

**IDENTIFICATION OF SUICIDAL IDEATION IN HIV-
INFECTED PATIENTS: DEVELOPMENT OF A SUICIDE
RISK ASSESSMENT TOOL AND A SUICIDE
INTERVENTION PLAN FOR HIV- INFECTED
PATIENTS FOLLOWING VOLUNTARY
COUNSELLING AND TESTING**

by

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requirements for the degree

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DECLARATION

I ROMONA DEVI GOVENDER declare that:

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DEDICATION

*I dedicate my PhD to my late husband, Si, who has been
my inspiration and emotional support.*

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My heartfelt gratitude goes to my late husband, Si, who had started me on my PhD journey. Finishing this manuscript is bitter sweet because he is not here to share my success; but, I have my girls, Ginger and Katy, who took the reins from their dad and encouraged me to finish. Ginger and Katy, you have been my reason to continue and to reach my dream.

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ABSTRACT

Background. Globally, suicide and HIV/AIDS remain two of the greatest healthcare issues, particularly in low- and middle-income countries where approximately 85% of suicides occur. Every year, more than 800,000 people die from suicide; this roughly corresponds to one death every 40 seconds, and the World Health Organization (WHO) estimates that by 2020 the rate of death will increase to one every 20 seconds. HIV/AIDS patients in South Africa have a higher suicide risk than the general population and may an increased frequency and severity of suicidal ideation depending on the different intervals in the continuum of HIV disease progression. Several studies have observed a relationship between the increase in suicide and HIV in South Africa, but due to the paucity of empirical data, this relationship remains inconclusive. Suicide in HIV-infected persons is multifactorial. Risk factors include: a history of attempted suicide; fears of social isolation; feelings of hopelessness; fear of losing control of life; elevated levels of depression; denial; and poor coping strategies. Despite the introduction of antiretroviral therapy (ART), the suicide rate remains more than three times higher among HIV-infected persons than in the general population. Although international findings on the correlation between suicide and HIV/AIDS are diverse, results show compelling evidence to screen for suicide risk and intervene as early as possible.

Objectives. The main objectives of this research were: (i) to determine the prevalence of suicidal ideation in HIV-positive persons following voluntary HIV counselling and testing (VCT); (ii) to develop and validate a suicide risk screening scale (SRSS) for use in HIV-infected persons post HIV diagnosis; (iii) to implement and evaluate a brief suicide preventive intervention (BSPI) for use in the period immediately following HIV diagnosis.

Methods. A quantitative methodology was used with a cross-sectional, correlational and regression analysis in the prevalence study. Participants completed a sociodemographic questionnaire, Beck's Hopeless Scale and Beck's Depression Inventory. Drawing 14 items from two established screening tests, the SRSS was developed and assessed. Validity, internal consistency and receiver-operating curves were used to determine the sensitivity and specificity of the tool. Following confirmation that recently

diagnosed HIV-positive persons were at risk for suicidal behaviour, a BSPI was implemented and its efficacy evaluated with the validated SRSS. Statistical analysis included generalised linear modeling, and Pearson's and McNemar's chi-square analyses.

Results. There was an increase in suicidal ideation over a six-week period following a positive HIV diagnosis, from 17.1% to 24.1%. Suicidal ideation was significantly associated with seropositivity, age and gender, with the majority of affected patients falling in the younger age category. Young males had an 1.8 times higher risk for suicidal ideation than females. Lower education and traditional beliefs were also significantly associated with an HIV-positive status upon testing. The SRSS was implemented and, despite certain limitations, was considered to be a valuable screening tool for suicidal ideation at VCT clinics. The BSPI was associated with a clinically significant decrease in the rate of suicidal ideation over time, providing preliminary evidence on its efficacy.

Conclusion. Significant correlations exist between hopelessness, depression and suicidal ideation; these serve as important markers that should alert healthcare professionals to underlying suicide risks in HIV-positive patients. Screening for suicide risk and possible suicidal behaviour should form a routine aspect of comprehensive patient care at VCT clinics to assist with effective prevention and treatment. Healthcare workers at VCT clinics should be trained in suicide prevention interventions and the importance of educating vulnerable HIV-positive patients on suicide-prevention strategies. Further longitudinal studies are recommended to enable researchers to observe and differentiate between the variables that may be more prevalent at different stages of HIV, as well as the impact of ART on suicidal behaviour.

KEYWORDS

Suicidal ideation; HIV; risk factors; protective factors; suicide; depression; hopelessness; suicide risk assessment; suicide prevention; suicide intervention.

LIST OF ABBREVIATIONS

ARVs	antiretrovirals
ART	antiretroviral therapy
AUC	area under the curve
BDI	Beck's Depression Inventory
BHS	Beck's Hopelessness Scale
BSPI	brief suicide preventive intervention
CI	confidence interval
HIV	human immunodeficiency virus
NIMSS	National Injury Mortality Surveillance System
PLWHA	people living with HIV/AIDS
PTSD	post-traumatic stress disorder
ROC	receiver operating characteristic
RR	risk ratio
SD	standard deviation
SPTC	standard post-test counselling
SRSS	suicide risk screening scale
STDs	sexually transmitted diseases
TB	tuberculosis
WHO	World Health Organization
VCT	voluntary HIV counselling and testing

LIST OF PUBLICATIONS

Govender RD, Schlebusch L. Hopelessness, depression and suicidal ideation in HIV-positive persons. *South African Journal of Psychiatry* 2012; 18(1): 16-21.

Govender RD, Schlebusch L. Suicidal ideation in seropositive patients seen at a south african HIV voluntary counselling and testing clinic. *African Journal of Psychiatry* 2012; 15: 94-98.

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Govender RD, Schlebusch L. A suicide risk screening scale for HIV-infected persons in the immediate post-diagnosis period. *Southern African Journal of HIV Medicine* 2013; 14(2): 58-63.

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CONTRIBUTIONS

The researcher designed and developed all phases of the research protocols, performed all literature searches, secured funding, sought and obtained ethical permissions, trained all staff involved in implementation of the research protocols, performed data capturing, made major contributions to the aforementioned journal publications and prepared the final manuscripts for publication. This is confirmed and supported in the supervisor's report.

OUTLINE

This dissertation entitled, “*Identification of suicidal ideation in HIV-infected patients: Development of a suicide risk assessment tool and a suicide intervention plan for HIV-infected patients following voluntary counselling and testing*”, will be presented in the form of three phases. The main objective of **Phase One** was to determine the prevalence of suicidal ideation in HIV-positive persons following voluntary HIV counselling and testing (VCT). **Phase Two** saw the development of a suicide risk screening scale (SRSS) and the validation thereof for internal consistency and reliability for use in HIV-infected persons post HIV diagnosis. **Phase Three** involved the implementation of a brief suicide preventive intervention (BSPI) immediately post HIV diagnosis and evaluation of the outcomes thereof at three time intervals. All three phases are presented as published research articles in peer-reviewed journals.

CHAPTER 1

ORIENTATION AND PROBLEM STATEMENT

This chapter provides an overview of, and rationale for the study.

1.1 BACKGROUND

Suicide and HIV/AIDS alone are a burden; together, they represent a global crisis and a public health catastrophe. Research has shown that HIV/AIDS patients are at high risk for suicide (Schlebusch and Vawda, 2010). According to the World Health Organization (WHO), over one million people die each year as a consequence of suicide, and in the past 45 years global suicide rates have increased by 60% (WHO, 2008). The latest trends of the global HIV/AIDS epidemic show that the number of people living with HIV rose from around 8 million in 1990 to 34 million by the end of 2010, with sub-Saharan Africa carrying the greatest burden of the epidemic (68% of all HIV-positive people) (AVERT, 2011).

The 2006 National HIV and Syphilis Prevalence Survey in South Africa estimated that the overall HIV prevalence in South Africa was 29.1%, with KwaZulu-Natal Province bearing the highest individual prevalence of 39.1% (NDoH, 2007). Durban, a city in KwaZulu-Natal, is known to be the very hub of the epidemic, with one of the highest HIV-seropositive prevalence rates globally. Some of the South African studies on suicide and HIV have been conducted in this city (UNAIDS, 2006; Schlebusch and Vawda 2010); however, no prior study has focused specifically on the relationship between HIV/AIDS and suicidal ideation in this region. Nevertheless, statistics based on reported attempted suicide have revealed a 25.4% prevalence of suicidal ideation among the general population (UNAIDS, 2006), and a 27% and 73% suicide risk among male and female HIV-positive patients, respectively (Schlebusch and Vawda, 2010).

