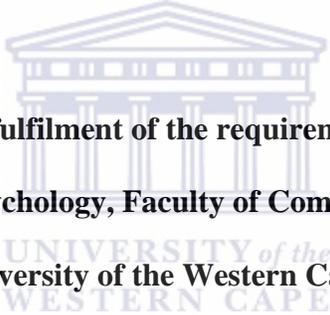


**EXAMINING ANXIETY AND SOCIAL SUPPORT IN ADULTS DIAGNOSED WITH HIV OR  
AIDS IN A PUBLIC HEALTH CLINIC IN THE WESTERN CAPE PROVINCE**

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**Mini-thesis submitted in partial fulfilment of the requirements for the degree of Masters in  
Research in the Department of Psychology, Faculty of Community and Health Sciences, at the  
University of the Western Cape.**

The logo of the University of the Western Cape is centered in the background. It features a classical building facade with a pediment and columns, rendered in a light blue color. Below the building, the text "UNIVERSITY of the WESTERN CAPE" is written in a serif font, with "of the" in a smaller, italicized font.

**November 2009**

**Supervisor: Professor P. Naidoo**

**Co-supervisor: Professor K. Mwaba**

## Declaration

I, Petronella Nondumiso Nompilo Majozi, declare that *Investigating anxiety and social support in adults diagnosed with HIV or AIDS in a public health facility in the Western Cape Province* is my own work, that it has not previously in its entirety or in part been submitted at any other university for a degree, and that all the sources I have used or quoted have been indicated and acknowledged by complete references. This study is part of a larger study entitled “*Implicative personal dilemmas and cognitive conflicts in health decision-making in HIV positive adults and adults with AIDS.*”

Date: .....

Signed:.....



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First and foremost, I thank God Almighty for giving me strength throughout this project and his grace that helped me to press on when I wanted to give up.

I also wish to express my sincere gratitude to the individuals listed below, without whose assistance this study would not have been possible:

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To mom and dad, thank you for allowing me to pursue my dreams and for picking me up when I fall. Your support has been amazing, thank you.

## DEDICATION

This thesis is dedicated to my loving husband Eugene Machimana who has been a pillar of strength throughout the year. Thank you for all the hard work you put in to make it possible for me to finish this project. Wishing you everything of the best with your own Masters studies.



## **Keywords**

Human Immunodeficiency Virus

Acquired Immune Deficiency Syndrome

Anti retroviral therapy

Anxiety

Social support

Adults

Bio-psycho-social model

Public health

Quantitative

Cross sectional study



## ABSTRACT

Globally, and especially in Sub-Saharan Africa the advent of HIV and AIDS has created new inequalities within already challenged health care systems. Chronic illnesses have often been associated with increased prevalence of psychological symptoms. Both national and international studies have found a strong association between psychiatric morbidity and HIV and AIDS. Furthermore, studies have found that social support contributes to positive adjustment of individuals infected with HIV and provides a buffer against the effects of anxiety. The aim of this study was therefore to examine anxiety and social support in adults diagnosed with HIV or AIDS at a public health clinic in the Western Cape. The objectives in relation to the aim were: (1) To determine the prevalence of anxiety in adults diagnosed with HIV or AIDS. (2) To determine the degree of social support, as a component of quality of life, in adults diagnosed with HIV or AIDS. (3) To examine the relationship between anxiety and social support in adults diagnosed with HIV or AIDS. The broad theoretical framework that guides this study is the bio-psycho-social model. A cross-sectional design was used in which 70 participants were recruited using a purposive sampling method. Participants were assessed using well-validated self-administered questionnaires: Hospital Anxiety and Depression Scale (HADS) and Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q). Data were analysed using the Statistical Package for the Social Sciences (SPSS) version 17.1. Correlational and inferential statistics were conducted. The findings of this study indicated that participants in this study had higher levels of anxiety (28%) when compared to the general population (15.8%). Participants in this study, indicated a 59% enjoyment and satisfaction with social support, which indicates satisfaction with social support some of the time. There was however no significant relationship between anxiety and social support in this study. HIV

intervention efforts should include screening HIV positive individuals for the presence of psychiatric symptoms. Interventions should also include encouraging HIV positive individuals to maintain and expand their social networks.



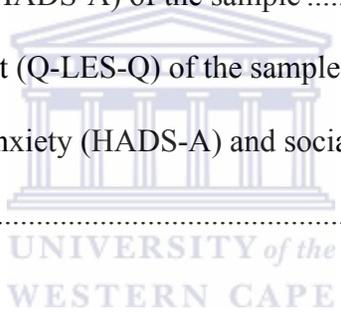
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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to this study

Human Immunodeficiency Virus (HIV) is defined as a retrovirus, which causes AIDS. It is markedly characterised by a CD4 count above 200 (Kirch, 2008). Acquired Immune Deficiency Syndrome (AIDS) on the other hand is characterized by a CD4 count below 200 per ml and a viral load of 100 000 to 1 million per ml plasma. It is the last stage of HIV infection (Jackson, 2002; Korn, 2008).

HIV and AIDS is one of the leading causes of morbidity and mortality in the world, especially in developing countries (Myer, Seedat, Stein, Moomal & Williams, 2009). Globally, it is estimated that 33 million people are living with HIV, with an annual rate of 2.7 million new infections with Sub-Saharan Africa being the region with the highest infection rates. This region accounts for 67% of the global HIV prevalence and 72% of AIDS related deaths (UNAIDS/WHO, 2008a). South Africa (SA) has the highest infection rates of HIV in Sub-Saharan Africa. In 2008, it was estimated that SA had an adult<sup>1</sup> HIV prevalence rate of 5.4 million (Statistics South Africa, 2008), which was an increase from the 2001 estimates of 4.6 million. At the provincial level, the HIV prevalence rate is highest in KwaZulu-Natal with an estimated 39.1% followed by Mpumalanga and Free State with 32.1% and 31.1% respectively. The Western Cape is the least affected province in SA with an HIV prevalence rate of 15.1% (UNAIDS/WHO, 2008b). The majority of those infected in the Western Cape are in the townships (Shisana & Simbayi, 2002). In South Africa, a township denotes an urban area,

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<sup>1</sup> UNAIDS/WHO as well as Statistics South Africa uses the term adult to denote any person who is 15 years or older.

which in the apartheid era was set aside for Black (non-white) people (Allen, 1990). These areas are usually located on the periphery of towns or cities.

Since the year 2000 the global percentage of people living with HIV has been stabilizing. One of the major reasons for this stabilization is attributed to the global rollout of antiretroviral therapy (ART) (UNAIDS/WHO, 2008a). The administration of ART treatment in Sub-Saharan Africa has greatly decreased the number of AIDS related deaths, which subsequently increased the HIV prevalence rates as infected individuals are now living longer. Although the administration of ART is showing positive results, there are however large numbers of people that are not yet on treatment (Doherty & Colvin, 2004). In 2008 an estimated 3 million people were receiving treatment globally (UNAIDS/WHO, 2008a). An estimated 460 000 HIV positive South Africans are currently on ART, while an estimated 1 700 000 people are still in need of ART in this country. These figures of people currently receiving treatment in SA, include both private and public sector estimates (UNAIDS/WHO, 2008b).

The exponential increase in HIV or AIDS and its subsequent increase in mortality rates have substantially contributed to the burden of mental disorders especially in developing countries (Myer, Seedat, Stein, Moomal & Williams, 2009). The awareness of this burden placed by HIV or AIDS on mental health has played a critical role in intensifying efforts that examine mental disorders in people with HIV or AIDS. This is partly due to mental health problems being a high risk factor for contracting the disease and also partly due to mental health problems being a consequence of HIV infection. Research conducted locally as well as internationally reveals that a chronic illness such as HIV or AIDS is often associated with

increased prevalence of psychological symptoms (Dew, *et al.*, 1997; Olley, Seedat & Stein, 2006; Sharpe & Curran, 2006).

One of the most common mental health problems to develop in people diagnosed with HIV or AIDS is anxiety (Kemppainen, *et al.*, 2003). The Diagnostic and Statistical Manual for Mental Disorders, fourth edition (DSM-IV-TR) (2000), defines anxiety as a “feeling of apprehension and fear characterized by physical symptoms such as palpitations, numbness, fear of dying, shortness of breath and sweating” (Sadock & Sadock, 2007). Having noted the DSM-IV-TR classification of anxiety it is important to note that in this study, participants will not be diagnosed using the DSM-IV-TR criteria for anxiety, but it is important to mention the DSM-IV-TR classifications to aid in understanding this psychiatric disorder. In this study anxiety will be measured using the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983), which is a scale that assesses the severity of anxiety disorders (Snaith, 2003). Anxiety in this study should therefore be understood in a general sense as no particular anxiety disorder is measured.

The prevalence of anxiety disorders in people diagnosed with HIV or AIDS is estimated to be 38% (Elliot, 1998 in Basu, Chwastiak & Bruce, 2005). The development of anxiety symptoms in people diagnosed with HIV or AIDS may be transient, but in some cases these symptoms can develop into clinical manifestations such as generalized anxiety disorder, phobias and post-traumatic stress disorder (Starace, *et al.*, 2002). Although studies have highlighted the impact that a positive HIV diagnosis can have on the mental health of individuals with HIV, further studies in this area have however been recommended (Shisana, *et al.*, 2009). It is

precisely this emphasis that has led to the examination of the prevalence of anxiety in the sample in this study.

The burden placed by HIV or AIDS on the mental health of those infected poses major challenges on the individuals' adaptive capabilities. An HIV positive diagnosis represents a very stressful challenge to many individuals, especially since such a diagnosis is usually associated with stigma in a number of communities (Kalichman & Simbayi, 2003). The stigma associated with an HIV positive diagnoses as well as the debilitating impact of HIV-related symptoms all shape the mental health processes of those infected with this disease. It is only once one gets an understanding of the mental health processes that one can help guide intervention that will help individuals to adapt to a severe illness such as HIV (Schmitz & Crystal, 2000). Based on a review of literature, Schmitz and Crystal (2000) argue that social support is the key to shaping mental health outcomes of those infected. In reviewing past literature they found that social support is strongly linked to positive health outcomes. It is therefore this understanding that has lead many researchers to examine the role and the level of social support in individuals diagnosed with HIV or AIDS, as is the case in the present study.

The concept of social support has been variously defined and measured in the literature. Sarason, Levine, Basham and Sarason, (1983) assert that social support refers to: "(a) the perception that there is a sufficient number of available others to whom one can turn in time of need and (b) a degree of satisfaction with the available support" (p 128-129). A definition given by Cobb (1976 in Sarafino, 2002) states that social support is the perceived comfort, care, esteem or help a person receives from other people. Burgoyne and Saunders (2000, in

Ncama, et al., 2008) define social support in HIV and AIDS as the assistance that one is offered by one's social network rather than by a professional. Sarason, Levine, Basham and Sarason (1983), proposed that regardless of one's definition, social support should include two basic elements namely: "(a) the perception that there is a sufficient number of available others to whom one can turn in time of need and (b) a degree of satisfaction with the available support" (p 128-129). For the purpose of this study social support denotes the perceived degree of enjoyment and satisfaction with social relationships that the individual has experienced over the past week. This will be measured using the Social Relations sub-scale of the Quality of Life Satisfaction and Enjoyment Questionnaire (Q-LES-Q). This questionnaire examines different aspects of quality of life including physical health, subjective feelings of well-being, leisure time activities, work, school, social relationships, household duties and general activities (Endicott, Nee, Harrison & Blumental, 1993).

In a longitudinal study, Leserman, *et al.*, (2000) observed that subjects who scored low on support satisfaction progressed to AIDS much quicker than those who scored above the median on support satisfaction. They concluded that subjects who have lower levels of social support are at greater risk for HIV progression. The findings of Dew *et al.* (1997), which were conducted, with a group of HIV positive and negative men also highlight the crucial role played by intimate relationships in influencing risk for anxiety in both these populations. They found that men who were poorly supported by their partners were more likely to show signs of anxiety during their follow-up visits than those who indicated good partner support. Given the above attributes of social support in individuals with HIV and AIDS, it is the aim of the present study to further examine this concept in the broader context of quality of life.

## 1.2 Rationale and research question

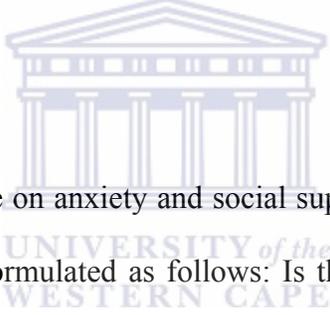
This study forms part of a larger study entitled, “*Implicative personal dilemmas and cognitive conflicts in health decision-making in HIV positive adults and adults with AIDS.*” Working within the broader study, the focus of this study is unique and distinct in that it specifically examines the prevalence of anxiety and the role that social support plays in the lives of adults diagnosed with HIV or AIDS.

The rationale for focusing on anxiety stems from the fact that a number of studies have shown an association between anxiety disorders and HIV infection. The presence of anxiety in an HIV infected individual often goes unnoticed because the symptoms of HIV infection (and many other disease conditions) and the symptoms of anxiety often overlap (Dew, *et al.*, 1997; Starace, *et al.*, 2002; Olley, *et al.*, 2003; Golden, Conroy & O’Dwyer, 2007). Kemppainen, *et al.*, (2003) have also found that participants with HIV or AIDS rarely seek assistance from health care professionals with regards to their fears and anxiety symptoms experienced. As a result of this, a large number of adults with HIV or AIDS are not receiving any psychiatric attention to help them deal with the effects of anxiety. This increases their vulnerability to a myriad of problematic behaviours as subjects with anxiety may lack the will power to adhere to treatment (Kemppainen, *et al.*, 2003).

A number of studies have shown the link between psychological adjustment, health and social support (Sarason, Levine, Basham & Sarason, 1983; Dew, *et al.*, 1997). Individuals with high social support demonstrate a more positive self-concept, low anxiety and high belief in their own abilities (Leserman, *et al.*, 2000; Galvan, Davis, Banks & Bing, 2008). The assertion that positive relationships with other people generate perseverance, which allows an individual to

face life's obstacles, is a very strong motivator to focus on social support in this study (Sarason, Levine, Basham & Sarason, 1983).

Although there are benefits to having good social support, a number of studies have shown that people with HIV or AIDS experience a number of psychosocial problems such as a loss of relationships, which results from stigma related to this illness (Fukunishi, *et al.*, 1997; Yakasai, 2004). As a result of this stigma, many people with HIV or AIDS often find themselves without social support, which could lead to increased levels of anxiety as well as accelerated progression of HIV or AIDS (Fekete, *et al.*, 2009). The rationale of this study is therefore to also get a better understanding of social support for people diagnosed with HIV or AIDS.



