COMPARING THE BDI II AND THE HADS (HADS-D) AS A SCREENING TOOL FOR DEPRESSION AMONGST HIV INFECTED INDIVIDUALS ATTENDING A PUBLIC HEALTH CLINIC

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Keywords

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Secondary Data Analysis

ABSTRACT

This study utilised secondary data from a larger study that looked at individuals that are already infected by HIV which is entitled *Implicative personal dilemmas and cognitive conflicts in health decision making in HIV positive adults and adults with AIDS*. The primary aim of the larger study was to examine the cognitive construction of the individual and how they utilised their individual resources to construct who they are and how they perceived the difficulties and challenges that they face and the decisions they make regarding their health. HIV and AIDS is a debilitating disease and it affects millions worldwide. South Africa, presently, has the largest burden of this disease with those between the ages of 15 – 49 years of age being most affected. As previously mentioned the decisions that individuals make can impact on their health. Decisions to take necessary precautions such as protected sex during sexual intercourse can decrease the progression of the disease. Decisions made regarding abstinence of risky behaviour as well as being committed to taking medication could also positively impact health. People living with HIV and AIDS find it difficult to adjust to the challenges that this disease presents. Depression is often experienced due to the changes in self image and perception. Studies show that females are twice more likely to experience depression than men. There has however been no conclusive evidence showing the reason for this, however, the perception of stress based on gender could shed some light on this matter and how these perceptions can increase the likelihood of women being more vulnerable to depression. Due to the limitation of this study, it will only look at depression as it relates to HIV and AIDS. Psychological problems such as depression can hamper the adjustment process and the effect of depression is evident in that it can lower the CD 4 + cells. Not only are those living with HIV and AIDS affected by depression, but they also have a lifetime prevalence to depression. It is important to have an effective screening tool for depression so that the detection of this disease can be made and effective treatment can be implemented to enhance health. The sample consisted of 113 adult participants that have already been diagnosed with HIV and AIDS. The primary aim of this study was to compare the Beck's Depression Inventory II (BDI II) and the Hospital Anxiety and Depression Scale –(the Depression component) (HADS-D) as a screening tool for depression. Exploratory Factor Analysis revealed a 5 factor structure which accounted for 60.14 % of the total variance. The HADS yielded one factor accounting for 14.33% of total variance. The BDI II has proven to be more a reliable measure of depression with 0.89 according to the Cronbach's Alpha co efficient opposed to 0.375 as per the HADS-D. The secondary aim was to establish the socio-demographic and disease profiles of the participants under study.

Declaration

I, Celeste Catherine Le Fleur, declare that *Comparing the BDI II and the Depression component on the HADS as screening tool for depression amongst HIV infected individuals attending a public health clinic* is my own work, that it has not previously in its entirety or in part been submitted at any other university or degree, and that all the sources I have used or quoted have been indicated and acknowledged by complete reference. This study is part of a larger stud entitled " *Implicative personal dilemmas and cognitive conflicts in health decision-making in HIV positive adults and adults with AIDS.*". I acknowledge that I am using secondary data from the larger study.

Date:……..

Signed:……

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Chapter One

1. Introduction

1.1 Background to the study

Acquired Immune Deficiency Syndrome (AIDS) is a chronic disease that could be defined as a combination of opportunistic infections which are a result of the immune system being compromised leaving the body defenceless toward warding off invading organisms (Kumar, Abbas, Fausto, Robbins & Stanley, 2005). Deaths that have resulted from HIV/AIDS have been estimated globally at 2.8 million in 2005 and has been projected to be 6.5 million by the year 2030 (Mathers & Loncar, 2005). Over 5.2 million South Africans are infected with AIDS (Shisana et al., 2009). The Human Immunodeficiency Virus (HIV) is a virus that progressively attacks the immune system decreasing the amount of immune system cells (Kumar et al., 2005). Once the immune system has been severely compromised it leads to AIDS (Gallo & Montagnier, 2003). The prevalence rates of those infected with HIV is at the highest with individuals between the ages of 25-29 where 1 in 3 in this age group had been found to be HIV positive in 2008 (Shisana et al., 2009).

Prevalence increases according to the various age groups of females with 21% amongst 20-24 year olds, 32.7 % amongst 25 to 29 year olds. Overall, females have higher prevalence rates of HIV infection in comparison to males (Shisana et al., 2009). There are to date two different forms of the HI virus namely HIV-1 which occurs more frequently in the population of the United States of America (USA) and the HIV-2 which occurs frequently in the population in Africa. Research has shown however, that HIV -2 also occurs in the USA (Brannon & Feist, 2007). The challenges that an individual living with HIV and AIDS has to face, is immense. The disease affects all aspects of life such as relationships, finances, and family and the reality of death looming (UNAIDS/WHO, 2008). There are two major factors that sustain and maintain the disease as it relates to HIV and AIDS. Firstly, behavioural patterns can lead to the progression of HIV and AIDS (Nevid, Rathus & Green, 2008) such as smoking, the increased consumption of

alcohol, the usage of illicit drugs, as well as not being committed to a disciplined regimen of taking medication and adherence to that regimen could lead to negative effects on health as well as a decrease in quality of life (Sternberg, 1994). HIV positive individuals have also been found to engage in behaviour that is risky such as increased amount of sexual partners which could expose the HI Virus to others (Porsche& Willis, 2006). Secondly, psychological problems such as depression make it difficult to adjust and to live with the disease (Nevid, Rathus & Green, 2008). People living with HIV and AIDS (PLWHA) often experience anxiety and depression because of the constant changes in self image and perception (Brannon & Feist, 2007). High levels of psychological distress such as anxiety and depression is associated with lower levels of CD 4+ cells (Mulder, van Griensven, Sandfort, de Vroome, & Antoni,1999).

Mental health is a relatively unchartered area that needs to be given attention especially since the implication of the chronic disease HIV/AIDS is immense regarding mental health. Mental illness impacts greatly on the development and progression of HIV/AIDS (WHO, 2008). Studies show that the prevalence of mental illness such as depression is higher amongst those who are living with HIV/AIDS. HIV also greatly impacts on the Central Nervous System which then subsequently causes neuropsychiatric problems which leads to depression and frank dementia amongst other mental disorders (WHO, 2008). Often individuals with mental illness fear to disclose their status as this could lead to further stigmatisation and adding to this, mental health professionals often do not adequately identify depression amongst individuals with HIV/AIDS so that it can be effectively managed and treated (WHO, 2008).

In a study conducted in 2003, it indicated that depression is very common among patients with HIV than with non-HIV controlled subjects (Tate et al., 2003). Eighty percent (80%) of the patients observed, reported clinically significant depression. The study also concluded that depression is an important neuropsychiatric symptom regarding HIV as it is a critical health issue and greater importance should be placed on this aspect by medical practitioners (Tate et al., 2003). The same

results was evident in a study conducted in South Africa which took place over five provinces where it was found that depression was the most common psychological disorder amongst PLWHA (Freeman, Nkomo, Kafaar & Kelly, 2008)

A study conducted by Penzak, Reddy and Grimsely (2000), showed that 24% to 45% of people who are infected with HIV have a lifetime prevalence to depression. Depression impairs the immune function as well as changes in behaviour resulting in the advancement of HIV infection. That which constitutes change in behaviour is possibly non adherence to therapeutic intervention. This is supported by another study by Bouhnik et al. (2000), that states that depression is linked to behaviour change such as non adherence to the administration of medication or therapeutic intervention which if not treated could have an adverse effect leading to the progression of HIV. A co-morbid mood disorder amongst PLWHA ultimately impacts their quality of life. It is important therefore to ascertain whether PLWHA are clinically depressed (Penzak et al., 2000). In keeping with this argument, the study focuses on investigating whether the BDI II or the HADS- D is a more reliable measuring tool for clinical depression amongst PLWHA.

1.2 Rationale and Research Question

This study uses secondary data from a larger study that looks at individuals that are already infected by the human immunodeficiency virus (HIV) which is entitled *Implicative personal dilemmas and cognitive conflicts in health decision making in HIV positive adults and adults with Acquired Immune Deficiency Syndrome (AIDS)* (Naidoo, 2009). The primary aim of the larger study is to examine the cognitive construction of the individual and how they utilise individual resources to construct who they are and how the decisions that they make can affect the outcome of being able to manage their symptoms more effectively and prevent the spread of the disease. This study is located within the secondary aim of the larger study which examines depression as a co-morbid condition in PLWHA (Naidoo, 2009). Often there is an immense pressure on the public health sector to give medical service to the large numbers of individuals and resources are often limited

and over used. In South Africa (SA), the biomedical approach to care in the public health sector is emphasised at the expense of a more holistic model of care that takes into account social and psychological well-being. The focus of this study, therefore, is to promote the psychological health of PLWHA, by recommending a more reliable measure of clinical depression with the ultimate aim of providing the necessary treatment for this co-morbid condition (Nevid et al., 2008).

The research question in this study is as follows: Is the BDI II or the depression component on the HADS a better screening tool for clinical depression amongst HIV and AIDS patients in a resource poor setting. It follows then that the main hypothesis being tested in this study is therefore: The BDI II is a better screening tool for depression than the HADS-D for use amongst low-income PLWHA.

1.3 Aims

The primary aim of the study is to investigate whether the BDI II or the HADS is a better screening tool for use in an HIV/AIDS public health clinic.

The secondary aim of the study is to establish the socio-demographic and disease profiles of the participants under study. This would include measuring clinical depression based on the data obtained from the BDI II and the HADS-D.

1.4 Objectives

The objectives of the study are as follows

1. To establish the psychometric properties (construct validity and internal consistency) of the BDI II.

2. To establish the psychometric properties (construct validity and internal consistency) of the HADS-D.

The objectives would also include the following:

1. To establish the socio-demographic and disease profiles of the participants under study.

2. To measure clinical depression based on the data obtained from the BDI II and the HADS-D.

1.5 Conclusion

Living with HIV and AIDS is a reality that faces many South Africans today. The prevalence rates are phenomenal and the challenges that the affected individual lives with are immense. Behavioural changes could also be indicative of the presence of depressive symptoms and the indicators of depression can be identified as non adherence to medication as well as the inability to make choices especially around the adjustment to the chronic disease. This is where the screening of depression becomes vital as the individual presents with these behavioural changes (Orlando, Burnam & Beckman, 2002). Behavioural and psychological factors are often that which maintains this disease and bearing this in mind health practitioners need to be able to detect depression within those who have been diagnosed with HIV/AIDS so that the necessary treatment can be implemented as part of the overall management of the disease. Depression is a mental illness that affects the disease and outcomes of the disease and often times this critical point is one that is often overlooked and therefore early detection of depression and treatment of depression is that which is essential within the field of mental health. An effective measure of depression is therefore essential within the field of mental health so that detection can be made leading to subsequent treatment of depression within PLWHA.

Chapter Two

Theoretical Framework and Review of Literature

2.1 Introduction

The Biopsychosocial model as proposed by the theorist George Engel has been selected to frame this study, because it takes into consideration the biological, psychological and social factors as it relates to health and illness.

2.2 Theoretical Framework

As the name denotes , the Biopsychosocial theory refers to a multifaceted perspective of disease such as biological, psychological and social factors. This theory is based on the systems approach. This systemic approach has been a departure from a reductionist point of view to a more holistic point of view. The assumption from a systemic point of view is that all factors are related to each other and can be views as interdependent on each other. Therefore if one aspect of the system (physical) is compromised, it affects the psychological as well as the social systems. The Biopsychosocial model (BPSM) in essence is a set of beliefs and values about health. This model is both philosophical as well as a guide to clinically understand the subjective experience as it relates to diagnosis and outcomes. Health and illness can be described as the sum total of factors as it relates to physical, psychological and social factors and how these factors contribute to a sense of health or illness. Other factors would include culture and social support (Engel, 1977). The disease that the individual is faced with can be best understood in terms of how biological factors, psychological factors and social factors play a key role in the interaction within the development of this particular disease. In fact this model highlights in essence, that there are a host of factors that influence the progression and development of a particular disease which would be of critical importance for medical health practitioners in their understanding and subsequent treatment of depression. For this reason the Biopsychosocial model has been viewed

in the light of how these various factors can help to implement a holistic framework for the understanding of this chronic disease, HIV and AIDS.

The BPSM is founded upon the systems theory as well as cybernetics (Brody, 1990). Here it underscores the multiple levels upon which a disease is constituted which ranges from molecule to social as well as ecological levels (Brody, 1990). The BPSM has contributed a rich comprehension on how not only social factors could contribute to the sustaining of this disease but also how biological and psychological factors can significantly impact the sustaining and development of the disease. Biological, psychological and social factors not only become efficacious in understanding the development of the disease, but also it is useful in understanding how these factors can employ a better understanding and give momentum toward seeing a more positive health outcome (Brody, 1990). Health can only be understood once the relationship between these factors can be identified (Brody, 1990).