The pattern of suicidal behaviour may differ throughout the progression of HIV infection up to the development of AIDS. Early international studies have described higher rates of suicidal ideation in HIV-positive individuals (Carrico, *et al.*, 2007) whereas some asymptomatic HIV-infected persons had higher rates of suicidal ideation than persons with AIDS (Kelly, *et al.*, 1998) while some reported suicidal ideation in patients within the first week of testing for HIV (Perry, *et al.*, 1990; Cooperman and Simoni, 2005). Local data reported high levels of suicidal ideation associated with pregnancy, age as well as current and previous depression (Rochat, 2013). There is limited evidence about the prevalence of suicide risk immediately following a positive HIV diagnosis. Consequently, the purpose of this research was to assess suicide risk following voluntary HIV counselling and testing (VCT). VCT offers patients the knowledge to comprehend their HIV status and, depending on the results of testing, affords the ability to access treatment and ultimately presents an opportunity for patients to alter risk behaviour.

1.2 CONCEPT CLARIFICATION

In promoting a clear comprehension of this study in its totality, certain core terms must be clarified:

Suicidal ideation is defined as having the intent to commit suicide, wanting to take one's own life or thinking about suicide without actually making plans to commit suicide (Schlebusch, 2005).

Hopelessness is defined as a feeling that nothing, neither internal resource nor external force, can extricate one from a bleak and unresponsive environment or an experience of despair or extreme pessimism about the future (Beck *et al.*, 1974; Abramson *et al.*, 1990).

Major depressive episode: The essential feature of a major depressive episode is a period of at least 2 weeks during which there is either a depressed mood or loss of interest or pleasure in all activities. The mood in a major depressive episode is often described by the person as 'depressed', 'sad', 'hopeless', 'discouraged' or 'down in the dumps'. The criteria for a major depressive episode include five or more of the symptoms (as listed below) present during the same two-week period and represent a change from

previous functioning. The criteria are based on the *Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition, Text Revision)* (DSM-IV-TR) (APA, 2000):

- A depressed mood most of the day, nearly every day, as indicated by either a subjective report or observation made by others;
- A markedly diminished interest or pleasure in all, or almost all activities most of the day, nearly every day;
- Significant weight loss when not dieting, or weight gain, or decrease or increase in appetite nearly every day;
- Insomnia or hypersomnia nearly every day;
- Psychomotor agitation or retardation nearly every day;
- Fatigue or loss of energy nearly every day;
- Feelings of worthlessness or excessive or inappropriate guilt;
- Diminished ability to think or concentrate, or indecisiveness, nearly every day;
- Recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

Following on the WHO/EURO Multicentre Study on Suicidal Behaviour, much debate in the field of suicidology arose regarding the terminology and definitions of suicidal behaviour (De Leo D, *et al.*, 2006) and the inter-relation of suicidal thought, plans and attempts in culturally different societies (Bertolote JM, 2005).

Suicidal behaviour is complex and includes fatal and non-fatal suicidal behaviour, with and without injuries (De Leo D, *et al.*, 2006)

Non-fatal suicidal behaviour, with or without injuries, is defined as “a nonhabitual act with nonfatal outcome that the individual, expecting to, or taking the risk to die or to inflict bodily harm, initiated and carried out with the purpose of bringing about wanted changes” (De Leo D, *et al.*, 2006) For the purpose of this study, includes the following **suicidal ideation** is defined as having the intent to commit suicide, wanting to take one’s own life or thinking about suicide without actually making plans to commit suicide (Schlebusch, 2005).

Fatal suicide is often also referred to as **completed suicide** when the individual's intent is to end to his/her own life and he/she ultimately succeeds (Schlebusch, 2005).

1.3 THE HIV EPIDEMIC

HIV/AIDS is the scourge of the 21st century globally. Since the beginning of the HIV epidemic, almost 70 million people have been infected with the virus and about 35 million people have died of AIDS-related causes. Although the burden of the epidemic continues to vary considerably between countries and regions, sub-Saharan Africa remains the most severely affected, with nearly 1 in every 20 adults (4.9%) living with HIV, accounting for 69% of the people living with HIV/AIDS (PLWHA) worldwide. The current estimated total HIV prevalence for South Africa is 5.258 million, with KwaZulu-Natal bearing the highest proportion of this load (15%) (ASSA, 2012).

The overall growth of the HIV epidemic has stabilised in recent years. The annual number of new infections has steadily declined, and due to the significant increase in people receiving antiretroviral therapy (ART), the number of AIDS-related deaths has also diminished (AVERT, 2011). Despite the introduction of ART for HIV/AIDS patients in South Africa in 2004, HIV is still associated with a very high morbidity and mortality in the country, with 320 000 estimated deaths in 2005 alone (UNAIDS, 2006). The estimated number of people living with HIV in South Africa was 5.6 million at the end of 2009 (UNAIDS, 2012).

1.4 HIV STIGMA AND DISCRIMINATION

It is well known that PLWHA experience stigma and discrimination on an ongoing basis. At an individual level, stigma undermines a person's identity and capacity to cope with the disease, limits the possibility of disclosure and hinders an eventual alteration in risk behaviour. Closely linked to stigmatisation are discrimination and the disclosure of an individual's HIV status. Stigmatisation and discrimination are inherent within South Africa's history, as depicted by the apartheid system with

respect to race. The attachment of discrimination to illness also has a long history, affecting people with mental illness and physical disorders such as cancer, tuberculosis (TB), sexually transmitted diseases (STDs) and leprosy (Sontag, 1988). So, the assumption that discrimination and stigma arise easily within the South African society may not be too unrealistic.

South Africa has reported a large number of incidents of stigma. Blame is often assigned to black people or to women, and some men apportion blame onto women for infecting them with, or spreading HIV (Leclerc-Madlala, 2002). In couples, this can lead to violence against women or their exclusion from the household (Leclerc-Madlala, 2002). The murder of Mpho Mtloung and her mother by her husband, who then also committed suicide, is testimony of such violence towards self and others (TAC, 2002). This type of reaction inevitably has the unfavourable outcome of rendering the epidemic 'invisible' and forcing people who have contracted HIV, or those who are associated with it 'to go into hiding'. The slogan 'Break the Silence', adopted at the International AIDS Conference in Durban in July 2000, was a response to the reluctance of individuals who are HIV-positive to test for HIV and to disclose their HIV status (Morrell, 2001). The manner in which each person experiences and copes with the illness is reflected in their decision of whether or not to disclose their sero-status, and their right to personal privacy and dignity.

1.5 SUICIDE: EPIDEMIOLOGY AND PREVALENCE

Suicidology was first introduced by Shneidman into the English scientific literature in 1964 (Hatton and Valente, 1989). Despite all the research into the subject over the years, suicidology is still surrounded by an aura of mystery. The quest to understand suicide traverses from the sociological theories of Durkheim to the psychoanalytical theories of Freud.

Suicide is a global phenomenon, with the WHO documenting an increasing trend in terms of prevalence (WHO, 2008). In 1998, suicide was estimated to constitute 1.8% of the total global disease burden, with

the present global mortality rate estimated to be 14/100 000 (18/100 000 among males and 11/100 000 among females) (WHO, 2008). An increase of up to 1.53 million suicides per annum is projected for the year 2020 (Bertolote and Fleischmann, 2009). Current suicide statistics are even more worrisome when perceived in real-time; e.g. a 16/100 000 global mortality rate translates into one death every 40 seconds (WHO, 2008).