Based on the review of literature on anxiety and social support in adults with HIV and AIDS, the research questions can be formulated as follows: Is there a relationship between anxiety and social support in adults diagnosed with HIV or AIDS in a public health facility in the Western Cape Province, SA? In order to further contextualize the study, the aim and objectives of this study will be presented in the following section.

### **1.3 Aim**

The aim of this study as derived from the research question is to examine anxiety and social support in adults diagnosed with HIV or AIDS at a public health clinic in the Western Cape Province.

## 1.4 Objectives

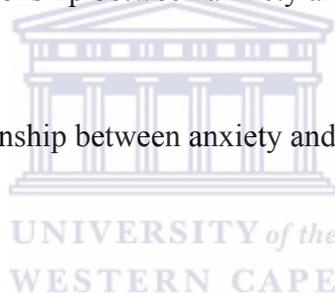
The objectives of this study in relation to the aim as specified above are:

1. To determine the prevalence of anxiety in adults diagnosed with HIV or AIDS.
2. To determine the degree of social support, as a component of quality of life, in adults diagnosed with HIV or AIDS.
3. To examine the relationship between anxiety and social support in adults diagnosed with HIV or AIDS.

## 1.5 Hypothesis

**H<sub>0</sub>:** There is no significant relationship between anxiety and social support in adults diagnosed with HIV or AIDS.

**H<sub>1</sub>:** There is a significant relationship between anxiety and social support in adults diagnosed with HIV or AIDS.



## 1.6 Outline of thesis

Chapter 2 commences with a review of the relevant literature consulted for this study. This chapter begins by highlighting the bio-psycho-social model, which is the theoretical framework used to frame this study. This is followed by the review of the relevant literature on HIV and AIDS, anxiety and social support. Both national and internal studies were consulted and findings and limitations of these studies were reported.

Chapter 3 provides a description of the methodology used in this study. This chapter outlines the research design, research setting, participants and sampling, procedure, data collection tools, data analysis and ethical considerations.

Chapter 4 reports on the results of the study. This chapter begins by reporting the socio-demographical characteristics of the sample, followed by descriptive statistics on anxiety and social support characteristics of the sample. This chapter ends by reporting the relationship between anxiety and social support in this study.

Chapter 5 begins with a discussion of the results from the previous chapter. This chapter also outlines the limitations and contributions of this study. This chapter concludes with recommendations for future studies in this field.



## CHAPTER TWO

### THEORETICAL FRAMEWORK AND REVIEW OF THE LITERATURE

#### 2.1 Introduction

In this chapter, the theoretical framework, namely the bio-psycho-social model (Engel, 1977) chosen for this study is presented. The importance of the theoretical underpinnings is highlighted, and its application to individuals diagnosed with HIV or AIDS is demonstrated. The chapter also reviews the literature on HIV and AIDS, anxiety and social support.

#### 2.2 Theoretical Framework

The concept of health implies a multifaceted definition, which includes psychological, physical, economic and spiritual attributes of health (Naidoo, 2004). Therefore, one can no longer simply isolate the physical, psychological or social needs of an individual, but instead a holistic view is required if practitioners are to better serve their patients. In light of this, George Engel's (1977) bio-psycho-social model of disease is used in this study to frame the psychological aspects of a life-long and terminal illness, namely HIV and AIDS. In this study the prevalence of anxiety and the degree of social support were investigated amongst adults diagnosed with HIV or AIDS in a public health clinic. Anxiety is examined using the Hospital Anxiety and Depression Scale (HADS), which is a screening tool capable of measuring symptoms of anxiety in adults with HIV or AIDS (Savard, Laberge, Gauthier, Ivers & Bergeron, 1998). Social support in this study refers to the level of satisfaction and enjoyment that a person has experienced in their social relationships. This will be measured using the Quality of Life and Enjoyment Questionnaire (Q-LES-Q), which measures social support in terms of health outcomes. According to the Q-LES-Q, levels of anxiety affect social support

(health outcome). High levels of anxiety result in lowered satisfaction and enjoyment with social relationships (Endicott, Nee, Harrison & Blumental, 1993).

The bio-psycho-social model is derived from the general systems approach, which was developed by Von Bertalanffy (1968). This approach stresses the integration of systems to human behaviour and disease. The premise of the systems approach is that all levels of organization (molecules, cells, organs and the organism) are linked to each other in a hierarchical relationship. Therefore a change in one organization (the cell for example) affects change in all the other organizations (Engel, 1977). In other words systems are interconnected. The optimal functioning of the whole system (in this case the individual), is therefore dependent on the interactions between all the other systems (such as the social, psychological and physical). A dysfunction in one part of the system (e.g. physical) will subsequently disrupt the functioning of the other systems (physical and psychological) (Orford, 1992). The bio-psycho-social model views disease in three broad categories, namely, physical, psychological and social systems (Sadock & Sadock, 2007). This approach allows for conceptualising disturbances at all levels, i.e. at the social, physical and psychological. Furthermore it allows one to have a more complex understanding of the factors that affect and influence an individual (Engel, 1962).

The biological system of the bio-psycho-social model emphasizes the anatomical, structural and molecular components of disease and how these affect the biological functioning of the individual (Sadock & Sadock, 2007). In the biological system it is suggested that cofactors may be involved in the progression of HIV due to the wide variance in the course of the disease. Bernard and Krupat (1993) have noted that some infected individuals deteriorate

much quicker than others and this may suggest genetic influences as genetic inheritance has shown to play a role in primary immune deficiency disorders.

The psychological system stresses the effects of psychodynamic factors, health beliefs and behaviours, motivation and personality on the experience of illness and the reaction to it (Bernard & Krupat, 1993; Sadock & Sadock, 2007). A diagnosis of HIV or AIDS can spark great fear and anxiety in individuals. This anxiety may be transient, but may become chronic if unattended. Thought distortions as a result of anxiety may therefore influence the way the individual thinks about their illness (Sadock & Sadock, 2007). Thought distortions affect coping skills and can increase stress levels, which as shown above, can accelerate the progression of the disease. Anxiety has also been found to affect perception and learning, which can result in confusion and distorted perceptions and meanings of events (Sadock & Sadock, 2007). These distorted thinking patterns may lead to risky sexual behaviour, which places the infected individual at risk of re-infection.

There are numerous interventions that have been used and shown to be successful in dealing with the psychological effects of an HIV positive diagnosis. Sarafino (2002) proposes the use of stress management, exercise and cognitive therapy to reduce anxiety in people with HIV or AIDS. Research has constantly shown that the use of such interventions reduces levels of anxiety in people with HIV or AIDS, which in turn results in stronger immune functioning. Even in cases of advanced HIV, the use of interventions to reduce anxiety produces stronger immune functioning (Antoni, Schneiderman, Fletcher, Goldstein, Ironson & Laperriere, 1990; Lutgendorf, *et al.*, 1997 in Sarafino, 2002). Not only does the treatment of anxiety produce positive physical effects, but can also have positive social effects. This shows the link between

anxiety and social support. When examining social support as a health outcome (quality of life), individuals who have higher psychological distress show negative social effects in that they show less satisfaction and enjoyment in social relationships. However, those with less psychological distress (anxiety) show greater satisfaction and fulfillment in their social relationships. It is therefore through understanding that the treatment of anxiety can have positive effects on infected individuals that the bio-psycho-social model has been used in this study.

The social dimension of the bio-psycho-social model highlights factors such as social support, education and the availability of adequate health care facilities and how these influence an individual's expression and experience of illness (Bernard & Krupat, 1993). Social interactions with friends, family, acquaintances and society at large have been found to affect an individual's expression and experience of health. Studies conducted on social support have shown that satisfactory and enjoyable interactions with friends, family and acquaintances can have positive effects on overall physical and mental health (Berkman, 1995; Sarafino, 2002).

According to Bowlby (1973 in Sarason, Levine, Basham & Sarason, 1983) social support strengthens an individual's capacity to withstand and overcome frustrations and challenges. In understanding the role played by social support in strengthening individual's capacity to withstand frustrations it is important that interventions for people with HIV or AIDS should enhance and encourage social support networks for this group of people. This will not only have positive effects on physical health, but will also have positive effects on mental health (anxiety). Therefore, a good understanding of issues around HIV or AIDS entails an awareness of the role that social networks contribute to overall health. The premise for the use of the bio-

psycho-social model in this study is therefore to strengthen social support, which will subsequently affect the biological and psychological systems.

From the above exploration of the bio-psycho-social model it is clear that a dysfunction in one system (biological) will inevitably affect the other systems (psycho-social) that make up the individual. It is from this theoretical understanding of health and illness that this study examines anxiety and social support. Through this theoretical framework, one can get a comprehensive understanding of disease and treatment. Furthermore, it is clear that HIV interventions should not only include ART, but should also take into account the psychological as well as social factors that influence an individual's health.

## **2.3 Review of the literature**

### **2.3.1 HIV and AIDS**

HIV is a retrovirus, which causes AIDS (Kirch, 2008). The HI virus weakens the immune system by attacking the Helper T cells or CD4 cells, which are the cells that fight infections in the body. Thus HIV destroys the body's ability to fight off infections such as tuberculosis or pneumonia. The HI virus is transmitted sexually or through direct contact with infected blood such as in the case of blood transfusions or through the use of contaminated needles. It can also be transmitted from the mother to the baby (mother-to-child transmission) (Kristensen, Sinkals & Vermund, 2002). By the turn of the century two types of HIV existed, namely HIV-1, which is the most common type globally, and HIV-2, which is only found in West Africa (Kirch, 2008).



AIDS is a chronic, infectious disease caused by HIV. It is characterized by a severe loss of immunity thus allowing deadly infections to develop. AIDS is the final stage of HIV infection (Zijenah & Katzenstein, 2002). According to the Center of Disease Control and Prevention (in Korn, 2008), there are three stages of HIV infection after the acute phase where the individual develops flu-like symptoms. The first stage is known as the asymptomatic stage characterized by a CD4 cell count above 500 and a viral load of 1000 to 100 000 copies of HIV per ml of plasma. At this stage the HIV infected individual shows no symptoms of infection and this can last for several years. The second stage is known as the symptomatic stage, which is characterized by a CD4 cell count of 200-500 cells per ml and a viral load below 100 000 per ml of plasma. This stage marks the beginning of AIDS related infections, which are commonly known as opportunistic infections. The last stage is characterized by a CD4 count below 200 per ml and a viral load of 100 000 to 1 million ml per plasma. This is the stage where the individual is said to have AIDS and where the individual experiences greater fatigue and increased physical limitations (Jackson, 2002; Korn, 2008).

### **2.3. 2 Socio-demographic factors in HIV or AIDS**

Studies reveal that particular socio-demographic factors play a role in the distribution of HIV in a population. International studies have found that factors such as level of education, race, employment status, socio-economic status and gender increases people's vulnerability to HIV infection (Dew, *et al.*, 1997; Holmes & Shea, 1997; UNAIDS, 2000; Tostes, Chalub & Botega, 2004). In most parts of the developed world HIV and AIDS is almost exclusively found amongst gay males, intravenous drug users and sex workers. In Sub-Saharan Africa however, infection is highest among females than males (Jackson, 2002; UNAIDS/WHO, 2008). Of the total adult population in SA, 19.3% accounts for infections in the female

population while 18.8% for males from the age of 20 to 64 (Statistics South Africa, 2008). A study conducted by Shisana, *et al.*, (2009) reveals similar findings. They found that both incidence and prevalence infection rates were higher amongst females than males. Incidence rates among females (3.6%) were more than twice that in males (2.7%). The prevalence rates for females between the age of 15 and 19 are 2.7 higher than that of males. This figure increases to 21.1% for females between 20 to 24 years of age and up to 32.7% among women aged 25-29.

There are a number of factors that contribute to the gender disproportions in HIV infection. One of the major factors that need to be addressed in order to sustain progress in reducing HIV is to attend to issues of human rights. Human rights violations such as in the case of gender inequality as well as stigma and discrimination need to be urgently addressed as they impede responses to the pandemic. Sub-Saharan Africa, has made great progress in ensuring that policies address gender inequality. These policies ensure that women have equal access to health care just like their male counterparts. This has improved the livelihood of women in many countries, but much still needs to be done to ensure more effective implementation of these policies (UNAIDS/WHO, 2008).

In a study of HIV positive women in a Brazilian population, Tostes, Chalub and Botega (2004) found that factors such as poverty, lower educational level, economic dependence, erroneous perception of low risk of infection in stable relationships and difficulty in negotiating condom use places women in greater danger of contracting HIV than their male counterparts. Also highlighted in this study is that women often delay using health services when they are sick because they prioritise the needs of their children and partner above their

own. Similar trends have been observed in SA (Ross & Deverell, 2004) as well as in Botswana and Swaziland (UNAIDS/WHO, 2008a).

Although HIV and AIDS affects people of all ages, differences have been observed in the distribution of this pandemic in different age groups. In the study by Shisana, *et al.* (2009), HIV prevalence peaked at different age groups. For males it peaked at the age of 30-34 with a 25.8% peak and for females it peaked between the ages 25-29 with a 32.7% peak rate. This study also reveals declines in HIV prevalence by age group. In children aged 2-14 years a decrease of 3.1% was observed as between 2002-2008. Between 2005 and 2008 infection rates also decreased in people aged 15-24 years.

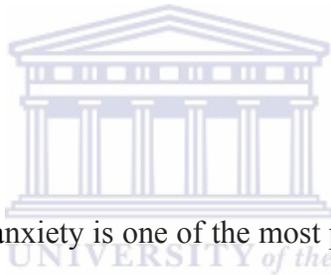
The above findings are similar to those conducted by the antenatal sero-prevalence survey (in Doherty & Colvin, 2004), which revealed a decline in HIV prevalence amongst 15 – 19 year old girls attending antenatal clinics. Although this decline was statistically non-significant it however showed a positive picture about the distribution of HIV in the different age groups (Doherty & Colvin, 2004). Although there is a decrease in HIV prevalence in this age group, global surveys from 64 nations show that much still needs to be done in this age range in terms of increasing accurate information on how to avoid HIV exposure and infection. Differences were especially noted between males and females in terms of knowledge of HIV infection. Males (40%) had more accurate knowledge about HIV and AIDS and how to prevent infection than their female counterparts (38%) (UNGASS Indicator in UNAIDS/WHO, 2008).

Although there were observed decreases in the different age groups, the findings by Shisana, *et al.* (2009) also reveal that there was an estimated 1.3% increase in prevalence rates in

people aged 25 years and older. Increases were also observed in people between 15 and 49 years of age. This study has thus highlighted that males between the age of 25 and 49 years and females between the age of 20 and 34 years were regarded as the groups that were most at risk of contracting HIV.

