infected men but that men had a higher rate of alcohol and substance abuse than women.

In developing countries women living with HIV/AIDS often face more stigmatisation and oppression than men who are living with HIV/AIDS and may therefore be at further risk for Major mood disorders (Olley et al., 2003). Olley et al. (2003) suggest that there is a need for clinicians to be aware of the high prevalence of mood disorders in both men and women and the gender-different responses to HIV/AIDS. This is important as people with HIV/AIDS who have comorbid mental disorders, especially mood disorders and substance abuse, are at risk for suicidal behaviour (Heckman et al., 2002; Starace, 1995).

2.16.6 SOCIAL SUPPORT

Social support can be defined as the availability of people on whom we can depend and who make us feel loved, cared for and valued (Sarason, Levine, Basham & Sarason, 1983). There

is evidence that social support contributes to positive adjustment and personal development and can be an effective buffer against stress (Sarason et al., 1983).

People with HIV infection who present with suicidal behaviour are likely to experience social isolation, stigma and lack social support networks (Frierson & Lippmann, 1988; Kalichman, Heckman, Kochman, Sikkema & Bergholte, 2000). Lack of social support has also been indicative of an increased risk of suicidal behaviour (Alfonso et al., 1994; Schlebusch, 2005). Social support has been identified as playing an important role in offsetting the biopsychosocial effects of living with HIV/AIDS (Barnett & Whiteside, 2002; van Dyk, 2001).

2.16.7 HOPELESSNESS

Many researchers have found that hopelessness is a consistent predictor of suicidal behaviour in people with HIV/AIDS (Chandra et al., 2005; Cohen, 1990; Frierson & Lippmann, 1988; Heckman et al., 2002; Kelley et al., 1988).

2.16.8 KNOWING SOMEONE WITH HIV/AIDS

Knowing others who have suffered, or died from, an HIV/AIDS-related illnesses is associated with an increased risk of suicidal behaviour (Komiti et al., 2002; Schlebusch, 2005; van Dyk, 2001).

2.17 SUMMARY

The HIV/AIDS epidemic can be seen as one of the most destructive plagues in human history with the highest death rate among young adults of both sexes and from all walks of life (Barnett & Whiteside, 2002). Throughout the world HIV infection devastates families, communities and all of society (Barnett & Whiteside, 2002; Meredith, 2005; van Dyk, 2001). South Africa is the world's most affected region with thousands of people being infected with HIV everyday (Abdool Karim & Baxter, 2005).

Suicide rates have increased across demographic categories by approximately 60% in the last 50 years in both developed and developing countries (WHO, 2006). Suicide is becoming a serious health problem in South Africa today (Schlebusch, 2005).

South Africa's political history of oppression and violence in addition to the present high rates of violent crime, unemployment and acculturation may make South Africans susceptible to stress related psychological disorders. This in turn increases the risk of suicidal behaviour in many individuals (Schlebusch, 2005).

Many chronic and life threatening diseases are associated with a high risk of suicidal behaviour and so it has been suggested that there may be the same elevated risk associated with HIV/AIDS (Komiti et al., 2001). Dealing with the many consequences of being HIV positive or having AIDS can cause feelings of hopelessness (Schlebusch, 2005; van Dyk, 2001). Hopelessness has been linked to an increased risk of suicidal behaviour (Beck, Kovacs & Weissman, 1975).

Earlier research on the relationship between HIV/AIDS found that people with HIV/AIDS have a higher risk of suicide than the general population. However, later studies suggest that there are many factors that have been associated with suicidal behaviour that also influence this relationship, including psychiatric morbidity, same gender sexual orientation, lack of social support and stress (Komiti et al., 2001; Schlebusch, 2005). Some studies have suggested that patterns of suicidality may vary according to the progression of the HIV infection (Schlebusch, 2005).

Most of the research has been done in developed countries using primarily homosexual populations. These studies have yielded conflicting results due to many methodological problems (Komiti et al., 2001). This has made it difficult to extrapolate the result to South Africa where the HIV/AIDS epidemic is highest among the heterosexual population (Abdool Karim & Baxter, 2005).

The high prevalence of HIV/AIDS in South Africa could contribute to an increased risk of suicidal behaviour in this group. However, the relationship between HIV/AIDS and suicide has been under-researched in this country although some studies have suggested that there is an association between HIV/AIDS and suicide (Schlebusch, 2005). Schlebusch (2005)

recommends that suicidologists in South Africa today investigate this relationship, paying attention to the country's diverse population and its political and socio-economic context.

This pilot study will investigate the relationship between HIV/AIDS and suicidal ideation. A sample of students who are HIV seropositive will be compared to a sample of students from the general population. In addition, the relationship between suicidal ideation and CD4 cell counts as well as between suicidal ideation and social support will be explored. This study aims to contribute to the development of a methodology for further research into the relationship between HIV/AIDS and suicide.

CHAPTER 3. AIMS AND METHOD

3.1 AIMS

This pilot study aims to contribute to the development of a methodology for researching various aspects of the relationship between HIV/AIDS and suicide in South Africa. The spectrum of HIV infection is from initial diagnosis of seropositivity to HIV/AIDS-related symptoms through to a diagnosis of AIDS, and aspects of suicidal behaviour range from suicidal ideation to suicide mortality. This study will investigate the relationship between being HIV seropositive and suicidal ideation. In addition, the relationship between CD4 cell counts and the amount of social support on suicidal ideation will be explored. The results of this study could indicate the extent to which suicide assessment is needed for people with HIV/AIDS. This in turn could inform policy makers as to elements of the protocol for Voluntary Counselling and Testing (VCT).

RESEARCH QUESTIONS

- Is there a difference in the intensity of suicidal ideation between people who are HIV seropositive and the general population?
- Is there a relationship between CD4 cell counts and the intensity of suicidal ideation in HIV seropositive people?
- Is there a relationship between amount of social support and the intensity of suicidal ideation?

HYPOTHESES TO BE TESTED

1) Null hypothesis: There is no difference in the intensity of suicidal ideation between HIV seropositive people and the general population.
Alternative hypothesis: There is a significant difference in the intensity of suicidal ideation between HIV seropositive people and the general population.

2) Null hypothesis: The level of CD4 cell counts is not associated with the intensity of suicidal ideation in HIV seropositive people.
Alternative hypothesis: The level of CD4 cell counts is associated with the intensity of suicidal ideation in HIV seropositive people.

3) Null hypothesis: Amount of social support is not associated with the intensity of suicidal ideation.
Alternative hypothesis: Amount of social support is associated with the intensity of suicidal ideation.

The hypotheses listed above are all non-directional.

3.2 METHOD

This research is an empirical study using primary data and a quantitative method.

A Demographic Questionnaire, the Beck Hopelessness scale (BHS) and the Norbeck Social Support Questionnaire (NSSQ) was administered to the participants in order to answer the questions posed by this study. A description of the method used to collect the data is provided in the Ethical Considerations section below.

A purposive sampling method was used. Participants were students from a South African university.

HIV Sample:

The HIV Sample consisted of 15 HIV seropositive students from a university based Voluntary Counselling and Testing (VCT) clinic.

Control Sample:

The Control Sample consisted of 55 students from the general student population.

Total Sample: 70 students.

3.3 INSTRUMENTS

3.3.1 THE BECK HOPELESSNESS SCALE (BHS) (See Appendix B).

DESCRIPTION

The BHS (Beck, Weissman, Lester, & Trexler, 1974) is a self-report measure consisting of 20 true-false items that assess the respondent's degree of negative expectations of the future. The scale measures the respondent's attitudes during the past week including the day of testing. The three main aspects that are measured are concerns about the future, loss of motivation and expectations.

ADMINISTRATION AND SCORING

The examiner reads out the instructions for the BHS. The questionnaire takes approximately five minutes to complete.

All of the statements on the questionnaire are keyed with a pessimistic response. If the participant's response agrees with the key, a score of 1 is given, however, if the response disagrees with the key it receives a score of 0. A total score of 0 indicates extreme optimism while a total score of 20 indicates extreme pessimism/hopelessness.

RATIONALE FOR USING THE BHS

The BHS measures respondents' degree of hopelessness. Increased hopelessness has been strongly linked to increased suicidal ideation (Beck et al., 1975). The BHS has been found to be a psychometrically sound instrument and has been shown to have good reliability and validity (Beck et al., 1974; Eyman & Eyman, 1992). To show the internal consistency of the BHS an Alpha coefficient was used. A reliability coefficient of 0.93 was found (Beck et al., 1974). The BHS had moderate to high correlations (0.62 – 0.74) with clinical ratings of hopelessness for patients who were in primary care and in hospital care for attempted suicides (Beck et al., 1974). It is now used extensively in research on suicide risk and can be used on normal populations (Eyman & Eyman, 1992). As with many of the instruments that are used in research in South Africa, the BHS has not been formally validated for local use. It has,

however, been used to measure hopelessness on multicultural samples in South Africa (Heppner, Lee, Pretorius, Wang & Wei, 2002; Pillay & Wassenaar, 1995).

3.3.2 THE NORBECK SOCIAL SUPPORT QUESTIONNAIRE (NSSQ) (See Appendix B).

DESCRIPTION

The NSSQ (Norbeck, 2003) is a self-report questionnaire. It was designed to measure multiple dimensions of social support. Emotional and tangible support as well as the stability of relationships and frequency of contact are rated. In addition, descriptive data about recent losses of supportive relationships is elicited.

ADMINISTRATION AND SCORING

Respondents list first names or initials for each significant person in their lives who provides support to them. They may list from one to 24 people. They then indicate the kind of relationship (spouse or partner, family members, or relatives, friends, work or school associates, neighbours, health care providers, counsellor or therapist, priest/minister/rabbi or other) for each person listed on the network. Respondents then describe the amount of support available from each person listed using a 5-point rating scale.

A scoring sheet is available with explicit instructions for recording the participants' responses.

RATIONALE FOR USING THE NSSQ

The NSSQ has been assessed as a reliable and valid measure of social support (Brodaty et al., 2002; Norbeck, Lindsey & Carrieri, 1981; 1983). An Alpha coefficient was calculated to determine the internal consistency of the NSSQ. A reliability coefficient of 0.92 was found (Norbeck et al., 1983). Although the NSSQ has not been validated for local use, it has been used extensively with cross-cultural samples in the USA. (Brodaty et al., 2002). The NSSQ measures multiple dimensions of social support. However, this study aims to investigate the association between the total amount of support received by the participants from significant

others, and so the other analyses are not needed. Therefore the scores for Total Functional Support will be used as this reflects the total amount of support received.

3.3.3 DEMOGRAPHIC QUESTIONNAIRE (See Appendix B)

A questionnaire was constructed to elicit demographic information. Based on the literature, questions relevant to the study were added. These factors may be related to suicidal ideation outcomes (Komiti et al., 2001). The questions and the rationale for using them are shown in Table 3 below.

Table 3 *Rationale for questions asked*

QUESTIONS	RATIONALE
Is someone close to you suffering from an HIV/AIDS-related illness? Has someone close to you died from an HIV/AIDS-related illness?	It has been shown that witnessing someone who is suffering from, or has died from, an HIV/AIDS-related illness may increase the risk of suicidal ideation in those who are HIV seropositive (Komiti et al., 2001).
Have you ever thought about taking your life? Have you ever tried to take your life?	A person who has had previous attempts may be at risk of doing so again (Heckman et al., 2002; Schlebusch, 2005).
Have you previously received emotional counselling or psychotherapy? If yes, reasons for seeking help? Did you experience any emotional problems before receiving your HIV positive result?	Research shows that a previous psychological disorder (particularly Mood Disorders) may increase the risk of suicidal behaviour (Schlebusch, 2005)
Do you have any physical symptoms related to your HIV positive status?	It has been suggested that being HIV seropositive and symptomatic as opposed to asymptomatic may increase the risk of suicidal behaviour (Beckerman, 1995; Komiti et al., 2001).
Are you taking antiretroviral drugs? Are you experiencing any side effects due to taking these drugs?	While the availability of antiretroviral treatment can act as a buffer against suicidal behaviour, the side effects of these drugs may cause psychological distress possibly leading to suicidal behaviour.

3.4 ETHICAL CONSIDERATIONS

Research into the fields of HIV/AIDS and suicide is fraught with ethical issues due to the sensitivity of these topics. The steps taken to address these issues are described below.

In order to ensure anonymity, identifying details were not required on the Demographic Questionnaire, the BHS or the NSSQ. The VCT Counsellor handed the questionnaires to the participants in the HIV Sample during a private and confidential counselling session. The participants then completed the forms in their own time, sealed them in an envelope provided and returned them to the VCT Counsellor. She then paced these sealed envelopes in a box that was collected by the researcher.

The lecturer handed the Control Sample questionnaires to the participants. They were asked to complete the forms, seal them in an envelope provided and place them in a box on the table as they left the room or in a sealed box provided at a specified location. The researcher then retrieved the sealed envelopes.

The above process ensured that neither the VCT Counsellor nor the lecturer would see the answers to the questionnaires. All the participants thus remained anonymous to the researcher. If any participants did not wish to complete the questionnaires and did not want to be identified as not participating, they were given the option of returning the blank questionnaires in the sealed envelope.

Autonomy was protected by the use of informed consent. The information sheet and the consent form (see Appendix C), which the participants kept, were issued with the questionnaires. To enhance understanding, the contents were explained to the participants. By completing the questionnaires they demonstrated that they had adequately understood the study and voluntarily agreed to participate. This meant that a signature, which could identify the participant, was not required.

It is possible that some of the questions may have caused psychological distress to some of the participants as they dealt with sensitive issues such as HIV status, feelings of hopelessness and degree of social support. These questions were necessary in order to answer the questions posed by this research. However, the participants in the HIV Sample would be

able to access help as they were all receiving ongoing counselling and all participants were given details of appropriate referrals to psychological services on campus and elsewhere. This was done to contain any possible negative consequences to the participants.