The suicide statistics for South Africa are even more alarming. There are at least 8 attempts for every fatal suicide (Schlebusch, 2004). When compared with international rates, these statistics were deemed higher than the global average (Schlebusch, 2004). Of further concern, it is believed that the South African statistics for completed suicides are not accurate, and that the reported rates are lower than the actual rates. This may be attributed to an evolving vital statistics database, the taboo and stigma related to suicide and, most likely, the misclassification of deaths by suicide. Statistics on fatal suicides are gleaned from a research-based database, the South African National Injury Mortality Surveillance System (NIMSS) (NIMSS, 2007), and data from the Durban Parasuicide Study (PDS) (Schlebusch, 2004). The general trend is that fatal suicides are on the increase (Schlebusch, 2005), and the latest report from NIMSS showed that deaths by suicide constituted 10.71% of the overall deaths in South Africa (NIMSS, 2007). If Durkheim had been asked to comment, he might have described the South African society as being in a state of deep crisis, both at a societal and individual level, with the extremely high prevalence of HIV/AIDS and increasing prevalence of suicide (Schlebusch, 2005).

Suicidal behaviour in the general population may be attributed to multiple factors (Schlebusch, 2005), including genetic, biological, cultural, psychological and social factors, and all of these may contribute either individually or in an interrelated manner, resulting in a cascade of emotional responses. A number of psychosocial risk factors – viz. marital disruption, unemployment, lower socioeconomic status, living alone, a recent migration, early parental deprivation, a family history of suicidal behaviour and psychopathology, poor physical health and stressful life events – have been reported to be associated significantly with the risk of suicide (Robertson *et al.*, 2006). These risk factors have been researched

extensively internationally and locally (Schlebusch, 2004, 2005; Schlebusch and Vawda, 2010; NIMSS, 2007).

Recent statistics for South Africa have indicated that there has been a shift in the prevalence of suicide, from an act more commonly committed by the elderly, to something that the younger generation is more likely to commit (Schlebusch, 2005). The grounds for suicidal behaviour stem from a constellation of complex components; how these interact or trigger a suicidal outcome may vary from one individual to another (Schlebusch, 2006). The likelihood of suicide or suicidal behaviour has been shown to increase with a higher number of risk factors (Schlebusch, 2006). The greatest risk for suicidal behaviour occurs when risk factors co-exist in individuals and families; yet, the paradox is that individuals may have one or more risk factors but may not be suicidal. Compounding all the complexities of suicide related to genetic, biomedical and psychosocial contributors, South Africa has the added trauma associated with a post-apartheid society, the political transformation that commenced in 1994, and the HIV/AIDS pandemic.

1.6 SUICIDAL IDEATION AND HIV

Are people living with HIV at greater risk for suicide? In South Africa, and on the African continent in general, HIV-related suicide is poorly researched and the relevant statistics are not accurate. In the few studies conducted in South Africa, 16% of the general in-patient admissions for suicidal behaviour were HIV/AIDS-related (Schlebusch, 2006) and the calculated descriptive attempted suicide rate (based on the estimated national suicidal behaviour prevalence rates) was 67.2/100 000 (Schlebusch and Vawda, 2010). As early as 1995, a study in South Africa showed that 17% of youth had attempted suicide because of an AIDS phobia (Mhlongo and Peltzer, 1999).

When patients are first diagnosed with HIV, many react with disbelief and anxiety, and express fear for what lies ahead. Evidence suggests that as many as one half of HIV-positive individuals attempt suicide within three months of notification of their positive status, and about two-thirds do so within the first year

(Robertson, 2006; Carrico, 2007; Schlebusch and Vawda, 2010; Kinyanda *et al.*, 2012). PLWHA may become increasingly suicidal upon a deterioration in their medical condition – e.g. a drop in CD4⁺ count, an increase in viral load, an opportunistic infection, hospitalisation, pain or the commencement of ART, which may trigger neurocognitive impairment and suicidal thinking (Morrell 2001; Schlebusch and Vawda, 2010; Kinyanda *et al.*, 2012). This is ultimately what laid the foundations for the research described in this dissertation. With the introduction of ART, there may also be an improvement in health which may translate into a decrease in suicide risk, as documented in some international studies; however, this remains to be tested in South Africa (ASSA, 2012).

HIV infection, besides having horrendous and debilitating physical and biological effects, also has a multitude of associated psychosocial impacts (Carrico *et al.*, 2007), which are just as important in determining the risk of suicidal behaviour in HIV-positive persons (ASSA, 2012). Some of the characteristics for suicidality in HIV/AIDS persons in a study conducted in Uganda included female gender, food insecurity, an increase in negative life events, a high stress score, a negative coping style, a past psychiatric history, psychosocial impairment, a diagnosis of post-traumatic stress disorder (PTSD), generalised anxiety disorder and major depressive disorder (Kinyanda *et al.*, 2012). The psychosocial effects can be seen among individuals, families and the community at large, affecting all strata of society and societal functioning, with the ultimate consequence on HIV prevention and treatment. The critical psychosocial stressors for persons with HIV/AIDS follow the same patterns as the general population, with negative effects generated by taboos, social stigma, decreased support from family and friends, multiple losses of family contracting HIV, social devaluation, and so forth, and these negative effects ultimately enhance suicide risk (Robertson *et al.*, 2006; Carrico *et al.*, 2007; Schlebusch and Vawda, 2010; Kinyanda *et al.*, 2012).

Beck's cognitive model of depression provides a framework for understanding how psychological responses to stressful life events may increase suicide risk (Mhlongo and Peltzer, 1999; Allen, 2003; Beck, 2008). HIV-positive persons commonly experience a variety of chronic, uncontrollable stressors

that can contribute cumulatively to the perception that living with this stigmatised illness is hopeless and intolerable. Precipitating events are conceptualised as specific stressful life events that are linked to increased suicide risk (Beck *et al.*, 1993). HIV-positive people are faced with being ostracised by family and friends, hence the incentive to withhold the disclosure of their HIV status. Such individuals are also subjected to stigmatisation and discrimination by the society at large.

A number of other psychosocial risk factors have also been associated significantly with the risk of suicide in HIV-positive people, including marital disruption, unemployment, lower socioeconomic status, living alone, a recent migration, early parental deprivation, family history of suicidal behaviour and psychopathology, poor physical health and stressful life events (Robertson *et al.*, 2006; Schlebusch and Vawda, 2010). The prevalence of depression and anxiety in PLWHA is almost double that of HIV-negative people with the same illnesses (Ciesla and Roberts, 2001). Evidence is growing that this is true of South Africa and other African countries (Ciesla and Roberts, 2001; Olley *et al.*, 2004). Taken together, these psychiatric, biological and social vulnerabilities in HIV-positive persons could accentuate hopelessness and the negative impact of stressful life events, and promote cognitive and behavioural patterns that increase suicide risk.

In summary, the risk factors for suicide are diverse and inter-related, and may be particularly complex in HIV-positive individuals. Despite the diverse correlations between suicide and HIV/AIDS (Olley *et al.*, 2004), there is compelling evidence to justify screening for suicide risk and intervening as early as possible (Olley *et al.*, 2004; Bantjies and van Ommen, 2008; Catalan *et al.*, 2011; Badiie *et al.*, 2012).

1.7 SCREENING FOR SUICIDE RISK

All professionals agree that no one can predict who, when and how people will commit suicide. Attempts to predict suicide produce many false-positive and -negative results. Suicide risk assessment includes individual, clinical, interpersonal, situational and demographic factors that increase or decrease suicide risk. There are a variety of suicide risk assessment methods available to the clinician. Suicide assessment

forms, structured and semi-structured suicide scales, questionnaires and checklists may complement, but should not substitute the clinician's assessment (Bantjies and van Ommen, 2008). It has been shown that screening for suicide, even among high-risk populations, ultimately does translate into preventing suicides (Hoven *et al.*, 2009).

1.8 SUICIDE PREVENTION AND INTERVENTION

Suicide prevention is defined as any self-injury-prevention or health-promotion strategy that is generally or specifically aimed at reducing the incidence and prevalence of suicidal behaviours (Rehse and Pukrop, 2003). Suicide intervention includes: early recognition and assessment of risk; immediate response; resource referrals; and follow-up management and treatment of at-risk individuals (Rehse and Pukrop, 2003). A complete and comprehensive preventive model is the universal/selective/indicated (USI) model, which targets the general population, vulnerable populations and persons at high risk for suicide. Universal preventive interventions are directed towards entire populations; selective interventions are directed towards individuals who are at greater risk for suicidal behaviour; and indicated preventions target individuals who have already begun to display self-destructive behaviour (Nordentoft, 2011).