Poverty continues to place individuals at risk of HIV infection for a variety of reasons. Having said this, it is crucial to note that HIV is not exclusively the disease of the poor, but affects the rich and wealthy in different ways (Doherty & Colvin, 2004). However, low socio-economic factors, which include occupation, education and income, make people more vulnerable to infection. Both qualitative and quantitative studies have found that socio-economic status is correlated with illness and mortality (Marks, Murray, Evans & Willig, 2000). For example, a study conducted by Dunkle, Jewkes, Brown, Gray, McIntyre and Harlow (2004) in Soweto, SA, reveals that issues such as “ever earning money” and living in substandard housing were amongst the highly reported factors for engaging in transactional sex. Women who would otherwise not engage in transactional sex were forced by their living conditions to engage in such risky behavior. This study also revealed that women who had post-secondary education were less likely to engage in transactional sex than those who had lower levels of education. In contrast to this finding, the HSRC report (in Doherty & Colvin, 2004); found no association between level of education and HIV infection. In fact, what they found was that HIV infection was higher in people with a matriculation level of education (21,1%) than those with no schooling (8.7%). The contradictions in the results of these two studies should be understood in terms of the way the term education has been conceptualized in these two studies.

In a study conducted by Gordillo, Amo, Soriano and Gonzalez-Lahoz (1999), an association was found between levels of education and adherence to ART treatment. People with low levels of education were less likely to adhere to treatment while people with a university degree had higher levels of adherence. They also found that having a job was positively correlated with better treatment adherence while individuals without jobs were less likely to adhere to treatment. Furthermore, adherence to treatment was positively correlated with the level of CD4 cell count. It was found that subjects with a CD4 cell count below 200 cells X 10<sup>6</sup>/l and those whose CD4 cell count was unknown were less likely to adhere to treatment. Subjects with CD4 cell counts above 200 cells X 10<sup>6</sup>/l showed statistically significant adherence levels.



## **2.4 Anxiety**

Several studies have found that anxiety is one of the most prevalent mental disorders in people with HIV and AIDS. These studies also reveal higher anxiety levels in people with HIV and AIDS than in the general population (Savard, *et al.*, 1998; Olley, *et al.*, 2003; Kemppainen, *et al.*, 2003; Shisana, *et al.*, 2005). The high prevalence of anxiety in HIV infected individuals is precisely the reason that this study focuses on this variable in order to determine the exact nature of this prevalence in a public health clinic.

Anxiety is primarily not pathological but an ever-present phenomenon, which is necessary for human survival. Only in its extreme form does anxiety become pathological (Lingen, 2008). According to the DSM-IV-TR, anxiety disorders include the following: panic, agoraphobia, specific phobia, social phobia, obsessive-compulsive disorder, post traumatic disorder, acute stress disorder and generalized anxiety disorders (American Psychiatric Association, 2000).

Globally anxiety disorders are among the frequently reported psychological disorders with approximately 1-2% of the population requiring treatment. Remission is very rare for people suffering from anxiety disorders, as they tend to become chronic at an early stage. Individuals with one type of anxiety disorder have a 50% probability of developing a second anxiety disorder or another psychological disorder such as depression. Anxiety sufferers are also prone to using substances. In most cases, the anxiety-substance use combination results from the sufferers attempt to treat anxiety themselves. The sufferer will use substances with the perception that this will help in overcoming feelings of apprehension and fear (Lingen, 2008). Anxiety is usually chronic, has a strong association with significant morbidity and resistant to treatment. Anxiety is found to be higher in women (30.5%) than in men (19.2%) (Sadock & Sadock, 2007). This trend is consistent with that found in SA, where mood and anxiety disorders have been observed to be higher in women than in men (Stein, Seedat, Herman, Moomal, Heeringa, Kessler & Williams, 2008). Anxiety disorders are the main prevalent psychological disorder in the USA, affecting an estimated number of 30 million people (Sadock & Sadock, 2007). In SA, anxiety is classified as the most prevalent class of disorder affecting an estimated of 15.8% of the population (Stein, *et al.*, 2008).

#### **2.4.1 Anxiety in HIV and AIDS**

The results from several studies have noted high prevalence of anxiety in people diagnosed with HIV and AIDS. It is therefore imperative that appropriate psychological screening among patients with HIV be conducted (Safren, Gershuny & Hendriksen, 2003). The most common anxiety disorders often displayed by people with HIV and AIDS includes death anxiety, post-

traumatic stress disorder (PTSD), and panic disorder (Morrison, *et al.*, 2002 in Basu, Chwastiak & Bruce, 2005).

A study by Savard, *et al.* (1998) found that people infected with HIV had high levels of distress especially anxiety. In this study anxiety was measured using the Zigmond and Snaith's (1983) Hospital and Anxiety and Depression Scale (HADS). Using the suggested cutoff scores, they found that nearly half of the 38 participants showed clinical levels of anxiety. Although the HADS is a screening tool, these findings are similar to those conducted with more clinically based measures of anxiety. A study conducted by Shisana, *et al.* (2005) in SA also found higher levels of anxiety among HIV positive individuals than those that tested negative. Individuals who tested positive were more likely "to have had some experiences in the past that they thought about often and which made them feel tense or frightened" (34.4% vs 26.4%), and to experience a "period during last 12 months lasting a month or longer when felt worried tense or anxious (24.8% vs 23.0%) than those that were negative.

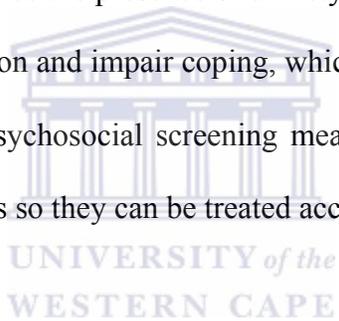
Several researchers have found that anxiety levels vary depending on the stage of infection, time since notification and population (Kemppainen, *et al.*, 2003). People in the earliest stages of HIV infection have generally been found to have higher levels of anxiety than those in later stages (Jones, Garcia, Wu, Job & Dunn, 1995; Rabkin, Goetz, Remien, Williams, Todak & Gorman, 1997). This is consistent with findings on depression by Dew *et al.* (1997), which reported that HIV positive men were more likely to develop major depression in the early stages of infection than those in later stages. Increased levels of anxiety are highly associated with low adherence to ART and causes major physical disruptions (Kemppainen, *et al.*, 2003).

According to a study conducted by Morrison, *et al.* (2002) individuals who showed high levels of anxiety were less likely to follow through with ART than those with lower levels of anxiety.

According to the DSM-IV-TR, the diagnoses of a life-threatening illness are classified as a trauma that could lead to Post Traumatic Stress Disorder (PTSD) (American Psychiatric Association, 1994). PTSD is one type of anxiety disorder that is most prevalent in people with HIV and AIDS (Starace, 2002). Since HIV and AIDS is a life threatening illness, as it is a chronic illness with no cure, it can therefore be classified as a trauma that could lead to PTSD (Safren, Gershuny & Hendriksen, 2003). Olley, Seedat and Stein (2005), note the high prevalence of PTSD in a sample of 149 recently diagnosed HIV patients. They found that the presence of PTSD in this sample population was much higher than reported in patients exposed to other life-threatening physical illnesses. This study also reported higher levels of PTSD on follow up (20%) than at baseline (15%). The authors postulate that this increase could be due to a delayed onset of PTSD or could signify the occurrence of new trauma that the individual may have experienced between baseline and follow up. Furthermore this study revealed that PTSD on follow up was related to a longer duration of HIV infection. Although the study by Olley, Seedat and Stein (2005) reported on PTSD levels of recently diagnosed HIV patients, the results of their findings is however validated by a study conducted on individuals who had known their HIV status for an average of eight years. This study reported a high prevalence of PTSD even after eight years of HIV diagnosis (Sledjeski, Delahanty & Bogart, 2005).

Another study conducted on HIV positive individuals by Safren, Gershuny and Hendriksen (2003), which examined the frequency of self-reported symptoms of posttraumatic stress

disorder (PTSD) and medication adherence revealed that more than half of the participants met the DSM-IV criteria for PTSD. On further analysis, PTSD was positively correlated with death anxiety and depression, which means that an increase in PTSD results in an increase in depression and death anxiety. PTSD, anxiety and depression were however negatively correlated with social support, which means that as social support increased, there was a decrease in all three of these variables. This study also found that high levels of PTSD were associated with low treatment adherence. This low treatment adherence results from an impaired coping and the inability to manage the diagnosis of HIV. As stated by Sadock and Sadock (2007) anxiety affects thinking, perception and learning as well as produces confusion and distortions of perception. Since the presence of anxiety in individuals with HIV and AIDS can significantly distort perception and impair coping, which could lead to non-adherence with treatment it is important that psychosocial screening measures be included in the treatment plan for HIV positive individuals so they can be treated accordingly



A study conducted by Kemppainen, *et al.* (2003) established that fear of death and fear of the future were the most common sources of anxiety in people with HIV and AIDS. Anxiety in HIV positive individuals can also be associated with changes in physical appearance, side effects from ART, discrimination, disclosure and economic as well as housing circumstances. This anxiety can have a significant impact on an individual's social status, family, friends and work. In essence, the presence of anxiety significantly affects an individual's enjoyment and satisfaction in many aspects of their lives. Thus the conclusion that is drawn by Endicott, Nee, Harrison and Blumental (1993) that psychological disorders affects quality of life. They assert that the presence of a psychological disorder can result in dissatisfaction as well as the inability to obtain pleasure in daily functioning such as physical functioning, emotional

functioning and social functioning. Past research has therefore examined the role that social functioning or social support plays in shaping mental health outcomes in individuals with chronic illnesses. It is to this topic that our review of the literature now focuses.

## **2.5 Social support**

The link between social support, mental and physical health is one that should not escape analysis when one examines anxiety in people diagnosed with HIV and AIDS (Dew, *et al.*, 1997; Leserman, *et al.*, 2000; Galvan, Davis, Banks & Bing, 2008). As pointed out earlier, in this study social support is examined in the broader context of quality of life. Even within quality of life, individual's satisfaction and enjoyment with social relationships is linked to psychological adjustment and health (Endicott, Nee, Harrison & Blumental, 1993). In this study social support is examined in terms of the perceived social support as measured by the level of enjoyment and satisfaction that one receives from these interactions. This is an important aspect of social support as studies have shown that individuals with high levels of perceived social support are more likely to describe themselves in more positive terms consequently promoting the development of effective coping skills. Perceived social support also allows individuals to deal effectively with life stressors (Galvan, Davis, Banks & Bing, 2008).

### **2.5.1 Types of social support**

Researchers have over the years attempted to understand the role that social support plays in shaping the mental health of individuals. As a result of these studies five different types of social support have been identified. (1) Emotional support. This kind of support involves expressions of empathy, care and concern, which provides an individual with feelings of

belongingness and being loved in times of sickness (2) Esteem support; this involves expressions of positive regard, encouragement of a person's feelings and ideas. These expressions help build a person's self-worth, competence and value. (3) Tangible or instrumental support, this involves direct support such financial assistance or assisting the person with their daily functioning (4) Informational support, this type of support involves giving feedback, suggestions and advice such as when a physician gives a patient feedback on their CD4 cell count. (5) Network support, this involves the individuals social networks and provides a feeling of membership with people, who share the same interests and social activities (Sarafino, 2002).

### **2.5.2 Social support and health**

For both mental and physical health, helpful effects of social connection are those experienced at a primary level such as family and friends rather than community-level support. This was found to be true in a study conducted by Mulvaney-Day, Alegria and Sribney (2000) with a sample of Latinos. This study examined social cohesion, social support and health among this population group. They found that self-rated physical health was significantly correlated with both social cohesion and friend support. Those who scored low on social cohesion and friend support reported worse physical health. A regression analysis on these variables however showed that only family and friend support had a significant relationship with self-rated physical health.

The above study also found that self-rated mental health was significantly associated with social cohesion, friend and family support, but family and friends had the strongest associations. Contrary to physical health, only family support and family cultural conflict was

significantly associated with mental health after a regression analysis was conducted. For both mental and physical health, family support yields positive results, which may suggest the role played by family in enhancing the mental and physical well-being of individuals which is something that needs to be considered when thinking of interventions for people with HIV and AIDS.

Another study, which supports the findings that show that social support can reduce anxiety in adults diagnosed with HIV and AIDS is that conducted by Serovich, Kimberly, Mosack and Lewis (2001). This study made use of both qualitative and quantitative methods in order to examine the relationship between support and mental health. The results of this study showed a significant correlation between social support and mental health. On further analysis, regression models were constructed and these revealed positive findings on mental health. Indicators in the regression analysis included, the number of persons available for support, number of persons utilized for socializing and perceived support. Women who had the most number of persons available for support experienced less anxiety. This finding was statistically significant ( $p = 0.003$ ) and accounted for 34% of the variance. In contrast, when examining depression, stress and loneliness in the last few days and last year, it was not the number of available people that decreased these conditions, but rather the perception of support from family and friends. This indicates that perceived social support rather than actual support was correlated with mental health, with the exception of anxiety.

There are two hypotheses that have been proposed to show the effects of social support on health and psychological adjustment, which seems to support the findings of the above-mentioned studies. The first hypothesis is the buffering hypothesis, which states that social

support affects health by protecting the person against negative effects of illness (Cohen, Willis, 1985 in Sarafino, 2002). According to this hypothesis when individuals encounter a strong stressor (such as a positive HIV diagnosis), those with high levels of social support tend not to appraise the event as stressful. They are able to do this because they believe that those around them will come to their aid and support them in dealing with the stressor. Moreover, this hypothesis suggests that social support modifies people's responses to a stressor. According to this hypothesis, individuals with high social support may have people who will provide them with the assistance they need in a stressful event (Cohen & Willis, 1985 in Sarafino, 2002).

The buffering hypothesis of social support is demonstrated in a number of studies. Social support has been found to buffer against the effects of stress (Sarason, Levine, Basham & Sarason, 1983). In a study conducted in the Western Cape, Le Roux and Kagee (2008), established that participants diagnosed with chronic health problems reported higher levels of support from friends than they did from family support. However, the high levels of support received from either family or friends, enhanced participant's general satisfaction with life despite being diagnosed with a chronic health problem.

The second hypothesis is the direct effects hypothesis, which states that social support benefits health and well-being regardless of the illness being experienced. According to this hypothesis the effects of social support is the same under high or low stress. It is postulated that people with high levels of social support have strong feelings of belongingness and self-esteem. There is also evidence that high social support encourages people to live much healthier lifestyles

(Sarafino, 2002). In a study conducted by Serovich, Kimberly, Mosack and Lewis (2001), perceived family support was shown to reduce risky sexual behaviour.