A letter of permission to conduct this study was obtained from the campus HIV/AIDS coordinator. The Faculty of Humanities, Development and Social Sciences and the Social Sciences and Humanities Research Ethics Committee gave ethical approval for this research.

3.5 ANALYSIS

The data were analysed using the Statistical Package for the Social Sciences (SPSS 12 for Windows).

The alpha level was set at 0.05 and the probability evaluation was two-tailed for all data analysed.

To investigate the difference in the intensity of suicidal ideation between participants in the HIV Sample and those in the Control Sample a t-test was conducted.

The relationship between level of CD4 cell counts and intensity of suicidal ideation in the VCT Sample was analysed using a Pearson correlation.

A Pearson correlation was conducted to investigate the relationship between amount of social support and the intensity of suicidal ideation.

OTHER RELEVANT VARIABLES

These were analysed using t-tests or chi-square tests where appropriate.

The results of this study will be reported in the next chapter and will be interpreted and discussed in Chapter 5.

CHAPTER 4. RESULTS

4.1 DESCRIPTIVE DATA

Results that are purely descriptive are shown in detail in Appendix A and those that were analysed more deeply are shown in various tables below.

GENDER

There were more females (10) than males (5) in the VCT Sample and more females (32) than males (23) in the Control sample. Females accounted for 60% and males for 40% of all participants (see Appendix A).

AGE

The participants in the VCT Sample were older ($\bar{x}$ = 25.40), than those in the Control Sample ($\bar{x}$ = 20.53). Across both Samples the ages ranged from 17 to 46 years old (see Appendix A).

MARITAL STATUS

Single participants accounted for 95.7% of both samples. In the VCT Sample 86.7% were single, 6.7% were married and 6.7% were divorced. In the Control Sample 98.2% were single, 1.8% were married, and none were divorced (see Appendix A).

HOME LANGUAGE

Zulu speakers accounted for 60% of the participants in the HIV Sample and for 56.4% in the Control Sample. None of the participants in the VCT Sample were first language English speakers while English speakers accounted for 23.6% in the Control Sample (see Appendix A).

NATIONALITY

In the VCT Sample and the Control Sample, 73.3% and 78.2% respectively were of South African nationality. South Africans accounted for 77.1% of the total participants studied (see Appendix A).

ETHNICITY

The VCT Sample consisted of 100% black participants and the Control Sample of 38.2% black, 30.9% white, and 27.3% Indian and 3.6% coloured participants (see Appendix A).

DEGREE

Participants enrolled in the Social sciences accounted for 55% of both samples (see Appendix A).

YEAR OF STUDY

There were more participants enrolled in their second or third year of study (60%) in the VCT Sample while there were more in their first year of study in the Control Sample (60%) (see Appendix A).

SEXUAL ORIENTATION

Most of the participants in the VCT Sample (80%) and in the Control Sample (74.5%) were heterosexual. A total of 75.7% of all participants were heterosexual (see Appendix A).

ARE YOU PRESENTLY INVOLVED IN A SEXUALLY ACTIVE RELATIONSHIP?

More participants were involved in a sexually active relationship (80%) in VCT Sample than in the Control Sample (26.9%) (see Appendix A).

HIV STATUS

The participants in the VCT Sample were all HIV seropositive. In the Control Sample, 72.7% reported that they were HIV seronegative and 27.3% reported that their HIV serostatus was unknown (see Appendix A).

NUMBER OF SESSIONS ATTENDED AT VCT CLINIC

Most of the participants in the VCT Sample (66.8%) had attended between 10 and 20 counselling sessions with the VCT counsellor (see Appendix A).

PLACE AND DATE OF RECEIVING HIV TEST RESULTS

Most of the participants in the VCT Sample (86.7%) received their HIV test results at the Campus Clinic. Thirteen of the participants (80%) received their HIV test results in between February and November 2005. The other two received their results in April 2004 and at the end of October 2004 (see Appendix A).

4.2 VARIABLES THAT MAY CONFOUND THE RESULTS

The descriptive data revealed differences between the groups in terms of gender, age and ethnicity and so further analysis was carried out to investigate the effect of these variables on the results.

GENDER

More participants were female (60%) than male (40%) in both samples (see Appendix A). This relationship was not significant ($p = 0.552$, $x^2 = 0.354$, $df = 1$). It can therefore be concluded that the variable of gender did not affect the results.

AGE

The VCT Sample was older ($\bar{x} = 25.4$) than the Control Sample ($\bar{x} = 20.53$) (see Appendix A). There was a significant difference in term of age between the two groups ($p = 0.001$, $t = 3.354$, $df = 68$). The VCT Sample was significantly older than the Control Group.

As the difference between the two groups in terms of age was significant, a Pearson's correlation was conducted within each sample to examine the relationship between age and suicidal ideation (as measured by the BHS). These correlations were not significant. This is shown as follows for the Control Sample and the VCT Sample respectively (r = -0.124, p = 0.366) and (r = -0.279; p = 0.315). This indicates that the variable of age was not a confounding factor.

ETHNICITY

There were more black participants in the VCT Sample (100%) than in the Control Sample (38.2%) (see Table 4).

Table 4

Counts and percentages for ethnicity in the VCT Sample and the Control Sample

		VCT Sample	Control Sample	Total
Ethnicity				
Black	n	15	21	36
	%	100%	38.2%	51.4%
Other	n	0	34	34
	%	0%	61.8%	48.6%
Total	n	15	55	70
	%	0%	100%	100%

There was a significant difference in Ethnic composition between the two samples (p = 0.000, x^2 = 18.03, df = 2). There were significantly more black participants in the VCT Sample than in the Control Sample indicating that ethnicity may have affected the results.

As the VCT Sample consisted of 100% black participants a t-test was conducted within the Control Sample to further investigate the relationship between ethnicity and suicidal ideation. The difference between the black participants and participants from other race groups in the Control Sample in terms of suicidal ideation was not significant (p = 0.672, t = 0.425, df = 53). Therefore, it can be concluded that ethnicity did not affect suicidal ideation outcomes.

4.3 QUESTIONS ASKED

These questions were asked to elicit information about factors that may affect suicidal ideation as discussed in Table 3 (Chapter 3).

HIV SEROSTATUS

In the Control Sample the participants who did not know their HIV serostatus had higher scores on the BHS ($\bar{x}$ = 4.80) than those who reported that their status was negative ($\bar{x}$ = 3.50). Further investigation showed a significant difference in the Control Sample between knowledge of status and scores on the BHS ($p = 0.030$, $t = -2.226$, $df = 53$). This indicates that those who did not know their status had higher suicidal ideation than those who did.

IS SOMEONE CLOSE TO YOU SUFFERING FROM AN HIV/AIDS-RELATED ILLNESS?

Table 5 shows that more participants in the VCT Sample (80%) knew someone close to them suffering from an HIV/AIDS-related illness than in the Control Sample (20%).

Table 5

Counts and percentages for responses to the question "Is someone close to you suffering from an HIV/AIDS-related illness?" in the VCT Sample and Control Sample

		VCT Sample	Control Sample	Total
Is someone close to you suffering from an HIV/AIDS-related illness?				
Yes	*n*	12	11	23
	%	80	20%	32.9%
No	*n*	3	44	47
	%	20%	80%	67.1%
Total	*n*	15	55	70
	%	100%	100%	100%

The relationship between the two groups in term of responses to the above question is significant ($p = 0.000$, $x^2 = 19.232$, $df = 1$). The VCT Sample knew significantly more people suffering from an HIV/AIDS-related illness.

HAS SOMEONE CLOSE TO YOU DIED FROM AN HIV/AIDS-RELATED ILLNESS?

Table 6 shows that 71.4% of those in the VCT Sample knew someone close to them who died of an HIV/AIDS-related illness while 30.9% of the Control Sample have had this experience.

Table 6

Counts and percentages for responses to the question "Has someone close to you died from an HIV/AIDS-related illness?" in the VCT Sample and the Control Sample.

		VCT Sample	Control Sample	Total
Has someone close to you died from an HIV/AIDS-related illness?				
Yes	*n*	10	17	27
	%	71.4%	30.9%	39.1%
No	*n*	4	38	42
	%	28.6%	69.1%	60.9%
Total	*n*	15	55	70
	%	100%	100%	100%

The relationship between the two groups in terms of responses to this question was significant ($p = 0.006$, $x^2 = 7.692$, $df = 1$). The VCT Sample knew significantly more people who had died of an HIV-related illness.

HAVE YOU EVER THOUGHT ABOUT TAKING YOUR LIFE?

More participants in the VCT Sample (60%) had thought about suicide than in the Control Sample (37%) (see Table 7).

Table 7

Counts and percentages for responses to the question "Have you ever thought about taking your life?" in the VCT Sample and the Control Sample.

		VCT Sample	Control sample	Total
Have you ever thought about taking your life?				
Yes	*n*	9	20	29
	%	60%	37%	42%
No	*n*	6	34	40
	%	40%	63%	58%
Total	*n*	15	54	69
	%	100%	100%	100%

The relationship between the two groups was not significant ($p = 0.11$, $x^2 = 2.541$, $df = 1$) indicating that thoughts of suicide did not distinguish either group.

HAVE YOU EVER TRIED TO TAKE YOUR LIFE?

Table 8 indicates that 20% of those in the VCT Sample and 13% in the Control Sample had attempted suicide.

Table 8

Counts and percentages for responses to the question "Have you ever tried to take your life?" in the VCT Sample and the Control sample

		VCT Sample	Control Sample	Total
Have you ever tried to take your life?				
Yes	*n*	3	7	10
	%	20%	13%	14.5%
No	*n*	12	47	59
	%	80%	87%	85.5%
Total	*n*	15	55	70
	%	100%	100%	100%

The relationship between the two groups in terms of attempting suicide was not significant ($p = 0.493$, $x^2 = 0.469$, $df = 1$). This indicates that previous attempts at suicide did not differentiate the two groups.

HAVE YOU PREVIOUSLY RECEIVED EMOTIONAL COUNSELLING OR PSYCHOTHERAPY?

Table 9 shows that more participants in the VCT Sample reported receiving previous emotional counselling or psychotherapy (86.7%) than participants in the Control Sample (25.5%). All subjects in the VCT sample received assistance at Campus facilities (SCC or Student Clinic). In the Control Sample, 35.7% had received assistance from SCC and a further 28.6% had consulted a private psychologist.

Table 9

Counts and percentages for responses to the question "Have you previously received emotional counselling or psychotherapy?" in the VCT Sample and the Control Sample

		VCT Sample	Control Sample	Total
Have you previously received emotional counselling or psychotherapy?				
Yes	*n*	13	14	27
	%	86.7%	25.5%	38.6%
No	*n*	2	41	43
	%	13.3%	74.5%	61.4%
Total	*n*	15	55	70
	%	100%	100%	100%

The relationship between the two groups in terms of amount of counselling received was significant ($p = 0.000$, $x^2 = 18.64$, $df = 1$), showing that significantly more of the participants in the VCT Sample had received counselling than those in the Control Sample.

However, as it seemed that many of the participants in the VCT sample misunderstood the question, the results seemed to more accurately reflect the amount of counselling they received at the time of testing for, and diagnosis of HIV seropositive status, than to counselling received before this event.

The answers from the VCT Sample to the question regarding the reasons for seeking counselling also seemed to pertain to the time of testing and diagnosis and to coping with a positive HIV status. The answers given by the participants in the VCT Sample are listed below.

Reasons for seeking counselling given by the VCT Sample

- To deal with personal problems
- To help me cope with my situation

- Did not really help. Counselling came from within and I managed to do it myself
- Seeking advice to help people understand how easy is life when you accept your status
- HIV testing
- I wasn't sure of whether to continue living or just commit suicide
- It was emotional stress
- After I found out my HIV status
- Because I was not initially coping with my condition, so I wanted to commit suicide
- To share my thoughts and receive more information about health related issues
- HIV status
- I was suicidal
- I was depressed, lonely, thinking of committing suicide
- Depression

4.4 QUESTIONS SPECIFIC TO THE VCT SAMPLE

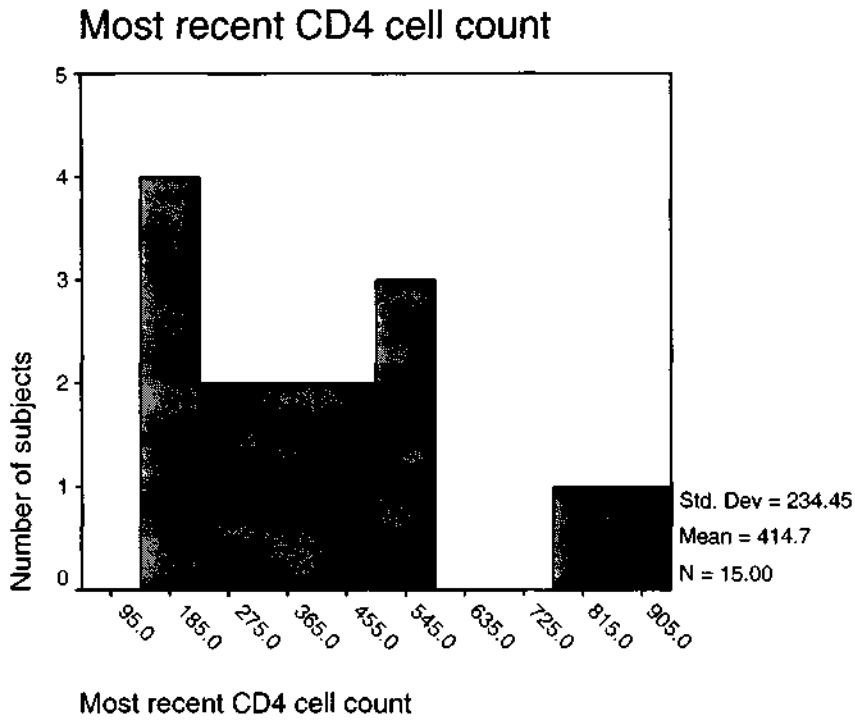
MOST RECENT CD4 CELL COUNT

AIDS is diagnosed when the CD4 cell count is below 200. A CD4 cell count of more than 350 indicates a low risk for opportunistic infections while a count of less than 350 indicates an increased risk for opportunistic diseases. Antiretroviral treatment can be implemented when the CD4 cell count is between 200 and 350 (NIAID, 2006).