1.9 THEORETICAL FRAMEWORK

The theoretical framework underpinning this research is based on Beck's cognitive model of depression (Allen, 2003; Beck, 2008). This framework describes how hopelessness in general, hopelessness about the future and a poor sense of one's own coping skills may act as mediators for suicidal behaviour in HIV-positive persons. This information-processing model states that systematic negativity which pervades cognitive processes forces a person to view events in a specific way – *viz.* the 'cognitive triad' – which activates symptoms of depression (Allen, 2003). Depression-prone patients develop a negative view of themselves. They see themselves as being worthless, unlovable and deficient; they have a negative view of their environment, seeing it as overwhelming, filled with obstacles and failure; and they

have a negative view of their future, seeing it as hopeless and believing that no effort will change their lives. This negative way of thinking eventually leads to hopelessness and depression, and ultimately, to suicidal behaviour (Beck *et al.*, 1993).

The supposition is that there is a need to understand the relationship between hopelessness, depression and suicidal behaviour. This relationship has been studied extensively. Hopelessness has been shown to correlate positively with the severity of depression, the number of previous suicide attempts, current suicidal ideation and suicidal intent. In alignment with the present research, this process is illustrated in Fig. 1, overleaf.

Consequently, it is evident that hopelessness is the primary mediator that links depression and suicidal behaviour. One of the best predictors of subsequent suicide is hopelessness, as measured by Beck's Hopelessness Scale (BHS) and the suicide item in Beck's Depression Inventory (BDI) (Beck *et al.*, 1990). Although the correlation between hopelessness, depression and suicide has been well documented, psychosocial characteristics that could ultimately predict suicide in HIV-positive patients need to be interrogated further.

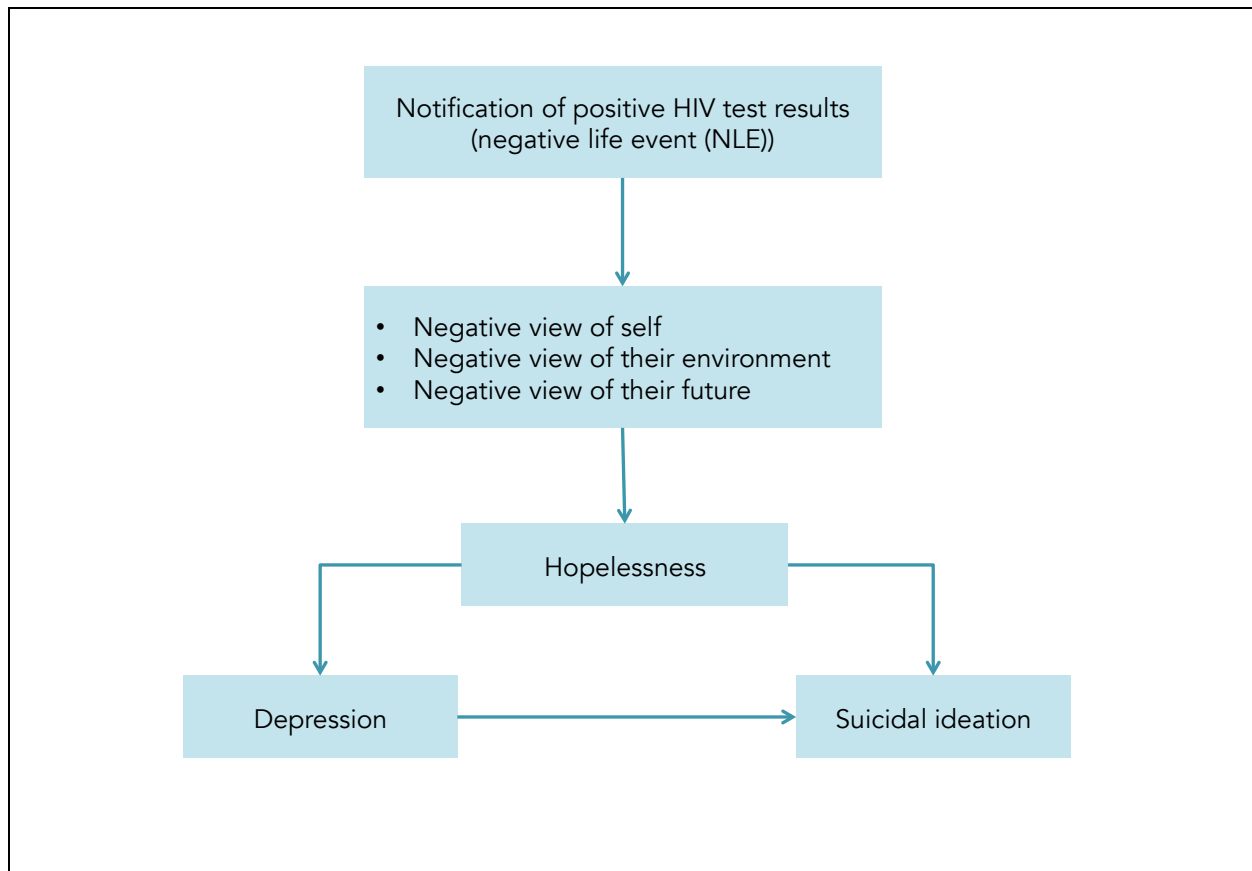


Fig. 1. Flow diagram illustrating the association between a positive HIV diagnosis, hopelessness, depression and the potential for suicidal ideation.

1.10 RATIONALE FOR THE RESEARCH

The researcher's journey towards a PhD started with a Columbia University-South African Fogarty AIDS International Training and Research Programme scholarship award. This scholarship thrust the researcher into the realms of HIV, and with a background in Family Medicine it was natural to be drawn into researching the impact of psychosocial factors in HIV-positive persons; of course notwithstanding the researcher was practising in a province that has the highest HIV prevalence and is the epicentre of the HIV epidemic in South Africa. It is well documented that HIV-positive persons are suicidal at various stages of HIV disease progression, but little is known about the impact of being told, 'You are HIV-positive' and the cascade of emotions that this statement triggers. To begin to understand the emotional impact, the research done by Beck on the Cognitive Triad of Depression, as well as the related

assessment tools developed to assess hopelessness and depression, were considered to be fascinating, especially when Beck was able ultimately to predict suicide using the hopelessness score.

The relationship between HIV/AIDS and suicide has, in the past, been under-researched in developing countries such as South Africa. The risk of suicidal ideation in HIV-positive persons is increasing, as correlated with the HIV pandemic and an increased prevalence of suicide attempts and completed suicides in South Africa (Meel and Leenaars, 2005). Despite the difficulties in determining the prevalence of suicide in HIV-positive patients in South Africa, there has been a parallel increase in suicide and HIV/AIDS mortality (Meel and Leenaars, 2005).

There is a need to understand the risk for suicide and suicidal ideation following notification of a positive HIV-test result, especially immediately post HIV counselling and testing. Therefore, the broad objective of this study was to add to the body of knowledge on suicidal ideation following notification of a positive HIV-test result, and to determine the sociodemographic and psychosocial indicators that may trigger HIV-positive persons to become suicidal.

The theoretical framework underpinning this research assessed the impact of a negative life event, i.e. receiving a positive HIV-test result, and the resultant cascade of emotions, including hopelessness and depression. Hopelessness and depression and their relationship to suicidal behaviour have been studied at length in the general population. In this research, the objective was to test if the same relationship exists in recently diagnosed HIV-positive persons. Beck's Hopelessness Scale (BHS) (Beck, 1974) and Beck's Depression Inventory (BDI) (Beck *et al.*, 1996) were chosen as the screening instruments, as these were internationally validated across different ethnic and cultural societies.

The use of the BHS and BDI allowed for the determination of the rates of hopelessness and depression in the cohort studied, at baseline, 72 hours and 6 weeks after obtaining the HIV-test results. In international research, hopelessness has shown to exhibit a significant correlation with suicide; based on this, the prevalence for suicidal ideation was determined. Although it is known that depression is also associated

with suicidal behaviour, this research tested the hypothesis that depression may be used to predict suicidal ideation in recently diagnosed HIV-positive persons.