The biological aspect of HIV/AIDS helps to understand its characteristics regarding compromised immune system which lead to the decrease of CD4+ cells. Once these CD4+ cells decreases to a significant amount of below 200 it then constitutes the transition of HIV to AIDS. Depression has been associated to lower levels of CD4 + cells and depression is also that which then in turn sustains the disease (Mulder, van Griensven, Sandfort, de Vroome, & Antoni, 1999). Clearly the biological factors (physical) impacts the psychological factors (depression). A compromised immune system also leads to infections such as Turbercolosis (TB) which is a co-morbid factor relating to HIV/AIDS. 80% of individuals that have been diagnosed with TB were also tested positive for HIV (Feldman, Manchester, Maposhere, 2002). 23% of AIDS related deaths were due to TB. Also from a biological aspect concerning HIV/AIDS, women have been reported to be more at risk for the infection of the HI virus due to the fact that women who have untreated STI's stand a

greater chance of increased levels of HIV in vaginal fluids as well as in vaginal yeast infections. Services around health issues are essential to women as research has shown that there is a correlation between STI's and HIV infection (Feldman et al., 2002). Undiagnosed STI's can lead to the progression of HIV. Many women are however uninformed about their infections of STI's and because their STI's are asymptomatic it is undiagnosed and untreated for long periods of time. Urethral discharge and genital ulcers have been known to be a high risk factor for the development of HIV. In rural areas, the figures are staggering as more women are being affected by these STI's (Feldman et al., 2002).

The social aspects as it relates the spread of the disease is such that black women between the ages of 15-49 years of age and who are also of child bearing age, have a heightened risk for infection of the HI virus. Within black communities where informal settlements are common, women are perceived to be of a lower status and this in itself is a contributing factor to sexually transmitted infections (STI's) and HIV and AIDS. Infrastructure is left much to be desired with no running water and poor sanitation which promotes diseases. Having a low status leaves these women with little bargaining power where it comes to the use of condoms (http://www.capegateway.gov.za/eng/pubs/public_info/F/87102/7).

Due to the fact that women are at the disadvantage that they are unable to own land and have rights to property means that they do not have a source of income. HIV and AIDS diagnosis also means that expenses are increased and income is drastically reduced. Poverty has been defined as " …a level of income below which people cannot afford a minimum, nutritionally adequate diet and non-food requirements" (Marks et al., 2006, p. 422). Poverty has an impact on the access to adequate health care, adequate sanitation as well as access to water that is safe to consume amongst others. Poverty is a critical factor as a cause of ill health and early mortality. Freeman et al (2008) states that a relationship exists between poverty and HIV. It has however shown that mental disorder is a result of the poverty rather than the diagnosis of HIV /AIDS but no substantial studies exist to

support this claim. The relationship between poverty and HIV is not that clear (“ Poverty and HIV/AIDS,”n.d.). Those that are poor however have an immense battle to cope with the effects of HIV/AIDS. As Freeman et al. (2008) relates, it shows that poverty does worsen conditions present in living with HIV which affects the mental health of the individual. Mental illness is a risk factor to poverty as employment becomes more difficult to find for those who are living with a mental disorder (Freeman et al., 2008). Living in poverty where economic resources are low have an impact on a sense of well-being (Das, Do, Friedmann, Mckenzie & Scott, 2007). It is not uncommon to experience depression and anxiety whilst living in dire sub economic conditions or where poverty is rife. Poverty is also associated to lower socio economic status as well as unemployment as well as lower levels of education. Lower socio economic status is a determinant of emotional distress. There is a body of evidence that shows that even the uncertainty of an income is a causal factor or mental disorders (Patel & Kleinman, 2003).

Presently the absence of a state of well-being is soaring as it is reported that two thirds of Africans are presently living in dire need of economic resources and these resources would include medical treatment or drugs for treatment of illness and disease. Two thirds of deaths in developing countries occur before the age of 65 whereas conversely in first world or developed countries the same scenario is that is occurs after the age of 65 (Naidoo, 2009). The focus of this study is the promotion of psychological health of PLWHA by the recommendation of a reliable measure of clinical depression and to provide treatment for this co morbid condition which impacts on quality of life.

The emotional and psychosocial stressors as it related to the disease as well as PLWHA have been described as stigmatisation, disclosure, anger, rejection, isolation, grief, the change in expectations and possibly preparing for death (Marks et al., 2006). These various stressors become more evident at the various stages of the disease and they are associated to the sense of

anxiety, hopelessness and helplessness. Depression and anxiety is also very commonly experienced by PLWHA (Marks et al., 2006). The psychological aspect of HIV/AIDS is that depression often develops due to the changes in self image and perception of who they are post the diagnosis of HIV (Penzak et al, 2000). Here it is useful to know that depression not only affects the individual leading to feelings of worthlessness and hopelessness, but that depression could possibly have an adverse effect on the immune system leading to the lowering of CD 4+ cells which could lead to the progression of HIV into AIDS. Depression could also lead to a decreased capacity to stay focused on being healthy (Penzak et al., 2000).

2.3 Theory of depression

Beck explains that depression is often maintained because of the cognitive triad which triggers depression. The concept of the triad is primarily three pronged. Each of the three components related to how the person holds a negative view of the self in that they do not have the necessary personal resources to attain happiness and success (Corey, 1991). Secondly, the cognitive triad relates to how the individual translates and interprets experiences as negative, as though the person makes a theory, usually negative, about them and consequently tries to prove their theory within their everyday experiences (Corey, 1991). Thirdly, the cognitive triad relates to how the individual feels about the future whereby they foresee that their present situation which they perceive as negative, will remain unchanged and continue to do so for an unlimited time (Corey, 1991). PLWHA, could have a perception of the word as being negative and this could impede the facilitation of social and interpersonal interactions. Also the individual could perceive of themselves as not being accepted by their family members and loved ones thus their evaluation of the situation is negative. The person's negative view of themselves also possibly could lead to a heightened sense of self-blame, self-criticism which could negatively impede on the individual's

life and having this negative view of self often also leads to negating positive characteristics about themselves (Songprakun, 2010).

2.3.1 The BDI II as a measurement of depression

The BDI II is a tool that is generally used in a wide context as a means of measuring the degree to which the individual is experiencing symptoms related to depression. Depression is measured by evaluating the individual's description of their symptoms and this has been collated to inform the structure of the BDI reflecting the varying degrees of depression (Beck et al., 1996). The original version of the BDI II which was the BDI, was developed in 1961 and also consisted of 21 questions and evaluating the symptoms of the individual pertaining to how they felt in the preceding week. Each of the 21 items had a choice of 4 responses which described the intensity of their symptoms. The BDI IA was really an amendment of the BDI and certain items which was similar with the same score was removed. Respondents were asked to evaluate symptoms related to that within the past 2 weeks rather than in the preceding week as formally proposed by the BDI. The reliability of the instrument measured at 0.85 as the reliability index, the Cronbach's Alpha, which meant that reliability was good (Ambrosini, Metz, Bianchini, Rabonovich & Undie, 1991). The current version which is part of this study, was established to make the construction of the scale more in line with the Diagnostic Statistical Manual of Mental Disorders- 4TH Edition (DSM-IV-TR) which ultimately meant that the construction of depression as presented in the BDI had to be similar to the DSM-IV-TR. Therefore items such as hyponchondria, body image and difficulty working were no longer part of the amended instrument. Items related to eating patterns were also changed to evaluate more early the change in the patterns thereof. Only 3 of the items from the original version remained the same which were feelings of being punished, suicide and interest in sex. The BDI II positively correlates with the Hamilton Depression Rating Scale (Beck et al., 1996).

The BDI II has a two factor approach which is mainly that of affect and somatic components, meaning there are two subscales with the intention of determining the aetiology of the individual's depression. The affect subscale relates to pessimism, self-dislike, self-criticalness, guilty feelings, past failures, suicidal thoughts and wishes, worthlessness and punishment feelings. The somatic subscale looks at sadness, anhedonia, crying, agitation, indecisiveness, loss of energy, change in sleeping patterns, concentration, fatigue, loss of interest in sex, and irritability. But like with any self report inventory, scores can be maximised or minimised by the recipient. Administration also has on impact on the final score. In a setting where the individual is asked to fill out the form in a public place, the environment itself can affect the way the person would answer, making the response more socially acceptable which will not be a true reflection of their response (Beck et al. 1996). Further details on the psychometric properties of the instrument will be discussed subsequently.

2.3.2 The HADS-D as a measurement of depression

Within the construction the HADS the role that depression plays within the ill health sector had to be considered as being important. Physicians within the public health setting often feel that they are not equipped to address the issue of depression whether as a contributing factor or as a pre-existing factor to the illness. The HADS however, should not be mistaken as only being used in the hospital environment, on the contrary, it has proven, according to Snaith (2003), to be a valuable tool within the broader community and worldwide. Within the HADS, statements pertains to depression and a considerable portion of it pertains to anhedonia (Snaith, 2003). The HADS has a 4 point (0-3) response category. Depression had been divided into 4 ranges namely, normal, mild, moderate and severe. The HADS takes about 2-5 minutes to complete and studies reveal that this instrument was found to be acceptable for the population for which it was intended. Care should be

taken that the recipient of this instrument understands the content as well as being literate as this could impede on the effective use of this instrument leading to it being answered haphazardly. The HADS has also shown to assess the severity of depression very adequately amongst patients with somatic and psychiatric illnesses in both primary care settings as well as the general population. The HADS has shown to have psychometric properties such as factor structure, interrelation and homogeneity (Snaith, 2003). A study using factor analysis on the HADS had revealed that the HADS reflected a two factor solution for the two subscales relating to depression as well as anxiety (Oyane, Bjelland, Pallesan, Holsten & Bjorvatn, 2008). The cronbach's alpha for the HADS-D revealed to be between 0.67 and 0.90. When compared to other instruments the HADS, the correlation ranged from between 0.49 to 0.83. The HADS has shown to be a reliable measure amongst medical patients where depression was measured (Oyane et al., 2008). Performing a principal component analysis where factors greater than 1 had been retained, the HADS had shown to have a 3 factor solution (Mykletun, Stordal & Dahl, 2001). Generally, the HADS had good psychometric properties regarding factor structure, intercorrelation, homogeneity, and internal consistency (Mykletun et al. 2001).

In relation to the BDI II and HADS-D and previous studies that show that it had been instruments in measuring depression, the construction of a good questionnaire plays a major role.

2.4 Questionnaire Construction

Questionnaires are often used as a means of measuring with regard to this study, depression. Often self administered questionnaires are used to acquire information which would be indicative of the measurement of depression. It is therefore important to decide which survey method would be used and the factors that would influence this would be the objective of the survey and the target population that will be surveyed.

Usually the adequacy of an instrument is measured by its psychometric properties as it relates to reliability and validity. Reliability is the measurement of an instrument yielding results that can be replicated successively (Pretorious, 2007). There are several forms of reliability such as test-retest reliability. This is where a particular individuals score correlate on different occasions on the same instrument. Internal consistency is also a measure of reliability and this refers to the extent to which each item on an instrument correlates with each other. Generally instruments with an alpha value of greater than 0.75 is considered to be reliable (Terre Blanche & Durrheim, 1999). Validity refers to the degree to which an instrument measures what it has intended to measure. There should thus be a good commonality between conceptual as well as operational definitions of the given construct. There are various types of validity such as content validity which refers to the degree of measurement reflecting a domain of content. Criterion validity refers to the degree that the measure of an instrument relates to other instruments. Construct validity refers to the extent to which a measure of one construct relates to another with which it is associated (Terre Blanche & Durrheim, 1999).

2.4.1 Measurement of depression

Depression is the most common co-morbid psychiatric disorder amongst PLWHA (Shisana et al., 2009). There are a number of instruments that can be used to measure depression. Depression could either be measured by an instrument or it could be measured by a clinical interview. Although self report instruments can be viewed as effective and not time consuming, it is important to remember that these type of instruments are subject to response bias(Beck et al., 1996). Individuals would indicate that they have more symptoms than what they actually present with and thus producing high scores while others may receive lower scores by under reporting on symptoms that they experience. Often individuals with depression think dichotomously and they would have a tendency to thus answer the self report instrument as extremely positive or

extremely negative and this type of self-report is indicative of a more severe depression as those with milder forms of depression would answer the self report instrument with variation within their responses (Becket al., 1996). With regard to this study, the BDI II has shown to have better internal consistency. Efficient mental health services thus becomes imperative within the management of HIV/AIDS therefore recommending a more reliable measure of depression becomes critical and it is the purpose of this particular study to inform the public health about effective means of being able to detect and identify depression more effectively by using the more conclusive screening tools as it related to those who are living with HIV and AIDS.