Having noted the positive effects of social support it is however important to note that social support does not always yield the desired outcomes. According to Dunkel-Schetter and Bennett, (1990 in Sarafino, 2002) social support does not always have the desired effects in some individuals. According to this study, even when social support is available, some people may not perceive it as supportive. This may be caused by insufficient support, or the individual may not want to be helped or the individual may be too emotionally distraught to notice that support is being offered.

Another reason that can cause social support not to have the desired effects is that the support may not meet the needs of the individual (Sarafino, 2002). A HIV infected person, for example, may require emotional support from a friend, but if the friend keeps giving informational support that support may not be perceived as support. Although the friend might be present and giving support, if the support is not meeting the need it will not be perceived as support.

### **2.5.3 Social support in HIV or AIDS**

Higher social support satisfaction is associated with a decreased AIDS progression. This is according to a study conducted Lesserman *et al.* (1999), which examined the role played by stress, depression and social support in the progression to AIDS in a sample of gay HIV positive men. They employed a longitudinal design, which assessed the men every six months over a period of 5.5 years using the Sarason Brief Social Support Questionnaire. At the

beginning of the study, all 82 men were clinically asymptomatic. Through the use of the Cox regression model, the results of this study showed an association between social support and HIV progression. With each point increase in cumulative social support satisfaction, the risk of HIV progression decreased by 63%. This study also showed that the size or number of people offering support was unrelated to HIV progression. Similar findings were also observed in a follow up study conducted by Leserman, *et al.*, (2000). They found that men who scored below the median for social support and above the median for stressful events and denial progressed to AIDS during the study compared to those with more social support, less stressful events and denial.

The above findings were also observed in a study by Fekete, *et al.* (2009). The results of their study revealed a significant relationship between disease progression and social support in a sample of men who had been positive for at least seven years from different ethnic groups (non-Hispanic white males, Latino and Spanish). This study examined the extent to which associations between serostatus disclosure to parents and disease status are modified by HIV-specific social support and ethnicity. Most of the men were exclusively homosexual and others were not in a relationship. The results of this study reveal a strong link between social support, ethnicity and disease status. It was found that non-Hispanic white males who had disclosed to their mothers and were receiving social support had higher CD4+ cell counts and lower viral load opposed to those with poorer social support. In contrast, Latino men who disclosed to their mothers, and did not receive social support, had higher viral load but those who disclosed and had higher levels of social support showed no significant effect on disease status.

According to a study conducted by Gaede, Majeke, Naidoo, Titus & Uys (2006), in Kwa-Zulu Natal there is a definite link between social support and health behaviour. Their study used a

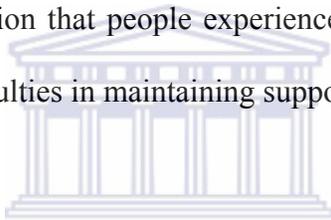
descriptive survey design to collect data on a sample of 262 women who were attending antenatal care in both rural and urban regions of this province. The results of this study showed a significant difference between perceived social support between women from rural and urban areas. Rural women reported more social support than their urban counterparts. On further analysis of the types of social support that these women received (emotional, tangible, affection and positive interaction), significant differences were noted in affectionate support ( $z = 3.899$ ;  $p < 0.001$ ) and tangible support ( $z = 3.075$ ;  $p = 0.002$ ). Higher scores on tangible and affectionate support were found in rural areas.

Furthermore the above study also established very positive associations between social support and health behaviour. The results showed that higher levels of social support were associated with condom use, support group attendance, receiving counselling and taking vitamins. These findings were confirmed to be significant by a multiple regression analysis that was further conducted on these variables. Moreover, support group attendance in turn showed to have positive associations with condom use, taking vitamins, taking immune-boosting medications and church attendance. These associations were statistically significant, which indicates that these relationships could not have happened by chance. These associations were found to be higher in women residing in rural areas than those women residing in urban areas.

A study conducted by Gordillo, del Amo, Soriano & Gonzalez-Lahoz (1999), shows that perception of good social support is positively correlated with better medication adherence. However, a study conducted by Ncama, *et al.* (2008), showed contradictory results as it found no link between social support and adherence to medication. The study by Ncama *et al.* (2008) examined social support and adherence in a sample of 149 HIV patients. This sample

comprised of English and IsiZulu speaking patients above the age of 18. The results showed that overall the sample had high adherence with 79% (n = 117) of the sample obtaining a score of three and above, which is indicative of high adherence according to the Morisky Adherence Scale. No significant differences were observed in adherence among those who scored high and those who scored low on social support.

What this study found, which is consistent with many of the studies presented in this paper is that the number of close friends and family is significantly associated with a greater sense of social support. According to Ncama, *et al.* (2008), the results of their study highlights the ongoing stigma and discrimination that people experience in this region. This stigmatisation and discrimination creates difficulties in maintaining supportive relationships.



According to Kyle and Lauren (1994), social support is a crucial resource in fostering positive adjustment and emotional well-being. Kyle and Lauren, (1994) conducted a cross-sectional study in which they examined perceptions of social support and locus of control and how these relate to psychosocial adjustment to HIV and AIDS. The results of the study showed a statistically significant ( $p < 0.001$ ) relationship between social support and psychosocial well-being ( $r = 0.55$ ). The social support subscales also showed a significant relationship between social support from family ( $r = 0.33$ ) and psychosocial adjustment and support from friends ( $0.56$ ) and psychosocial adjustment. As the level of support improves, there was also a substantial improvement in psychosocial adjustment. Support from friends played a greater role in improving psychosocial adjustment in this sample population. These findings highlight the need to develop interventions that will enhance both family and friend support.

Studies have found that there is a positive association of social support with self-esteem in people diagnosed with HIV and AIDS. The more individuals perceive their social support as satisfactory, the more they are able to engage in more positive self-talk. These positive self-appraisals in turn promote the development of more effective coping skills. It also equips the individual to effectively deal with life stressors (Zea, Reisen, Poppen, Bianchi & Echeverry, 2005 in Galvan, Davis, Banks & Bing, 2008). These findings are similar to those obtained by Sarason, Levine, Basham and Sarason (1983). They observed that people who scored high on social support had higher self-esteem and take a more positive look on life than those who scored low on social support. Furthermore, low levels of social support resulted in dissatisfaction with life and experienced difficulty attempting to do difficult or complex tasks.

The subject of death is often shunned in most societies, but a diagnosis of HIV or any terminal illness forces individuals to confront this issue. According to Catania, Turner and Coates, (1992) individuals with HIV and AIDS often experience death anxiety. In examining death anxiety and social support in a population of gay men, Catania, Turner and Coates (1992) found that support from peers, family, and medical practitioners were associated with lower levels of death anxiety. A further analysis of these findings reveals that these men were more likely to turn to peers for support than to family. However, symptomatic men received more support from family and medical practitioners than did asymptomatic and HIV negative men. The lack of support from friends for asymptomatic men has been postulated to be the result of inexperience in providing support and that they may be struggling with their own AIDS-related stressors. This may indicate that as death approaches the person is able to acquire more support.

In analyzing the literature on the phenomena of social withdrawal and self-isolation of people dying with AIDS, Barrett (1995) has noted the role that perception plays in social interactions. The analysis reveals that people living with HIV and AIDS who perceived the social support given to them as positive, were more likely to engage in positive coping strategies such as seeking information and assistance and receiving help from others. Those with a negative perception of social support tended to avoid interactions with others and engaged in more high-risk behaviours such as taking drugs and drinking. People living with HIV and AIDS who have had negative social experiences due to their HIV status often find it difficult to trust others and resort to social isolation.

In examining the interrelationships between social support, coping style and psychological distress in people with HIV and AIDS Schmitz and Crystal (2000), found that the effect of social support on mental health is cognitively mediated. The primary mediator of social support on mental health was identified as the psychological construct of feeling loved and understood. This indicates that social support influences a person's sense of importance. The more individuals felt important in another's world, the more they are able to find effective ways of coping with their sickness. In this study, individuals who were rejected by their family members after disclosing their HIV status were observed to have high levels of psychological distress at baseline. On further analysis, rejection by family resulted in less social support, which in turn influenced the sense of being loved and understood, which further influenced coping style and distress.

Social support has been shown to help manage uncertainty for people living with HIV and AIDS. According to a qualitative study conducted by Brashers, Neidig and Goldsmith (2004), there is a strong association between social support and efforts to manage high levels of uncertainty about disease progression, medication and symptoms associated with HIV and AIDS. Social support helps in managing uncertainty through, (1) assisting with information seeking and avoidance, (2) providing instrumental support (3) facilitating skill development (4) giving acceptance and validation, (5) allowing ventilation and (6) encouraging perspective shifting.

## **2.6 Conclusion**

In this chapter, the bio-psycho-social model was described as it pertains to the understanding of anxiety and social support in adults diagnosed with HIV and AIDS. From the literature review, it is clear that an HIV positive diagnosis could be a source anxiety in these adults. This anxiety results from the stigma that is associated with the disease, the physical effects of the illness; fear of death and fear of the future. This anxiety negatively affects individual's health outcomes. Through the context of quality of life, this review also included examining social support. This revealed that social support plays an important role in shaping the psychological health of individuals. Greater satisfaction and enjoyment with social relationships results in positive health outcomes for adults diagnosed with HIV and AIDS.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This section describes the methods used to test the primary hypothesis, namely, that there is a relationship between anxiety and social support in individuals infected with HIV and those with AIDS. This chapter gives a step-by-step procedure of how the research was conducted from research design to ethical considerations. Furthermore, this section gives a rationale for employing the methods used.

#### **3.2 Research design**

This is a cross-sectional, descriptive study that is located within a quantitative research paradigm. Hopkins (2000) argues that the goal of quantitative research is broadly concerned with quantifying relationships between variables. This is achieved through the use of statistical techniques such as correlations, differences between means and relative frequencies. Quantitative research can also capture the essence of reality through explaining and predicting human behaviour. In contrast, the goal of qualitative research is to describe and understand human behaviour from an insider's perspective (Babbie & Mouton, 2001). The aim of this study, which is to examine anxiety and social support, justifies the choice of a quantitative research design.

The rationale for a cross-sectional descriptive study is that it allows for the study of individuals who have varied degrees of the variables under investigation, for example, participants will have varied degrees of anxiety or social support. A cross-sectional design helps in the examination of variables under study, namely HIV and AIDS, anxiety and social

support of individuals, all at the same time (Jackson, 2009). According to Grimes and Schulz (2002) cross-sectional descriptive studies can efficiently describe the health of a population at a given time, as well as for the determination of existing relationships between variables. This design further helps in answering questions such as “Who has which particular disease?” “What is the condition of the disease being studied?” and “so what” which refers to the effects the disease will have on public health (Grimes & Schulz, 2002, p. 145-146).

### **3.3 Research setting**

This study was conducted in a health clinic, which is situated in a township in Cape Town, SA. The rationale for conducting this study in this setting was largely due to findings that indicate that, in Cape Town, HIV prevalence is high in townships (Shisana & Simbayi, 2002). The health clinic where this study was conducted is situated in a disadvantaged area, which includes informal settlements (City of Cape Town Media release, 2008). This area was established in 1974 as a transit area for migrant workers, mainly consisting of hostels until 1976 when freestanding homes were erected. The increase of informal settlements around 1990 created a situation where a large number of people living in this area were/are without toilets, running water and sewerage waste services (Dixon & Ramutsindela, 2006).

Currently there are approximately 100.000 residents in this community, with adults being the second largest group (20%). The adult population, which consists of people over 35 years of age is made up of 12.5% females and 7.5% males (Njomo, 2006). According to the City of Cape Town media release (2008), HIV and AIDS are amongst the top challenges that this community faces, hence the choice to conduct this study in this particular facility.

### **3.4 Participants and sampling**

Data for this study was drawn from a larger study examining “*Implicative personal dilemmas and cognitive conflicts in health decision-making in HIV positive adults and adults with AIDS*”. Participants were recruited through a purposive sampling method. Purposive sampling is a non-probability sampling method, whereby individual members of a population do not have an equal likelihood of being chosen to be part of the sample (Babbie & Mouton, 2001). Purposive sampling was utilized because of the relatively limited number of HIV and AIDS patients within the study site.

A health care practitioner approached every HIV positive adult attending the health facility at the time of his/her scheduled appointment to solicit for their participation in the study. All adults that agreed to participate become part of the sample. This kind of sampling was chosen as it allows for easy access of subjects that met the criteria of an HIV positive diagnosis.



The sample consisted of 70 adults, 20 males and 50 females attending a health clinic. The major inclusion factor was a positive HIV diagnosis. Those who met this criterion were further identified as those who were/are currently on antiretroviral therapy (ARV) and others currently receiving pre-ARV, counseling at the clinic. The sample also included patients with tuberculosis (TB), as there is a high co-infection rate between HIV and TB. Worldwide, the co-infection rate of HIV or AIDS and TB is estimated to be 10 million, and in Sub-Saharan Africa this figure exceeds 1000 per 10 000 people (Gooze & Daley, 2003). The only participants that were excluded were those found to be psychotic and those too ill to participate.

### **3.5 Procedure**

Although this study is part of a larger study, which had already been granted ethical clearance from the University of the Western Cape (UWC) (project number: 08/6/5). Permission to conduct this study was also provided by UWC's Higher Degrees Committee and the health authority concerned.

All assistant researchers (including this author) received very extensive training from the Principal Investigator (PI) on the project. Furthermore, the PI also provided training to all health care professionals who are in contact with prospective participants. The assistant researchers worked very closely with the health care professionals in this facility to ensure professionalism of the process and confidentiality of the participants involved. Once prospective participants had undergone their check up they were informed about the study and invited to approach the research assistant(s) if they were interested in participating in the study. The assistants were located in a private room in the clinic close to the rooms of the health practitioners that were involved in the study. Once participants agree to participate in the study they were asked to go to a private room where a research assistant further explained the study.

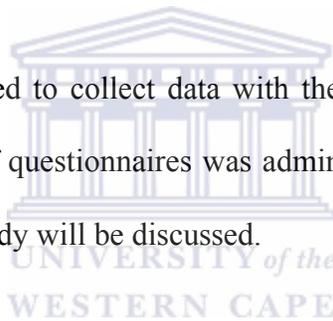
When participants reached the research assistant(s), the study was explained to them and they were given an information sheet detailing the purpose of the study. They were also given information about their involvement, issues of confidentiality, risk factors, benefits of the study and what they can expect from the study. Few patients opted not to participate after the study was explained, mainly due to long waiting period before being attended to by a health care practitioner. Majority of participants who approached the research assistant(s) were

however willing to participate. Once prospective participants consented to being part of the study they were given a consent form to sign. Both the consent form and information sheet were translated into IsiXhosa to enable participants to answer in a language of their choice.