For practical application of the research findings, the study further sought to develop a suicide risk screening scale (SRSS) – a shortened version of the BHS and BDI – and test its validity and internal consistency in screening recently diagnosed HIV-positive persons for suicidal ideation. The rationale was to develop a self-administered, quick and simple screening scale to identify HIV-positive patients at high risk for suicidal ideation which may be used in under-resourced settings without the need for additional trained staff. This allowed the identification of at-risk individuals requiring intervention and further saw the development of a brief suicide preventive intervention (BSPI) to be used following a positive HIV diagnosis. The BSPI, in turn, was assessed using the validated SRSS at baseline, 72 hours and 6 weeks after a positive HIV diagnosis. The study also evaluated which sociodemographic factors were risk factors and which were protective factors in terms of suicidal ideation.

In summary, five key questions underpinned the research:

1. What is the relationship between hopelessness, depression and suicidal ideation, and can depression be used to predict suicidal ideation?
2. What is the prevalence of suicidal ideation in HIV-positive persons following VCT?
3. What is the relationship between sociodemographic factors and suicidal ideation following VCT?
4. Can a brief SRSS be used to screen recently diagnosed HIV-positive persons for suicidality in order to assist with treatment and suicide prevention?
5. What is the effect of a brief psychosocial intervention on suicide risk following a positive HIV test result?

1.11 RESEARCH FOCUS

The overarching aim of this study was to measure the effectiveness of an SRSS among HIV-positive persons in order to implement a BSPI post HIV diagnosis to reduce suicidal ideation in HIV-positive persons following VCT.

The specific goals of this study were to:

- Describe the relationship between sociodemographic factors and suicidal ideation following VCT;
- Determine the prevalence of suicidal ideation at two time-points following VCT;
- Determine whether depression can be used to predict suicidal ideation;
- Develop an SRSS and test its validity, reliability and internal consistency in assessing suicide risk in HIV-positive persons;
- Implement a BSPI plan post HIV diagnosis for HIV-positive persons.

1.12 METHODOLOGY

The methodology is presented independently for the three phases in **Chapters Two, Three and Four**.

1.12.1 ETHICAL CONSIDERATIONS

Ethical approval for all three phases of the research described herein was obtained from the University of KwaZulu-Natal (UKZN) Biomedical Research and Ethics Committee, the UKZN Postgraduate Committee and the Department of Health.

The study participants were advised of the study either in English or isiZulu as requested; for those that could not read or write, the research assistant provided the necessary support. All research participants' rights (including that to confidentiality) were maintained and only complete voluntary participation was respected. The participants were compensated for their travelling expenses.

In terms of data management and storage, all electronic databases were password-protected and the raw data were kept in a lockable cabinet, to which only the researcher had access.

If the interviewer suspected that a participant was at high risk for suicide, then the relevant referral for help was made for more intensive treatment.

1.13 DELINEATION OF THIS STUDY

Chapter 1 includes an introduction to the research and outlines the rationale for the broader study.

Chapter 2 presents research exploring the relationship between hopelessness, depression and suicidal ideation in HIV-positive persons.

Chapter 3 presents the development of an SRSS via modification of the existing BHS and BDI, and describes the testing of the validity and reliability thereof.

Chapter 4 summarises the development and implementation of a BSPI for inclusion in the standard post-test counselling (SPTC) of HIV-positive persons, and assesses the outcomes of the BSPI using the validated SRSS at baseline, within 72 hours and at 6 weeks.

Chapter 5 summarises the key findings of the broader study and the practical applications thereof, discusses the study limitations, and provides recommendations for future work.

1.14 CONCLUDING REMARKS

An increasing trend of suicide and suicidal behaviour is forecast for the coming years. Society needs to awaken from the ‘ostrich head’ phenomenon in this regard and take charge of this growing epidemic to decrease suicide prevalence. The sociodemographic factors associated with suicide are a cause for great concern, with younger people being at higher risk, and males classically exhibiting a higher rate for completed suicides. South Africa is not insulated from these statistics; rather, the country suffers rates

that are higher than the global average. Furthermore, South Africa has the added impediment of the HIV pandemic. Some statistics are available on the prevalence of suicide in HIV-positive persons, but these are not adequate to estimate the burden of suicide in this national cohort of patients.

Accompanying the burden of a positive HIV diagnosis is a battery of psychosocial issues. The impact of these on suicide counselling needs to be comprehended in order for healthcare professionals to implement effective strategies for management and prevention programmes. HIV-positive persons need to be assessed for suicidal ideation and the underlying psychosocial issues must be addressed in an intervention plan in order to provide effective coping and risk-management skills that could ultimately reduce suicidal ideation and behaviour.

CHAPTER 2

PHASE ONE: PREVALENCE OF SUICIDAL IDEATION IN HIV-POSITIVE PERSONS FOLLOWING VOLUNTARY COUNSELLING AND TESTING

2.1 INTRODUCTION

The objectives of **Phase One** were: (i) to determine the prevalence and incidence ratio of suicidal ideation at two time-points following VCT; and (ii) to determine the association between depression, hopelessness and suicidal ideation.

Three peer-reviewed scholarly publications arose from Phase One:

- **Article One** was based on the relationship between hopelessness, depression and suicidal ideation following VCT, and therefore the choice of BHS and BDI as assessment tools.
- **Article Two** followed naturally, looking at suicidal ideation and sociodemographic factors.
- **Article Three** described age and gender as risk factors for suicidal ideation, since current research showed a shift away from the elderly being at higher risk for suicidal behaviour, instead to younger persons being at higher risk. Females are known to be greater risk for attempted suicide, and the objective was to determine whether this *status quo* held true for HIV-infected females.

2.2 METHODOLOGY

2.2.1 STUDY DESIGN

Phase One was prospective and observational.

2.2.2 STUDY AREA AND POPULATION

The study sample consisted of adult volunteer patients ($N=200$) attending the voluntary HIV counselling and testing (VCT) clinic at a university-affiliated, general state hospital in Durban, KwaZulu-Natal,

South Africa, over a three-month period. The study was approved by the Biomedical Research Ethics Committee of the University of KwaZulu-Natal and permission was granted by the relevant health institution. The recruited patients signed voluntarily informed consent to participate in the study. Administered questionnaires were completed in the language preferred by each participant preferred (either English or isiZulu).

2.2.3 INSTRUMENTS

2.2.3.1 A BRIEF SOCIODEMOGRAPHIC INVENTORY (ANNEXURE 1)

2.2.3.2 BECK'S HOPELESSNESS SCALE (BHS) (ANNEXURE 2)

BHS is one of the most widely used measures of hopelessness, and addresses three major aspects thereof: feelings about the future; loss of motivation; and expectations. The BHS questionnaire is then scored according to the answers given. The BHS is a 20-item true-false instrument that assesses the degree to which a person holds negative expectations about the future. Nine of the items are keyed false and 11 true. The items are summed to obtain a total hopelessness score, ranging from 0 to 20. The scale has excellent internal consistency and test-retest reliability. The concurrent validity is well established across a wide variety of samples and the scale has frequently been used in treatment-outcome studies. Several studies have supported the predictive validity of BHS for suicide attempts and completed suicide. Psychological well-being is assessed using the following scoring scale: 0 – 3 (none or minimal); 4 – 8 (mild); 9 – 14 (moderate and may not be in immediate danger but requires frequent regular monitoring. Is the life situation stable?); and 15 (severe; definite suicidal risk).

Research consistently supports a positive relationship between the BHS score and measures of depression, suicidal intent and suicidal ideation. Beck found, in a cohort of 1 958 outpatients, that hopelessness – measured according to BHS – was also significantly related to eventual suicide. Thus, BHS may be used as an indicator of suicide potential (Beck *et al.*, 1974, 1990, 1993).

2.2.3.3 BECK'S DEPRESSION INVENTORY (BDI) (ANNEXURE 3)

The BDI consists of 21 items, each consisting of 4 statements that reflect gradations in the intensity of a particular depressive symptom. The respondent chooses the statement that best describes how the respondent feels at the time of responding. The questionnaire is composed of items relating to symptoms of depression, such as hopelessness and irritability; cognition, such as guilt and feeling of being punished; as well as physical symptoms, such as weight loss, fatigue and lack of interest in sex. The first two-thirds of the questions score emotional symptoms and the remaining third physical symptoms. The individual statements are scored from 0 to 3 and the sum total ranges from 0 to 63; 0 – 9 (not depressed); 10 – 15 (mildly depressed); 16 – 24 (moderately depressed); and ≥ 25 (severely depressed).