2.5 REVIEW OF THE LITERATURE

2.5.1 HIV and AIDS

A cluster of diseases that had previously been very rare was seen within the United States of America in 1979 and 1980. These diseases were related to pneumonia which was spread by birds called pneumocystis carinii as well as the cancer called Karposi's Sarcoma. The first publication of these rare diseases as they were manifested was journalised in the Morbidity and Mortality Weekly Report (MMWR) on the 5 June 1980 which was a well known report that included various publications on infectious diseases and related deaths as informed by the Centres for Disease Control in the USA (Brannon & Feist, 2007) . Already on the 3 July this Journal had reported 3 cases related to pneumoystic carnii and numbers of cases were rising related to Karposi's sarcoma especially in the area of New York and San Francisco. Later it was discovered that only homosexual men had contracted these particular diseases but within time it was associated to haemophiliacs as well as those who partook in blood transfusions. This disease would later be known as Acquired Immunodeficiency Syndrome or AIDS which is an illness

characterised by the immune system being seriously and adversely affected. The disease was not contracted in any other way but by being exposed directly to the virus, so it wasn't spread like the flu or chickenpox (Whiteside & Sunter, 2000).

The virus, once having been exposed to it, would subsequently attack the immune system impeding an effective way of combating infection, making the immune system weaker. AIDS is a syndrome meaning that the person who is infected with the disease would be made vulnerable to a host of opportunistic infections once the immune system had been compromised and the body infected. In 1983 the virus that caused AIDS had been identified by a French scientist, Luc Montagnier and thereafter this discovery was confirmed by Robert Gullo (Whiteside & Sunter, 2000). The virus was called the Human Immunodeficiency Virus or HIV. HIV is retrovirus making it difficult to locate.

The HI virus weakens the immune system to such an extent that the body is no longer able to defend itself against diseases caused by invading organisms (Louw & Edwards, 1997). The virus would enter a cell and replicate itself by accessing the cell's DNA. The virus affects largely the T-Cells, the white blood cells that serve as the "protectors" of the body where cells are concerned (Louw & Edwards, 1997). Other immune cells known as macrophages are also affected rendering it impossible for the body to counter attacking these HI Viruses. In 1985 the second immunodeficiency virus was discovered and this was labelled the HIV2 (Whiteside, Sunter, 2000). It was generally not as fast acting as the HIV1 virus and was mostly reported in West Africa. In Southern Africa the most dominant strain found was the HIV1 (Whiteside, Sunter, 2000). Being HIV positive doesn't mean that AIDS is present (Mcphee, Lingappa & Ganong, 2003). There has been no conclusive evidence that HIV causes AIDS, but there are positive correlations between the HIV production and viral load as well as the prognosis of AIDS (Whiteside & Sunter, 2000). Although there are not many cases available to confirm the validity, AIDS has been known to occur without HIV being present. There are cases where HIV positive

individuals do not develop AIDS. The period in which infection develops is around 8-10 years and there have been cases where people have outlived this infection period but this is the exception rather than the norm (Whiteside & Sunter, 2000). It is only when CD4 + counts or the human immune system cells fall below 200 that it would constitute a progression from HIV to AIDS. During the window period, the antibodies is not detected and it is here that the person becomes seriously infected. The incubation period is where the body tries to ward off the virus in response to the rapid growth of the virus. This incubation period can last between 6 years to 8 years. CD4 cells drop when this process of warding off the virus occurs. An uninfected person has 1200 CD4 cells per micro litre of blood. It is when opportunistic infections become more evident, that the individual is said to have the syndrome AIDS (Whiteside & Sunter, 2000).

Lung infection affects three quarter of patients (Mcphee et al., 2003). This is the most common opportunistic infection with symptoms such as fevers, coughs, shortness of breath, and hypoxia; a condition where not enough oxygen is available to body tissue (Mcphee et al., 2003). The chances of developing Tuberculosis while being HIV positive are very high (Mcphee et al., 2003; Whiteside & Sunter, 2000). The reason for this being that cellular immunity is compromised (Mcphee et al, 2003). In 2008 there were over 5.2 million people in South Africa that was living with HIV/AIDS. In Sub-Saharan Africa as it relates specifically to Zambia, the HIV/AIDS prevalence rates are at 20% and this prevalence is within the age group of individuals between 15-49 years of age. These rates are considered to be the highest in Southern Africa. The total population of Zambia which is considered to be the most urbanised country within the Sub Saharan region compromises of 49 % male and 51% females of which 62% live in areas that are rural. Females between the ages of 20-29 years are mostly affected by HIV and AIDS and males are mostly affected between the ages of 30-39 years of age. Given the impact that HIV and AIDS

have on mental health, the priority of mental health has only been identified as 17th on the League Table and clearly has not met the 6 main health concerns as a priority (Mayeya et al., 2004).

2.5.2 The Impact Of Depression On The Individual

Depression is a mood disorder that affects cognition (Leahy & Holland, 2000). The individual beliefs and assumptions impacts their perspectives as well as the way in which they interpret events or the way they can assess a possible traumatic setback such as being diagnosed with HIV/AIDS. The promotion of psychological health in PLWHA by the effective evaluation of a reliable measure is therefore imperative as this will then provide the necessary treatment for this co-morbid condition.

Research into depression has been found to have been aetiologically understood due to genetic factors as well as coping styles of the individual. Individuals develop depression because they evaluate the situation that they are in as life threatening. A negative perception is a risk factor for the onset of depression (Brannon & Feist, 2007). Depression is viewed as a sense of loss, or having less of, or the absence of not being able to achieve desired rewards. Distorted automatic thoughts consist of the belief that the individual is a failure and is worthless. An event that occurs is processed through these automatic thoughts and this results in the onset of depression and thus resulting in decreased motivation in pursuing behaviour that brings about rewards (Corey, 1991). Maladaptive assumptions are primarily the belief that future expectations will not be achieved and the future is thus perceived as negative. Negative schema's as described by Beck (1976) is that process that occurs cognitively within a given situation where loss or failure is experienced. Earlier negative concepts of the self are then triggered. Schema's "constitute the deepest level of thinking. They reflect core beliefs about the self, such as that the self if unlovable, helpless, vulnerable to abandonment…or incompetent " (Leahy & Holland, 2000, p.18).

Deferential characteristics as it pertains to depressed and non depressed individuals are that their exposure to negative life events, experience of chronic strain, coping patterns vary as well as support of social resources (Brannon & Feist, 2007). Psychological factors play a major role where life events are concerned as it would often determine how the individual interprets these events. Psychological factors include cognitive styles, the interpretation of the event and how the individual perceives of themselves. The more negative these psychological factors are, the higher the likelihood of the development of depression (Hamen, 2005).

According to Leahy and Holland (2000), the prevalence of depression as it pertains to gender is such that between 10 % and 25 % women are affected and between 5 % and 12% of men are affected. The age group that are the most affected is those between the ages of 18 and 44 years of age with individuals over the age of 65 being the least at risk for the development of depression. This is however contrary to the findings of the detection of mental disorders amongst PLWHA which is a study that was conducted reflecting that due to the increased rate of alcohol abuse, more men are likely to have a mental disorder as more men consume alcohol to mask their depression (Porsche & Willis, 2006). Individuals who also have family members that have been previously diagnosed with depression, or with a history of suicide , or alcohol abuse, shows to stand a greater risk for developing depression (Hamen, 2005).

2.5.3 Depression in HIV and AIDS

The impact that the diagnosis of a chronic disease has on the life of the individual is one that embodies negative emotions which primarily is about loss. (Brannon & Feist, 2007). Longevity may well be a distant reminder of the healthy life the individual had prior to the diagnosis while

now living with what could be perceived as a death sentence. The diagnosis of HIV or AIDS encompasses that which signifies a loss. Thus depression is not uncommon amongst people who have been diagnosed with a chronic disease such as HIV or AIDS. Changes in self perception, body image and as previously mentioned strain on family and relationships all encompass the changes that might very well be inevitable to the individual. Emotions such as anxiety and depression are not uncommon to the life of the affected, due to these drastic changes and loss that is experienced (Brannon & Feist, 2007). In a study done that reviewed articles written in Africa on the subject of depression and HIV and AIDS it has shown that people that are diagnosed with the disease are more than likely to experience depression (Olley, Seedat, Nei & Stein, 2004). Depression can thus be seen as further complicating the disease of HIV/AIDS (Olley, et al, 2004). PLWHA find it difficult to adjust to the known fact that they have been diagnosed with a disease that has been associated to a death sentence. The adjustment to this disease can thus present itself as a risk factor toward health care. Depression is often what sets in among PLWHA as coping strategies become growingly ineffective.

In a study conducted in Denmark it was revealed that depression is under diagnosed and undertreated in patients with HIV (Kalichman, Heckman, Kochman, Sikkema & Bergholte, 2000) This study was conducted at an outpatient client with 214 participants. Symptomotolgy was related to depression especially regarding stress, finance, low adherence and risky sexual behaviour. Therefore it is imperative to screen individuals for depression and to provide the necessary psychiatric treatment for the commencement of ART or HAART (Highly Active Antiretroviral Therapy).

In a study conducted, it showed that depression was linked to the various HIV clinical stages (Lyketsos et al., 2004). An example of this is that individuals who are at the symptomatic stage of HIV experience depressive symptoms. Lower socioeconomic status, age and HIV clinical stage

as well as risky sexual behaviour as well as being female with HIV/AIDS who had experienced negative life events was a predictor of major depression. Negative life events included unemployment, poverty and financial resources that are scarce. Interestingly according to this study, it showed that it wasn't the quality of negative life events that predicted major depression, but that the impact that these negative life events had on the individual (Lyketsos et al., 2004). In another study conducted by Hutton, Lyketsos, Zenilman, Thompson & Erbelding (2004), it was found that depression leads to risky sexual behaviour such as unprotected sexual intercourse and that depression can also impede the motivation to change behaviour that is directed at this type of behaviour.

According to a study conducted by Valente (2003), it showed that treating depression can significantly reduce the risk of the rapid spread of this disease. Depression has been known to impair the physical and cognitive functioning and behaviours related to depression which can put the individual at a higher risk for acquiring and spreading HIV (Valente, 2003). Depression is also associated to risky sexual behaviour with the risk of transmitting HIV. It has been found that of the 140 participants in a study conducted in Argentina that due to depressive symptoms being present, it lead to the improper and inconsistent use of condoms which posses a significant risk factor in the spread of HIV (Valverde & Cassetti, 2009) Depression is also associated to excessive consumption of alcohol and substance abuse as well as affecting coping strategies.

Depression has been known to be a psychiatric complication as it relates to PLWHA in South Africa. Prevalence rates ranges from 0% to 47.8% (Olley et al., 2004). Negative life events has not shown to directly affect the onset of depression as previously noted, but there does however seem to be a relationship between depression in HIV and prior events that have been characterised as negative. The effect of depression on the HIV/AIDS is such that research have shown that a drop in CD4 counts can account to the development of depression but there have

been no conclusive evidence to substantiate this (Olley, et al 2004). However as the manifestation of HIV and AIDS becomes clear within the increase of symptoms, it has been known to increase depressive symptoms (Olley, et al 2004). The individual's progression through the various stages of the disease has been known to increase the likelihood of depression. The onset of depression with those who have HIV have been shown to adversely affect the progression of HIV into AIDS according to research (Olley,et al, 2004). The effects of depression could also lead to a further sense of worthlessness and hopelessness which could decrease the individual's capacity to stay focused on being healthy (Olley et al., 2004). Adherence becomes essential in the overall management of this chronic diseases. Di Matteo, Lepper & Croghan (2000) have concluded in their study that depression is a significant contributing factor where non compliance and non adherence to medication is concerned. Depression affects the rates of non compliance in that depressed individuals find it more difficult to comply to the administration of a medicine regime. It had also been concluded that depressed individuals were three times less likely to comply to the adherence of medication as depressed individuals expressed pessimism and largely had negative mind states which affected adherence considerably. Emotional factors such as depression has to be duly considered and should be thoughtfully taken into consideration where adherence is concerned (Di Matteo et al., 2000). Not adhering to a medical regime such as HAART is a contributing factor to the drug resistance related to HIV. HAART has been used for the treatment of HIV/AIDS with the desired outcome of increasing the life expectancy of those with HIV or with AIDS (Di Matteo et al., 2000).