All consenting participants completed the questionnaires in a private room with the help of a research assistant in either English or IsiXhosa. The research assistant helped participants who were unable to read and/or write and those with general questions. Light refreshments were provided for participants while they were filling in the questionnaires.

### **3.6 Data collection tools**

Self-report inventories were used to collect data with the help and direction of well-trained research assistants. A battery of questionnaires was administered to the participants, but only those that are relevant to this study will be discussed.



#### **3.6.1 Biographical information**

A biographical questionnaire was administered to obtain demographical data of all participants. This questionnaire included questions on the demographic characteristics of the participants: their age, sex, language, marital status and employment. This questionnaire also asked questions pertaining to the participants HIV status such as the phase of infection, CD4 cell count, co morbid conditions and whether they were currently on ART or not.

### **3.6.2 Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q)**

The degree of social support in adults diagnosed with HIV or AIDS was measured using the Social Relations scale. The Social Relations scale is a sub-scale of the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q), which was developed to “measure the degree of enjoyment and satisfaction experienced by subjects in various areas of daily functioning” (Endicott, Nee, Harrison & Blumental, 1993, p.321). It was also designed with the intention to measure subjects with a variety of mental and medical conditions (Endicott, Nee, Harrison & Blumental, 1993).

The Social Relations sub-scale comprises 11 items that determine the level of an individual’s satisfaction with social support. To determine the level of satisfaction with social relationships, a five-point Likert scale is employed. Scores are reported as percentage maximum possible and this is calculated as follows:  $\text{maximum percentage} = \frac{\text{raw score} - \text{minimum score}}{\text{maximum score} - \text{minimum score}}$ . These scores indicate the degree of enjoyment and satisfaction with social relationships that the individual has experienced over the past week. Higher scores indicate a greater degree of enjoyment and satisfaction with these relationships. The questions focus on relationships with family. The minimum raw score on this scale is 11 and the maximum is 55 (Endicott, Nee, Harrison & Blumental, 1993).

An overall score on the Social Relations scale can be interpreted as follows: a score between 0% and 11% indicates “not at all”, a score between 14% - 36% indicates that the individuals “rarely” enjoys social relationships. A score between 39% to 61% indicates “some of the time” enjoyment, a score between 64% - 86% indicates that the individual is “often” satisfied with

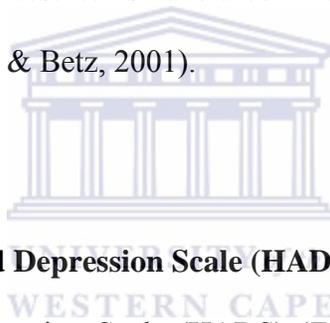
their relationships and a score of 89% - 100% indicates that the individuals enjoys social support “frequently or all the time”.

The study by Endicott, Nee, Harrison and Blumenthal (1993), shows that the Q-LES-Q is a reliable instrument for measuring different aspects of quality of life enjoyment and satisfaction. The concurrent validity of the Q-LES-Q showed that the Social Relations scale was negatively correlated with the Clinical Global Impression Severity of Illness Ratings. The correlation between these two scales was -0.51, which demonstrates that the Social Relations Scale has valid scores in measuring the severity of illness. According to Pretorius (2007), a correlation between 0.40 and 0.70 indicates a substantial relation correlation. The interpretation of the negative relationship between the two scales can be interpreted as showing that with an increase in satisfaction with social relationships there’s a decrease in severity of illness. The study by Endicott, Nee, Harrison and Blumenthal (1993) also showed that the Social Relations sub-scale of the Q-LES-Q has a high internal consistency reliability with a Cronbach alpha of 0.93 (n = 83) as well as test retest reliability with a Cronbach Alpha of 0.82 (n = 54). These high coefficients indicate that there is not a lot of error in this subscale in measuring social relations.

In a study with schizophrenia, schizoaffective and mood disorder patients, which used the abbreviated form of the Q-LES-Q, the Social Relations scale was noted to have good construct validity (Ritsner, Kurs, Gibel, Ratner & Endicott, 2005). This study also observed that the Social Relations scale had the ability to discriminate well between psychiatric patients and healthy subjects. Furthermore, this study also established that general quality of life was

positively associated with social support. This indicates that with an increase in social support there's a corresponding increase in quality of life.

A reliability analysis was conducted in order to determine the Cronbach Alpha for the Social Relations subscale of the Q-LES-Q in this particular study. The analysis showed that the Social Relations questionnaire had an internal consistency of 0.89. This is a good reliability coefficient as Anastasi and Urbina (1997), suggest that a good reliability coefficient should range between 0.80 and higher. This coefficient indicates that the test items in this scale may be unidimensional, thus the test measures the same dimension in all test takers. Furthermore, this coefficient indicates that the test items have a common core, thus they measure the same attribute in all test takers (Walsh & Betz, 2001).



### **3.6.3 The Hospital Anxiety and Depression Scale (HADS)**

The Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983) is a scale, which measures anxiety (HADS-A) and depression (HADS-D). The prevalence of anxiety was therefore assessed using the HADS-A. The HADS was particularly developed to measure depression and anxiety among people with physical illnesses. As such, it does not include items containing somatic symptoms such as fatigue, insomnia, tachycardia and dyspnea, which could overestimate the occurrence of anxiety and depression due to organic pathologies (Campos, Bonolo & Guimaraes, 2006).

The HADS comprises 14 items, with seven items measuring anxiety (HADS-A) and seven measuring depression (HADS-D). Items are rated on a four-point scale ranging from 0-3 with three indicating higher symptoms of either anxiety or depression. The scores for both these

subscales range from 0 to 21 and the cut-score for both scales has been set at seven. The total scores, which indicate the severity of symptoms, are classified as follows: 0-7 normal, 8-10 mild, 11-14 moderate and 15-21 severe (Whelan-Goodinson, Ponsford & Schoonbergeer, 2009). These scores can further be interpreted as follows: a score of 0-7 is regarded as being in the normal range, while a score of 8-10 suggests the presence of anxiety. A score of 11 and above indicates probable presence of anxiety, meaning that the individual is more likely to meet DSM-IV-TR criteria for an anxiety disorder (Snaith, 2003).

The HADS was chosen because it is brief and excludes confounding items, which might reflect somatic complaints in participants (Golden, Conroy & O'Dwyer, 2006). The HADS takes approximately two to five minutes to complete in literate populations but could take longer when the researcher has to read the questions to the participant. The questions are designed in such a way that the individual gives answers about how they felt in the past week with regards to inner tension, worry and panic attacks. For example "I feel tense or 'wound up'" (Snaith, 2003).

National and international studies have shown that the HADS is a reliable and valid instrument in the measurement of depression and anxiety in medically ill patients (Bernard, Boermeester & Viljoen, 1998; Savard, et al., 1998; Golden, Conroy & O'Dwyer, 2006). A study conducted by Savard, et al., (1998) with a sample of HIV positive individuals revealed that the HADS is more reliable and valid in assessing anxiety and depression than other self-report scales such as the State-Trait Anxiety Inventory (STAI). They observed that the HADS had a Cronbach alpha of 0.89 for each of the sub-scales and both demonstrated high internal consistency. Correlations between each item of the HADS-A and the total score varied from 0.45 to 0.80

and all these scores were significant at  $p < .0001$ . Convergent and discriminant validity of the HADS was also calculated. A significant correlation of 0.78 was obtained between the HADS-A and the STAI. This study also noted that the HADS-A is unconfounded by HIV symptoms. This was due to the fact that the HADS does not contain any somatic items that may be confused with the illness manifestations.

Another study conducted by Whelan-Goodinson, Ponsford and Schoonberger (2009) with traumatic brain injury patients revealed that the overall HADS scale together with the depression and anxiety subscales showed Cronbach alpha of 0.94, 0.88 and 0.92 respectively. This study also observed that subjects who had higher HADS (A or D) scores also had a greater likelihood of receiving a clinical diagnosis using the Structured Clinical Interview for DSM-IV-TR (SCID-IV), which is a clinical measure.

In this study, a reliability analysis was conducted in order to determine the internal consistency of the Hospital Anxiety and Depression Scale. The analysis revealed that this scale had low internal consistency, with a Cronbach Alpha of 0.41. This coefficient is lower than the acceptable reliability for research purposes, which is 0.60-0.80 (Field, 2005). This low coefficient may indicate that the items in this scale do not have a common core, thus they may not be measuring the same attribute in the sample. Furthermore, this low coefficient may be indicative of multidimensionality, which means that the test items may in fact be tapping into several dimensions of constructs, which may or may not be related to anxiety (Walsh & Betz, 2001).

The low coefficient of the HADS-A in this study will have several effects on the interpretation of the results. Firstly, the results will indicate more error variance than true variance. This will affect the computation of the standard error of measurement (SEM), which estimates the degree of closeness of a person's observed score to their true score (Walsh & Betz, 2001). In this study, the observed score is therefore not very close to participants true scores because of the large variance in the scores. Secondly, this low coefficient can affect the validity of the test, hence the quality of the test in measuring anxiety in this study (Walsh & Betz, 2001). Given the low internal consistency of the HADS-A in this study, caution should be taken in interpreting the prevalence of anxiety in this study.

There are a number of factors that could have contributed to the low coefficient in the HADS-A subscale in this study. Firstly, the psychometric properties of the IsiXhosa version of the scale have not yet been established. Since the IsiXhosa version of the test has not been validated, it may be possible that the items in the scale do not measure the same construct as in the English version. Although the scale was back translated by language experts, the evaluation of equivalence was not carried out between the two languages. Another possible factor that could have contributed to the low coefficient is the low literacy rate of the participants. Some participants could not read or write and it is possible that this could have contributed to the low coefficient rate of this scale. Having said this, it is important to note that illiterate participants were assisted by trained research assistants in completing the questionnaires.

### **3.7 Data analysis**

Data generated from the questionnaires were analyzed using the Statistical Package for the Social Sciences (SPSS) software Version 17.0 (SPSS Inc. Chicago, IL). After all the data were entered into the Excel spreadsheet, it was screened for accuracy, missing values and amendments were made accordingly. Records that had a lot of missing data were excluded from the analysis. Those records that had a few missing entries in some variables, had some of their aspects analysed.

Descriptive statistics were obtained on all the study variables namely; demographic information, anxiety and social support. The use of descriptive statistics helped in summarising and describing the data (Pretorius, 2007). For example, to obtain the prevalence of anxiety in the study population by showing how many people scored above the cut-off score of seven on this measure. Inferential statistics were also computed to help draw conclusions and make decisions. This type of statistics will help in making inferences about the population studied based on the data analysed (Pretorius, 2007). For example, conclusions can be made about the population attending the health facility about anxiety levels. If there is a high prevalence of anxiety in the sample, there will be a high probability that the total population attending this health facility for HIV related care is also high.

To assess the prevalence of anxiety and degree of social support, frequency distributions were computed. The analysis also included cross-tabulations of anxiety and social support with all the biographical data obtained for this study. The Chi-Square statistic was used in the cross-tabulation. To examine the relationship between anxiety and social support, Spearman correlation ( $p_s$ ) was used. The use of the Spearman correlation is appropriate in this study as

the data are ordinal or ranked for both anxiety (normal, mild, moderate and severe) and social support (not at all, rarely, some of the time, often and frequently). Furthermore, Spearman correlation is employed so as to measure the consistency of the relationship between anxiety and social support independent of the form of this relationship (Gravetter & Wallnau, 2004).

### **3.8 Ethical Considerations**

Participation in the study was completely voluntary. Prospective participants were given information about this study by detailing what the study entails and what is required of them as stipulated in the information sheet (Appendix 1). Participants were informed that they can refuse to participate in the study and that refusal to participate will not interfere with their treatment regimen. Participants were also informed that they have the right to withdraw at any stage during the study, even after signing the consent form. All participants who agreed to be part of this study were given a consent form (Appendix 2). Only once participants have signed the consent form did they participate in the study. Information given by the participants was kept strictly confidential and was not shared with clinic staff or the public.

To ensure confidentiality questionnaires were coded and locked with the principal investigator (PI) and data was only used in liaison with the PI. Participant's details remained anonymous when reporting findings about the study. Careful measures were taken to ensure that participants were not harmed in any way, psychologically or otherwise. Professional counseling was arranged for participants who might experience distress as a result of participating in this study. However, none of the participants needed to use this service.

## CHAPTER FOUR

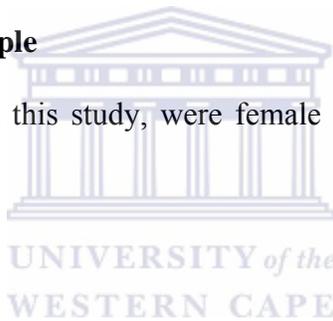
### RESULTS

#### 4.1 Introduction

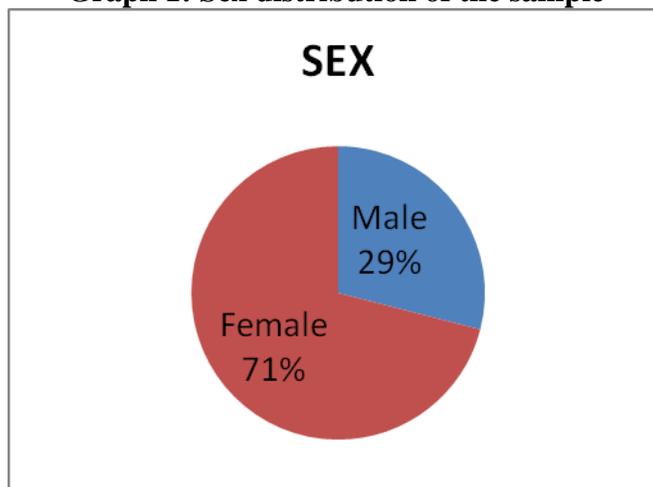
The current chapter outlines the results obtained in the research investigating anxiety and social support in people diagnosed with HIV or AIDS. The chapter commences with an overview of the demographic variables, antiretroviral therapy (ART) status and stage of infection of the sample. Thereafter, the analyses will focus on the constructs relevant to the study, that is, anxiety and social support.

#### 4.2 Sex distribution of the sample

The majority of participants, in this study, were female 71% (n=50), with males only 29% (n=20).