2.2.4 DATA COLLECTION

A sociodemographic questionnaire was completed following VCT. BHS and BDI were completed within 72 hours and again within 6 weeks to determine the impact of a positive HIV-test result on suicidal ideation.

2.2.5 DATA ANALYSIS

The data were stratified according to age, gender, educational status, professional status, marital status, religion/traditional beliefs and race/ethnicity. The prevalence of suicidal ideation and the suicidal incident ratio were determined. Participants were also assessed for hopelessness and depression at two time intervals.

2.2.6 STATISTICAL ANALYSIS

SPSS software (version 15.0; SPSS Inc, Chicago, Illinois, USA) was used for data analysis. Pearson's chi-squared test, *t*-tests and a binary logistic regression analysis of the sociodemographic variables were conducted. The latter used a backward stepwise method with entry and exit probabilities set at 0.05 and

0.1 based on likelihood ratio tests. The sociodemographic variables were entered into the model at step one. After five steps, the final model was reported with odds ratios (ORs) and 95% confidence intervals (CIs).

2.3 ARTICLE ONE

Key question: What is the relationship between hopelessness, depression and suicidal ideation, and can depression be used to predict suicidal ideation?

CITATION:

GOVENDER RD, SCHLEBUSCH L. HOPELESSNESS, DEPRESSION AND SUICIDAL IDEATION IN HIV-POSITIVE PERSONS. *SOUTH AFRICAN JOURNAL OF PSYCHIATRY* 2012; 18(1): 16-21.

ABSTRACT:

Background. HIV/AIDS and suicidal behaviour are major public health concerns.

Objective. The aim of this study was to examine the relationship between hopelessness, depression and suicidal ideation in HIV-infected persons.

Methods. The sample consisted of all adult volunteers attending a VCT clinic at a university-affiliated state hospital. Suicidal ideation and depression were measured using BHS and BDI, respectively, at two intervals, viz. 72 hours and 6 weeks after HIV diagnosis.

Results. Of the 156 patients who tested positive for HIV, 32 (20.5%) had a hopelessness score of 9 or above on BHS and 130 patients (82.8%) were depressed according to BDI at 72 hours after diagnosis. Of the 109 patients assessed 6 weeks after diagnosis, 32 (28.8%) had a hopelessness score >9 on BHS and 86 (78.2%) were depressed according to BDI. A moderately positive correlation at both time periods was found between hopelessness and depression. A receiver operating characteristic (ROC) analysis showed optimal sensitivity, indicating that the HIV-positive depressed patients were at risk for suicidal behaviour.

Conclusion. The significant correlations between hopelessness, depression and suicidal ideation are important markers that should alert healthcare professionals to underlying suicide risks in HIV-positive patients. Early recognition of this and suicide prevention strategies should be incorporated into the treatment offered at VCT clinics.

Hopelessness, depression and suicidal ideation in HIV-positive persons

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Background and objectives. HIV/AIDS and suicidal behaviour are major public health concerns. The aim of this study was to examine the relationship between hopelessness, depression and suicidal ideation in HIV-infected persons.

Methods. The sample consisted of all adult volunteers attending a voluntary counselling and testing (VCT) HIV clinic at a university-affiliated state hospital. Suicidal ideation and depression were measured using the Beck Hopelessness Scale (BHS) and the Beck Depression Inventory (BDI), respectively, at two intervals, viz. 72 hours and 6 weeks after HIV diagnosis.

Results. Of the 156 patients who tested positive for HIV, 32 (20.5%) had a hopelessness score of 9 or above on the BHS and 130 patients (82.8%) were depressed according to the BDI at 72 hours after diagnosis. Of the 109 patients assessed 6 weeks after diagnosis, 32 (28.8%) had a hopelessness score of >9 on the BHS and 86 (78.2%) were depressed according to the BDI. A moderately positive correlation at both time periods was found between hopelessness and depression. A ROC analysis showed optimal sensitivity, indicating that the HIV-positive depressed patients were at risk for suicidal behaviour.

Conclusion. The significant correlations between hopelessness, depression and suicidal ideation are important markers that should alert healthcare professionals to underlying suicide risks in HIV-positive patients. Early recognition of this and suicide prevention strategies should be incorporated into the treatment offered at VCT HIV clinics.

While suicidal ideation has been extensively studied in the general and medical population,^{1,2} its relationship with HIV infection is less well documented. This is of concern, since the psychological responses to an HIV-positive result can be wide ranging and include feelings of hopelessness, helplessness, anxiety, worthlessness and depression and suicidal behaviour.³⁻⁵ Recognising this in a biopsychosocial context is paramount to understanding the relationship between the HIV/AIDS pandemic and the increased prevalence of suicidal behaviour in South Africa.^{4,5} The association between hopelessness, depression and suicide has been well documented.^{1,5} Hopelessness, being a feeling of despair and

extreme pessimism about the future, forms part of Beck's 'cognitive triad'⁶ and cognitive theory of depression.⁷ Central to depression are negative thoughts generated by dysfunctional beliefs,⁷ which in part may trigger suicidal behaviour in HIV-positive patients.⁵

Depression has been identified as a high-risk factor for suicidal behaviour, and a significant percentage of all depressed persons may die by suicide. The lifetime risk for suicide in the general South African population has been found to be about 17%.⁵⁻¹⁰ Likewise, studies in Africa have reported high rates of depressive symptoms and suicidal behaviour in HIV-infected persons,^{5,11,12} with the lifetime prevalence for depression ranging from 22% to 45% in this population.¹³ The prevalence of depression has been reported to be almost twice as high in HIV-positive than in HIV-negative persons.¹³ Nevertheless, HIV-related suicidal behaviour is a complex phenomenon^{4-5,14-15} that requires further research. It is against this backdrop that the present study aimed to explore the relationship between hopelessness, depression and suicidal ideation in a patient cohort recently diagnosed as HIV positive.

Methods

Sample

The sample comprised 156 HIV-positive patients assessed 72 hours after diagnosis, and 109 seropositive patients assessed at 6 weeks' follow-up. This sample was obtained from patients attending the voluntary counselling and testing (VCT) HIV clinic at a university-affiliated state hospital in Durban, South Africa. The study was conducted over a 3-month period. The recruited patients voluntarily signed informed consent and were advised not to answer questions they considered intrusive or sensitive. Patients who tested HIV negative were excluded from the analyses for purposes of this study. The study was approved by the Biomedical Research Ethics Committee of the University of KwaZulu-Natal, and permission to conduct it was granted by the relevant health institution.

Instruments

The Beck Hopelessness Scale (BHS) and the Beck Depression Inventory (BDI) were used in the study. They were considered appropriate given that they were developed by Beck within the context of his cognitive theory of depression, and their excellent internal consistency, reliability and concurrent validity have been well established across a wide variety of samples. The BHS is designed to measure negative expectations and feelings of hopelessness about the future and has been used in both inpatients¹ and outpatients.¹⁶ Feelings of hopelessness play a pivotal role in the development of negative cognitions, leading to the belief that suicide is the only option to escape unbearable psychological pain.^{5,17-18} According to the results from empirical studies, elevated scores on the BHS are significantly related to suicidal ideation, which can be used to predict eventual suicidal behaviour.^{1,16-17} The scale consists of items that are endorsed as either true or false, with 9 of

the items keyed false and 11 keyed as true. The answers are totalled to obtain a hopelessness score ranging from 0 to 20.¹⁶ As in other research,^{1,16} in this study we used a cut-off score of 9 and above on the BHS to identify suicidal ideation in the HIV-infected patients studied. The BDI consists of 21 items, each with 4 statements that reflect gradations in the intensity of a particular depressive symptom.¹⁷⁻²⁰ The instrument is composed of items relating to symptoms of depression, including feelings of hopelessness. The first two-thirds of the items rate emotional symptoms and the remaining third physical symptoms. We used the standard cut-off scores empirically derived by the test developer, which are as follows: 0 - 9 indicates minimal depression, 10 - 18 mild depression, 19 - 29 moderate depression, and 30 - 63 severe depression.²⁰

Previous studies^{19,21-23} have paid close attention to item 7 on the BHS and item 9 on the BDI in examining suicide risk, and the reliability and validity of using these items to assess suicidal ideation. On item 7 of the BHS, patients have to endorse 'My future looks dark'; and on item 9 on the BDI choose between 'I don't have any thoughts of killing myself'; 'I have thoughts of killing myself, but I would not carry it out'; 'I would like to kill myself' and 'I would like to kill myself if I had the chance'. Therefore, in line with other research, we decided to focus on these two items in the present study in order to assess suicidal ideation.