Figure 1 shows the most recent CD4 cell counts reported by the participants. The highest CD4 cell count was 913, the lowest was 140 ($\bar{x} = 414.7$). Three participants had CD4 cell counts below 200, indicating that a diagnosis of AIDS may be made and one had a CD4 cell count of 205. However, only two of the participants were receiving ARV treatment.

Figure 1

Most recent CD4 cell count for the VCT Sample



DATE OF MOST RECENT CD4 CELL COUNT

The most recent CD4 cell counts were received from the end of 2005 up until June 2006 in a period of approximately 10 months before the data were collected.

DO YOU HAVE ANY PHYSICAL SYMPTOMS RELATED TO YOUR HIV POSITIVE STATUS?

Four participants (26.7%) reported that they had physical symptoms related to their HIV seropositive status. The symptoms listed (in order of severity) were:

Participant 1: vaginal warts, stress,

Participant 2: influenza, headaches, insomnia, chest pain

Participant 3: influenza

Participant 4: rashes, headache

ARE YOU TAKING ANTIRETROVIRAL DRUGS?

Two participants (13.3%) were receiving antiretroviral treatment, one for 11 months and the other for 15 months.

ARE YOU PRESENTLY EXPERIENCING SIDE EFFECTS DUE TO TAKING THESE DRUGS?

Both of the participants receiving ARV treatment reported experiencing drug-related side effects.
The side effects reported were: (in order of severity):
Participant 1: weakness
Participant 2: insomnia, painful feet, dizziness and concentration difficulties.
(See Appendix A).

DID YOU EXPERIENCE ANY EMOTIONAL PROBLEMS BEFORE RECEIVING YOUR HIV POSITIVE RESULT?

In answer to this question, 40% of the VCT Sample reported that they had problems before being diagnosed as HIV seropositive. However, this question seemed to be misunderstood by most of the participants in the VCT Sample, as many of the problems reported appeared to be HIV-related. These answers are listed below.

Emotional problems experienced before HIV result

- Scared
- Anxiety
- Mostly stressed out and anxious. Afraid of possibility of results coming back positive
- I was thinking about people around me how am I going to confront them about this situation, but I was fine
- Frequently fighting with my boyfriend and discovered he was severely cheating. I concluded that the chances of being HIV positive were high

4.5 RESEARCH QUESTIONS AND HYPOTHESES

4.5.1 IS THERE A DIFFERENCE IN THE INTENSITY OF SUICIDAL IDEATION BETWEEN THE VCT SAMPLE AND THE CONTROL SAMPLE?

Null hypothesis: There is no significant difference in the intensity of suicidal ideation between the VCT Sample and the Control Sample

Alternative hypothesis: There is a significant difference in the intensity of suicidal ideation between the VCT Sample and the Control sample

Table 10 indicates that the scores on the BHS were higher in the Control Sample ($\bar{x}$ = 3.34) than in the VCT Sample ($\bar{x}$ = 1.60).

Table 10

Means for the Beck Hopelessness Scale in the VCT Sample and the Control Sample

	VCT Sample	Control Sample	
BHS Scores			
n	15	55	70
$\bar{x}$	1.60	3.34	

This difference between the two groups in scores on the BHS was significant (p = 0.048, t = -2.011, df = 68). The Null hypothesis is therefore rejected and the Alternative hypothesis is accepted. However, the direction of this difference is unexpected. While it would have been expected that the VCT Sample would have higher suicidal ideation, the result indicates that this group had lower suicidal ideation than the Control Sample.

However, the BHS scores were low in both groups, indicating a generally low level of hopelessness. The means for both groups were between 0 and 3 suggesting a minimal degree of hopelessness (See Table 11).

Table 11

Tentative cut-off scores for the BHS (Beck et al., 1974)

BHS scores	
0-3	None or Minimal
4-8	Mild
9-14	Moderate
15-	Severe

To further investigate the degree of hopelessness in the Control Sample the scores above the mean were examined. Twenty participants (36.36%, $\bar{x}$ = 6.5) had scores of between 4 and 14, indicating a mild to moderate degree of hopelessness, and four (7.27%, $\bar{x}$ = 11.25) had scores between 10 and 14, indicating a moderate degree of hopelessness (See Table 12).

Table 12

BHS Scores (Control Sample)

	N	BHS scores
	5	4
	4	5
	3	6
	1	7
	2	8
	2	10
	1	11
	1	14
Total	20	
$\bar{x}$		6.5

4.5.2 IS THERE A RELATIONSHIP BETWEEN CD4 CELL COUNTS AND THE INTENSITY OF SUICIDAL IDEATION IN THE VCT SAMPLE?

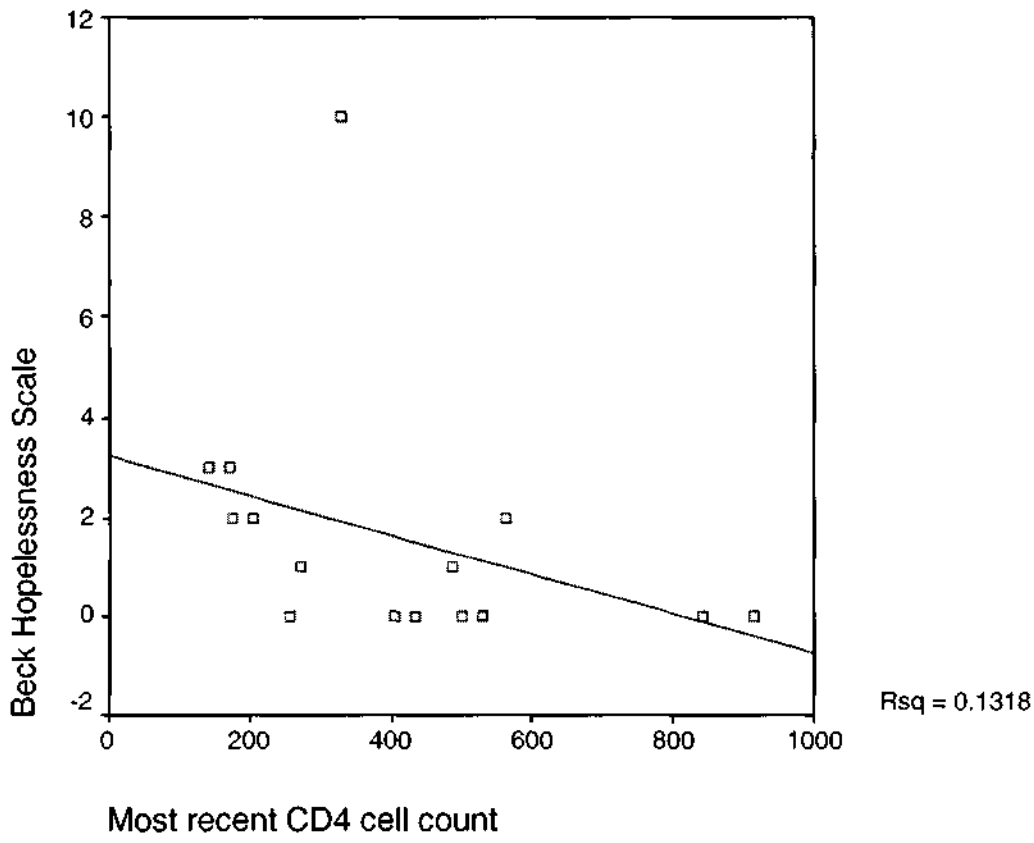
Null hypothesis: There is no significant relationship between CD4 cell counts and the intensity of suicidal ideation in the VCT Sample

Alternative hypothesis: There is a significant relationship between CD4 cell counts and the intensity of suicidal ideation in the VCT Sample

A Pearson Correlation was conducted to determine the relationship between suicidal ideation (as measured on the BHS) and level of CD4 cell counts. The results are shown in Figure 2.

Figure 2

Pearson's Correlation between BHS and most recent CD4 cell count in the VCT Sample



The correlation between CD4 cell counts and suicidal ideation was not significant (r = -0.363, p = 0.183) therefore the Null hypothesis is not rejected. However, although not statistically significant and needing further investigation, the analysis suggests that as the

CD4 cell counts decreased (indicating a more compromised immune system), the scores on the BHS increased (indicating higher suicidal ideation).

4.5.3 IS THERE A RELATIONSHIP BETWEEN AMOUNT OF SOCIAL SUPPORT AND THE INTENSITY OF SUICIDAL IDEATION?

Null hypothesis: Amount of social support will not affect the intensity of suicidal ideation

Alternative hypothesis: Amount of social support will affect the intensity of suicidal ideation

To investigate this relationship it was decided to firstly conduct a t-test to ascertain if there was a difference between the two samples in terms of social support. Table 13 shows that Total Functional Support in the VCT Sample (1.60) was lower ($\bar{x} = 1.60$) than in the Control Sample ($\bar{x} = 3.34$).

Table 13

Mean Scores for Total Functional Support on the NSSQ in the VCT Sample and the Control Sample

	VCT Sample	Control Sample	Total
NSSQ Scores			
n	15	55	70
$\bar{x}$	1.60	3.34	

There was no significant difference in the Total Functional Support between the two groups ($p = 0.215$, $t = -1.252$, $df = 67$).

As the difference between the two groups was not significant, the two groups were combined and a Pearson correlation was conducted to investigate the relationship between the amount of social support and suicidal ideation. The correlation was not significant ($r = -0.124$, $p = 0.308$) therefore the Null hypothesis was not rejected.

4.6 SUMMARY OF RESULTS

This study was conducted using two sample groups. The VCT Sample consisted of 15 HIV seropositive participants who were attending counselling at the VCT clinic on campus. The Control Sample had 65 participants from the general student population of whom 72.7% reported that they were HIV seronegative and 27.3% reported that their status was unknown to them (27.3%). There were a total of 70 participants.

Zulu speakers accounted for 60% of the participants in the HIV Sample and for 56.4% in the Control Sample. None of the participants in the HIV Sample were first language English speakers while English speakers accounted for 23.6% of the Control Sample. Most of the participants in both samples were single (95.7%), heterosexual (75.7%) and enrolled in degrees in the Social Sciences (55%). More participants were involved in a sexually active relationship in the VCT Sample (80%) than in the Control Sample (26.9%). In both samples South Africans accounted for 77.1%.

There were more female (60%) than male (40%) participants in both groups but the difference in terms of gender between the two groups was not significant. The difference between the two groups in terms of age was significant, with the VCT Sample being significantly older than the Control Sample. This was in keeping with the finding that there were significantly more second and third year students in the VCT Sample and significantly more first year students in the Control Sample. However, there was no significant correlation between age and suicidal ideation in either group. There was a significant relationship in ethnic composition between the two groups. There were significantly more black participants in the VCT Sample than in the Control Sample. However, within the Control Sample the difference between black participants and participants from other ethnic groups in terms of suicidal ideation was not significant ($p = 0.672$, $t = 0.425$, $df = 53$).

It was therefore concluded that the variables of gender, age and ethnicity did not distinguish either group.

QUESTIONS ASKED

There was a significant difference in the Control Sample between suicidal ideation and knowledge of status ($p = 0.030$, $t = -2.226$, $df = 53$). Participants who did not know their status had significantly higher suicidal ideation than those who reported knowing their status.

More participants in the VCT Sample (80%) reported being in a sexually active relationship than in the Control Sample (20%).

The participants in the VCT Sample knew more people who had suffered from, or died from an HIV/AIDS illness than the Control Sample. This association between the groups was found to be significant. Although more participants in the VCT Sample had thought about suicide (60%) and had attempted suicide (20%) than in the Control Sample (37% and 13% respectively), this relationship was not significant.

More participants in the VCT Sample (86.7%) reported that they had received previous emotional counselling or psychotherapy than did those in the Control Sample (22.5%). This relationship was found to be significant. However, most of the participants in the VCT Sample seemed to misunderstand the questions regarding amount of counselling and the reasons for seeking help as the results more accurately seemed to refer to the problems they were experiencing at the time of HIV testing and diagnosis, and not before. Most of the participants in both samples received assistance from campus facilities (SCC or campus Clinic).

QUESTIONS SPECIFIC TO THE VCT SAMPLE

Most of the participants received their HIV seropositive result at the Campus Clinic between February and November 2005. The highest CD4 cell count reported was 913 and the lowest was 140 ($\bar{x} = 414.7$). These counts were received in a period of approximately 10 months before this study was conducted.

Four participants reported experiencing physical symptoms related to their HIV seropositive status. Two participants were receiving ARV treatment and both reported suffering from treatment-related side effects.

The question regarding emotional problems experienced before receiving an HIV seropositive diagnosis seemed to be unclear, as most of the participants appeared to refer to problems experienced at the time of testing and diagnosis.

RESEARCH QUESTIONS

1. IS THERE A DIFFERENCE IN THE INTENSITY OF SUICIDAL IDEATION BETWEEN THE VCT SAMPLE AND THE CONTROL SAMPLE

A significant difference was found between the two groups in terms of suicidal ideation. The Null Hypothesis was therefore rejected. The VCT Sample was significantly less hopeless than the Control Sample. However, the scores on the BHS were low in both groups, suggesting that there was a minimal degree of suicidal ideation.