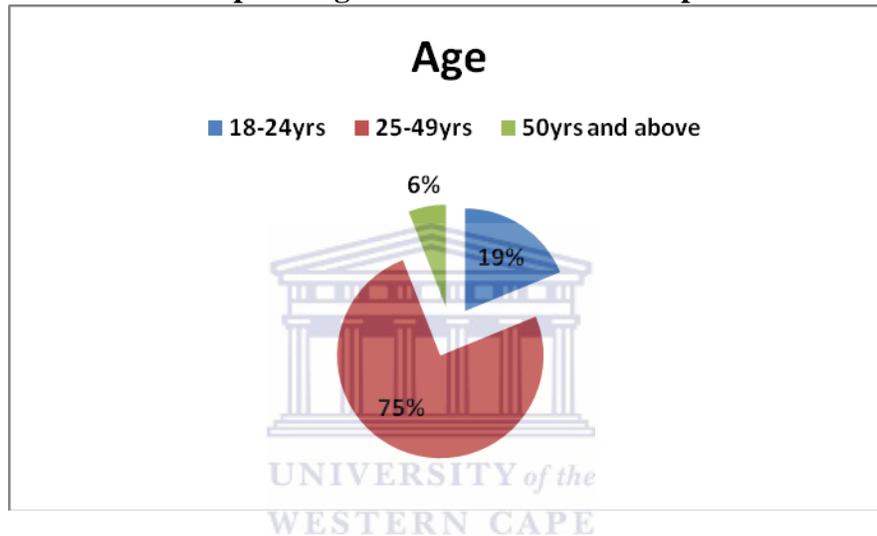
**Graph 1: Sex distribution of the sample**



### 4.3 Age distribution of the sample

Graph 2 shows the ages of the sample, which ranged from 18 to 54 years with a mean age of 31 and standard deviation of 8.7. From the frequency distribution it can be seen that majority of participants were between 25 to 49 years 75% (n=43). This was followed by the age group between 18 to 24 years 19% (n=22), and the rest 50 years and older 6% (n=5).

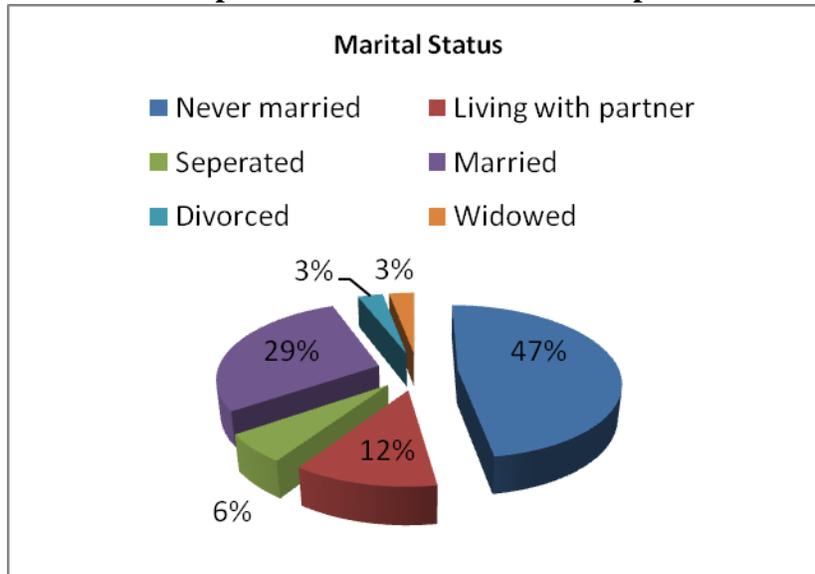
**Graph 2: Age distribution of the sample**



### 4.4 Marital status distribution of the sample

Graph 3 shows the marital status distribution of the sample. The graph shows that majority of participants were single 47% (n=33), followed by those who were married 29% (n=20). Participants who were living with a partner accounted for 12% (n=8) of the sample, while those who were separated accounted for 6% (n=4) of the sample. There was an equal distribution of participants in the divorced 3% and widowed 3% (n=2) categories.

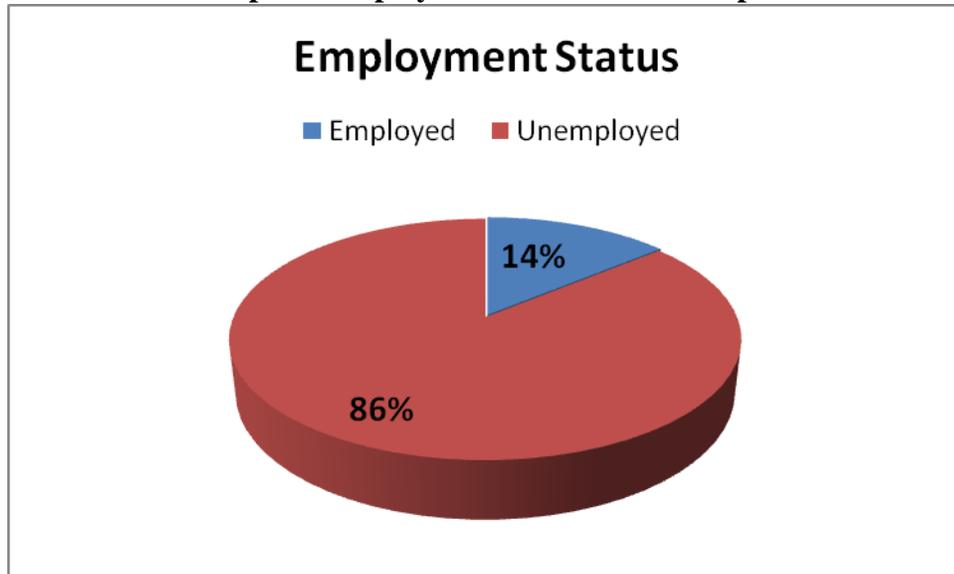
**Graph 3: Marital status of the sample**



#### **4.5 Employments status of the sample**

Graph 4 shows the distribution of participant's employment status. The majority of participants in this study were unemployed 86% (n=60), with only 14% (n=10) who were employed. More males (n = 7) were employed than females (n = 3). Of the 14% of participants who were employed, majority (n = 4) had a net monthly income between R1 000 and R2 000, followed by those who earned less than R500 net monthly income (n = 3). Only two participants had a net monthly income between R2 000 and R3 000 and these were males.

**Graph 4: Employment status of the sample**



#### **4.6 Anti-retroviral therapy (ART) status and stage of infection**

Table 1 shows the distribution of participants who were on ART and those who were not. Those that were on ART accounted for 29% (n=20) of participants, while those who were not on ART accounted for 50% (n=55) of participants and those with missing values accounted for 21% (n=15) of participants.

**TABLE 1: ART status of the sample**

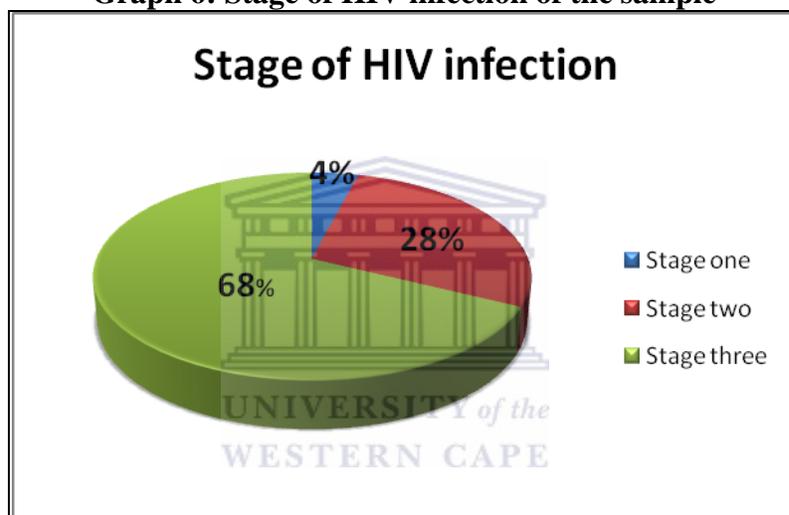
ART Status	n	%
Yes	20	29
No	35	50
Missing	15	21
Total	70	100.0

#### **4.7 Stage of HIV infection of the sample**

Graph 6 shows the stage of infection that participants were in as indicated by their CD4 cell count. The CD4 cell count of participants ranged from 19 to 579. Participants who had CD4 cell count below 200 had a mean of 122 and those who had a CD4 count of 200 and above had

a mean CD4 cell count of 391. The graph shows that majority of participants 68% (n=31) were at stage three, which is the AIDS stage of infection characterised by a CD4 cell count below 200. This is followed by 28% (n=13) of participants who were at the symptomatic stage characterised by a CD4 cell count between 200 and 500 cells per ml. Participants who were at the asymptomatic stage of HIV infection, which is characterized by a CD4 cell count above 500 cells per ml accounted for 4% (n=4) of the sample.

**Graph 6: Stage of HIV infection of the sample**



#### **4.8 Prevalence of anxiety (HADS-A) of the sample**

The results that follow pertain to objective one, which was to establish the prevalence of anxiety in people diagnosed with HIV or AIDS. Table 2 indicates the frequency distribution of anxiety as obtained from the Hospital Anxiety and Depression Scale- (HADS-A).

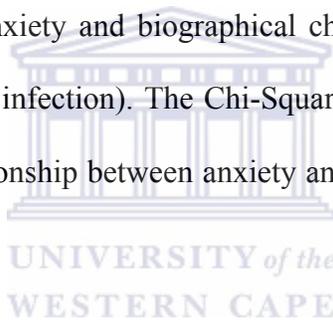
The results presented in Table 2 shows that 67% (n=47) of participants had normal levels of anxiety. The table also shows the percentage of participants who met the criteria for anxiety, which is indicated by 14% (n=10) of participants who had mild anxiety, 13% (n=9) who had

moderate anxiety and 1% (n=1) with severe anxiety. The overall mean score of the HADS-A questionnaire was six.

**Table 2: Prevalence of anxiety of the sample**

	<b>n</b>	<b>%</b>
Normal	47	67.1
Mild	10	14.3
Moderate	9	12.9
Severe	1	1.4
Missing	3	4.3
Total	70	100.0

After obtaining the prevalence of anxiety of the sample, cross tabulations were conducted, to test the relationship between anxiety and biographical characteristics of the sample (marital status, ART status and stage of infection). The Chi-Square statistic of these cross tabulations revealed a non-significant relationship between anxiety and the biographical characteristics of the sample in this study.



#### **4.9 Degree of social support (Q-LES-Q) of the sample**

The results that follow pertain to aim two of the study, which was to determine the degree of social support in adults diagnosed with HIV or AIDS.

Table 5 shows the degree of satisfaction and enjoyment that participants had with their social support. The table shows that majority of participants 39% (n=27) were satisfied some of the time with their social support, followed by 36% (n=25) who were often satisfied with social support. Only 3% (n=2) of participants indicated that they are not satisfied at all with social support. Those who were rarely satisfied accounted for 13% (n=9) of the sample and those

who were satisfied all the time accounted for 7% (n=5) of the sample. The mean score for social support in this study was 59%, which indicates satisfaction some of the time.

**Table 5: Degree of Social Support of the sample**

	<b>n</b>	<b>%</b>
Not at all	2	2.9
Rarely	9	12.9
Some of the time	27	38.6
Often	25	35.7
All of the time	5	7.1
Missing	2	2.9
	70	100.0

After determining the degree of social support of the sample, cross tabulations were conducted on social support and biographical characteristics of the sample. In this analysis, the Chi-Square statistic was non-significant, which indicates that in this study, there was no relationship between the biographical characteristics and social support.

#### **4.10 Correlation between anxiety (HADS-A) and social support (Q-LES-Q)**

The results of the Spearman's rho coefficient (-0.1) revealed that there was no significant relationship ( $p > 0.05$ ) between anxiety and social support in adults diagnosed with HIV or AIDS in this study.

#### **4.11 Conclusion**

In this sample, there were more males (30%) than females (70%), and majority of respondents were between the age of 25 and 49 years. These figures are consistent with a national study which, established that HIV infection is disproportionately higher in females than in males and

that HIV infection rates peak around 25-29 years for females and 30-34 for males (Shisana, *et al.*, 2009).

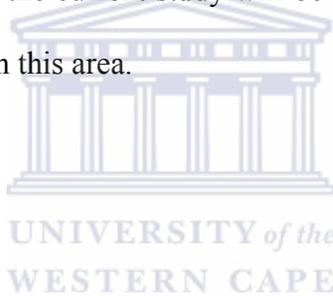
In this study, the majority of participants were not on ART (50%) as opposed to those who were on ART (29%). Furthermore, most participants (68%) had a CD4 cell count below 200. These results may be indicative of the challenges faced by the public health sector in providing ART to HIV positive adults in need of treatment. The results of the prevalence of anxiety and degree of social support in this study sample will be discussed in the following chapter.



**CHAPTER FIVE**  
**DISCUSSION, CONTRIBUTIONS, LIMITATIONS, RECOMMENDATIONS**  
**AND CONCLUSION**

**5.1 Introduction**

In this chapter, the key results in relation to the aim and objectives of this study will be discussed. The first section discusses the prevalence of anxiety, followed by a discussion of the degree of social support received by adults with HIV or AIDS. After this, a discussion of the relationship between anxiety and social support will be discussed. Conclusions will be drawn through examining the results in relation to the relevant literature on this topic. Contributions and limitations of the current study will be noted and recommendations will be put forward for future research in this area.

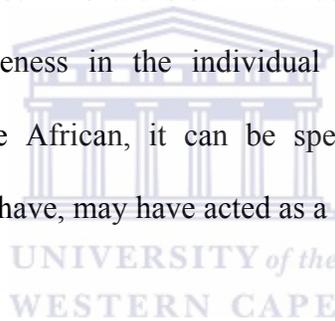


**5.2 Prevalence of anxiety**

Majority of participants 67% (n=47) in this study showed normal symptoms of anxiety. This indicates that despite experiencing anxiety provoking circumstances such as the low levels of employment and low CD4 cell count, participants in this study did not have high levels of anxiety symptoms. There are a number of possible factors that could have contributed to these low symptoms of anxiety in this study. Firstly, perceived levels of social support from family, friends and neighbours have been shown to act as a buffer against stressful circumstances (Berkman, 1995; Miller, Chibnall, Videen & Duckro, 200; Serovich, Kimberly, Mosack & Lewis, 2001). This is supported by the hypothesis that communities that are characterised by high levels of social support have better levels of health (Campbell, 2001). According to this hypothesis, social cohesiveness determines health-related outcomes. This hypothesis captures

the essence of the African concept of Ubuntu, an African word that describes brotherliness, solidarity and togetherness (Telschow, 2003).

In most African communities, being human is encapsulated in the concept of Ubuntu, which, recognises the individual in relation to the family (extended family) and community. This view of humankind encourages sharing, mutual care and compassion for all members of the family and community (Ramose, 1999). In the African worldview, care involves all members of the family, community and tribe. In this worldview, it is believed that life is sacred and should be preserved at all cost, therefore family and community members take on the responsibility of caring for those who are sick in an attempt to restore wholeness on the community by restoring wholeness in the individual (Masango, 2005). Since all the participants in this study were African, it can be speculated that the close family and community ties that individuals have, may have acted as a buffer against anxiety.