Statistical analyses

SPSS version 15.0 (SPSS Inc., Chicago, Ill., USA) was used to analyse the data. A p -value <0.05 was considered statistically significant. Pearson's correlation coefficient was used to assess the presence and strength of the relationship between BDI scores and suicidal ideation at 72 hours and 6 weeks after HIV diagnosis. The chi-square or Fisher's exact probability tests, as appropriate, were used to determine associations between responses to individual items on the BHS and BDI and suicidal ideation.

Receiver operating characteristic (ROC) analyses were used to determine the sensitivity and specificity optimal of cut-off points on the BDI to predict suicidal ideation. ROC analysis is based on the signal detection theory and involves plotting the sensitivity against the false-positive fraction for every cut-off point on a measure. It is used to evaluate the discriminative performance of a screening test in distinguishing cases from non-cases, and yields a summary

measure, namely the area under the curve (AUC). The AUC indicates the screening instrument's ability to discriminate between cases and non-cases, with a perfectly accurate discrimination resulting in an AUC of 1.00. The area under the ROC curve (AUC) could be regarded as the probability of correct prediction.^{24,25} ROC analysis was used to determine the sensitivity and specificity of cut-off points on the BDI to predict suicidal ideation. In establishing cut-off points on the BDI which would optimise sensitivity and specificity, it was decided that ideally the test should be more sensitive than specific to identify as many probable suicidal patients as possible. In this regard, according to Beck *et al.*,¹⁶ sensitivity is paramount to suicide prediction, on which our rationale for maximising sensitivity was based in the present study.

Results

Thirty-two patients (20.5%) had a hopelessness score of 9 or more on the BHS 72 hours after HIV diagnosis and 32 (28.8%) had a score in this range at 6 weeks. One hundred and thirty patients (82.8%) were depressed according to the BDI scores 72 hours after diagnosis, and 86 (78.2%) were depressed at 6 weeks. Pearson's correlation coefficients for hopelessness and depression scores were 0.556 ($p<0.001$) at 72 hours and 0.625 ($p<0.001$) 6 weeks after diagnosis, illustrating a moderately positive correlation at both time periods.

The mean scores for item 7 on the BHS were 0.561 at 72 hours and 0.421 at 6 weeks. The mean scores for item 9 on the BDI were 0.154 at 72 hours and 0.076 6 weeks later. Table 1 depicts a significant association between the responses to item 9 on the BDI and suicidal ideation with $p=0.036$ at 72 hours and $p=0.008$ at 6 weeks, in that 36% and 66% of the patients have evidence of suicidal ideation on both the BDI and BHS as defined by the standard cut-off scores at 72 hours and 6 weeks respectively.

Table 2 shows a statistically significant association ($p=0.002$) in that at 72 hours, 28% of the respondents who endorsed item 7 on the BHS had a score sufficiently high to predict suicidal ideation, compared with only 7% who did not endorse that item. Table 2 also shows that at 6 weeks there was a statistically significant association ($p<0.001$) between item 7 on the BHS and a predisposition for suicidal ideation (i.e. 57% of the respondents compared with none endorsed this item).

Table 1. The association between suicidal ideation on the BHS scores and item 9 on the BDI 72 hours and 6 weeks after HIV test results

Item 9 on BDI	Suicidal ideation 72 hours after HIV diagnosis*			Suicidal ideation 6 weeks after HIV diagnosis†		
	No	Yes	Total	No	Yes	Total
0	108 (82.4%)	23 (17.6%)	131	75 (75%)	25 (25.0%)	100
1	16 (64%)	9 (36%)	25	3 (33.3%)	6 (66.7%)	9
Total	124 (79.5%)	32 (20.5%)	156	78 (71.6%)	31 (28.4%)	109

* $p=0.036$.

† $p=0.008$.

Table 2. The association between suicidal ideation on the BHS scores and item 7 on the BHS 72 hours and 6 weeks after HIV test result

Item 7 on BHS	Suicidal ideation 72 hours after HIV diagnosis*			Suicidal ideation 6 weeks after HIV diagnosis [†]		
	No	Yes	Total	No	Yes	Total
0	52 (92.9%)	4 (7.1%)	56	55 (100%)	0 (0%)	55
1	72 (72.0%)	28 (28.0%)	100	24 (42.9%)	32 (57.1%)	56
Total	124 (79.5%)	32 (20.5%)	156	79 (71.2%)	32 (28.8%)	111

* $p=0.002$.

[†] $p<0.001$.

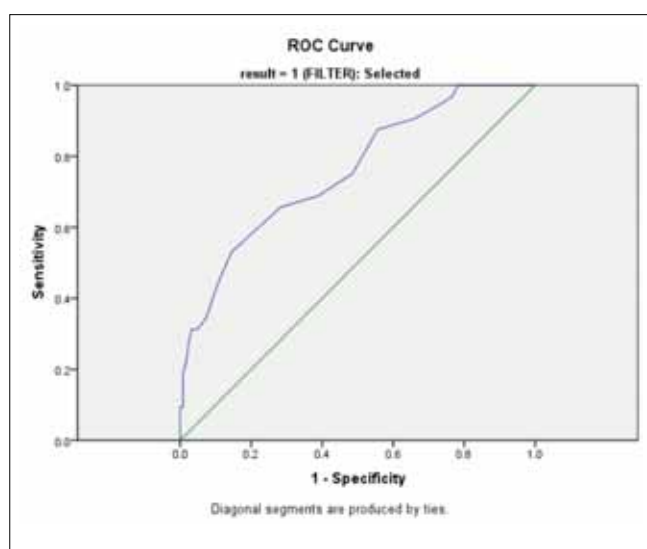


Fig 1. ROC curve of BDI scores v. suicidal ideation (BHS scores) in HIV-positive patients 72 hours after HIV diagnosis.

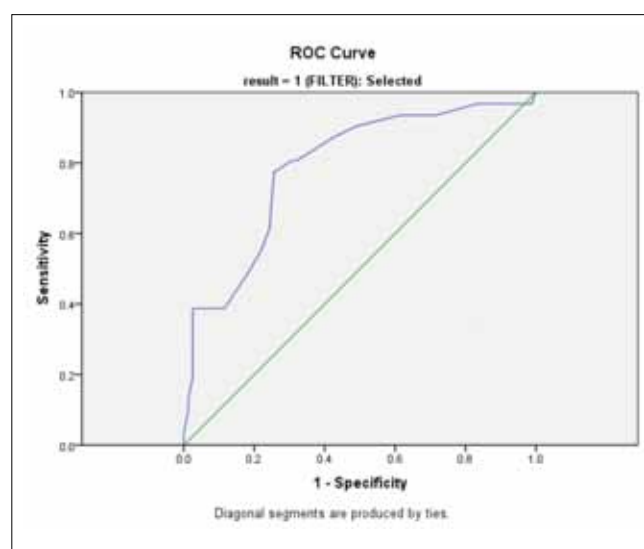


Fig 2. ROC curve of BDI scores v. suicidal ideation (BHS scores) in HIV-positive patients 6 weeks after HIV diagnosis.

Fig. 1 indicates the ROC curve of the BDI scores used to predict suicidal ideation at 72 hours after HIV diagnosis versus suicidal ideation on the BHS scores. The AUC was 0.757 ($p<0.001$), and the BDI score was therefore considered a good predictor of suicidal ideation at 72 hours.

Table 3 shows the cut-off points of the BDI and their corresponding sensitivity, specificity and percentage correctly classified, as well as the positive and negative likelihood ratios (LR) at 72 hours after HIV diagnosis. Using this table, it can be seen that a cut-off score of 10 (≥ 10 being a positive result) achieves 100% sensitivity and 21.8% specificity in predicting suicidal ideation.