9.8% of the population in South Africa suffer from mood disorders with females being the most at risk (Stein et al., 2008). To support this study, Strebel, Stacy and Msomi (1999) states that gender is seemingly a significant factor; as it appears to be 6.75 times more prevalent in women than in men. Women have been known to be more prone to the development of depression.

Factors such as genetics, psychosocial and endocrinal factors have been accounted for contributing to the known fact that puts women at a higher risk for the development of depression. Women also report that they experience affective distress and depressive symptoms more often than men do. Women are more likely to experience somatic symptoms related to depression such as loss of appetite, hyposomnia and loss of energy (Brannon & Feist, 2007). Another likely contributing factor to depression as experienced by women is the social status hypothesis that asserts that women cannot achieve or master tasks which increases the likelihood of helplessness, dependency and low self-esteem. These are once again reinforced by society. It has been known than men experience less psychological distress than women do. Putting this concept of distress contextually, it is then defined within childcare responsibilities, not being able to care for others as well as the distress related to stigmatisation as well as social isolation of women who live with HIV (Brannon & Feist, 2007).

According to the WHO it has been reported that depression affects those who are largely within the age group of 14-44 years of age and it is the leading cause of disability in the world. Cheong, Herkov and Goodman (2006) reports approximately the same age range for depression between the ages of 20 to 40 years of age with the mid twenties being the average age where depression develops. The age range for depression does however seem to decrease with each passing year. Where HIV infection is concerned, the age group that is most affected are the young adults as they are more than likely to engage in risky behaviour, as well as being ill informed about HIV, and also not being empowered to make a decision regarding protecting themselves (Brannon& Feist 2007).

In a study done in rural Ethiopia it has shown that people who are from a higher monthly income bracket as well as evidence of formal education had shown to have a lower levels of mood disorders (Das et al., 2007). The context of developing countries is such that poverty is a

contributing factor when deliberating illness and mortality. Socioeconomic status has been shown to be a contributing factor to mental health. There have also been an increase in the burden of disease in countries were socioeconomic status is low and where income is thus also lowered. People with a lower socioeconomic status has been shown to be at risk between 1.5 and 2.0 times higher than those who are from a higher socioeconomic status. Evidence of decreased social support has been shown to increase the likelihood of the development of depression (Das et al., 2007).

Amongst the factors that contribute to depression, medication can also exacerbate neuropsychiatric problems especially AZT, acyclovir and interferon which cause depression (Grant, Marcotte & Heaton, 1999). Protease inhibitors (PI's) such as Reyataz have common side effect such as nausea, diarrhoea and stomach pain and depression. The same applies to Fusion Inhibitors (FI's) such as Fuzeon (enfuvirtide) which also has depression as a common side effect (Grant, Marcotte & Heaton, 1999). The treatment of ARV does have the ability of extending the life of the individual but complications does however arise when the drug administered offers no combat to the rapid increase of the HI virus, as well as other complications such as side effects. ARV treatments thus always have to be monitored in order to track any progress. Viral load tests refer to the quality of the HI virus in the blood stream. The higher the viral load, the lower the CD4 count which puts the individual at risk for opportunistic infections (WHO, 2010). Functioning of the individual can become impeded by a host of neurological, psychological and cognitive problems. From a neurological point of view the impeding of functioning can manifest as a result of the effects of the drugs. Motor control is also affected with the intensity thereof varying between fair impairment and severe impairment. (WHO, 2010).

2.6 Conclusion

The Biopsychosocial Model as proposed by Engel (1977), was employed to present a framework of understanding how biological , psychological and social factors interact which leads to an understanding of how HIV/AIDS develop. Specifically the psychological factors as it related to depression was considered. Depression has an impact on the disease which impedes the health outcome of the individual (Olley et al., 2004). The diagnosis of HIV/AIDS has a fundamental impact on their perspective and thus it could lead to the development of depression. The detection of depression by means of an effective measuring instrument within individuals who are living with HIV and AIDS thus becomes essential as the development of depression in itself as understood from the literature can also lead to negative outcomes which then further impedes the health outcome of the individual.

Chapter Three

Methodology

3.1 Introduction

This chapter is a description of the methods employed which would serve as means of meeting the aim of this study which is to establish the psychometric properties of both the BDI II and the HADS-D. It was also intended that the relationship between age, sex, income, disease profile and the measure of depression be established.

3.2 Research Design

The research design as it pertains to the larger study is quantitative in nature employs a pre-test-post-test design (Terre Blanche & Durrheim, 1999). This study uses data from the base- line measures obtained from a once off measure and may therefore be arguably conceived of as a cross-sectional descriptive study. Secondary data from Phase 1 (pre-intervention phase) of the main study was used in this study.

Null Hypothesis

H o There is no difference in the internal consistency of the BDI II and the HADS-D

Alternative Hypothesis

H 1 The BDI II has better internal consistency than the HADS-D

The null hypothesis is rejected as a difference does exist in that the BDI II has better internal consistency.

3.3 Research Setting

The study took take place in a township within the larger Cape Town metropole. Many of the current inhabitants of this township has been placed there after major flooding and fires that have

taken place in other townships across the Western Cape. One of the many factors that plagues this particular township is that of unemployment, crime and HIV/AIDS (www.capetown.gov). This is according to the City of Cape Town media release (2008), which states that HIV and AIDS is a challenge for this township. The highest concentration of age in years in this township is between 18 to 34 years of age and the lowest concentration of age in years is over the age of 65. (www.capetown.gov) Figures show that 1.66 % of the inhabitants are English speaking, 8.88% of the inhabitants are Afrikaans speaking and 84.06% are Xhosa speaking and only 42.81% of the population is employed. The income bracket of those earning between 0-R1600 is 79.29 % , R1601- R6400 is 19.21%, while those who fall in the income bracket of R6401- R25 600 is only 1.50%. . (www.capetown.gov).

3.4 Participants and Sampling

Purposive sampling was used to recruit the participants within the larger study. Purposive sampling is a non-probability sampling method where the desired population for a study is difficult to locate or if it is very limited (Terre Blanche & Durrheim1999). The inclusion criteria were for those who have already been diagnosed with HIV and AIDS and who are undergoing ARV therapy and pre ARV counselling at the clinic. The sample also included participants with Tuberculoses (TB) as often it often co-exists with HIV as cellular immunity is compromised (Mcphee et al, 2003; Brannon & Feist, 2007). Exclusion criteria was for psychotic individuals and those who are in an advanced stage of AIDS and who were too ill to participate in the study. The sample size in this study is 113 participants. Males and females who were 18 years and older were invited to participate.

3.5 Procedures

The principal investigator had trained the health care professionals and the research assistants that collected the data. The participants were selected by the nurses and counsellors at the clinic. The participants were referred to the research assistant if they were interested in taking part in the study. The research assistants as well as the nursing professionals worked very closely in order to ensure the confidentiality of the participants information that was elicited from the questionnaire and also to ensure professionalism at all times.

Once the participants agreed to partake in the study, they were taken to a private room where the participants were informed about the rationale of the study. This also entailed what their perceptions were regarding their health and how these perceptions were affecting the decisions they made regarding their health. They were informed as to the new program that would be implemented based on the understanding they have regarding their health.

Participants were also informed about the benefits of the program in that should they were invited to take part in the new program that they would receive counselling regarding their health status. Participants were also informed that if they were negatively affected by their participation in the study that appropriate referrals will be made which would give the participant the opportunity to speak about their experiences of being HIV positive. The participants were explained that there would be a battery of questionnaires that would be administered and that these questionnaires would be in the language of their choice. The information sheets were either in English or isiXhosa. They would be under the guidance of well informed research assistants who assisted them if they needed any assistance. Assistance was given to those participants who couldn't read or write. Once the consent of the participant was received, they were then asked to

sign the consent form. The consent form as well as the information sheet was translated into isiXhosa. The duration of the questionnaires that needed to be filled out did not take longer than two hours to complete. Light refreshments were served.

3.5.1 Ethical Consideration

This study is part of the larger study *Implicative personal dilemmas and cognitive conflicts in health decision making in HIV positive adults with AIDS* and has been granted ethical clearance (Appendix Five) from the University of the Western Cape (UWC) (Ethical clearance number: 08/6/5). Ethical clearance was also obtained from the health authority concerned. Participation in the study was purely on a voluntary basis where participants were informed about the objective of the study. This was clearly stipulated in the information sheet provided (Appendix Three). The benefits of the study included the ability to be able to express subjective experiences related to being HIV positive. Counselling was also offered to participants who needed to be able to express how they felt about their health status. Participants were informed that they could withdraw from the study at any time and that their decision to do so will in no way affect receiving treatment. A consent form (Appendix Four) was then signed once participants were well informed and agreed to be part of the study. Once the consent form was signed, they were then invited to partake in the study. All information given by the participants were kept strictly confidential and the information was not divulged to the clinic staff. Participants' identifying information was kept confidential and to ensure this, the questionnaires were coded and then kept in a safe place by the Principal Investigator (PI). This information was used purely by the discretion of the PI. Research assistants who have assisted with the larger study had been trained to deal with any crisis that could arise.

3.6 Data Collection Tools

3.6.1 Socio-Demographic and Disease Characteristic Questionnaire

A biographical questionnaire was administered in order to elicit information regarding the participants age, gender, marital status as well as information regarding their known CD 4 count, whether they are on ARV treatments or not, their HIV status as well as any other co-morbid factors that also exist.

3.6.2 Beck's Depression Inventory (BDI II)

The Beck's Depression Inventory II is a 21 item self report measuring the severity of symptoms as it relates to depression. The administration of the BDI II takes about 10 minutes to complete. Consideration should also be given to participants who do not read and write where the researcher then has to read out the questions which could take longer than 10 minutes to complete (Beck et al., 1996).

The Beck's Depression Inventory II is a 21 item self report which measure the extent of symptoms related to depression in both adults and children. In the case of children the age range is from 13 years of age and older (Beck et al., 1996). The 21 item inventory is based on the DSM-IV and corresponds with Major Depressive Disorder (Foxcroft &Roodt, 2009). The BDI II has been used extensively to assess the severity of depression and for use as a screening tool for the detection of depression. The BDI II discriminates between those who are clinically depressed and those who are not clinically depressed. Although this assessment might not be able to give a functional analysis of how the problem of depression had arisen, it can however be useful in establishing the severity of the problem and to be able to decide on subsequent therapy.

3.6. 3 Psychometric Properties of the BDI II

The BDI II correlates with the criteria for Major Depressive Disorder according to the DSM-IV. The BDI II displays high reliability and validity for clinical purposes (Valente, 2003; Kalichman et al., 2003). It has both content and construct validity correlating with construct of hopelessness as well as two factors namely somatic-affective and cognitive factors. The BDI-II has shown to have reliable psychiatric characteristics for both clinical and non-clinical populations (Steer et al., 1996). According to a study conducted on 140 psychiatric outpatients in 1996 with psychiatric disorders, the BDI II showed to have a coefficient alpha of 0.91 (Steer et al., 1996). The BDI II has a high test-retest reliability. To determine extent of depression, cut off scores were set at depression as mild, moderate, severely and non-depressed. The scale is an inexpensive means of detecting depression and it takes 5-10 minutes to complete. Depression and HIV related symptoms are differentiated by the subscale for somatic symptoms. In comparison to other measures of depression, the BDI II shows moderate to high convergent validity (Steer et al., 1996). In another study conducted by Dozois, Dobson and Ahnberg (1997) on 150 psychology students with depression the BDI II measured well on internal reliability. Where factor structure is concerned the BDI II was stronger than the BDI I. The internal consistency of the BDI II was reported at 0.91. The BDI II was also reported to have correlated with the Hamilton Pscyhiatric Scale for Depression (Steer et al., 1996). The interpretation of the scores related to the BDI II is as follows: 0-10 Normal; 11-16 Mild Depression; 17-20 Borderline Depression; 21-30 Moderate Depression; 31-63 Severe Depression (Harrington, Greene-Harrington, 2007).

3.6.4 Hospital Anxiety and Depression Scale –Depression (HADS-D)

The Hospital Anxiety and Depression Scale (HADS) was developed by Snaith and Zigmond in 1983 and this scale with particular attention to the depression component measures how depression affects the individual's experience within the medical environment (Snaith, 2003). The HADS can be used within any community setting not only within a hospital environment. There is presently a growing need for the ability to be able to detect a psychiatric disorder or a mood disorder by means of a standardised procedure. It is essential within the primary health care setting that the detection of a mood disorder is made and is treated effectively (Snaith, 2003).

Many a times mood disorders go undetected and untreated by medical professionals and the related psychological distress that is associated to the mood disorder. Therefore if a mood disorder can be detected and identified it will not only be effective from a clinical point of view but it would also be cost effective. The HADS is however a self assessment scale and is only valid for screening purposes which means that further and more thorough therapeutic processes need to be put in place in order to make a diagnosis for depression (Snaith, 2003).