Secondly, the use of a self-report questionnaire could have also contributed to the high levels of normal anxiety. One major disadvantage with self-report questionnaires is that individuals may report socially desirable responses thus skewing the results (McDonald, 2008). In this study, the problem of social desirability is further confounded by the fact that most participants were illiterate, hence had to be helped by the research assistants in terms of reading and responding to the items. There is a high probability that participants did not want the research assistants to know their true anxiety levels, hence they gave responses that seem socially acceptable.

Finally, the prevalence of anxiety in this study needs to be interpreted and understood against the backdrop that the psychometric properties of the IsiXhosa version of the HADS-A had not yet been established. The fact that the IsiXhosa version of the instrument had not yet been established could have influenced the participants' responses. Since the IsiXhosa version of the HADS-A had not yet been validated, it may be possible that it is measuring a different construct to the English version of this sub-scale. Furthermore, this instrument may be measuring several dimensions of anxiety, thus giving a skew picture of what was being measured in this study.

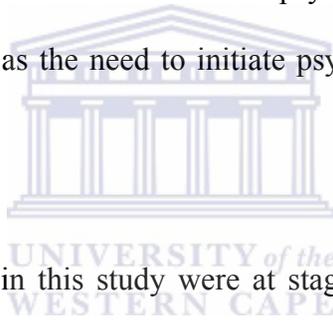
Although the majority of participants (67%) showed symptoms of normal anxiety, the prevalence of such symptoms is however still very high (28%) <sup>1</sup>in comparison to national findings 15.8% (Stein, et al., 2008). The national study, however sampled from the general population and not specifically HIV positive individuals. Although anxiety in the literature has been shown to have a strong association with gender and age (Sadock & Sadock, 2007; Stein, et al., 2008) there were however no significant associations between anxiety and any of the biographical variables in this study after conducting the Chi-Square cross tabulation analysis on these variables.

Although the prevalence of anxiety found in this study was higher than national estimates, it is however consistent with previous studies of HIV infected adults in health care facilities. Several studies found that anxiety was higher in HIV-infected individuals than in the general population (Sewell, et al., 2000; Olley, Seedat & Stein, 2006; Campoa, Bonolo, Guimaraes, 2006). These findings are also consistent with findings that studied specific anxiety disorders

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<sup>1</sup> These are all the respondents that met the criteria for anxiety, namely, those who had mild, moderate and severe symptoms of anxiety.

such as PTSD (Safren, Gershuny & Hendriksen, 2003, Sledjeski, Delahanty & Bogart, 2005) as well as studies conducted on other chronic diseases (Le Roux & Kajee, 2008). It may be argued that studies conducted in health care facilities are not representative enough to allow for generalizations to individuals outside these settings. A national study conducted in South Africa by Shisana *et al.*, (2005), however provides findings that are similar to those conducted in health care facilities. They noted that anxiety was more prevalent in individuals who are HIV positive (34.8%) than those who were not (26.4%). Based on these findings and those conducted by Stein *et al.*, (2008), it is clear that the prevalence of anxiety is high in adults with HIV and AIDS in the current study. The high prevalence of anxiety in adults with HIV and AIDS in this clinic indicates the need to screen for psychological disorders that may result from an HIV diagnosis as well as the need to initiate psychiatric care programmes in health care facilities.



Majority (68%) of participants in this study were at stage three of HIV infection, which is characterised by increased physical limitations and greater fatigue (Sewell, *et al.*, 2000). This finding supports the findings of a longitudinal study that found that HIV positive men with more HIV symptoms, greater fatigue and increased physical limitations reported higher levels of anxiety (Sewell, Goggin, Rabkin, Ferrando, McElhiney & Evans, 2000). These findings are however in contrast to other studies that observed that individuals in the earliest stages of HIV infection generally have higher levels of anxiety than those in later stages (Jones, Garcia, Wu, Job & Dunn, 1995; Rabkin, Goetz, Remien, Williams, Todak & Gorman, 1997). This may indicate that anxiety is provoked by different factors in different communities.

A consideration of a myriad of factors may be necessary for a better understanding of the high levels of anxiety in this study. Firstly, majority of participants (86%) in this study were unemployed and given the fact that the clinic services disadvantaged communities, it can be safely assumed that majority of the participants in this study live below the minimum poverty line. Patel and Kleinman (2003 in Stein, *et al.*, 2008) have reported that an individual's low-income status may significantly contribute to psychiatric disorders, implying that poverty may be a factor in psychiatric disorders. The high anxiety levels in this study should therefore be understood against the backdrop of the economic status of these participants. The high unemployment rate, which may be indicative of poverty, in this study could already have been a source of anxiety for these individuals.

Secondly, stigma often experienced by individuals with HIV and AIDS, could also have contributed to increased levels of anxiety. Although stigma was not assessed in the current study, it is however important to note that increased rates of stigmatization experienced by many HIV infected individuals in African countries contribute to increased anxiety symptoms in these individuals (Myer, Smit, Le Roux, Cur, Parker, Stein & Seedat, 2008). In a study conducted in Cape Town, (SA), the results established that a third of persons living with HIV and AIDS are mistreated by their family and friends due to their HIV positive diagnosis (Simbayi, Kalichman, Strebel, Cloete, Henda & Mqeketo, 2007). An important point to note about stigma is that not only does actual stigmatisation increase anxiety; even the perception of stigma can result in increased symptoms of anxiety (Barrett, 1995; Galvan, Davis, Banks & Bing, 2008). Thus, participants in this study may not have experienced actual stigma, but the mere fact that they may have had a perception of such, could have resulted in increased levels

of anxiety. An understanding of the role of stigma in increasing psychological distress is therefore crucial when putting in place interventions to reduce such distress.

Thirdly, knowledge of someone who has died of AIDS related illnesses can contribute to increased levels of anxiety. A national study which examined the impact of AIDS-related mortality on mental health has shown that knowing someone who died of AIDS-related illnesses was strongly associated with DSM-IV defined anxiety and other psychological disorders (Myer, Seedat, Stein, Moomal & Williams, 2008). Given the high HIV prevalence rates in townships around Cape Town (Shisana & Simbayi, 2002), it may be assumed that majority of participants in this study may know someone who died of AIDS-related illnesses. This knowledge may thus have contributed to heightened symptoms of anxiety in these participants. Moreover, the participants own HIV status, and the reality of their impending death could have contributed to heightened symptoms of anxiety in this study. This assumption is made on the basis of a study that has shown that HIV infected individuals report anxiety about death as one of the key factors that contribute to anxiety in these individuals (Kemppainen, *et al.*, 2003).

### **5.3 Degree of social support**

The degree of social support enjoyed by participants from the results of this study was satisfactory, with a mean of 59%. This indicates that on average participants were satisfied with social support “some of the time”. Majority of participants indicated satisfaction with social support “some of the time” (39%) followed by those who were “often” satisfied with social support (37%). These findings contradict some studies, which examined quality of life in individuals with psychological disorders (Endicott, Nee, Harrison & Blumental, 1993;

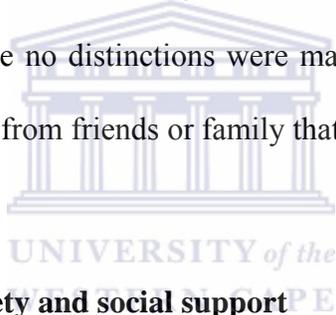
Rapaport, Clary, Fayyad & Endicott, 2005). These studies found that psychological disorders substantially compromise the psychosocial functioning of an individual. According to these studies, individuals with increased psychological distress will experience decreased satisfaction with social relationships. Thus, the degree of satisfaction that respondents enjoyed would have decreased due to high levels of anxiety.

According to Barret (1995), the degree of satisfaction that an individual experiences in their social relationships determines the extent to which they engage in positive coping strategies as well as demonstrating openness to receiving assistance from others (Barret, 1995). In the current study, it can therefore be deduced that on average participants will be receptive to assistance from others as well as engage in positive coping strategies consequent upon the degree of social support received. These positive strategies can range from better disease management (Mosack, *et al.*, 2008), increased medication adherence (Ncama, *et al.*, 2008), and increased condom usage (Gaede, Majeke, Modeste, Naidoo, Titus & Uys, 2006). It is perhaps through satisfaction with social support that participants in this study sought to be tested and to know their HIV status. A number of these participants (29%) were/are currently on ART. They were at the research site to collect their medication, which indicates a level of positive coping with their illness.

Another deduction that can be made from the results of this study is that individuals who scored high on social support satisfaction would enjoy better physical and mental health compared to their counterparts who scored low on social support satisfaction (Lesrman, *et al.*, 2000; Le Roux & Kagee, 2008). This could be as a result of reduced emotional distress (Serovich, Kimberly, Mosack & Lewis, 2001) as well as reduced mental disorders (Sharir,

Tanasescu, Turbow & Maman, 2007) associated with satisfaction with social support. This may explain the high percentage of participants who had normal levels of anxiety in this study. Studies have shown that perceived social support from friends and family is inversely associated with perceived HIV-related stigma (Galvan, Maxwell, Banks & Bing, 2008). Social support in this study may thus have acted as a buffer against the negative effects of stigma, which consequently decreases levels of anxiety.

In this study, no distinctions were made between support from friends and support from family, however other studies have established that support from friends was more satisfying than support from family (Serovich, Kimberly, Mosack & Lewis, 2001; Sharir, Tanasescu, Turbow & Maman, 2007). Since no distinctions were made in the current study, there is no certainty whether it was support from friends or family that individuals found satisfying.

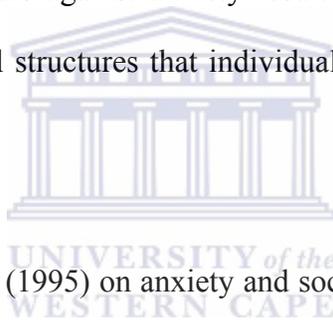


#### **5.4 Relationship between anxiety and social support**

As reported in the results section, there was no significant relationship between anxiety and social support in adults diagnosed with HIV and AIDS in this study. The findings of the current study are in contrast with a study conducted by Serovich, Kimberly, Mosack and Lewis (2001), which indicated a relationship between anxiety and social support in a sample of HIV positive women. The study found that women who had the most number of persons available for support experienced less anxiety and that overall mental health was determined by an individual's perceived level of social support. Another study established that with an increase in social support there was a subsequent increase in psychological adjustment after individuals became aware of their positive HIV status (Kyle & Sachs, 1994). In the current

study, although most individuals perceived their social relationships to be satisfactory and enjoyable, the prevalence of anxiety however remains high.

In studies that make a distinction between different types of social support, a longitudinal study established that partner support as opposed to support from friends or family that HIV positive individuals live with predicted levels of anxiety. Poor partner support was found to elevate anxiety in HIV-positive men (Dew, et al., 1997). In this study, very few participants were married 29% (n=20) or living with a partner 12% (n=8), yet most participants indicated satisfaction with social support. This may indicate that although partner support may be important in buffering individuals against anxiety resulting from a positive HIV diagnosis, there were however other social structures that individuals utilized in coping with their HIV status in this study.

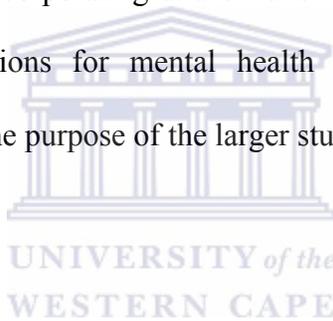


An important finding by Barrett (1995) on anxiety and social support is that anxiety in people with HIV and AIDS results in changes in the quality of relationships. HIV infected individuals may sometimes isolate themselves and withdraw from others to avoid the risk of being rejected due to their deteriorating health. This withdrawal is a result of unfavourable past experiences that HIV infected people often had/have to endure. Once again this links back to the concept of stigma, which can be very detrimental to an individual's health. This interaction between anxiety and social support is one that should be closely examined and addressed as a way of holistically addressing HIV and AIDS.

## **5.5 Contributions**

This study adds to the larger body of knowledge on the prevalence of anxiety in people with HIV and AIDS in South Africa. It also highlights the need to screen HIV-infected individuals as part of their treatment procedure in order to assess the prevalence of anxiety or any other psychological disorder that may result from an HIV-positive diagnosis. This is crucial in the fight against HIV and AIDS in this country.

This study also contributes to the literature on social support in adults with HIV and AIDS. By knowing the degree of social support that HIV-infected individuals receive, it is hoped that this information will help in incorporating and enhancing social support networks in these individuals. This has implications for mental health care of HIV and AIDS infected individuals, this contributes to the purpose of the larger study.



## **5.6 Limitations**

One of the major limitations of this study was the sampling method used. The use of a non-probability sampling method (purposive sampling) does not allow for any generalisations to be made, thus one cannot generalise the findings of this study to the wider population of adults diagnosed with HIV or AIDS (Babbie & Mouton, 2001). Although purposive sampling allows for easy access to participants, it is however a very unreliable sampling design, which places limitations on inferences that can be made from the findings of this study.

Although a back-translation design was used in translating the IsiXhosa version of the Hospital Anxiety and Depression Scale (HADS), this technique is limited in a number of ways. Firstly, it does not ensure that the translated scale is indeed equivalent to the source

language. Secondly, errors made in the original translation can possibly be carried over when conducting a back-translation (Foxcraft & Roodt, 2005).

The use of one public health clinic in one geographic area restricts the range of community and public health centres studied. This restriction makes the findings ungeneralisable to the wider population. The use of a cross-sectional design is also very limited in that it only captured anxiety and social support at one point in time and did not examine these variables over time (Babbie & Mouton, 2001). Some of the participants took part in the study immediately after receiving their diagnosis and a number of factors would have influenced the way they responded, such as shock or denial.

Another limitation is that there was no clinical interview to validate the findings on the prevalence of anxiety since this information was obtained through self-report questionnaires. Self-report questionnaires may skew the results as participants may give socially desirable responses (Neuman, 1997). The measures of both anxiety and social support do not differentiate the different types of anxiety that individuals may experience and social support that may be received.

## **5.7 Recommendations**

A larger and more diverse random sample of participants should be used in future studies to make findings more generalisable. A longitudinal study can also be conducted to be able to assess the prevalence of anxiety and degree of social support over time. This will however be covered in the larger study that this project is a component of. Another recommendation would

be to examine anxiety and social support in a number of heterogeneous public health clinics and compare results.

The IsiXhosa version of the HADS-A has not been validated, therefore future studies can focus on validating this version of questionnaire. It is crucial that this be done so as to determine whether this version of the test actually measures the same construct as the English version.