2. IS THERE A RELATIONSHIP BETWEEN CD4 CELL COUNTS AND THE INTENSITY OF SUICIDAL IDEATION IN THE VCT SAMPLE?

The relationship between CD4 cell counts and suicidal ideation between the two groups was not significant, therefore the Null Hypothesis was not rejected. However, the analysis showed that as the CD4 cell count decreased (indicating a compromised immune system), the scores on the BHS increased (indicating higher suicidal ideation). This finding justifies future research in this area.

3. DOES THE AMOUNT OF SOCIAL SUPPORT AFFECT THE INTENSITY OF SUICIDAL IDEATION?

No significant difference was found in terms of amount of support and suicidal ideation between the two groups.

In the next chapter the results will be interpreted and discussed, relating them to the literature. The limitations of this study and suggestions for further research will also be discussed.

CHAPTER 5. DISCUSSION

5.1 INTRODUCTION

When discussing the results of this study in relation to the literature, it must be remembered that most research on the relationship between HIV/AIDS has been conducted in developed countries using primarily male homosexual populations and has yielded conflicting results (Komiti et al., 2001). This makes it difficult to extrapolate the results to the mainly heterosexual, male and female HIV infected population in South Africa (Barnett & Whiteside, 2002; Komiti et al., 2001).

This chapter will discuss the results and limitations of this study and make suggestions for further research.

5.2 IS THERE A DIFFERENCE IN THE INTENSITY OF SUICIDAL IDEATION BETWEEN THE VCT SAMPLE AND THE CONTROL SAMPLE?

People living with HIV/AIDS may be at higher risk of suicidal behaviour (Komiti et al., 2001). Based on the literature, the initial hypothesis of this research was that there would be higher suicidal ideation in the VCT Sample than in the Control Sample. However, the findings show that, on the contrary, the VCT Sample had significantly lower suicidal ideation (as measured on the BHS) than the Control Sample.

Although the difference was statistically significant, the scores on the BHS were low across both samples (VCT Sample $\bar{x}$ = 1.60; Control Sample $\bar{x}$ = 3.34), indicating an overall low level of suicidal ideation. Therefore these results should be interpreted cautiously. However, The BHS scores are on a continuum from none or very low hopelessness to very high hopelessness and 36.6% of the participants in the Control Sample had scores suggesting mild to moderate degrees of suicidal ideation, therefore warranting discussion.

5.2.1. POSSIBLE EXPLANATIONS FOR THE DIFFERENCE IN SUICIDAL IDEATION BETWEEN THE VCT SAMPLE AND THE CONTROL SAMPLE

5.2.1.1 Counselling

The most salient difference between the samples was the amount of counselling they had experienced. The VCT Sample reported receiving significantly more counselling than the Control Sample. The question regarding counselling received in the past was intended to elicit information about previous mental health problems in order to control for the effects of this factor on present suicidal ideation. However, it appeared that the question was unclear as most of the participants in the VCT Sample referred to counselling received at the time of testing for HIV seroposivity, not to counselling received before this event. Many of the problems reported were HIV-related.

Despite the questions concerning previous counselling received and emotional problems experienced being unclear, the results provided some useful information. The counselling received by the participants in the VCT Sample may have contained feelings of hopelessness about the future. This might have resulted in a lowering of a suicidal ideation present at the time of HIV testing and diagnosis and could account for the difference between the two groups. Most of the participants in the VCT Sample (86.7%) received their HIV test results at the Voluntary Counselling and Testing (VCT) clinic on campus and were engaged in ongoing counselling at the time of this study.

While further research would be needed to prove this, the suggested beneficial effects of counselling in the VCT Sample in this study could support the importance of VCT found in the literature (UNAIDS, 2006; van Dyk, 2001; van Dyk & van Dyk, 2003).

A person who has displayed previous suicidal behaviour may be at risk of doing so again (Heckman et al., 2002; Schlebusch, 2005). The results showed that the association between the two samples in terms of suicidal thoughts was not significant. However, the direction of the results suggested that more participants in the VCT Sample reported thinking of suicide (60%) than those in the Control Sample (37%). This lends weak support to the original premise mentioned above, as it suggests that the HIV positive participants had higher suicidal ideation than the Control Sample. In keeping with their mode of answering the questions

concerning their reasons for counselling, it appeared that the participants in the VCT Sample were again referring to suicidal thoughts experienced around the time of testing and diagnosis.

Some research shows that witnessing someone who is suffering from, or has died from an HIV/AIDS-related illness may increase the risk of suicidal ideation in those who are HIV seropositive (Komiti et al., 2001). Beckerman (1995) refers to "preemptive suicide" suggesting that people who are HIV seropositive but asymptomatic may attempt or commit suicide to avoid the pain and suffering they witness in others. This study found that the sample of participants who were HIV seropositive knew significantly more people who were suffering from, or had died from an HIV/AIDS-related illness. Based on the literature referred to above it would be expected that the VCT Sample would have higher suicidal ideation than the Control Sample, which was not the case. This result could possibly be attributed to the beneficial effects of VCT mentioned previously, and might again demonstrate the importance of this counselling for people living with HIV/AIDS.

While the results suggest that counselling may be a protective factor for suicidal ideation, further research is needed to control for this variable. When people are tested for HIV infection, they are required to go through the VCT process. This may raise questions about the relationship between the quality and effectiveness of counselling in different settings. It is also possible that the participants in the VCT Sample were receiving other forms of treatment such as antidepressants that could have contributed to lower suicidal ideation.

5.2.1.2 Benefits of knowing HIV serostatus

The uncertainty of not knowing one's HIV serostatus can cause psychological distress. It is possible that the participants in the Control Sample had higher suicidal ideation than the VCT Sample due to the stress of not knowing their status. The results showed a significant difference in the Control Sample between those knowing their status and those whose status is unknown in terms of scores on the BHS. Those who knew their status had lower suicidal ideation than those who did not.

It may be that knowledge of status, whether seropositive or seronegative, might not result in as much emotional stress as not knowing and worrying about serostatus. This could support

the benefits of VCT highlighted above. Knowledge of HIV status is an important benefit of VCT because it enables the individual to take steps to either stay negative, or to receive the psychological and medical assistance needed to stay healthy if positive (van Dyk, 2001).

5.2.2 POSSIBLE EXPLANATIONS FOR THE LOW SUICIDAL IDEATION FOUND IN THE VCT SAMPLE.

5.2.2.1 Risk at time of HIV testing

Of the participants in the VCT Sample, 40% reported that they had experienced emotional problems before being diagnosed as HIV seropositive. This question seemed to be misconstrued by most of the HIV participants, and the answers they gave appeared to pertain to the problems they experienced around the time of HIV testing and diagnosis. Although further statistical analysis was not conducted because of the small sample size, the findings from this question might possibly suggest that the participants were experiencing psychological distress and suicidal ideation at the time of testing and diagnosis. This possible finding could accord with research that indicates an increased risk of suicidal behaviour at this stage (Kelley, 1998; Noor-Mahomed & Karim, 2000; Rundell et al., 1992).

The low suicidal ideation found in the VCT Sample might be due to the fact that most of the participants received their HIV seropositive result in 2005 and the data for this study was collected in 2006. It is possible that they were no longer at a stage of increased risk of suicidal behaviour at the time of this study.

These findings could indicate the importance of including suicide assessment in the VCT process at the time of HIV testing and diagnosis.

5.2.2.2 Highly Active Antiretroviral Treatment (HAART)

The introduction of HAART has decreased viral loads and increased longevity, making HIV/AIDS in many developed countries a manageable chronic disease. This has given people living with HIV/AIDS new hope for their future and served to reduce related psychosocial stressors (Abdool Karim, S., & Abdool Karim, Q., 2005).

This treatment is now available to the students at the university and is administered and monitored by the campus VCT counsellor. It is possible that the availability of this medication may have increased hope for the future and might account for the low suicidal ideation indicated in the VCT Sample. There were three participants with CD4 cell counts below 200, indicating that a diagnosis of AIDS may be made, and one with a CD4 cell count of 205. However, of these, two were receiving ARV treatment.

5.2.2.3 Stages of infection

Much less is known about the risk of suicidal behaviour in HIV infected individuals who are asymptomatic as opposed to those who have AIDS (Perry et al., 1990; Rabkin et al., 1993). Research indicates that those who are HIV seropositive but asymptomatic are at lower risk of suicidal behaviour than those who are symptomatic (Komiti et al., 2001, McKegney & O'Dowd, 1999; Rabkin et al., 1993; Perry et al., 1990).

Some studies suggest that while still asymptomatic there is a reduced fear of being diagnosed with AIDS and the possibility of imminent death (Green, Platt, Eley & Green, 1996). This may apply to participants in the VCT Sample who were mostly asymptomatic (73.33%) and may possibly explain the finding that they had low suicidal ideation at the time of this study. Due to the small sample size of the VCT Sample, further statistical analysis investigating the relationship between HIV-related symptoms and suicidal ideation was not possible.

5.2.2.4 Acceptance

Prior to commencing this study, the VCT counsellor observed that some of her previous clients (all of whom were black students), upon receiving an HIV seropositive result, seemed unsurprised and resigned to the inevitability of their status (personal communication, campus VCT counsellor, 2005). She wondered if, because of the high incidence of HIV infection among the black population, becoming infected is an expected occurrence and that they may therefore adjust more quickly to their status than other populations. As the VCT Sample in this study consisted of 100% black participants, this might be a tentative explanation of the finding of low suicidal ideation in this group and suggests a further area of research.

There is some literature that suggests that people find strength in adversity and crises (Pointdexter, 1997). McKegney and O'Dowd (1992) proposed that people with AIDS experience less emotional distress and suicidal behaviour than asymptomatic and symptomatic HIV infected patients. Yalom and Greaves (as cited in McKegney & O'Dowd, 1992) refer to "cancer cures neurosis", suggesting that when a person has AIDS they face and master many of their fears of death, turning their focus away from trivial matters which enables them to have a fuller appreciation of their lives. An acceptance of an HIV seropositive status, although traumatic at first, may be the factor that enables people to move on with their lives and even possibly have a better attitude towards life than before.

It is possible that many of the HIV seropositive participants in this study found ways to accept their status and find hope for the future as mentioned in the literature above. This may be reflected in their low suicidal ideation at the time of the study.

5.3 IS THERE A RELATIONSHIP BETWEEN CD4 CELL COUNTS AND THE INTENSITY OF SUICIDAL IDEATION IN THE VCT SAMPLE?

Research indicates that there are higher risks of suicidal behaviour at different stages of HIV infection from diagnosis of infection to experiencing HIV-related symptoms to a diagnosis of AIDS (Kelley et al., 1998). The HI virus destroys CD4 cells, the most important cells in the functioning of the body's immune system, and over time they become depleted. This weakens the immune system's ability to defend itself against external pathogens (NIAID, 2006).

It has been suggested that there is an increased risk for suicidal behaviour when CD4 cell counts drop, signifying a compromised immune system (Cavallari, 1996). People may experience or anticipate the onset of AIDS-related physical symptoms and worry that they may soon be diagnosed with AIDS. This might cause psychological distress and lead to suicidal ideation. This trend has reportedly been noticed among the HIV seropositive students at the university (personal communication, University HIV/AIDS coordinator, 2004).

The results of this study thus differ from expectations generated by previous studies, as the correlation between CD4 cell counts and suicidal ideation in the VCT Sample was not significant. However, although not significant, the analysis suggests that as the CD4 cell

counts decreased (indicating a more compromised immune system), the scores on the BHS increased (indicating higher suicidal ideation). The direction of these scores possibly reflects the premise of this study, that is, lower levels of CD4 cell counts will be associated with increased suicidal ideation in those who are HIV seropositive.

5.3.1 POSSIBLE EXPLANATIONS FOR THE RESULTS

The differing results above could be attributed to one BHS score in the VCT Sample that did not follow the pattern of the other scores. This was a score of 10, which is considered to be at the higher end of the hopelessness scale and could indicate a risk of suicidal behaviour. In retrospect it might have been advisable to exclude this case to remove this outlier score, which may have yielded more accurate results. This participant reported experiencing suicidal ideation, presumably at the time of testing and diagnosis. She received many sessions with the VCT counsellor and so the question arises as to why this did not contain her feelings of hopelessness about the future. Based on the literature and the trend found in this study regarding levels of CD4 cell counts and suicidal ideation, it could be hypothesised that her most recent CD4 cell count had dropped considerably from the last one, raising her level of hopelessness.

The participant referred to above had a CD4 cell count of 330, indicating a further possible reason for her high score on the BHS, as according to the CDC this indicates a possible increased risk of opportunistic infections (NIAID, 2006). Although she reports being asymptomatic, on receiving her CD4 cell count she may have felt that she may soon be at risk of illness and closer to a diagnosis of AIDS. She reported receiving this CD4 cell count in April 2006, approximately six weeks before the collection of the data for this study. This implies that the negative emotional consequences of receiving a CD4 cell count below 350 could have manifested in suicidal ideation and been present at the time of this study.

To further investigate the relationship between CD4 cell counts and suicidal ideation in the VCT Sample, a *post hoc* analysis was conducted. Taking the CDC stages into account, the VCT Sample was divided into two groups. The first being those whose CD4 cell counts were above 350 (low risk of opportunistic infections = Group 1) and the second those below 350 (higher risk of opportunistic infections = Group 2). These groups were then compared with

the scores on the BHS. Table 14 indicates that the scores on the BHS were considerably lower in Group 1($\bar{x}$ = 3) than in Group 2 ($\bar{x}$ = 21).