The HADS is a 4 point likert scale with a 7 point depression subscale. An example of this is : as much as I always do [0]; not quite so much; definitely not so much; and not at all. If a score of 21 is reached, it would be indicative of depression. Zigmond and Snaith puts forward two cut-off scores for both subscales which is either 7 or 8 for possible and 10 or 11 for probable depression. A third cut-off of 14 or 15 is indicative of severe disorder (Herrero, Blanch, Peri, De Pablo & Bulbena, 2003). The administration of the HADS takes approximately 2 to 5 minutes to complete but consideration would have to be taken for the administration to be much longer than that if the

person is unable to read or write and the researcher would then have to read the questions on the questionnaire to the participant.

3.6.5 The Psychometric properties of the Hospital Anxiety and Depression Scale – Depression (HADS-D)

The HADS-D subscale according to a study conducted in Norway in 2001 conducted by Mykletun et al. (2001), have noted that according to other studies, there has been no conclusive evidence regarding the psychometric properties of this screening tool. In trying to ascertain the psychometric properties of this tool they have conducted a study on 65 648 participants between the ages of 20 and 89 years of age. The aim of the study was to measure the factor structure, homogeneity and internal structure of the screening tool. Their conclusions on the study was that the HADS depression subscale had internal consistency with a cronbach alpha of 0.76 (Mykletun et al., 2001). In another study conducted it was found that the psychometric properties found in the HADS made it suitable to screen for psychiatric disorders (Herrero et al., 2003). Where factor analysis was concerned the HADS displayed a two factor structure for both males and females. The HADS-D and the BDI have a correlation of between 0.62 to 0.73. This self-assessment scale is only valid for screening purposes which means that further and more thorough therapeutic processes need to be put in place in order to make a diagnosis (Mykletun et al, 2001). For this purposes an internal consistency of at least 0.60 should be reached and at least 0.80 as a screening instrument. The HADS-D fulfils these criteria at 0.82 to 0.90. The HADS-D had shown to be able to effectively assess the severity of depression in both somatic and psychiatric patients which makes it reliable and valid. It also has evidence of concurrent validity. In another study conducted by Bjelland, Dahl, Haug and Neckelman (2001), it was found that the HADS was effective in ascertaining the severity of symptoms of both somatic and psychiatric nature of patients.

According to their study the Cronbach's alpha of the HADS was measured at 0.67 to 0.90 with an average of 0.82.

3.7 Data Analysis

Descriptive analysis was used as a means to describe the data by the scores as it relates to the variable such as socio-demographic factors, disease profile and depression and whether the scores on each variable were interrelated (Terre Blanch & Durrheim, 1999). It is also used to describe the characteristic of the sample. Inferential data analysis was used as a means of being able to draw conclusions about the data and the population (Terre Blanch & Durrheim, 1999). Reliability can be measured by means of statistics. It also refers to whether a questionnaire has the ability of replication consistent results. Reliability analysis was conducted in order to obtain the Cronbach's alpha (α) for the reliability of the instruments. Cronbach's α measures internal consistency of each scale. Internal consistency should range from zero to one. If these scales obtain a score of 0.60-0.70 , it will indicate reliability and 0.8 will indicate good reliability (Pretorius, 2007).

Factor analysis is a technique that statistically allows you to determine the factors that enables the relationship between variables to be more evident. So essentially variables are measured and the outcome of this technique is to ascertain the correlation between variables. These variables are then plotted onto an R matrix and each element is measured at 1 as each variable correlates perfectly within that particular variable. This becomes useful when wanting to see how items on a questionnaire are interrelated. Factor analysis (FA), specifically exploratory (FA), was used to determine the construct validity or theoretical construct of a measure as in the case of the BDI II and the HADS-D. (Pretorius, 2007). The Kaiser normalisation was used as part of the preliminary analysis which was employed as a means of determining the number of factors to

extract in a factor analysis. The Anti-Image Correlation subsequently was a technique used to ascertain the correlation between each variable and the level of correlation with each other i.e. the factorability of the data (Suhr, 2008). The factor extraction was then used to determine the amount of factors that are inter related and the most common method is Principal Component Analysis (Pretorious, 2007).

3.8 Conclusion

This chapter highlighted the methodology of the study so as to give a broader understanding of the subsequent chapter highlighting the subsequent results pertaining to the study in the following chapter.

Chapter Four

Results

4.1 Introduction

The first part of this chapter presents the socio-demographic variables, disease variables and psychological characteristics of the participants of this study who are infected with HIV and AIDS. The objective pertaining to this aim was subsequently to establish the socio-demographic and disease profile of the participants as well as to measure clinical depression based on the data obtained from the BDI II and the HADS-D. In response to this, this chapter displays the characteristics descriptively pertaining to the sample of the study. These variables associated to the socio demographic factors are age, gender, income and the disease variables such as CD4 count and TB co-infection. The main psychological variable under study is clinical depression, which was measured by the BDI II and the HADS-D.

4.1.1 Demographic Characteristics, Disease Profile and Psychological Characteristics of the sample

Data was collected from 113 participants. From the data collected, there were missing values as it pertained to the analysis. Missing values refers to information that was left blank on the questionnaire by the participant. The primary aim of this study was to investigate whether the BDI II or the HADS-D is a better screening tool for use in an HIV/AIDS public health clinic. The objectives of this study were to establish the internal consistency and construct validity of both the BDI II and the HADS-D.

As part of the inclusion criteria, the ages of the participants ranged from 18 years to 54 years. The mean age of the sample was 32 years of age and the majority of the ages pertaining to the sample was between 24 and 40 years of age.

Table 4.1 ***Demographic Characteristics of the Sample***

Gender	**N**	**Percentage(%)**	**Total**
Male	29	25.7	
Female	84	74.3	113
Language			
English	4	3.6	
Xhosa	101	91.0	
Afrikaans	0	0	
Other	6	5.4	111
Net Monthly income			
0	1	5	
Less than R500	4	20	
R500-R1000	4	20	
R1000-R2000	5	25.0	
R2000-R3000	6	30.0	
More than R3000	0	0	
Employment status			
Employed	16	14.5	
Unemployed	94	85.5	110
Receiving disability grant	N	Percentage	total

Yes	4	4.0	
No	96	96.0	100
Diagnosis of Aids			
Yes	61	63.5	
No	35	36.5	96

The majority of the sample was females (74.3%) and 25.7% were male.

The majority of the sample was Xhosa-speaking individuals (91.0%) and there were no Afrikaans speaking individuals (0%). Of the sample presented, the majority of the sample had an income ranging between R2000-R3000 and none of the participants earned more than R3000 per month. 85.5% of the sample was unemployed and 14.5% was employed.

Of those who have reported on their stage of disease, 63.5 % reported to have been diagnosed with AIDS, whereas 36.5 % were HIV positive and not yet diagnosed with AIDS.

Table 4.2 CD 4 count of the sample

N	Minimum	Maximum	Mean	Standard deviation
113	0	750	215	148

Table 4.3*Treatment Received for TB*

Treatment received for TB	N	Percentage (%)	Total

Yes	23	20.4	
No	72	63.7	95

The majority of the sample was not receiving treatment for TB (63.7%) with only 20.4% receiving treatment for TB. The following results pertain to the objective of measuring clinical depression based on the data from the BDI II and the HADS-D.

Table 4.4 ***Depression of the sample as measured by the BDI II***

Category of depression	N	Percentage	Total
Normal	63	55.8	
Mild	21	18.6	
Borderline	7	6.2	
Moderate	12	10.6	
Severe	8	7.1	111

The table above shows the prevalence of clinical depression as measured by the BDI II. 55.8% of the sample was within a normal range of depression whereas 18.6% was within the mild range of depression. 6.2% was within the borderline range of depression, while 10.6% was moderately depressed. 7.1 % was within the severe range of depression. 44.2% of the sample could therefore be considered as being depressed.

Table 4.5 ***Depression of the sample as measured by the HADS-D***

Category of depression	N	Percentage	Total
Normal	57	50.4	

Borderline	33	29.2	
Abnormal	19	16.8	109

The table above shows the prevalence of depression as per the HADS-D. 50.4 % of the sample was within a normal range, while 29.2% was within the borderline range. 16.8% was within the abnormal range of depression. There were missing data pertaining to these reports.

13 of the 29 males reported to have been depressed to some degree, whereas 35 of the 82 females reported to have been depressed. There were 2 missing values pertaining to the data.

Only 18 participants reported to have received an income. 10 Participants reported to have a monthly income earning between R2000 –R3000. These participants also reported to be within the normal range of depression. The rest had reported to be earning less. The age group that had been affected by depression fell within the range of between 25 - 49 years of age. Of the 89 participants within this age group, 40 have reported to have depression to some degree (44.95%). There were 96 participants who have reported to have either HIV or AIDS. 53 Of the participants reported to have not been depressed whereas 43 reported to have depression to some degree. 11 of the participants reported to be mildly depressed with a diagnosis of AIDS whereas 7 participants reported mild depression with a diagnosis of HIV. There were 8 participants with a diagnosis of AIDS that reported to have severe depression.

The primary aim of this study was to establish the psychometric properties (internal consistency and construct validity) of the BDI II and the HADS-D. This will be discussed in terms of the internal consistency and subsequently the construct validity.

4.2 Internal consistency of the BDI II and the HADS-D

Reliability of the BDI II and the HADS-D

Reliability can be described as an instrument's ability to provide consistent results. One such measure as per SPSS is the internal consistency. Reliability is the manner in which the items on the scale relate to each other and reliability regarding the scale within its entirety (Pretorious, 2007). The Cronbach's Alpha is a reliability index and is used specifically as a measure expressing the internal consistency. Pertaining to the primary aim, the internal consistency of the BDI II was 0.89, which as per the Cronbach's alpha co efficient, reflected very reliable. A value that is greater than 0.70 is usually considered to be very reliable (Pretorious, 2007). The alpha co-efficient for the 5 factors extracted in the factor analysis were 0.79 (Negative view of self), 0.76 (Negative view of the past and subsequent negative view of the future), 0.63(Somatic affective), 0.58 (Negative affect), 0.56 (Expression and negative cognition).

The HADS-D according to this study only had an internal consistency of 0.38 as per the cronbach's alpha co efficient. The value of the score as generated by the reliability index reflects that the internal consistency of the HADS-D is very low (Pretorious, 2007).

4.3 Construct validity of the BDI II

Validity of the BDI II

4.3.1 Factor analysis of the BDI II

This statistical method is used to reduce a number of components or variables on a scale to factors which are based on a common variance. Exploratory factor analysis was conducted as a means of ascertaining what the construct validity of the BDI II and the HADS-D was. This analysis consists of steps which are subsequently outlined (Pretorious, 2007).

4.3.2 Preliminary analysis

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was employed as a means of determining the number of factors to extract in a factor analysis. This is performed prior to conducting the factor analysis. This test ultimately tests whether the distribution is significant making it suitable for factor analysis. This test also entails retaining the factors that relate to the highest variance of the data (Field, 2000). Within the KMO, especially as a means of deciding which factors to extract, factors with a value of greater than 1 would be retained. This would be indicative of the number of correlations and the intensity thereof with the end result of producing reliable factors.

Table 4.6 ***KMO and Bartlett's Test of the BDI II***

Kaiser-Meyer-Olkin Measure of sampling adequacy	0.804
Bartlett's Test of Sphericity Approx Chi-Square	794.313
Df	210
Sig	.000

According to this table, it shows that the KMO value pertaining to the BDI II is 0.81. This falls in the range of being very good and subsequently means that factor analysis is suitable. The Bartlett's test of sphericity is used as a means of acquiring whether the correlation matrix is an identity matrix so that subsequent factor analysis can be performed. The results of this test would determine whether factor analysis can be performed as then a suitable relationship

between variables exist (Suhr, 2008). Regarding the BDI II the Bartlett's Test of Sphericity [x^2 (210) = 794.313, p<0.01] was significant.

Table 4.7 ***KMO and Bartlett's test of the HADS-D***

Kaiser-Meyer-Olkin Measure of sampling adequacy	0.616
Bartlett's Test of Sphericity Approx Chi-Square	239.127
Df	91
Sig	.000

According to this table it shows that the KMO value pertaining to the HADS-D is 0.616. This falls in the range of being mediocre. Values that are above 0.5 are considered as a minimum requirement in order for factor analysis to be performed. Regarding the HADS-D the Bartlett's Test of Sphericity [x^2 (91) = 239.127, p<0.01] was significant.