Since anxiety is frequently unrecognised and underreported, it is recommended that ongoing screening for anxiety be conducted in people with HIV or AIDS. More comprehensive measures can be used that will permit examining the different types of anxiety that individuals can experience as well as the different types of social support that individuals may receive. It is therefore recommended that studies be conducted to determine the source of anxiety in individuals with HIV in order to better address anxiety in these individuals. If practitioners know the exact source of the anxiety, they may initiate programs that will target this source of anxiety.

Future studies can make distinctions between social support received from family and that received from friends in order to know the exact source of social support that individuals with HIV and AIDS are receiving. This is particularly important when practitioners want to include social networks to enhance the well-being of their patients. If clinicians know the most satisfying social networks for individuals, they will be in a better position to enhance these networks in their patients. Depending on the most satisfying source of social support, individuals could be encouraged to maintain existing relationships as well as form other

meaningful relationships. It is also recommended that future studies explore the concept of Ubuntu in the context of caring for HIV infected adults.

## **5.8 Conclusion**

The burden placed by psychological disorders in the lives of those living with HIV and AIDS is one that warrants attention if policy makers and practitioners are to develop successful interventions to curb the effects of HIV and AIDS in this country. A holistic view of health needs to be adopted in order to provide successful HIV and AIDS interventions. In this study, this holistic view was adopted through examining both the psychological (anxiety) and social (social support) factors that affect adults diagnosed HIV or AIDS.

Furthermore, by treating anxiety, HIV infected individuals will experience a reduction in somatic symptoms as well as reduced high-risk behaviours that are often associated with psychological dysfunction (Basu, Chwastiak & Bruce, 2005). By examining and treating anxiety in HIV-infected individuals, clinicians are in fact operating within the bio-psycho-social model of disease, which acknowledges that psychological functioning affects and is affected by both the physical and social functioning of an individual (Engel, 1962).

The high prevalence of anxiety in this study highlights the need to screen individuals as part of treatment regimens for HIV-infected individuals so that proper care can be provided for those with psychological symptoms. Further studies should however be conducted to assess the source of anxiety in HIV-infected individuals so as to provide the best possible interventions for these individuals. An encouraging finding in this study is that although anxiety levels were

high, majority of individuals were still able to find satisfaction in their social relationships. This indicates that support received from family and friends can have a number of positive outcomes and should therefore be encouraged.



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## APPENDIX ONE

### INFORMATION SHEET

**Project Title:** IMPLICATIVE PERSONAL DILEMMAS AND COGNITIVE CONFLICTS IN HEALTH DECISION-MAKING IN HIV POSITIVE ADULTS AND ADULTS WITH AIDS

#### **What is this study about?**

This is a research project being conducted by Professor Pamela Naidoo at the University of the Western Cape. We are inviting you to participate in this research project because you have tested positive for the HI Virus and you are already on a treatment programme, which includes anti-retro viral therapy. The purpose of this research project is to try and understand how you think about your life and the fact that you are HIV positive, and how you arrive at the decisions you make regarding your health. You are aware that you can infect others with the HI Virus if you do not take the necessary precautions, such as using protective devices (e.g. a condom) whilst you are involved with other individuals during periods of intimacy. You are also aware that you have to follow a particular life-style, such as not engaging in risky behaviour, which can compromise your health. Not taking the anti-retro viral therapy as the doctor or the nurse advises you to take it, for example, may lead you to suffer ill health.

Very often despite individuals knowing that, certain behaviours are bad for theirs and other individual's health, they make decisions that may endanger theirs and the lives of others. This study, therefore, focuses on the difficulties that individuals, who are HIV positive, face when making health decisions. The study also attempts to understand how HIV positive individuals arrive at making health decisions that are good for them and other individuals that form part of their lives.

Once we are better able to understand the way you think about your health and how this thinking influences the decisions you make about taking care of your health, we will try to use this understanding to make changes to your current treatment programme. Once these changes are made and you receive the newly developed programme we will monitor the programme to assess whether it works well. Only one of the two clinics that is involved in the study will provide the new programme because we still need to test whether the programme works better than the previous programme before all the clinics provide it.

#### **What will I be asked to do if I agree to participate?**

You will be asked to fill in a number of questionnaires in a language of your choice. You will be assisted and guided by a research assistant. There will be a special room where you will be able to sit comfortably and fill in all the questionnaires. Please do not hesitate to inform the research assistant if you are experiencing any discomfort or if you want to have a rest before

completing the questionnaires. You should be able to complete the questionnaires within one and a half (to two) hours. Light refreshments will be provided.

About 6 to 8 months after the new treatment programme is given to you at your clinic, we will ask you and the patients from the clinic that did not provide the programme to fill in another set of questionnaires, which should take an hour and a half to complete. This will be done at one of your follow-up visits. Once again, you will be given the questionnaires in a special room where light refreshments will also be provided.

If you are required to come in when it is not your clinic follow-up visit, then you will be given money for your transport.

### **Would my participation in this study be kept confidential?**

We will do our best to keep your personal information confidential. To help protect your confidentiality, we will not write your name on each of the questionnaires but we will use a code so that the main researchers can identify you. This is important because we would like you to benefit from this study. We would like you to participate in the follow-up phase of the study, after the new programme is provided at the clinic. It is for this reason that the main researchers need to be able to identify you.

Please be assured that the questionnaires you answered will be locked in a safe place and only the main researchers will be able to access it. After we enter your answers on the computer, we will create a protected file that only the main researchers can enter with a pass-word.

If we write a report or article about this research project, your identity will be protected to the maximum extent possible.

### **What are the risks of this research?**

There are no known risks associated with participating in this research project. However, you are at liberty to rest if you get tired whilst you are filling in the questionnaires.

### **What are the benefits of this research?**

The benefits to you if you receive the new treatment programme include the fact that you will be able to express the way you think and feel about being HIV positive. You will be given the choice to have more counselling about your health status.

You and the patients who do not receive the new programme, will also be helping other people who are HIV positive, indirectly, to benefit. By testing the new programme, we will be able to advise all the health practitioners involved in your treatment what the best method of treatment is so that you can live a better life by making better decisions.

**Do I have to be in this research and may I stop participating at any time?**

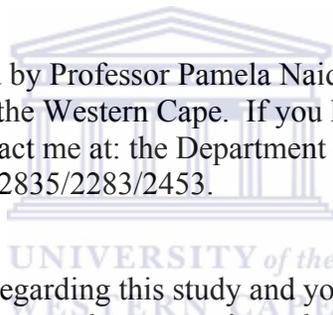
Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

**Is any assistance available if I am negatively affected by participating in this study?**

Yes, the research assistants will be able to help you during the time that you are participating in the research. If you feel that you want to talk more about your experiences of being HIV positive, the research assistant will arrange for the appropriate professional person to see you. If this happens, you will have to provide permission for the research assistant to refer you.

**What if I have questions?**

This research is being conducted by Professor Pamela Naidoo of the department of Psychology at the University of the Western Cape. If you have any questions about the research study itself, please contact me at: the Department of Psychology at the University of the Western Cape. Tel: 021 959 2835/2283/2453.



Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Head of Department: Professor Kelvin Mwaba

Dean of the Faculty of Community and Health Sciences: Prof R Mpofu

University of the Western Cape

Private Bag X17

Bellville 7535

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

**APPENDIX TWO**  
**CONSENT FORM**

**Title of Research Project:** IMPLICATIVE PERSONAL DILEMMAS AND COGNITIVE CONFLICTS IN HEALTH DECISION-MAKING IN HIV POSITIVE ADULTS AND ADULTS WITH AIDS

The study has been described to me in language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

**PARTICIPANT'S NAME**.....

**PARTICIPANT'S SIGNATURE**.....

**DATE**.....



Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

**Study Coordinator's Name: PROFESSOR PAMELA NAIDOO**

**University of the Western Cape**

**Private Bag X17, Belville 7535**

**Telephone: (021)959-2835**

**Cell: 083 776 1144**

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

## APPENDIX THREE

### HOSPITAL ANXIETY AND DEPRESSION SCALE (HADS)

Patients are asked to choose one response from the four given for each interview. They should give an immediate response and be dissuaded from thinking too long about their answers. The questions relating to anxiety are marked "A", and to depression "D". The score for each answer is given in the right column. Instruct the patient to answer how it currently describes their feelings.

A	I feel tense or 'wound up':	
	Most of the time	3
	A lot of the time	2
	From time to time, occasionally	1
	Not at all	0

D	I still enjoy the things I used to enjoy:	
	Definitely as much	0
	Not quite so much	1
	Only a little	2
	Hardly at all	3

A	I get a sort of frightened feeling as if something awful is about to happen:	
	Very definitely and quite badly	3
	Yes, but not too badly	2
	A little, but it doesn't worry me	1
	Not at all	0

D	I can laugh and see the funny side of things:	
	As much as I always could	0
	Not quite so much now	1
	Definitely not so much now	2
	Not at all	3

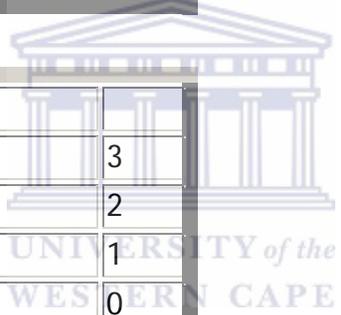
A	Worrying thoughts go through my mind:	
	A great deal of the time	3
	A lot of the time	2
	From time to time, but not too often	1
	Only occasionally	0

D	I feel cheerful:	
	Not at all	3
	Not often	2
	Sometimes	1
	Most of the time	0

A	I can sit at ease and feel relaxed:	
	Definitely	0
	Usually	1
	Not Often	2
	Not at all	3

D	I feel as if I am slowed down:	
	Nearly all the time	3
	Very often	2
	Sometimes	1
	Not at all	0

A	I get a sort of frightened	
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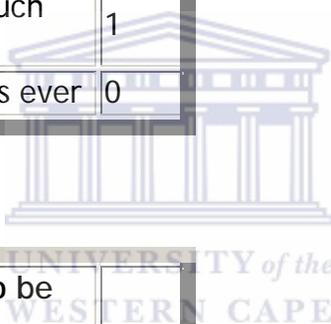


	feeling like 'butterflies' in the stomach:	
	Not at all	0
	Occasionally	1
	Quite Often	2
	Very Often	3

D	I have lost interest in my appearance:	
	Definitely	3
	I don't take as much care as I should	2
	I may not take quite as much care	1
	I take just as much care as ever	0

A	I feel restless as I have to be on the move:	
	Very much indeed	3
	Quite a lot	2
	Not very much	1
	Not at all	0

D	I look forward with enjoyment to things:	
	As much as I ever did	0
	Rather less than I used to	1
	Definitely less than I used to	2
	Hardly at all	3



A	I get sudden feelings of panic:	
	Very often indeed	3
	Quite often	2
	Not very often	1
	Not at all	0

D	I can enjoy a good book or radio or TV program:	
	Often	0
	Sometimes	1
	Not often	2
	Very seldom	3

	Scoring (add the As = Anxiety. Add the Ds = Depression). The norms below will give you an idea of the level of Anxiety and Depression.	
	0-7 = Normal	
	8-10 = Borderline abnormal	
	11-21 = Abnormal	



Reference:

*Zigmond and Snaith (1983)*

## APPENDIX FOUR

Page 7 of 8

### SOCIAL RELATIONS

Circle the most appropriate answer

- 1 Not at all (never)
- 2 Rarely
- 3 Some of the time
- 4 Often or most of the time
- 5 Frequently or all of the time

During the past week how often have you...

Enjoyed talking with or being with friends or relatives?	1	2	3	4	5	(250)
Looked forward to getting together with friends or relatives?	1	2	3	4	5	(251)
Made social plans with friends or relatives for future activities?	1	2	3	4	5	(252)
Enjoyed talking with co-workers or neighbours?	1	2	3	4	5	(253)
Been patient with others when others were irritating in their actions or words?	1	2	3	4	5	(254)
Been interested in the problems of other people?	1	2	3	4	5	(255)
Felt affection toward one or more people?	1	2	3	4	5	(256)
Gotten along well with other people?	1	2	3	4	5	(257)
Joked or laughed with other people?	1	2	3	4	5	(258)
Felt you met the needs of friends or, relatives?	1	2	3	4	5	(259)
Felt your relationships with your friends or relatives were without major problems or conflicts?	1	2	3	4	5	(260)

**APPENDIX FIVE**

**PERSONAL DETAILS AND BIOGRAPHICAL INVENTORY  
PART A**

A1. Name:

A2. File No

A3. Age in years:

A4. Tel: W

(A/H, home, or other contact no.):

A5. Type of transport used to get to the clinic? *(Please circle)*

(a) PUBLIC: Bus:

Taxi:

Walk

(b) PRIVATE: Own Vehicle:

Hired Vehicle:



A6. Did you have to be accompanied to the clinic? *(Please tick)* Yes

No

If yes, please state reason(s):

**Please make a cross in the appropriate columns**

A7. Sex

Male	<input type="checkbox"/>
Female	<input type="checkbox"/>

A8. Language

English	<input type="checkbox"/>
Afrikaans	<input type="checkbox"/>
Xhosa	<input type="checkbox"/>
Other <i>(Please Specify)</i>	<input type="checkbox"/>

**A9. Marital Status**

Never Married	
Living with partner	
Separated	
Married	
Divorced	
Widowed	

**A10. Employment**

Occupational status (if employed)?

Employed	
Unemployed	



**A11. Net Monthly Income**

Less than R500	
R500 to R1 000	
R1 000 to R2 000	
R 2 000 to R3 000	
More than R 3000	

**A12. Financial Aid**

Are you on a disability grant? Yes No

Please state amount: \_\_\_\_\_

Do you receive any other financial aid from government? Yes  No

If yes, please specify: \_\_\_\_\_

**A13. Is anyone financially dependent on you?** Yes  No

If yes, please specify what the relationship of the dependent is to you: \_\_\_\_\_

A14. Are you financially dependent? Yes  No

A15. Do you live on your own? Yes  No   
If yes, do you own your home? Yes  No

If no, with whom do you live?

Is this person employed? Yes  No

A16. Do you have any coexisting conditions (medical e.g. TB)? Yes  No

If yes please specify when you were diagnosed with this condition \_\_\_\_\_ and what treatment are you on? \_\_\_\_\_

A17. Phase/Stage of Disease: Have you been diagnosed with having AIDS yet?  
Yes  No  If Yes, when were you diagnosed with AIDS \_\_\_\_\_ and what stage of the illness are you in \_\_\_\_\_

A18. Phase/Stage of Disease: You are HIV positive. Do you know at what stage of the disease you are in? Yes  No  Please specify \_\_\_\_\_

A19. What is your CD4 count? \_\_\_\_\_ A20. At what Stage of the disease are you in?: \_\_\_\_\_  
(Researcher to obtain information if you do not know)