Table 14

Comparison between CD4 cell counts and BHS scores in the VCT Sample

			CD4 cell count	BHS score ($\bar{x}$)
Group 1	*n*	9	(> 350)	$\bar{x}$ = 3
Group 2	*n*	6	(<350)	$\bar{x}$ = 21
Total	*n*	15		

Due to the small sample size, further statistical analysis was not possible. However, the analysis suggests that as CD4 cell counts drop below 350, which could imply an increased risk of opportunistic infections, the scores on the BHS increase implying an increase in suicidal ideation. This is similar to the direction of the results found previously that as CD4 cell counts decrease so suicidal ideation increases and may also possibly support the premise of the second research question. These tentative findings concur with the results found in previous studies on the relationship between stages of HIV infection and suicide risk (Komiti et al., 2001).

Although these findings are not statistically significant and should be interpreted cautiously, they could possibly suggest that greater vigilance for suicidal behaviour should be exercised in the VCT process at a stage when an individual receives a lowered CD4 cell count or a CD4 cell count of below 350. Further research is needed to support this.

5.4 IS THERE A RELATIONSHIP BETWEEN THE AMOUNT OF SOCIAL SUPPORT AND THE INTENSITY OF SUICIDAL IDEATION?

Access to a good social support system has a positive effect on psychological well-being (Sarason et al., 1983). Social support has been identified as playing an important role in offsetting the biopsychosocial effects of living with HIV/AIDS (Barnett & Whiteside, 2002; van Dyk, 2001). Lack of social support has also been indicative of increased risk of suicidal behaviour (Alfonso, et al., 1994; Schlebusch, 2005). There is evidence to suggest that social support can reduce risk of suicidal behaviour and be a protective factor for those living with HIV/AIDS (van Dyk, 2001).

Based on the literature mentioned above, it was expected that the group that had the highest score on the BHS would have had significantly less social support than the other group. However, the results of this study did not support this expectation. There was no significant difference between the two groups in amount of social support, and the correlation between amount of social support and suicidal ideation in both groups combined was not significant. Therefore amount of social support was not associated with suicidal ideation or HIV status.

5.4.1 POSSIBLE EXPLANATION FOR THE RESULTS

While the NNSQ has proved to be valid measure of amount of social support cross-culturally in America (Brodaty et al., 2002), it may not be a valid measure for the South African population.

5.5 LIMITATIONS

The results of this study showed that the VCT Sample had significantly less hopelessness and therefore less suicidal ideation than the Control Sample. However, the degree of hopelessness was low in both samples, suggesting that interpretation of the intensity of suicidal ideation be done with caution.

This study originally proposed to have a third sample of participants from the university Student Counselling Centre (SCC) who were receiving counselling for psychological problems. This sample was intended to control for the variable of counselling. However, due

to time constraints, both on the part of the researcher and the psychologists at the SCC, such data could not be collected. The VCT Sample had received significantly more counselling than the Control Sample. The SCC Sample could have lent further insight into the relationship between counselling and suicidal ideation.

The sample size was small, decreasing the reliability of the results. This was due to the relatively small population of students receiving counselling at the VCT clinic as well as time constraints.

Data from both samples were collected shortly before the exams commenced and lectures ended. As the participants in the Control Sample were accessed during lectures this limited the size of the sample and also meant that some of them were possibly too busy to complete the questionnaires. At the onset of this study, the researcher had established a good relationship with the VCT counsellor who was supportive of the research. She had a trusting and close relationship with the HIV seropositive students. She had discussed the importance of research with them and many of them were willing to volunteer for this study. However, when the data was collected she was no longer employed at the university, resulting in lower than expected enrolment in the VCT Sample. The researcher then dealt with the new VCT counsellor who had not had time to establish a relationship with the students making it difficult for her to access volunteers. Establishing and maintaining a good working relationship with the relevant gatekeepers is important to the success of data collection.

Some of the questions on the demographic questionnaire were unclear and did not elicit the intended data. However, it was possible to use the results from these questions to extrapolate some meaningful data. Suggestions for improved and additional questions will be discussed below.

The NSSQ has not been standardised on South African populations and may not be a valid instrument for measuring social support for the sample in this study. This is a common problem in South African research as most of the available instruments are developed overseas. Standardising this instrument on South African samples was beyond the scope of the present study.

CHAPTER 6. RECOMMENDATIONS AND CONCLUSIONS

6.1 SUGGESTIONS FOR FURTHER RESEARCH

The following are suggestions for improving the questionnaire in future studies:

To improve the questions regarding previous psychological functioning and counselling or psychotherapy received by the VCT Sample:

- In the past, have you ever experienced any emotional problems that were not related to being tested for HIV infection or receiving your HIV positive result?
- In the past have you ever thought about taking your life because of problems you were experiencing that were not related to being tested for HIV infection or receiving your HIV positive result?
- In the past have you ever tried to take your life because of problems you were experiencing that were not related to being tested for HIV infection or receiving your HIV positive result?
- In the past, have you received emotional counselling or psychotherapy for problems that were not related to being tested for HIV infection or receiving your HIV positive result?

To gain more clarity on psychological functioning at the different stages of HIV infection and the effectiveness of counselling (VCT Sample):

- When you went for an HIV test did you think your chances of being positive were: high, moderate, low, zero?
- What were your reasons for having an HIV test?
- Were you expecting an HIV positive result?
- Does knowing that ARVs are available to you make you feel more positive about your future?
- Describe how you felt when receiving your CD4 cell count.
- If your CD4 cell count dropped since your last count what were your feelings?

- If you are receiving ARV treatment describe how you felt when you were advised to begin this treatment.
- How do you rate the counselling you received from the VCT clinic? (Use a scale)
- Did this counselling help you to feel more hopeful about your future?
- At what stage was this counselling the most useful to you: at the time of testing and diagnosis; when receiving your CD4 cell counts; when experiencing HIV-related physical symptoms; when receiving ARV treatment; other?

To obtain more information from the Control Sample pertaining to HIV testing, risk of infection and concerns about being infected:

- Have you ever had an HIV test?
- What were your reasons for having an HIV test?
- What are your reasons for not having an HIV test?
- At the moment, what do you think your chances of being HIV positive are: high, moderate, zero?
- Do you ever worry that you might be at risk of being infected with HIV?
- If yes to thoughts about, or attempts of suicide: Why did you think/ feel that suicide was the only option?

Counselling:

To control for the variable of counselling a third sample of participants who are receiving ongoing counselling for psychological problems, could be added. This sample may also yield additional relevant data. Information about other treatment variables could also serve as a control for the effects of counselling.

Small sample size:

To increase the reliability of a study, a large sample size is desirable, but not always attainable. It was not possible in this study to conduct statistical analysis on some of the variables within the samples. It would therefore be beneficial to future studies to have larger

samples. This could make it possible to conduct further statistical analysis on relevant variables within the groups.

If future studies intend using a student population it is suggested that data be collected from VCT sites on other university campuses. This would possibly yield a higher sample size.

Matching:

Matching the samples on relevant variables (e.g., demographic variables) could reduce the variability between the samples. Although the findings of this study suggested that age, gender and ethnicity did not distinguish the two samples, matching of these variables could make the results more robust. However, matching can be difficult to do and may result in a decreased sample size.

Norbeck Social Support Questionnaire (NSSQ):

To further investigate the relationship between suicidal ideation and social support, further analysis of the data yielded by the NSSQ could be done. For example, the categories of people who were reported to be providing support may provide links with 'importance of counselling' to the HIV positive participants.

6.2 CONCLUSION

This pilot study aimed to contribute to the development of a methodology for researching various aspects of the relationship between HIV/AIDS and suicide in South Africa. Specifically, the relationship between suicidal ideation and HIV seropositivity was investigated. The study found that students who were HIV positive were not more suicidal than the controls – indeed the HIV positive group had lower hopelessness scores than the controls. The study was a pilot study intended to provide suggested directions for further research and not to be generalised to other populations.

If this study is replicated a larger sample, matched on demographic variables should be used to decrease some confounding variability between the samples and to allow for more robust statistical analysis.

An additional sample of participants receiving ongoing counselling for psychological problems is suggested to control for the variable of counselling. The questions listed in section 6.1 should be included as they could provide more insight into the questions posed by this study and the suggested direction of the findings.

It might be necessary to use an alternative, more valid instrument than the NSSQ to measure social support.

This study highlighted variables that may need to be studied in greater depth and outlined suggestions for further research methodology. This could contribute to furthering research into the relationship between HIV/AIDS and suicide in South Africa, where few systematic studies have been conducted to date. Results from such studies could inform policy makers as to the extent to which suicide assessment and counselling should be included in the standard Voluntary Counselling and Testing (VCT) process.

REFERENCES

Abdool Karim, S., & Abdool Karim, Q. (2005). The future of the AIDS epidemic in South Africa. In S. Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 567-572). New York: Cambridge University Press.

Abdool Karim, S., & Baxter, C. (2005). Introduction. In S. Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 31-36). New York: Cambridge University Press.

Abramson, L., Alloy, L., Hogan, M., Whitehouse, W., Gibb, B., Hankin, B., & Cornette, M. (2000) The hopelessness theory of suicidality. In T. Joiner & M. Rudd (Eds.). *Suicide science* (pp. 17-32). Massachusetts: Kluwer Academic Publishers.

Alfonso, C.A., Cohen, M.A., Aladjem, A.D., & Morrison, F., Powell, D.R., Winters, R.A., & Orlowski, B.K. (1994). HIV seropositivity as a major risk factor for suicide in the general hospital. *Psychosomatics, 35*, 368-373.

Au, A., Chan, I., Li, P., Chung, R., Po, L., & Yu, P. (2004). Stress and health related quality of life among HIV infected persons in Hong Kong. *AIDS and Behaviour, 8*, (2) 119-129.

AVERT, 2006. *HIV AND AIDS Statistics*. Retrieved 2006, from www.avert.org

Barnett, T., & Whiteside, A. (2002). *AIDS in the twenty-first century: Disease and globalization*. New York: Palgrave Macmillan.

Beck, J. (1995). *Cognitive therapy: Basics and beyond*. New York: The Guilford Press

Beck, A. T., Kovacs, M., & Weissman, A. (1975). Hopelessness and suicidal behaviour. In J. Maltsberger, & M. Goldblatt (Eds.), *Essential papers on suicide* (pp. 331-341). New York: Oxford University Press.

Beck, A., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessimism: The hopelessness scale. *Journal of Consulting and Clinical Psychology, 42 (6)*, 861-865.

Beckerman, N.L. (1995). Suicide in relation to AIDS. *Death Studies, 19*, 223-234.

Bonnet, F., Morlat, P., Chêne, G., Mercié, P., Neau, D., Chossat, I., Decoin, M., Djossou, F., Beylot, J., & Dabis, F. (2002). Causes of death among HIV-infected patients in the era of highly active antiretroviral therapy, Bordeaux, France, 1998-1999. *HIV Medicine, 3*, 195-199.

Bower, B. (1990). Suicide thoughts drop in HIV positives. *Science News, 137*, 70.

Bradshaw, D., & Dorrington, R. (2005). AIDS-related mortality in South Africa. In S.Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 419-429). New York: Cambridge University Press.

Brodaty, H., Green, A., Banerjee, S., Mittelman, M., Schulz, R., Whitehouse, P., Harvey, R., Powell, M., Prince, M., Rios, D., & Zarit, S. (2002). Towards harmonization of caregiver outcomes measures. *BrainAging*. Retrieved 2007, from www.brainaging.org

Brown, G.R., & Rundell, J.R. (1989). Editorial: Suicidal tendencies in women with Human Immunodeficiency Virus infection. *American Journal of Psychiatry*, 146, 556-557.

Catalan, J., & Pugh, K. (1995). Suicidal behavior and HIV infection – is there a link? *AIDS Care, 7,* 117-121.

Cavallari, C. (1996). Dealing with positivity: a study of the factors associated with psychological trauma when receiving an HIV-positive test result. *International Conference* AIDS. 11,162. Retrieved March 2007, from www.gateway.nlm.nih.gov

Center for Disease Control and Prevention, 2006. Retrieved 2006, from www.cdc.gov

Chandra, P., Desai, G., & Ranjan, S. (2005). HIV and psychiatric disorders. *Indian Journal of Medical research, 121*, 451-463.

Clark, D., & Fawcett J. (1992). Review of empirical risk factors for the evaluation of the suicidal patient. In B. Bongar (Ed.). *Suicide: Guidelines for assessment, management and treatment* (pp. 16-48). New York: Oxford University Press.

Clark, D., & Horton-Deutsch, S. (1992). Assessment in abstentia: The value of the psychological autopsy method for studying antecedents of suicide and predicting future suicides. In R. Maris, A. Berman, J. Maltsberger, & R. Yufit (Eds.), *Assessment and prediction of suicide* (pp. 144-182). New York: The Guilford Press.

Cochand, P., & Bovet, P. (1998). HIV infection and suicide risk: An epidemiological inquiry among male homosexuals in Switzerland. *Social Psychiatry and Psychiatric Epidemiology, 33,* 230-234.

Cohen, M. (1990). Biopsychosocial approach to the Human Immunodeficiency Virus Epidemic: A clinician's primer. *General Hospital Psychiatry, 12*, 98-123.

Colvin, M. (2005). Impact of AIDS – the health care burden. In S. Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 336-350). New York: Cambridge University Press.

Cote, T.R., Biggar, R.J., & Dannenberg, A.L. (1992). Risk of suicide among persons with AIDS: A national assessment. *Journal of the American Medical Association, 268*, 2066-2068.

Davila, J., & Daley, S. (2000). In T. Joiner & D. Rudd (Eds.), *Suicide science* (pp. 175-200). Massachusetts: Kluwer Academic Publishers.

Durkheim, E. (1952). *Suicide: A study in suicidology*. London: Routeledge & Kegan Paul.

Eyman, J., & Eyman, S. (1992). Psychological testing for potentially suicidal individuals. In B. Bongar (Ed.), *Suicide: Guidelines for assessment, management and treatment* (pp. 127-143). New York: Oxford University Press.

Evian, C. (2000). *Primary AIDS care*. Houghton: Jacana.