4.3.3 Anti- Image Correlation

An anti-image correlation is a technique employed to ascertain what the correlation between each variable is and whether they correlate significantly with each other, in other words, it would test the factorability of the data. (Suhr,2008). Values higher than 0.5 is indicative of significant correlations between variables and this would subsequently mean that no variable would need to be excluded (Field, 2000).

According to the BDI II as observed by the diagonal on the anti-image correlation matrix, the correlations generally had values that were good. None of the variables had to be excluded.

Table 4.8 ***Anti Image Correlation of the BDI II***

	BDI II 1	BDI II 2	BDI II 3	BDI II 4	BDI II 5	BDI II 6	BDI II 7	BDI II 8	BDI II 9	BDI II 10	BDI II 11	BDI II 12	BDI II 13	BDI II 14	BDI II 15	BDI II16	BDI II 17	BDI II 18	BDI II 19	BDI II 20	BDI II 21
BDI II 1	0.70																				
BDI II 2		0.83																			
BDI II 3			0.74																		
BDI II 4				0.81																	
BDI II 5					0.65																
BDI II 6						0.87															
BDI II 7							0.79														
BDI II 8								0.84													
BDI II 9									0.69												
BDI II 10										0.72											
BDI II 11											0.87										
BDI II												0.87									

12																				
BDIII13													0.83							
BDIII14														0.82						
BDIII15															0.86					
BDIII16																0.74				
BDIII17																	0.76			
BDIII18																		0.55		
BDIII19																			0.82	
BDIII20																				0.84
BDIII21																				0.74

Table 4.9 ***Anti Image of the HADS-D***

	HADS-D1	HADS-D2	HADS-D3	HADS-D4	HADS-D5	HADS-D6	HADS-D7
HADS-D 1	0.68						
HADS-D 2		0.66					
HADS-D3			0.68				
HADS-D4				0.65			
HADS-D5					0.63		
HADS-D6						0.61	
HADS-D7							0.68

According the HADS-D as observed by the diagonal on the anti-image correlation matrix, the values were acceptable. No variable therefore had to be excluded.

Table 4.10 ***Communalities for items regarding the BDI II***

	Extraction
1. Sadness	0.68
2. Pessimism	0.67
3. Past Failure	0.88
4. Loss of Pleasure	0.68
5. Guilty feelings	0.71
6. Punishment feelings	0.65
7. Self-dislike	0.75
8. Self-criticalness	0.57
9. Suicidal thoughts	0.77
10. Crying	0.79
11. Agitation	0.74
12. Loss of interest	0.64
13. Indecisiveness	0.57
14. Worthlessness	0.65
15. Loss of energy	0.63
16. Changes in sleeping patterns	0.66
17. Irritability	0.82
18. Changes in appetite	0.83
19. Concentration difficulty	0.61
20. Tiredness or Fatigue	0.73
21. Loss of interest in sex	0.69

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalisation

The items pertaining to the BDI II reflected values greater than 0.30 which reflected that there was a degree of common variance between the items (Field, 2009).

Table 4.11 ***Communalities for items regarding the HADS-D***

	Extraction
I still enjoy the things I used to enjoy	0.72
I can laugh	0.39
I feel cheerful	0.65
I feel as I am slowed down	0.58
I have lost interest in appearance	0.66
I look forward with enjoyment to things	0.68
I can enjoy a book	0.54

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalisation

The items pertaining to the HADS-D also reflected values greater than 0.30 which reflected that there was a degree of common variance between the items (Field, 2009).

4.3.4 Factor extraction of the BDI II

The method used to determine the amount of factors that will be retained was the KMO Bartlett's test. Factor extraction is a method used to extract the amount of factors which would explain the reason how the items of the questionnaire are inter related with each

other and the most common method of doing this is by conducting Principal Component Analysis. This method is based on a regression analysis which sets out to cluster the variables which are best combined which would account for the general variance. In every instant that these variables cluster or combine a principle component is formed i.e. the first combination will be the first principal component.

4.3.4.1 Factor Extraction of the BDI II

Pertaining to the BDI II in this study, there are 21 variables i.e. 21 principal components should result from the principal component analysis. Therefore 21 variables resulted in a principal component analysis of 21 components. Eigenvalues represent the variance between each factor. Eigenvalues generally which have a value of greater than 1 can be utilised as factors.

Table 4.12 Eigen Values of the BDI II

		initial Eigenvalues		extraction Sums of squared Loadings		
factor	total	% of Variance	Cumulative %	Total	% of Variance	Cumalative %
1	6.874	32.735	32.735	6.874	32.735	32.735
2	1.843	8.778	41.513	1.843	8.778	41.513
3	1.481	7.052	48.565	1.481	7.052	48.565
4	1.304	6.211	54.777	1.304	6.211	54.777
5	1.127	5.366	60.142	1.127	5.366	60.142
6	1.045	4.975	65.117	1.045	4.975	65.117

7	1.029	4.902	70.019	1.029	4.902	70.019
8	0.872	4.151	74.171			
9	0.754	3.592	77.763			
10	0.66	3.144	80.907			
11	0.642	3.056	83.963			
12	0.564	2.688	86.651			
13	0.479	2.281	88.931			
14	0.433	2.064	90.995			
15	0.413	1.969	92.964			
16	0.349	1.664	9.627			
17	0.282	1.344	95.971			
18	0.275	1.307	97.278			
19	0.231	1.102	98.38			
20	0.194	0.923	99.302			
21	0.146	0.698	100			

Extraction Method: Principal Component Analysis

With regard to the BDI II, seven factors have been yielded. For example, factor 1 accounts for 6.87 of the total variance as it relates to the 21 variables which represents 32.74% of the total variance. The factors extracted account for 70.019 % of the total variance.

Table 4.13 Eigenvalues of the HADS-D

		Rotation sums of squared		

		Loading		
Factors	Cumalative %	Total	% of Variance	Cumalative %
1	18.98	2.00	14.33	14.33
2	14.64	1.81	12.97	27.31
3	9.65	1.64	11.73	39.04
4	8.02	1.59	11.37	50.41
5	7.22	1.13	8.12	58.54

Extraction Method: Principal Component Analysis

4.3.4.2 Factor Extraction of the HADS-D

According to the HADS, five factors have been yielded. Factor 1 accounts for 2.65% of the total variance as it relates to the 7 variables which represents 18.98 % of the total variance. The factors extracted account for 58.54% of the total variance.

4.3.5 Factor Rotation

The rotated factor matrix variables is a procedure which is approached mathematically which makes it easier to interpret factor loadings. This rotated factor matrix represents the 21 variables and how they are loaded according to the factors extracted and it also represents rotating the axes. The rotation procedure employed was the orthogonal method (varimax) which decreases variables with a high factor loading (Field, 2000).

Table 4.14 Factor matrix of the BDI II

				FACTORS	
	1	2	3	4	5

7. Self Dislike	0.778				
13. Indecisiveness	0.731				
11. Agitation	0.648				
8. Self-criticalness	0.622				
12. Loss of Interest	0.57				
14. Worthlessness					
3. Past Failure		0.843			
4. loss of Pleasure		0.666			
2. pessimism		0.627			
21. Loss of interest in sex			0.787		
20. Tiredness or Fatigue			0.652		
15. Loss of energy			0.616		
1. Sadness				0.734	
5. Guilty Feelings				0.623	
6. Punishment Feelings				0.566	
9. Suicidal thoughts					0.756
10. Crying					0.699
19. Concentration difficulty					0.53
17. Irritability					
16. Changes in sleeping patterns					
18. Changes in appetite					

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalisation

Once the variables, as shown above, have a loading on each factor , a meaning has to be derived which will describe the pattern within the factors that have been loaded. As a rule of thumb, there needs to be a minimum of three items that load for a particular factor for it to be considered as significant (Suhr, 2008). According to the table above factor 6 only had 2 items loaded namely irritability (0.77) and change in sleep patterns (0.71). Factor 7 only had one loading as it pertained to the change in appetite (0.87). These factors were not included in the above table (Hair, Black, Babbin & Anderson, 2010). The variables which have a higher loading for that particular factor plays a major role in the labeling of that particular factor. The name therefore has to be a reflection of that particular factor and then subsequent interpretation of the factors can be made. The naming of the factors relies on the opinion of the researcher (Hair et al., 2010). The factors were named as follows i.e. negative view of self, negative view of the past and subsequent negative view of the future, somatic affective, negative effect, expression and negative cognition. The analysis reveals that "guilty feelings" (0.54) cross loaded with factor two (Negative View Of The Past And Subsequent Negative View Of The Future) and factor four (Negative affect). This was removed as the loading was identical (Hair et al., 2010). The higher value was retained for that particular factor which in this case was factor four.

Factor one –Negative View Of The Self

The characteristic feature of this factor is described as level of hostility toward self and possibly subsequent agitation and the inability to trust the self to make decisions leading to indecisiveness as well as a feeling of loss of interest.

Factor two – Negative View Of The Past And Subsequent Negative View Of The Future

The characteristic feature of this factor is described as assessing the past by its failures with subsequent loss in pleasure as well as a subsequent lack of confidence in the future. This has cross loaded with "guilty feelings" as revealed by the factor structure.

Factor three- Somatic affective

The characteristic feature of this factor is that of motivation and how it relates to primary drives within the realm of the physiological such as the loss of sexual response as well as lack of energy and fatigue.

Factor four- Negative Affect

The characteristic feature of this factor is that of Cognition which in its broadest sense refers to mental activities as well as affect which refers to the emotional state as well as in its broadest sense referring to mood. This has cross loaded with "guilty feelings" as revealed by the analysis of the factor structure.

Factor five -Expression and Negative Cognition

The characteristic feature of this factor is that of Cognition which in its broadest sense refers to mental activities.

Table 4.15 Factor matrix of the HADS-D

			factors		
	1	**2**	**3**	**4**	**5**
I still enjoy	0.82				

the things I used to enjoy					
I feel cheerful	0.50				
I can laugh	0.43				
I can look forward with enjoyment to things		-0.773			
I have lost interest in appearance		0.65			
I can enjoy a good book			0.72		
I feel as I am slowed down				0.716	

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalisation

From the above table, as per the HADS-D, there was only 1 significant loading co-efficient namely factor one. Even though factor 4 had 3 item loading co-efficients (I feel cheerful 0.49 and I have lost interest in appearance 0.41), there were two items which cross loaded. These were removed as the loading was identical (Hair et al., 2010). The higher value was retained for that particular factor which in this case was factor one.

Factor One - Loss of interest in previously enjoyed activities

This is congruent to the description of depression (Corey, 1991). Generally there is a loss of interest in activities that were enjoyed prior to the depressive state that the individual finds themselves in.

4.4 Conclusion

In this sample, there were more females (74.3 %) than males (25.7 %) and this is quite a common phenomena and consistent with various bodies of knowledge that females report to be infected in higher proportions as opposed to their male counterparts. The age of those infected, according to studies reveal that in comparison to males, the prevalence of morbidity as it relates to HIV/AIDS is greater amongst females (Shisana et al, 2009). The age group of this sample fell predominantly in the range of between 18 to 54 years of age. The mean age was 32 with the majority of the ages ranging between 24 and 40 years of age. This is also consistent with previous studies revealing that within this age group the prevalence of infection is approximately 32.7% (Shisana et al, 2009). Of the 19 participants that reported that they are employed, only 30% of that proportion earns between R2000-R3000 per month. 85.5 % of the 110 participants who reported on their employment status were unemployed with only 14.5 % being employed. 96% responded that they were not in receipt of any disability grant. This could possibly mean that those who reported as being unemployed and not receiving a disability grant are receiving no other income which could imply that they are from a lower socioeconomic status. Subsequently the likelihood of not having adequate resources are heightened and this is a contributing factor where illness and mortality is concerned (Das et al., 2007).

The mean level of CD 4 counts pertaining to the sample is 215 and it is only where CD 4 counts are below 200 that it constitutes the transition from HIV to AIDS. The uninfected

person has 1200 CD 4 counts per micro litre of blood. 36.5% of the sample reported that they are have not been diagnosed with AIDS but fall into the category of being HIV positive which according to a theoretical understanding, means that their CD 4 counts are not below the level which warrants for the diagnosis of AIDS. It is well known that TB is often a co-morbid infection with HIV/AIDS and according to the sample only 23 % is receiving treatment for TB while 72 % is not receiving treatment for TB (Feldman et al., 2002). In another study conducted, it had revealed that 23% of AIDS related deaths were due to TB (Fieldman et al,2000).