Fell, M., Newman, S. Herns, M., Durrance, P., Manji, H., Connolly, S., McAllister, R., Weller, I., & Harrison, M., (1993). Mood and psychiatric disturbance in HIV and AIDS: Changes over time. *British Journal of Psychiatry, 162,* 604-610.

Frierson, R.L., & Lippmann, S.B. (1988). Suicide and AIDS. *Psychosomatics, 29,* 226-231.

Frohlich, J., 2005. The impact of AIDS on the community. In S. Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 351-370). New York: Cambridge University Press.

Gala, C., Pergami, A., Catalan, J., Durbano, F., Musicco, M., Baldeweg, T., & Invernizzi, G. (1992). Risk of deliberate self-harm and factors associated with suicidal behaviour among asymptomatic individuals with human immunodeficiency virus infection. *Acta Psychiatrica Scandinavica, 86,* 70-75.

Garrison, C. (1992). Demographic predictors of suicide. In R. Maris, A. Berman, J. Maltsberger, & R. Yufit (Eds.), *Assessment and prediction of suicide* (pp. 484-498). New York: The Guilford Press.

Glass, R.M. (1988). Editorial: AIDS and suicide. *Journal of the American Medical Association, 259,* 1369-1370.

Gouws, E. (2005). HIV incidence rates in South Africa. In S. Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 67-76). New York: Cambridge University Press.

Gouws, E. & Abdool Karim, Q. (2005). HIV infection in South Africa: the evolving epidemic. In S. Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 48-66). New York: Cambridge University Press.

Green, G., Platt, S., Eley, S., & Green, S. (1996). 'Now and again it really hits me': The impact of an HIV-positive diagnosis on psychological well-being. *Journal of Health Psychology, 1,* 125-141.

Hastings, E., Northman, L., & Tangney, J. (2000). Shame, guilt, and suicide. In T. Joiner & D. Rudd (Eds.), *Suicide science: Expanding the boundaries* (pp. 67-80). Boston: Kluwer Academic Publishers.

Hawton, K., Houston, B., Haw, C., Townsend, E., & Harris, L. (2003). Comorbidity of Axis I and Axis II disorders in patients who attempted suicide. *American Journal of Psychiatry, 160* (8), 1494-1500.

Heckman, T.G., Miller, J., Kochman, A., Kalichman, S.C., & Carlson, B. (2002). Thoughts of suicide among HIV-infected rural persons enrolled in a telephone-delivered mental health intervention. *Annals of Behavioral Medicine. 24,* 141-148.

Heppner, P., Pretorius, T., Wei, M., Lee, D., & Wang, Y. (2000).Examining the generalisability of problem-solving appraisal in black South Africans. *Journal of Counselling Psychology, 49,* 484-498.

Heywood, M. (2005). The Achilles heel? The impact of HIV/AIDS on democracy in South Africa. In S. Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 371-383). New York: Cambridge University Press.

Holtby, M. (1999). In Shernoff, M. (Ed), *AIDS in mental health practice: Clinical and policy issues.* New York: The Haworth Press, Inc.

Hull, H.F., Mack Sewell, C., Wilson, J., & McFeeley, P. (1988). Editorial: The risk of suicide in persons with AIDS. *Journal of the American Medical Association, 260,* 29-30.

International Data Base, 2006. Retrieved 2006, from www.cencus.gov

Joiner, T. (2000). New life in suicide science. In T. Joiner & D. Rudd (Eds.), *Suicide science* (pp. 1-8). Massachusetts: Kluwer Academic Publishers.

Kalichman, S., Heckman, T., Kochman, M., Sikkema, K., & Bergholte, J. (2000). Depression and thoughts of suicide among middle aged persons living with HIV/AIDS. *Psychiatric Service,* 51, 903-907.

Kelley, B., Raphael, B., Judd, F., Perdices, M., Kernutt, G., Burnett, P., Dunne, M., & Burrows, G. (1998). Suicidal ideation, suicide attempts, and HIV infection. *Psychosomatics,* 39, 405-415.

Kirchner, J. (1995). AIDS and suicide. *Journal of Family Practice,* 41, 473-496.

Kishi, Y., Robinson, R., & Kosier, J. (2001). Suicidal ideation among patients with acute life-threatening physical illness. *Psychosomatics, 42,* 382-390

Kizer, K.W., Green, M., Perkins, C.I., Doebbert, G., & Hughes, M.J. (1988). Editorial: AIDS and suicide in California. *Journal of the American Medical Association, 260,* 1881.

Komiti, A., Judd, F., Greech, P., Mijch, A., Hoy, J., Lloyd, J.H., & Street, A. (2001). Suicidal behaviour in people with HIV/AIDS: A review. *Australian and New Zealand Journal of Psychiatry, 35,* 747-757.

KwaZulu-Natal Epidemiological Bulletin, (2003).

Lester, D. (1992). Alcoholism and drug abuse. In R. Maris, A. Berman, J. Maltsberger, & R. Yufit, (Eds.), *Assessment and prediction of suicide* (pp. 321-336). New York: The Guilford Press.

Maj, M. (1990). Psychiatric aspects of HIV-1 infection and AIDS. *Psychological Medicine, 20,* 547-563.

Maltsberger, J. (1992). The psychodynamic formulation: An aid in assessing suicide risk. In R. Maris, A. Berman, J. Maltsberger, & R. Yufit (Eds.). *Assessment and prediction of suicide* (pp. 25-49). New York: The Guilford Press.

Maltsberger, J., & Goldblatt, M. (1996). Introduction. In J. Maltsberger & M. Goldblatt (Eds.), *Essential papers on suicide* (pp. 1-8). New York: New York University Press.

Mancoske, R., Wadsworth, C., Dugas, D., & Hasney, J. (1995). Suicide risk among people living with AIDS. *Social Work, 40,* 783-787.

Maris, R. (1992a). Overview of the study of suicide assessment and prediction. In R. Maris, A. Berman, J. Maltsberger, & R. Yufit (Eds.), *Assessment and prediction of suicide* (pp. 3-22). New York: The Guilford Press.

Maris, R. (1992b). How are suicides different? In R. Maris, A. Berman, J. Maltsberger, & R. Yufit (Eds.), *Assessment and prediction of suicide* (pp. 65-87). New York: The Guilford Press.

Maris, R. (1992c). The relation of nonfatal suicide attempts to completed suicides. In R. Maris, A. Berman, J. Maltsberger, & R. Yufit (Eds.), *Assessment and prediction of suicide* (pp. 362-360). New York: The Guilford Press.

Marzuk, P.M., Tierney, H., Tardiff, K., Gross, E., Morgan, E., Hsu, M., & Mann, J. (1988). Increased risk of suicide in persons with AIDS. *Journal of the American Medical Association, 259,* 1333-1337.

Marzuk, P.M., & Tardiff, K., Leon, A., Hirsch, C., Hartwell, N., Poterera, L., & Iqbal, M. (1997). HIV seroprevalence among suicide victims in New York City, 1991-1993. *American Journal of Psychiatry, 154,* 1720-1725.

Mateos, J. Lastra, I. (1996). Research in psychopathology in patients with HIV/AIDS and psychiatric services in Spain. *AIDS Care, 8,* 233- 239.

McIntosh, J. (1992). Methods of suicide. In R. Maris, A. Berman, J. Maltsberger, & R. Yufit (Eds.). *Assessment and prediction of suicide* (pp. 381-419). New York: The Guilford Press.

McKegney, F., & O'Dowd, M. (1992). Suicidality and HIV status. *American Journal of Psychiatry, 149,* 396-398.

Meel B. (2003). Suicide and HIV/AIDS in Transkei, South Africa. *Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology, 4.*

Meredith, M. (2005). *The fate of Africa: From the hopes of freedom to the heart of despair.* London: Simon & Schuster UK Ltd.

Morris L., & Cilliers, T. (2005). Viral structure, replication, tropism, pathogenesis and natural history. In S. Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 79-88). New York: Cambridge University Press.

Morrison, M., Petitto, J., Have, T., Gettes, D., Chiappini, M., Weber, A., Brinker-Spence, P., Bauer, R., Douglas, S., & Evans, D. (2002). Depressive and anxiety disorders in women with HIV infection. *American Journal of Psychiatry, 159,* 789-796.

Motto, J. (1992). An integrated approach to estimating suicide risk. In R. Maris, A. Berman, J. Maltsberger, & R. Yufit (Eds.), *Assessment and prediction of suicide* (pp. 625-639). New York: The Guilford Press.

National Injury Mortality Surveillance System, 2005. Retrieved 2006, from www.sahealthinfo.org

National Institute of Allergy and Infectious Diseases (NIAID), (2006). *HIV infection and AIDS: An overview.* Retrieved 2006, from www.niaid.nih.gov

Noor-Mahomed, S., & Karim, E. (2000). Suicidal ideation and suicide attempts at a general hospital. In L. Schlebusch & B. Bosch (Eds.), *Suicidal behavior 4,* (38-48). Durban: University of Natal.

Noor-Mahomed, S. (2000). Psychological adjustment and suicidal ideation in patients diagnosed with cancer of the cervix. In L. Schlebusch & B. Bosch (Eds.), *Suicidal behaviour 4* (12-23). Durban: University of Natal.

Norbeck, J., Lindsey, A., & Carrieri, V. (1981). The development of an instrument to measure social support. *Nursing Research, 30,* 264-269. Retrieved 2005, from www.nurseweb.ucsf.edu

Norbeck, J., Lindsey, A., & Carrieri, V. (1983). Further development of the Norbeck Social Support Questionnaire: Normative data and validity testing. *Nursing Research, 32,* 4-9. Retrieved 2005, from www.nurseweb.ucsf.edu

Norbeck, J. (2003). *The Norbeck Social Support Questionnaire (NSSQ).* Retrieved 2005, from www.nurseweb.ucsf.edu

Olley, B.O., Gxamza, F., Seedat, S., Theron, H., Tajaard, J., Reid, E., Reuter, H., & Stein, D. J. (2003). Psychopathology and coping in recently diagnosed HIV/AIDS patients – the role of gender. *South African Medical Journal, 93,* 928-931.

Perry, S., Jacobsberg, L., & Fishman, B. (1990). Suicidal ideation and HIV testing. *The Journal of the American Medical Association, 263,* 679-682.

Pillay, A., & Wassenaar, D. (1995). Psychological intervention, spontaneous remission, hopelessness, and psychiatric disturbance in adolescent parasuicides. *Suicide and Life-Threatening Behavior, 25,* 386-392.

Pointdexter, C. (1997). In the aftermath: Serial crisis intervention for people with HIV, *Health & Social Work, 22,* 125-134.

Pugh, K., & O'Donnell, I. (1993). Suicide and HIV disease. *AIDS Care, 5,* 391- 400.

Rabkin, J., Remien, R., Katoff, L., & Williams, J. (1993). Suicidality in AIDS long-term survivors: What is the evidence? *AIDS Care, 5,* 401-411.

Rajs, J., Fugelstad, A. (1992). Suicide related to human immunodeficiency virus infection in Stockholm. *Acta Psychiatrica Scandinavica, 85,* 234-239.

Rudd, M. (2003). Letter to the editor: warning signs for suicide? *Suicide and Life-Threatening Behavior, 33.*

Rundell, J., Kyle, K., Brown, G., & Thomason, J. (1992). Risk factors for suicide attempts in a Human Immunodeficiency screening programme. *Psychosomatics, 33,* 24-27.

Sadock, B., & Sadock, V. (2003). *Synopsis of psychiatry: Behavioural sciences/clinical psychiatry.* New York: Lippincott Williams & Wilkins.

Sarason, I., Levine, H., Basham, R., & Sarason, B. (1983). Assessing social support: The Social Support Questionnaire. *Journal of Personality and Social Psychology, 44,* (1), 1127-139. Retrieved 2005, from www.web.psych

Schlebusch, L. (2000). An overview of suicidal behaviour in South Africa at the dawn of the new millennium. In L. Schlebusch, & B. Bosch (Eds.), *Suicidal behavior 4* (pp. 3-9). Durban: University of Natal.

Schlebusch, L. (2005). *Suicidal behaviour in South Africa.* Pietermaritzburg: University of KwaZulu-Natal Press.

Schneidman, E. (1992). A conspectus of the suicidal scenario. In R. Maris, A. Berman, J. Maltsberger, & R. Yufit (Eds.), *Assessment and prediction of suicide* (pp. 223-238). New York: The Guilford Press.

Schneidman, E. (1999). "Suicide" and "Suicidology": A brief etymological note. In A. Leenaars (Ed), *Lives and deaths: Selections from the works of Edwin S. Schneidman* (pp. 151-153). Philadelphia: Taylor & Francis. (Reprinted from *Life-threatening Behavior,* 1970, *1,* 260-263

Schneidman, E. (1999). Suicide. In A. Leenaars (Ed.), *Lives and deaths: Selections from the works of Edwin S. Schneidman* (pp. 176-197). Philadelphia: Taylor & Francis. Reprinted from *Encyclopaedia Britannica,* 1973, *21,* 383-385.

Schneidman, E. (1999). Suicide on my mind, Britannica on my table. In A. Leenaars, (Ed.), *Lives and deaths: Selections from the works of Edwin S. Schneidman* (pp. 154-175). Philadelphia: Taylor & Francis. (*Reprinted from The American Scholar,* 1998, *67,* 93-104.

Schmidt, N., Woolaway-Bickel, K., & Bates, M. (2000). Suicide and panic disorder: Integration of the literature and new findings. In T. Joiner & D. Rudd (Eds.), *Suicide science* (pp. 117-136). Massachusetts: Kluwer Academic Publishers.

Shea, S.C. (1999). *The practical art of suicide assessment: A guide for mental health professionals and substance abuse counsellors*. New York: John Wiley & Sons Inc.

Sherr, L. (1995). Suicide and AIDS: Lessons from a case note audit in London. *AIDS Care, 7*, 109-116.

Simoni, J.M., Nero, D.K., & Weinberg, B.A. (1998). Suicide attempts among seropositive women in New York City. *American Journal of Psychiatry, 155*, 1631-1632.

Starace, F. (1993). Suicidal behaviour in people infected with human immunodeficiency virus: A literature review. *International Journal of Social Psychiatry, 39*, 64-70

Starace, F. (1995). Epidemiology of suicide among persons with AIDS. *AIDS Care, 7*. 5123-5128.

Tanney, B. (1992). Mental disorders, psychiatric patients, and suicide. In R. Maris, A. Berman, J. Maltsberger, & R. Yufit (Eds.), *Assessment and prediction of suicide* (pp. 277-320). New York: The Guilford Press.

UNAIDS (2006a). *Report on the global AIDS epidemic: Executive summary*. Retrieved 2007, from www.unaids.org

van Dyk, A. (2001). HIV/AIDS: *Care and counselling, a multidisciplinary approach*. Cape Town: Pearson Education.

van Dyk, A., & van Dyk, P. (2003). "What is the point of knowing?": Psychological barriers to HIV/AIDS Voluntary Counselling and Testing programmes in South Africa. *South African Journal of Psychology, 33* (2), 118-125.

Wassenaar, D., Pillay, A., Descoins, S., Goltman, M., & Naidoo, P. (2000). Patterns of suicide in Pietermaritzburg 1982-1996: Race, gender and seasonality. In L. Schlebusch, & B. Bosch, (Eds.), *Suicidal Behaviour 4* (pp. 3-9). Durban: University of Natal.

Wasserman, I. (1992). Economy, work, occupation and suicide. In Maris, R., Berman, A., Maltsberger, J., & Yufit, R. (Eds.), *Assessment and prediction of suicide* (pp. 520-539). New York: The Guilford Press.

Weishaar, M. (2000). Cognitive risk factors in suicide. In Maris, R., Canetto, S., McIntosh, J., & Silverman, M. (Eds.), *Review of suicidology* (pp. 112-139). New York: The Guilford Press. (Reprinted from *Frontiers of cognitive therapy*, 1996, 226-249)

Weishaar, M., & Beck, A. (1992). Clinical and cognitive predictors of suicide. In Maris, R., Berman, A., Maltsberger, J., & Yufit, R. (Eds.), *Assessment and prediction of suicide* (pp. 467-483). New York: The Guilford Press.

Westefeld, J., Range, L., Rogers, J., Maples, M., Bromley, J., & Alcorn, J. (2000). Suicide: An overview. *The Counselling Psychologist, 28,* 445-510.

Whiteside, A. (2005). The economic impact of AIDS. In S. Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 405-418). New York: Cambridge University Press.

WHO (2000). *Multisite intervention study on suicidal behaviours.* Retrieved 2006, from www.WHO.org

WHO (2006). *The World Health Report.* Retrieved 2007, from www.WHO.org

Williams, B. (2005). Models and trends. In S. Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 405-418). New York: Cambridge University Press.

Williamson, C., & Martin, P. (2005). Origin, diversity and spread of HIV-1. In S. Abdool Karim & Q. Abdool Karim (Eds.), *HIV/AIDS in South Africa* (pp. 109-118). New York: Cambridge University Press.

Zilboorg, G. (1996). Some aspects of suicide. In J. Maltsberger & M. Goldblatt (Eds.), *Essential papers on suicide* (pp. 83-92). New York: New York University Press. Reprinted from *Suicide and Life-threatening Behaviour,* 1975, *5,* 131-139.

APPENDICES

APPENDIX A

DESCRIPTIVE DATA

MARITAL STATUS

					Total
			VCT Sample	Control Sample	
Marital status	Single	Count	13	54	67
		%	86.7%	98.2%	95.7%
	Married	Count	1	1	2
		%	6.7%	1.8%	2.9%
	Divorced	Count	1	0	1
		%	6.7%	.0%	1.4%
Total		Count	15	55	70
		%	100.0%	100.0%	100.0%

HOME LANGUAGE

					Total
			VCT Sample	Control Sample	
Home language	English	Count	0	31	31
		%	.0%	56.4%	44.3%
	Zulu	Count	9	13	22
		%	60.0%	23.6%	31.4%
	Setswana	Count	0	1	1
		%	.0%	1.8%	1.4%
	Suthu	Count	1	1	2
		%	6.7%	1.8%	2.9%
	Creole	Count	0	2	2
		%	0.0%	3.6%	2.9%
	Shona	Count	2	2	4
		%	13.3%	3.6%	5.7%
	Xhosa	Count	2	1	3
		%	13.3%	1.8%	4.3%
	Kinyarwanda	Count	0	1	1
		%	.0%	1.8%	1.4%
	Dhivehi	Count	0	2	2
		%	.0%	3.6%	2.9%
	Swazi	Count	0	1	1
		%	.0%	1.8%	1.4%
	No answer	Count	1	0	1
		%	6.7%	.0%	1.4%
Total		Count	15	55	70
		%	100.0%	100.0%	100.0%

NATIONALITY

			VCT Sample	Control Sample	Total
Nationality	South African	Count	11	43	54
		%	73.3%	78.2%	77.1%
	Botswana	Count	0	1	1
		%	.0%	1.8%	1.4%
	Mauritian	Count	0	2	2
		%	.0%	3.6%	2.9%
	Zimbabwe	Count	2	3	5
		%	13.3%	5.5%	7.1%
	Malawi	Count	0	1	1
		%	.0%	1.8%	1.4%
	Rwanda	Count	0	1	1
		% group	.0%	1.8%	1.4%
	British	Count	0	1	1
		%	.0%	1.8%	1.4%
	Maldivian	Count	0	2	2
		%	.0%	3.6%	2.9%
	Swazi	Count	0	1	1
		%	.0%	1.8%	1.4%
	Lesotho	Count	1	0	1
		%	6.7%	.0%	1.4%
	No answer	Count	1	0	1
		%	6.7%	.0%	1.4%
Total		Count	15	55	70
		%	100.0%	100.0%	100.0%

ETHNICITY

					Total
			VCT Sample	Control Sample	
Ethnicity	Black	Count	15	21	36
		%	100.0%	38.2%	51.4%
	Coloured	Count	0	2	2
		%	.0%	3.6%	2.9%
	White	Count	0	17	17
		%	.0%	30.9%	24.3%
	Indian	Count	0	15	15
		%	.0%	27.3%	21.4%
Total		Count	15	55	70
		%	100.0%	100.0%	100.0%

DEGREE

			VCT Sample	Control Sample	Total
Degree enrolled for	BA	Count	0	4	4
		%	.0%	7.3%	5.8%
	LLB	Count	0	7	7
		%	.0%	12.7%	10.1%
	Social Sciences	Count	5	28	33
		%	35.7%	50.9%	47.8%
	BSC	Count	1	3	4
		%	7.1%	5.5%	5.8%
	Psych Honours	Count	0	3	3
		%	.0%	5.5%	4.3%
	BCom	Count	1	4	5
		%	7.1%	7.3%	7.2%
	B Ed	Count	2	4	6
		%	14.3%	7.3%	8.7%
	B Agric	Count	1	0	1
		%	7.1%	.0%	1.4%
	Soc Sc Honours	Count	2	0	2
		%	14.3%	.0%	2.9%
	Theol PHD	Count	1	0	1
		%	7.1%	.0%	1.4%
	No answer	Count	1	2	3
		%	7.1%	3.6%	4.3%
Total		Count	14	55	69
		%	100.0%	100.0%	100.0%

YEAR OF STUDY

					Total
			VCT Sample	Control Sample	
Year of study	No answer	Count	2	0	2
		%	13.3%	.0%	2.9%
	1st	Count	1	33	34
		%	6.7%	60.0%	48.6%
	2nd	Count	3	6	9
		%	20.0%	10.9%	12.9%
	3rd	Count	6	11	17
		%	40.0%	20.0%	24.3%
	4th	Count	2	5	7
		%	13.3%	9.1%	10.0%
	5th	Count	1	0	1
		%	6.7%	.0%	1.4%
Total		Count	15	55	70
		%	100.0%	100.0%	100.0%

SEXUAL ORIENTATION

			VCT Sample	Control Sample	Total
Sexual orientation	Heterosexual	Count	12	41	53
		%	80.0%	74.5%	75.7%
	Gay	Count	1	1	2
		%	6.7%	1.8%	2.9%
	Lesbian	Count	0	1	1
		%	.0%	1.8%	1.4%
	Bisexual	Count	0	2	2
		%	.0%	3.6%	2.9%
	Unwilling to disclose/ no answer	Count	2	10	12
		%	13.3%	18.2%	17.1%
Total		Count	15	55	70
		%	100.0%	100.0%	100.0%

ARE YOU PRESENTLY INVOLVED IN A SEXUALLY ACTIVE RELATIONSHIP?

					Total
			VCT Sample	Control Sample	
Are you presently involved in a sexually active relationship?	Yes	Count	12	14	26
		%	80.0%	26.9%	38.8%
	No	Count	3	38	41
		%	20.0%	73.1%	61.2%
Total		Count	15	52	67
		%	100.0%	100.0%	100.0%

HIV STATUS

					Total
			VCT Sample	Control Sample	
HIV status	Positive	Count	15	0	15
		%	100.0%	.0%	21.4%
	Negative	Count	0	40	40
		%	.0%	72.7%	57.1%
	Unknown	Count	0	15	15
		%	.0%	27.3%	21.4%
Total		Count	15	55	70
		%	100.0%	100.0%	100.0%

NUMBER OF SESSIONS ATTENDED AT VCT CLINIC

				Total
			VCT Sample	
Number of sessions attended at VCT clinic	0	Count	2	2
		%	13.3%	13.3%
	3	Count	1	1
		%	6.7%	6.7%
	6	Count	1	1
		%	6.7%	6.7%
	9	Count	1	1
		%	6.7%	6.7%
	10	Count	1	1
		%	6.7%	6.7%
	11	Count	1	1
		%	6.7%	6.7%
	12	Count	1	1
		%	6.7%	6.7%
	14	Count	1	1
		%	6.7%	6.7%
	15	Count	1	1
		%	6.7%	6.7%
	20	Count	5	5
		%	33.3%	33.3%
Total		Count	15	15
		%	100.0%	100.0%

APPENDIX B

INSTRUMENTS

DEMOGRAPHIC QUESTIONNAIRE (VCT SAMPLE)

AGE: _____

GENDER: MALE _____ FEMALE _____

NATIONALITY: _____

MARITAL STATUS: SINGLE___ MARRIED____ DIVORCED __

ETHNICITY: BLACK COLOURED WHITE INDIAN
(Circle the relevant category - for statistical purposes only)

HOME LANGUAGE: _____

DEGREE ENROLLED FOR: _____

YEAR OF STUDY: _____

NUMBER OF SESSIONS ATTENDED AT VCT CLINIC: _____

ARE YOU INVOLVED IN A SEXUALLY ACTIVE RELATIONSHIP? YES __ NO __

SEXUAL ORIENTATION:
HETEROSEXUAL 1 GAY 2 LESBIAN 3 BISEXUAL 4
UNWILLING TO ANSWER 5
(Circle the relevant category)
IS SOMEONE CLOSE TO YOU SUFFERING FROM AN HIV/AIDS RELATED ILLNESS? YES _____ NO _____

HAS SOMEONE CLOSE TO YOU DIED OF AN HIV/AIDS RELATED ILLNESS?
YES ____ NO ____

HAVE YOU EVER THOUGHT ABOUT TAKING YOUR LIFE? YES_____
NO_____

HAVE YOU EVER TRIED TO TAKE YOUR LIFE? YES ____ NO ____

HAVE YOU PREVIOUSLY RECEIVED EMOTIONAL COUNSELLING OR PSYCHOTHERAPY? YES ____ NO ___
IF YES: REASON FOR SEEKING HELP :
_____
_____

WHERE DID YOU RECEIVE THIS HELP? _____

DATE WHEN YOU RECEIVED YOUR HIV TEST RESULTS: _____
PLACE WHERE RESULT WAS RECEIVED 1 _____

MOST RECENT CD4 CELL COUNT (IF APPLICABLE): _____
DATE WHEN ABOVE CD4 CELL COUNT WAS RECEIVED: _____

DO YOU HAVE ANY PHYSICAL SYMPTOMS RELATED TO YOUR HIV POSITIVE STATUS? YES _____ NO ___
IF YES: HOW OFTEN DO THESE PHYSICAL SYMPTOMS INTERFERE WITH YOUR QUALITY OF LIFE?

NO AT ALL 1 SOMETIMES 2 OFTEN 3
MOST OF THE TIME 4
(Circle the relevant category)

PLEASE LIST THESE SYMPTOMS STARTING FROM THE MOST SEVERE TO THE LEAST SEVERE

_____
_____

ARE YOU TAKING ANTI- RETROVIRAL DRUGS? YES ___ NO ___

IF YES: DATE WHEN YOU BEGAN TAKING ANTI-RETROVIRAL DRUGS
_____

ARE YOU PRESENTLY EXPERIENCING SIDE EFFECTS DUE TO TAKING THESE DRUGS THAT INTERFERE
WITH YOUR QUALITY OF LIFE? YES _____ NO ____
IF YES: HOW OFTEN DO THESE SIDE EFFECTS INTERFERE WITH YOUR QUALITY OF LIFE?