Within the sample, the measurement of depression according to the BDI II was that a total of 44.2% reported to some degree of depression, while the HADS-D reported 49.6%. There is a large body of knowledge that can account for the fact that depression is not uncommon amongst those who have been diagnosed with AIDS and this is often associated to drastic changes in the life of the affected individual as well as that of loss (Brannon & Feist, 2007). Where the KMO and Bartlett's test is concerned the BDI II score was 0.81% and yielding 7 factors which accounted for 70.01% of the variance. As previously mentioned, in order for a loading to be significant, there needs to be a minimum of three items and for this reason there were only 5 factors that was yielded which accounted for 60.14% of the variance.

Where construct validity is concerned the HADS-D yielded according to the KMO and Bartlett's test a score of 0.62%. The HADS-D yielded only 1 factor. The contributing factor toward the HADS-D having a lower construct validity according to the KMO and Bartlett's test could be due to the lack of differentiating between the construct of depression as well as anxiety (Naidoo, 2010).

Chapter Five

Discussion

5.1 Introduction

The primary objective of this study was to establish the psychometric properties of the two scales measuring depression in a sample of 113 individuals infected with the HI Virus. The HIV/AIDS epidemic has been described as a challenge in this particular township. Firstly however, the socio-demographic profile as well as the disease profile will be discussed. The objective here would also include to measure clinical depression based on the data obtained from the BDI II and the HADS-D. The construct validity as it relates to validity will be discussed and then the internal consistency as it relates to the reliability of the screening tools will be discussed thereafter.

5.2 The socio-demographic and disease profiles of the participants

5.2.1Age

Within this study conducted, the data reveals that the minimum age of the sample was 18 and the maximum age was 54 years of age with the mean age of 32 years of age (SD = 8). Previous literature regarding HIV/AIDS shows that infection is generally most likely occur between the ages of 24-40 years of age (Shisana et al, 2009). An example of this is where in a study conducted, it revealed that 21 % were infected by HIV/AIDS between the ages of 20-24 whereas in the slightly older age group of 25-29, the figure was 32.7% as it related to the rate of infection (Shisana et al., 2009). This figure is generally consistent as it relates to this study where the age group ranged from 24 years upward. Furthermore studies reveal

that in South Africa the age group of 25-29 had the highest prevalence with as much as 1 in every 3 being infected in 2008 (Shisana et al., 2009).

The sample also indicated that most of the participants were female (74.3%), whereas the males who partook in the study in comparison were less (25.4%). This may be due to the sampling method which was employed by this study namely purposive sampling and that perhaps women were more open to partake in the study than their male counterparts were. Where females are concerned, it is within this age group (25-29 years of age), that women are within their child bearing years and subsequently have a heightened risk for infection of the HI Virus (www.capegateway.gov.za). Women from the age group are generally in the developmental stage of childbearing. This implies that there is a stronger chance of transmitting the disease and subsequently risking infection to their unborn child once these women are already infected by HIV/AIDS. Empowering women is therefore critical as this could mean that the impact of this disease becomes less severe. An example of empowering women can be in the form of providing essential information to women about contraception which inevitably could lead to women making informed choices. This cannot be done without greater access to contraception as well as hiving access to counseling (www.capegateway.gov.za). Another implication that is presented with women being affected within this age group is that it is the most productive and essential sector of the work force which further increases the chances of poverty which then spirals into the progression of the disease (www.capegateway.gov.za).

In sub-Saharan Africa, prevalence rates where HIV/AIDS infection are concerned, are 20% for individuals between 15-49 years of age which is the highest rates in Southern Africa. Particularly females between the ages of 20-29 is the age group that is most affected. Males are affected within the age group of 30-39 (Mayeya et al, 2004).

Young adults are most affected as they are most likely to engage in risky behaviour, as well as not being informed about the risks and consequences of HIV/AIDS. Especially where females are concerned there is less bargaining power regarding the use of condoms which could lead to the development of STI's due to unsafe sexual practice, and if these STI'S are left untreated it could lead to the progression of HIV (Brannon & Feist, 2007).

5.2.2 Sex

Literature reveals that women are more vulnerable to contracting HIV than what their male counterparts are (Brannon & Feist , 2007). This can be accounted for by various reasons such as biological factors, as well as how society perceives their roles. Within a report by the UNAIDS (2008) it showed that of the women that are living with HIV/AIDS, 98% of these women live in developing countries. Social factors would include how within a patriarchal society such as South Africa, women are considered as having less power than their male counterparts and often, there is a perception that they are not supposed to challenge this form of power. Violence is often a contributing factor to males having more power and often also a tool used by men to sustain this form of power with regard to their female counterparts. Not only is violence often a common subjective experience to women, but it also implicated the spread of HIV. Women who experience violence often lives in fear and this experience of fear often results in women not being able to effectively negotiate condom use. Subsequently, fear can lead females to not disclose their HIV status to their male counterparts which then ultimately lead to not fully adhering to ART which implicates effective management of the disease (Riddle, 2009).

In further studies that have been conducted, women have been known to be at a greater risk of infection by HIV/AIDS through heterosexual contact and transmission of HIV. While many women are still being subjected to not having the power to negotiate on condom use, it creates a further dilemma where subsequently, women who engage in unprotected sex

stand a further chance of contracting HIV/AIDS by biological factors which make them vulnerable to contracting the disease (These biological factors would include that women who don't receive adequate treatment for STI's stand a much greater chance of contracting HIV/AIDS as there will be higher levels of the HI Virus within the vaginal fluid as well as leading to increased vaginal yeast infections. Studies reveal that there is a correlation between STI's and HIV infection and if STI's remain untreated it can lead to the progression of HIV(Feldman et al., 2002). The cervix of women is also a relatively vulnerable site for the transmission of the HI Virus and the more underdeveloped the cervix is, as is the case with younger women, the greater the chance of transmission exists for these younger women. (http://www.global-campaign.org/womenHIV.htm). Women are more affected by STI's in rural areas (Feldman et al., 2002). Further studies also reveal that women are still those who are more infected than men especially within Sub-Saharan Africa. It is also here that heterosexual contact and transmission is the most common form of the spreading of the HI Virus. In 2007 it was reported that 12 million of women were infected compared to that of 8 million men. Women are also twice as likely to contract the virus from their partners while partaking in unprotected sex (Strydom, 2007). In other areas worldwide, within Western and Central Europe as well as Oceania, there are rather low percentage of women who are living with HIV/AIDS in comparison the aforementioned Sub-Saharan Africa. The percentage of women infected is also higher within the Carribean region. Within other countries, such as the United States of America, there are more women affected by HIV/AIDS than men (up to 80%) (Strydom, 2007). There has been a steady increase in the amount of women who are infected and the rate of infection has risen from 2004-2007. Within the USA however, the women here only account for one fourth of all women infected globally. The most common form of transmission of HIV/AIDS is

through heterosexual contact and transmission which accounts for roughly 72% of the infection rate (Strydom, 2007).

In India, it has been reported that women are at lower risk for infection by HIV/AIDS (approximately 35%) and this is mainly due to the fact that they engage in monogamous sexual relationships, however women are still at risk as their husbands engage in unprotected sex which increases the likelihood of their wives been infected by HIV/AIDS. A staggering 90% of women reported that they have been infected by HIV/AIDS by their unfaithful husbands who engaged in unprotected sex. (Strydom, 2007)

5.2.3 Income

Within the sample that has reported on their employment status, it has revealed that 85.5% of the participants are unemployed with 96% of the participants reporting that they are not in receipt of a disability grant either which could possibly mean that they have no other income placing them at a greater chance of living in poverty. Income as a social factor also contributes to the development of this disease as it inevitably places an additional burden on the individual as this would imply that the lack of income means that there is a less access to proper medical care and attention which subsequently means that the disease cannot be effectively managed (Riddle,2009). Poverty is defined as "... a level of income which people cannot afford a minimum nutritionally adequate diet and non-food requirements" (Marks et al., 2006, p. 422). Poverty can thus be associated to lower socioeconomic status (Patel & Kleinman, 2003). Socioeconomic status is also a contributing factor to mental health as well as it having a contributing factor toward ill health and early mortality. Poverty not alone affects ill health, but it is also a contributing factor toward mental health as the burden of disease becomes significantly burdensome and it thus decreases the

socioeconomic status as well as lowering income received (Das et al., 2007). The theoretical underpinning of this perspective is undergirded by the Social Causation Hypothesis (Johnson, Cohen, Dohren-Wend, Link & Brook, 1999). This hypothesis highlights that stress and deprivation are the main contributing factors toward lower socioeconomic status. There is a correlation between poverty and HIV (Freeman et al., 2008) but this correlation is not very clear ("Poverty and HIV/AIDS,"n.d.). Furthermore, poverty prevents the person from being able to deal with the onslaughts related to HIV/AIDS adequately and as such poverty thus decreases the individual's sense of well-being (Kessler et al., 2005).

The research setting pertaining to this particular study was found in a particular township which had been historically disadvantaged which included a high prevalence of informal settlements (City of Cape Town Media Release, 2008). One of the many challenges that this township still faces is unemployment. From the sample it became even more evident as the rate of unemployment is considerably high. The rate of unemployment resulting in lower socioeconomic status implies, based on the aforementioned discussion, that ill health is further exacerbated by it as well as increased ill mental health as deprivation leads to lowered access to adequate resources.

5.2.4 Language

The majority of the participants within the sample pertaining to this study was predominantly Xhosa speaking (91.0%) with those speaking English to be only 3.6%. This township where the study took place was in an area which was predominantly inhabited by Xhosa speaking individuals.

5.2.5 Disease profile

According to the sample, of the only 96 participants that have reported on their status, it revealed that 63.5% have been diagnosed with AIDS and 36.5% have been diagnosed as

being HIV positive. Where CD4 count was concerned, the minimum count was 0 and the maximum as 750 with 215 being the mean CD 4 count. Most of the CD 4 count tallied to be between 67 and 363. The percentage of those who have been receiving treatment for TB was 20.4% while 63.7% are not receiving any TB treatment.

In keeping with literature on this particular township, the data revealed confirms that HIV/AIDS indeed is a challenge that this township is facing. It is quite alarming that given the biological factors related to HIV/AIDS in that it compromises the immune system, making it more vulnerable to infections such as TB, only 20.4 % of individuals are receiving treatment for TB. In a study conducted in 2002 it revealed that 80% of those individuals diagnosed with TB were also tested positive for HIV/AIDS and furthermore, 23% of deaths that are AIDS related are mainly due to TB (Feldman et al., 2002). The CD 4 count of the sample is within the range of 67 and 363 with 67 constituting a progression of HIV to AIDS. According to literature it is only when CD 4 counts fall below 200 micro litres of blood that it constitutes a diagnosis of AIDS (Whiteside & Sunter, 2000). Within the sample, it could be assumed that of the 63.5% of those who have been diagnosed with AIDS CD4 counts fall below 200. Lower levels of CD 4+ cells is not only associated to the immune system being compromised leading to the progression of HIV to AIDS, it is also associated to the prevalence of anxiety and depression being higher (Mulder et al., 1999). Depression subsequently could lead to the individual being decreasingly focused on being healthy (Penzak et al., 2000).

5.2.6 Measuring clinical depression based on the data by the BDI II

Within the sample, as it pertains to the BDI II, there are 55.8% who have reported to be within normal limits as it pertains to depression. 44.2% of the sample was diagnosed with depression. According to Moosa and Jeenah (2007), the prevalence of depression in HIV positive individuals ranges from 0% to 47.8% and within clinical samples the rage ranges

from 2%-35%. Within community samples however, the rate ranged from 30%-60%. Bearing this in mind, the findings of this particular study show that the prevalence of depression are considerably high. Depression is quite a common phenomenon amongst PLWHA, generally making it difficult to come to terms with the disease and to be able to adjust adaptively (Nevid et al., 2008). The effect that depression has physiologically is that it impairs the immune system putting the individual at risk for lower levels of CD 4 + cells which then can speed up the transition of being HIV positive to being diagnosed with AIDS (Mulder et al, 1999). Depression also affects behaviour which could then ultimately have an effect on adherence and this then further complicates the management of this disease effectively. There were more female representatives within the sample than males which also denoted that women are more at risk for the development of depression than their male counterparts. The psychological factor namely depression can therefore lead to a greater development of the disease as it not only leads to decrease sense of self worth as well as a greater level of hopelessness, but that it also has an adverse effect on the immune system and the implications thereof is that it decreases the level of CD 4+ cells leading to the progression of HIV into AIDS. Depression therefore further complicates HIV. Depression also embodies that which represents loss and in this way the individual feels a greater sense of loss due to the further development and ultimate deterioration of their already impaired sense of health. Effective detection and treatment of depression therefore becomes essential in the reduction of the spread of the disease (Olley et al., 2004).