NOT AT ALL 1 SOMETIMES 2 OFTEN 3
MOST OF THE TIME 4
(Circle the relevant category)

PLEASE LIST THE SIDE EFFECTS THAT YOU ARE EXPERIENCING STARTING FROM THE MOST SEVERE TO THE LEAST SEVERE:

_____
_____

DID YOU EVER EXPERIENCE ANY EMOTIONAL PROBLEMS BEFORE RECEIVING YOUR HIV POSITIVE RESULT? YES ___ NO ____
IF YES: DESCRIBE THE PROBLEMS YOU WERE EXPERIENCING:

_____
_____

DEMOGRAPHIC QUESTIONNAIRE (CONTROL SAMPLE)

AGE: _____

GENDER: MALE ___ FEMALE ___

NATIONALITY: _____

MARITAL STATUS: SINGLE ___ MARRIED ____ DIVORCED _____

ETHNICITY: BLACK 1 COLOURED 2 WHITE 3 INDIAN 4
(Circle the relevant category - for statistical purposes only)

HOME LANGUAGE: _____

DEGREE ENROLLED FOR: _____

YEAR OF STUDY: _____

ARE YOU INVOLVED IN A SEXUALLY ACTIVE RELATIONSHIP?
YES ____ NO ____

SEXUAL ORIENTATION: HETEROSEXUAL 1 GAY 2 LESBIAN 3
BISEXUAL 4 UNWILLING TO DISCLOSE 5
(Circle the relevant category)

IS SOMEONE CLOSE TO YOU SUFFERING FROM AN HIV/AIDS RELATED ILLNESS? YES____ NO____

HAS SOMEONE CLOSE TO YOU DIED OF AN HIV/AIDS RELATED ILLNESS?
YES____ NO____

HAVE YOU EVER THOUGHT ABOUT TAKING YOUR LIFE? YES__ NO__

HAVE YOU EVER TRIED TO TAKE YOUR LIFE? YES____ NO____

HAVE YOU EVER RECEIVED EMOTIONAL COUNSELLING OR PSYCHOTHERAPY? YES ____ NO __
IF YES: REASON FOR SEEKING HELP :
_____
_____

WHERE DID YOU RECEIVE THIS HELP? _____

HIV STATUS: POSITIVE 1 NEGATIVE 2 UNKNOWN 3

UNWILLING TO DISCLOSE 4
(Circle the relevant category)

IF HIV POSITIVE:

DATE WHEN YOU RECEIVED YOUR HIV TEST RESULT: _____
PLACE WHERE RESULT WAS RECEIVED: _____

MOST RECENT CD4 CELL COUNT (IF APPLICABLE): _____
DATE WHEN ABOVE CD4 CELL COUNT WAS RECEIVED _____

DO YOU HAVE ANY PHYSICAL SYMPTOMS RELATED TO YOUR HIV POSITIVE STATUS? YES ____ NO ____
IF YES: HOW OFTEN DO THESE PHYSICAL SYMPTOMS INTERFERE WITH YOUR QUALITY OF LIFE?

NO AT ALL 1 SOMETIMES 2 OFTEN 3
MOST OF THE TIME 4
(Circle the relevant category)

PLEASE LIST THESE SYMPTOMS STARTING FROM THE MOST SEVERE TO THE LEAST SEVERE

_____
_____

ARE YOU TAKING ANTI- RETROVIRAL DRUGS? YES ___NO ____

IF YES: DATE WHEN YOU BEGAN TAKING ANTI-RETROVIRAL DRUGS _____

ARE YOU PRESENTLY EXPERIENCING SIDE EFFECTS DUE TO TAKING THESE DRUGS THAT INTERFERE WITH YOUR QUALITY OF LIFE? YES _____ NO_____

IF YES: HOW OFTEN DO THESE SIDE EFFECTS INTERFERE WITH YOUR QUALITY OF LIFE?:

NOT AT ALL 1 SOMETIMES 2 OFTEN 3
MOST OF THE TIME 4
(Circle the relevant category)
PLEASE LIST THE SIDE EFFECTS THAT YOU ARE EXPERIENCING STARTING FROM THE MOST SEVERE TO THE LEAST SEVERE:

_____
_____

DID YOU EVER EXPERIENCE ANY EMOTIONAL PROBLEMS BEFORE RECEIVING YOUR
HIV POSITIVE RESULT? YES ____ NO ____
IF YES: DESCRIBE THE PROBLEMS YOU WERE EXPERIENCING:

_____
_____

BECK HOPELESSNESS SCALE (BHS)

This questionnaire consists of a list of twenty statements (sentences). Please read the statements carefully one by one.

If the statement describes your attitude for the past week, including today, write down TRUE next to it. If the statement is false for you, write FALSE next to it. You may simply write T for TRUE and F for FALSE. Please be sure to read each sentence.

_____ A. I look forward to the future with hope and enthusiasm.

_____ B. I might as well give up because there's nothing I can do about making things better for myself

_____ C. When things are going badly, I am helped by knowing that they can't stay that way for ever.

_____ D. I can't imagine what my life would be like in ten years time.

_____ E. I have enough time to accomplish the things I most want to do.

_____ F. In the future I expect to succeed in what concerns me most.

_____ G. My future seems dark to me.

_____ H. I happen to be particularly lucky and I expect to get more of the good things in life than the average person.

_____ I. I just don't get the breaks, and there's no reason to believe I will in the future.

_____ J. My past experiences have prepared me well for my future.

_____ K. All I can see ahead of me is unpleasantness rather than pleasantness.

_____ L. I don't expect to get what I really want.

_____ M. When I look ahead to the future I expect I will be happier than I am now.

_____ N. Things just won't work out the way I want them to.

_____ O. I have great faith in the future.

_____ P. I never get what I want so it's foolish to want anything.

_____ Q. It is very unlikely that I will get any real satisfaction in the future.

_____ R. The future seems vague and uncertain to me.

_____ S. I can look forward to more good times than bad times.

_____ T. There's no use in really trying to get something I want because I probably won't get it.

SOCIAL SUPPORT QUESTIONNAIRE

PLEASE READ ALL DIRECTIONS ON THIS PAGE BEFORE STARTING

Please list each significant person in your life on the right. Consider all the persons who provide personal support for you or who are important to you.

Use only first names or initials, and then indicate the relationship, as in the following example:

Example:

	First Name or Initials	Relationship
1.	Mary T	friend
2.	Bob	brother
3.	M.T.	mother
4.	Sam	friend
5.	Mrs. R.	neighbor

etc.

Use the following list to help you think of the people important to you, and list as many people as apply in your case.

- spouse or partner
- family members or relatives
- friends
- work or school associates
- neighbors
- health care providers
- counselor or therapist
- minister/priest/rabbi
- other

You do not have to use all 24 spaces. Use as many spaces as you have important persons in your life.

WHEN YOU HAVE FINISHED YOUR LIST, PLEASE TURN TO PAGE 2.

Note: Before use, pages 1-4 should be cut along the dashed center line to allow the response lines for Questions 1-6 to align with the Personal Network list on page 5.

number that applies.

0 = not at all
1 = a little
2 = moderately
3 = quite a bit
4 = a great deal

Question 1:

How much does this person make you feel liked or loved?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[EMO1]

Question 2:

How much does this person make you feel respected or admired?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[EMO2]

GO ON TO NEXT PAGE

Note: Before use, pages 1-4 should be cut along the dashed center line to allow the response lines for Questions 1-6 to align with the Personal Network list on page 5.

0 = not at all
1 = a little
2 = moderately
3 = quite a bit
4 = a great deal

Question 3:

How much can you confide in this person?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[EMO3]

Question 4:

How much does this person agree with or support your actions or thoughts?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[EMO4]

GO ON TO NEXT PAGE

Note: Before use, pages 1-4 should be cut along the dashed center line to allow the response lines for Questions 1-6 to align with the Personal Network list on page 5.

0 = not at all
1 = a little
2 = moderately
3 = quite a bit
4 = a great deal

Question 5:

If you needed to borrow $10, a ride to the doctor, or some other immediate help, how much could this person usually help?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[AID5]

Question 6:

If you were confined to bed for several weeks, how much could this person help you?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[AID6]

GO ON TO NEXT PAGE

Note: Before use, pages 1-4 should be cut along the dashed center line to allow the response lines for Questions 1-6 to align with the Personal Network list on page 5.

Question 7:

How long have you known this person?

1 = less than 6 months
2 = 6 to 12 months
3 = 1 to 2 years
4 = 2 to 5 years
5 = more than 5 years

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[DURATION]

Question 8:

How frequently do you usually have contact with this person? (Phone calls, visits, or letters)

5 = daily
4 = weekly
3 = monthly
2 = a few times a year
1 = once a year or less

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[FREQCON]

PLEASE BE SURE YOU HAVE RATED EACH PERSON ON EVERY QUESTION. GO ON TO THE LAST PAGE.

Date _____

PERSONAL NETWORK

	First Name or Initials	Relationship	
1.	_____	_____	[SOU1]
2.	_____	_____	[SOU2]
3.	_____	_____	[SOU3]
4.	_____	_____	[SOU4]
5.	_____	_____	[SOU5]
6.	_____	_____	[SOU6]
7.	_____	_____	[SOU7]
8.	_____	_____	[SOU8]
9.	_____	_____	[SOU9]
10.	_____	_____	[SOU10]
11.	_____	_____	[SOU11]
12.	_____	_____	[SOU12]
13.	_____	_____	[SOU13]
14.	_____	_____	[SOU14]
15.	_____	_____	[SOU15]
16.	_____	_____	[SOU16]
17.	_____	_____	[SOU17]
18.	_____	_____	[SOU18]
19.	_____	_____	[SOU19]
20.	_____	_____	[SOU20]
21.	_____	_____	[SOU21]
22.	_____	_____	[SOU22]
23.	_____	_____	[SOU23]
24.	_____	_____	[SOU24]

9. During the past year, have you lost any important relationships due to moving, a job change, divorce or separation, death, or some other reason?

_____ 0. No
_____ 1. Yes [LOSS]

IF YOU LOST IMPORTANT RELATIONSHIPS DURING THIS PAST YEAR:

9a. Please indicate the number of persons from each category who are *no longer available* to you.

_____spouse or partner [LOSS1]
_____family members or relatives [LOSS2]
_____friends [LOSS3]
_____work or school associates [LOSS4]
_____neighbors [LOSS5]
_____health care providers [LOSS6]
_____counselor or therapist [LOSS7]
_____minister/priest/rabbi [LOSS8]
_____other (specify) _____ [LOSS9]

[LOSSNO]

9b. Overall, how much of your support was provided by these people who are no longer available to you? [LOSSAMT]

_____ 0. none at all
_____ 1. a little
_____ 2. a moderate amount
_____ 3. quite a bit
_____ 4. a great deal

APPENDIX C

CONSENT FORM (VCT SAMPLE)

I am Adele Hamilton from the Psychology Department at the University of KwaZulu-Natal (Pietermatizburg). We are conducting research on issues related to student health and would like you to answer some questionnaires which should take about 45 minutes to complete. We feel that the findings could benefit all students as they may be used to improve health services on campus. The results from this research will also form part of a Masters degree.

Please understand that **your participation is voluntary** and you are not being forced to take part in this study. The choice of whether to participate or not, is yours alone. However, we would really appreciate you completing the questionnaires. If you choose not to take part, you will not be affected in any way whatsoever. If you agree to participate you may choose to withdraw at any time. If you do this there will not be any penalties and you will NOT be prejudiced in ANY way.

Your name will not be recorded on any of the questionnaires and no one will be able to link you to the answers you give. To ensure confidentiality, I will not have contact with you as the VCT counsellor will give you the questions to fill in which you will do privately. You will then seal them in the envelope given to you and return them to the VCT counsellor. The VCT counsellor will not read any of the information you have given. I will then collect the sealed envelopes.

If you would like to receive feedback on the findings of this study, please email me at the following address. This address is password protected and so will not be accessible to anyone else. There will also be no way of me linking you to the questionnaires you filled in.

If you should find that after participating in this study that you have any concerns about your physical or emotional well-being please contact the clinic (telephone 260 5208) or the Student Counselling Centre (telephone 260 5233) on campus or Lifeline (telephone 394 4444) for confidential assistance.

CONSENT FORM (CONTROL SAMPLE)

Hello, my name is Adele Hamilton from the Psychology Department at the University of KwaZulu-Natal (Pietermatizburg). We are conducting research on issues related to student health and would like you to answer some questionnaires which should take about 45 minutes to complete. We feel that the findings could benefit all students as they may be used to improve health services on campus. The results from this research will also form part of a Masters degree.

Please understand that **your participation is voluntary** and you are not being forced to take part in this study. The choice of whether to participate or not, is yours alone. However, we would really appreciate you completing the questionnaires. If you choose not to take part, you will not be affected in any way whatsoever. If you agree to participate you may choose to withdraw at any time. If you do this there will not be any penalties and you will NOT be prejudiced in ANY way.

Your name will not be recorded on any of the questionnaires and no one will be able to link you to the answers you give. After completing them you will seal them in the envelope given to you and put them in the box provided. The lecturer will not read any of the information you have given. I will then collect the sealed envelopes from the box. Should you not wish to complete the questionnaires but do not want to be identified as not participating you may return blank questionnaires in the sealed envelope.

If you would like to receive feedback on the findings of this study, please email me at the following address: Buckingham@ifrica.com. This address is password protected and so will not be accessible to anyone else. There will also be no way of me linking you to the questionnaires you filled in.

If you should find that after participating in this study that you have any concerns about your physical or emotional well-being please contact the clinic (telephone 260 5208) or the Student Counselling Centre (telephone 260 5233) on campus or Lifeline (telephone 394 4444) for confidential assistance.

CONSENT TO PARTICIPATE IN RESEARCH STUDY

By completing these questionnaires I am consenting to participate in the research study regarding student health and I have read and understood the information given to me about this study. I understand that I am participating freely and without being forced in any way to do so. I also understand that I can choose not to participate at any point and that this decision will not in any way affect me negatively.

I understand that this is a research project whose purpose is not necessarily to benefit me personally. I have received the telephone numbers of places that I can access help should I feel physically or emotionally affected by my participation.

I understand that my answers will remain confidential. I understand that if I want to, I can receive feedback on the results of the completed research.