The Biopsychosocial theory has given much insight into understanding illness from a holistic point of view rather than attempting to understand illness in isolation pertaining to biological, psychological and social factors in isolation. Being able to understand how these factors interact with each other and how these factors contribute to the development of the disease could determine how subsequent treatment can be effected. For this reason the

Biopsychosocial theory perhaps renders the most comprehensive perspective as it offers a theoretical framework which can effectively contribute to the medical health profession in implementation of disease treatment and overall management of the disease.

5.3 Hypothesis one

Null Hypothesis

H o There is no difference in the internal consistency of the BDI II and the HADS-D

Alternative Hypothesis

H 1 The BDI II has better internal consistency than the HADS-D

The null hypothesis is rejected as a difference does exist in that the BDI II has better internal consistency.

The internal consistency as per the Cronbach (α) of the BDI II was 0.89 which proved to be very reliable whereas the HADS-D had an internal consistency as per the Cronbach (α) of 0.38 which means that it was not reliable. This was obtained concerning the total scales. A possible reason why the HADS-D had a much lower Cronbach (α) could be due to depression and anxiety not being adequately differentiated which has affected the reliability of the scale.

5.4 Hypothesis Two

Null Hypothesis

Ho : There is no difference in the construct validity of the BDI II and the HADS-D

Alternative Hypothesis

H 1: The BDI II has better construct validity than the HADS-D

The null hypothesis is rejected as a difference does exist in that the BDI II has better psychometric properties

It was predicted that the BDI II would be a better screening tool for depression and in terms of the psychometric properties namely the construct validity and internal consistency as it relates to validity and reliability consecutively, the BDI II has proven to be more efficient than the HADS-D. According to another study conducted the BDI II had a two factor structure which was namely cognitive affective factor and somatic affective factor (Commerford et al, 1994). Within other studies the BDI II yielded a 2 factor structure as reported with cognitive and somatic domains representing each factor. The study was conducted with 200 women who hailed from lower socio economic backgrounds (Kneipp, Kairalla, Stacciarini & Perreira, 2009). Another study however, revealed a four factor structure namely, depression, negative attitude, performance ability and somatic elements. The study was conducted on adolescents who hailed from Hong Kong (Byrne, Stewart & Lee, 2004). Exploratory Factor Analysis for the BDI II as it pertains to this study revealed a 7 factor structure which accounted for 70.02 % of the total variance. A 5 factor structure however needed to be considered due to there not being a significant loading of items for factor 6 and 7. The factor structure accounts therefore for 60.14% of the total variance.

Factor one pertaining to this study is a negative view of the self. This includes "self-dislike", "indecisiveness", "agitation", "self-criticalness" and "loss of interest". A negative view of the self pertains to how Beck constructs his theory of depression. Depression has been primarily theorised as that of loss (Corey, 1991) . The perception of self is negatively evaluated and this can have an adverse effect on how the person is able to adjust to the disease. The individual's set backs are often blamed upon themselves and also upon their inadequacies and furthermore the perception that these individuals have is that they don't

have the necessary qualities or desirable attributes that can bring them to a place of happiness and satisfaction. The symptoms as it related to the negative self were a general sense of being critical toward the self. The evidence of a mood disorder is that of a general sense of distress which is precipitated by a change in their cognitive abilities which are predominantly characterised by a negative evaluation of the self (Kaplan & Sadock, 2007).

Factor two pertaining to this study has been labeled as negative view of the past and the future. This included "past failures", "loss of pleasure" and "pessimism". Previous studies also show that there is a link between prior negative events which have been predominantly been evaluated as negative and the onset of depression in HIV/AIDS (Olley et al, 1994). This factor is also partly based on the cognitive triad theorised by Beck as being part of the cognitive triad relating to a negative view of the future. The individual has a dull and negative perception of their future. The individual perceives that the future is a possible reflection based on their past failures resulting in their perception of their situation as remaining unchanged and will continue to do so for an indefinite time period. Thus the individual's beliefs and assumptions, for example that future expectations will not be achieved, can negatively affect the way they perceive future events (Leahy & Holland, 2000). Those who have been diagnosed with HIV could perceive of their future as a result of their past failures.

Factor three pertaining to this study has been labeled as somatic affective. This includes "loss of interest in sex", "tiredness or fatigue", "loss of energy". This primarily underscores the changes that take place in bodily functions pertaining to sexual desire as well as energy levels which decreasingly less leaving the individual feeling that there is an increased tiredness or fatigue. Fatigue and loss of energy is also the criteria for Major Depressive Episode (Corey, 1991). Depression has been known to impair the physical functioning of the body (loss of energy and increased fatigue) and this can present itself as a risk as the

individual finds it difficult to subscribe to a regimen of taking medication due to the loss of physical functioning. Adherence becomes essential within the general management of HIV/AIDS and according to Di Matteo et al. (2000) depression contributes toward increased levels of non-compliance to medication. Non-compliance also contributes toward eventual drug resistance especially with regard to HAART

Factor four pertaining to this study has been labeled as Negative Affect. This included variables such as "sadness", "guilty feelings" and "punishment feelings". These symptoms describe the emotional state of the individual once being diagnosed with HIV/AIDS. Negative affect has been known to increase the levels of depression (Commerford et al., 1994).

Factor five pertaining to this study has been labeled as expression and negative cognition. This includes "suicidal thoughts", "crying" and "concentration difficulties". According to a study done by Commerford et al. 1994, emotional expression has been known to increase the likelihood of depression. The reason for this is that emotional expression was indicative of being associated to not being able to accept the disease that the individual has been diagnosed with. Depression is a mood disorder that primarily affects the cognition of the individual and the greater level of negative cognition the greater the likelihood of the development of depression (Hamen, 2005). Cognitive restructuring thus remains essential as this will decide how the individual perceives of illness and finds aspects that are positive and also how they can find new meaning within living with the disease (Commerford et al, 1994).

Within another study conducted, the HADS revealed a 2 factor structure within a clinical sample (Boland & Brandbert, 1993). This is due to the inclusion of the anxiety subscale. In this study however, the depression scale relating to the HADS-D revealed one factor structure. Factor one pertains to loss of interest in previously enjoyed activities. This

includes “I still enjoy the things I used to enjoy”, “I feel cheerful” and “I can laugh”. This is often a symptom that is related to depression as the individual feels less motivated to engage in activities that once brought about a sense of interest and pleasure. There is thus a decreased sense of motivation as experienced by the individual leading to a heightened depressive state (Leahy & Holland, 2000).

5.5 Limitations of this study

A primary limitation of this study is that the participants who were part of this study were a homogenous group that was located in a one particular area with the same socio economic status. Another limitation of the study is that it only included a limited population and thus only a limited representation of a very broad cultural group and thus not being generalised to the South African population collectively.

The sample size was also relatively small and adding to this was the fact that there were a few missing data which reduced the sample size even further. There could be a host of factors that could contribute to the missing data. Language is usually a barrier and certain constructs within the self report instruments could be difficult to comprehend within a cultural context as well as the language in which it was interpreted.

In addition to the limitation of this study, is that the questionnaire that was used was based upon quantitative methods in research and thus it gave very limited insight into what the individual had experienced regarding their identifiable depressive symptoms. Qualitative methods gives the participant the opportunity to account for their experiences more broadly and more personally opposed to the quantitative approach where likert type scales are employed giving little insight into the personal experience of the individual (Terre blanche & Durrheim, 1999). Another limitation of this study was that the instruments utilised were both self report instruments. These type of instruments are subject to response bias and this

means that the individuals tend to under report on their depressive symptoms and would tend to give more socially acceptable responses.

5.6 Recommendations and implications for Future Research

Given the affected population of almost 5.2 million people that are currently living with HIV/AIDS this disease presents the individual with insurmountable challenges. Those who are living with HIV/AIDS are also experiencing mood disorders such as depression which makes the management of this disease challenging. Greater importance should be placed on early detection as well as management of this co morbid disorder regarding PLWHA. Utilization of an effective tool especially within the public health sector is essential and thus this study has shown that the BDI II is an effective and more reliable measure of depression. With regard to the previously mentioned limitation of this study regarding the generalisability as it pertains to the limited representation of the South African population, this study could be implemented within participants who hail from various socio economic backgrounds as well as the various population groups, given the richly diverse cultural backgrounds of this country, South Africa. Further to this, the recommendations of the study will be made to the health authority concerned where subsequent changes benefitting the well being of the participants will be implemented.

5.7 Conclusion

The primary aim of this study was to establish the psychometric properties of the two mentioned scales namely the BDI II and the HADS-D. In terms of construct validity the BDI II reflected to have better construct validity than the HADS-D. A particular reason for this could be due to the fact that that depression and anxiety is not differentiated as per the HADS-D.

In terms of internal consistency the BDI II had an alpha co efficient of 0.89 while the HADS-D had an alpha co-efficient of 0.36 making the BDI II more reliable in terms of internal consistency. The BDI II yielded a 5 factor structure which accounted for 60.14% of the variance. The HADS-D yielded 1 factor with 14.33% of the variance.

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Appendix one

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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 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	

Appendix Two : BDI II

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BDI II **File no. _____**

Please circle one item in each group that best describes the way you have been feeling in the last two weeks, including today.

1. Sadness
0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad and unhappy that I can't stand it.

2. Pessimism
0 I am not discouraged about the future.
1 I feel more discouraged about the future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

3. Past Failure
0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back I see a lot of failures.
3 I feel I am a total failure as a person.

4. Loss of Pleasure
0 I get as much pleasure out of things as I used to.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings
0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. Punishment Feelings
0 I don't feel I am being punished.
1 I feel I may be punished.

2 I expect to be punished.
3 I feel I am being punished.

7. Self Dislike
0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. Self-Criticalness
0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all my faults.
3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes
0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10. Crying
0 I don't cry any more than I used to.
1 I cry more now than I used to.
2 I cry over very little things.
3 I feel like crying but I can't.

11. Agitation
0 I am no more restless or wound up than usual.
1 I feel more restless or wound up than usual.
2 I am so restless or agitated that it's hard to stay still.
3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of interest
0 I have not lost interest in other people or activities.
1 I am less interested in other people or things than before.
2 I have lost most of my interest in other people or things.
3 It's hard to get interest in anything.

13. Indecisiveness
0 I make decisions about as well as ever.
1 I find it more difficult to make decisions than usual.
2 I have much greater difficulty in making decisions more than I used to.
3 I have trouble in making any decisions.

14. Worthlessness

0 I do not feel I am worthless.
1 I don't consider myself as worthwhile and useful as I used to.
2 I feel more worthless as compared to other people.

3 I feel utterly worthless.

15. Loss of energy
0 I have as much energy as ever.
1 I have less energy than I used to have.
2 I don't have enough energy to do very much.
3 I don't have enough energy to do anything.

16. Changes in sleeping pattern
0 I have not experienced any change in my sleeping pattern.
1a I sleep somewhat more than usual.
1b I sleep somewhat less than usual
2a I sleep a lot more than usual.

2b I sleep a lot less than usual.

3a I sleep most of the day.

3b I wake up 1-2 hours early and can't get back to sleep.

17. Irritability
0 I am no more irritable than usual.
1 I am more irritable than usual.
2 I am much more irritable than usual.
3 I am irritable all the time.

18. Changes in appetite
0 I have not experienced any change in my appetite.
1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.

2a My appetite is much less than before.
2b My appetite is much greater than usual.

3a I have no appetite at all.

3b I crave food all the time

19. Concentration difficulty
0 I can concentrate as well as ever.
1 I can't concentrate as well as usual.

2 It's hard to keep my mind on anything for very long.
3 I find I can't concentrate on anything.

20. Tiredness or Fatigue
0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a lot of the things I used to do.
3 I am tired or fatigued to do most of the things I used to do.

21. Loss of interest in sex
0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interest in sex now.
3 I have lost interest in sex completely.

TOTAL = _____

Appendix three : Information sheet

Project Title: IMPLICATIVE PERSONAL DILEMMAS AND COGNITIVE CONFLICTS IN HEATH DECISION-MAKING IN HIV POSITVE 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 decision 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 our 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 d 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 you 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 answer 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 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 further 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 four : 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 his 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 experiences related to the study, please contact the study coordinator:

Study Coordinator's Name: PROFESSOR PAMELA NAIDOO

University of the Western Cape

Private Bag X17, Bellville 7535

Telephone: (021)959-2835

Cell: 083 776 1144

Email:pnaidoo@uwc.ac.za

Appendix five

OFFICE OF THE DEAN
DEPARTMENT OF RESEARCH DEVELOPMENT

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6 February 2009

To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape has approved the methodology and the ethics of the following research project by Prof P Naidoo (Dept. of Psychology)

Research Project:	Implicative personal dilemmas and cognitive conflicts in health decision-making in HIV positive adults and adults with AIDS
Registration no.:	08/6/5

Piet Syster
Research Development
University of the Western Cape