Fig. 2 indicates the ROC curve of BDI scores used to predict suicidal ideation at 6 weeks after HIV diagnosis versus suicidal ideation on the BHS scores. The AUC was 0.788 ($p<0.001$), so the BDI scores were considered a good predictor of suicidal ideation at 6 weeks.

Table 4 shows the cut-off points of the BDI scores and their corresponding sensitivity, specificity and percentage correctly classified, as well as the positive and negative likelihood ratios at 6

weeks. Here the sensitivity drops off at very low values of the BDI scores compared with those at 72 hours. Using this table, it can be seen that a cut-off score of 9 (≥ 9 being a positive result) achieves 96.77% sensitivity and 16.67% specificity in predicting suicidal ideation. A cut-off point of 10 on the BDI at 72 hours and 9 at 6 weeks after HIV diagnosis therefore showed optimal sensitivity in indicating that the depressed patients in this study were at risk for suicide, although the specificities were low. These cut-off points serve to flag suicide ideators (and possible suicide attempters) who would benefit from intervention measures aimed at suicide prevention.²⁶ According to these results, the BDI can be used to predict suicidal ideation in the sample studied.

Discussion

The findings in this study confirm those of earlier studies^{4-5,27-29} that many HIV-positive persons have high levels of depressive symptomatology, as well as the fact that those with suicidal ideation reported increased levels of such symptoms. Beck's cognitive theory of depression^{6,30} can be used to contextualise this relationship in that the cognitive symptoms of depression tend to precede the affective and mood components of the disorder, which in

Table 3. Cut-off points of BDI and corresponding sensitivity and specificity to predict suicidal ideation 72 hours after HIV diagnosis

Cut point	Sensitivity (%)	Specificity (%)	Correctly classified (%)	Likelihood ratio +	Likelihood ratio -
(≥0)	100.00	0.00	20.51	1.0000	
(≥3)	100.00	1.61	21.79	1.0164	0.0000
(≥4)	100.00	2.42	22.44	1.0248	0.0000
(≥5)	100.00	5.65	25.00	1.0598	0.0000
(≥6)	100.00	6.45	25.64	1.0690	0.0000
(≥7)	100.00	8.87	27.56	1.0973	0.0000
(≥8)	100.00	11.29	29.49	1.1273	0.0000
(≥9)	100.00	16.13	33.33	1.1923	0.0000
(≥10)	100.00	21.77	37.82	1.2784	0.0000
(≥11)	96.88	23.39	38.46	1.2645	0.1336
(≥12)	93.75	28.23	41.67	1.3062	0.2214
(≥13)	90.63	33.87	45.51	1.3704	0.2768
(≥14)	87.50	44.35	53.21	1.5725	0.2818
(≥15)	75.00	51.61	56.41	1.5500	0.4844
(≥16)	71.88	56.45	59.62	1.6505	0.4982
(≥17)	68.75	61.29	62.82	1.7760	0.5099
(≥18)	65.63	71.77	70.51	2.3250	0.4789
(≥19)	53.13	85.48	78.85	3.6597	0.5483
(≥20)	43.75	89.52	80.13	4.1731	0.6284
(≥21)	34.38	92.74	80.77	4.7361	0.7076
(≥22)	31.25	95.16	82.05	6.4583	0.7225
(≥23)	31.25	96.77	83.33	9.6875	0.7104
(≥24)	28.13	97.58	83.33	11.6250	0.7366
(≥25)	21.88	98.39	82.69	13.5625	0.7941
(≥27)	18.75	99.19	82.69	23.2500	0.8191
(≥28)	15.63	99.19	82.05	19.3750	0.8506
(≥30)	9.38	99.19	80.77	11.6250	0.9136
(≥31)	9.38	100.00	81.41		0.9063
(≥32)	6.25	100.00	80.77		0.9375
(≥34)	3.13	100.00	80.13		0.9688
(>34)	0.00	100.00	79.49		1.0000

turn are triggered by negative automatic thoughts in suicidal behaviour.³¹⁻³⁵ The sequelae can range from a major depressive disorder precipitated by progression of the illness to a depressive episode secondary to the biopsychosocial issues related to being infected with the HI virus. A positive HIV diagnosis may be viewed by some as a negative life event resulting in, among others, marital problems, financial problems, stigmatisation by family, friends and community, fear of disclosure of a positive HIV test result, problems in accessing health care, and other difficulties.^{5,14,34} Consequently, feelings of hopelessness, symptoms of depression and in some patients, suicidal ideation arise. Hopelessness is a primary mediator that links depression and suicidal ideation, and the more hopeless

the individual feels about the future, the more depressed they are likely to become,³⁰ i.e. it results in the 'revolving door' effect unless appropriate interventions are implemented. The majority of the HIV-positive patients in this study felt that the future seemed dark to them, irrespective of whether or not they had suicidal ideation.

It was estimated that only about 193 579 South Africans were receiving antiretroviral therapy by the end of 2005,²⁸ and many affected South Africans may believe that they have little hope of obtaining ongoing antiretroviral treatment. A worrying observation in the present study is the correlation between item 7 on the BHS ('My future looks dark') and suicidal ideation 6 weeks after a positive

HIV diagnosis. Initially (i.e. pre-VCT) the future may have looked different, but with positive test results, reality sets in and the patients may have begun to envisage their future with less hope. A model of the link between a positive HIV diagnosis, hopelessness, depression and the potential risk for suicidal ideation is reflected in the flow diagram in Fig. 3.

Fortunately hopelessness and depression are both measurable and modifiable psychological variables, and unlike some other precursors of suicidal behaviour can therefore be timeously assessed. An advantage of using psychometric measures in this regard is that they are reliable yardsticks that, under clinical supervision, can be used by less highly trained health professionals for screening purposes at VCT clinics. The results can be used in treatment strategies to help prevent suicidal behaviour in these patients.

Limitations

Limitations of this study include the fact that predetermined values for suicidal ideation, as depicted by the measuring instruments

utilised, were used. For a more comprehensive suicide risk assessment, additional variables should be included such as, for

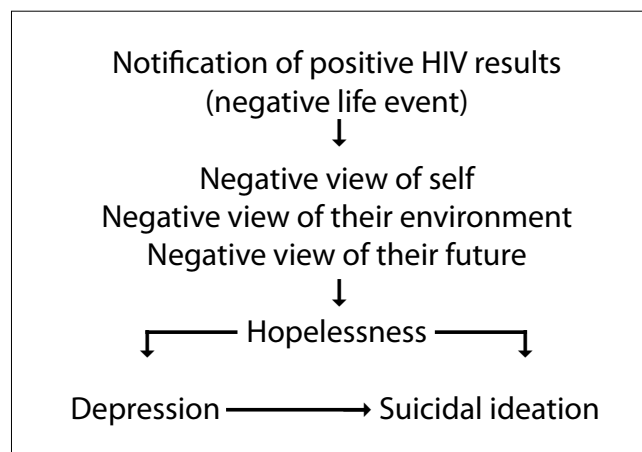


Fig. 3. Flow diagram linking seropositivity, hopelessness, depression and suicidal ideation.

Table 4. Cut-points of BDI and corresponding sensitivity and specificity to predict suicidal ideation 6 weeks after HIV diagnosis

Cut point	Sensitivity	Specificity	Correctly classified	Likelihood ratio +	Likehood ratio -
(≥1)	100.00	0.00	28.44	1.0000	
(≥4)	96.77	1.28	28.44	0.9803	2.5161
(≥5)	96.77	2.56	29.36	0.9932	1.2581
(≥6)	96.77	5.13	31.19	1.0201	0.6290
(≥7)	96.77	10.26	34.86	1.0783	0.3145
(≥8)	96.77	11.54	35.78	1.0940	0.2796
(≥9)	96.77	16.67	39.45	1.1613	0.1935
(≥10)	93.55	28.21	46.79	1.3030	0.2287
(≥11)	93.55	38.46	54.13	1.5202	0.1677
(≥12)	90.32	51.28	62.39	1.8540	0.1887
(≥13)	87.10	57.69	66.06	2.0587	0.2237
(≥14)	80.65	67.95	71.56	2.5161	0.2848
(≥15)	80.65	69.23	72.48	2.6210	0.2796
(≥16)	77.42	74.36	75.23	3.0194	0.3037
(≥17)	61.29	75.64	71.56	2.5161	0.5118
(≥18)	54.84	78.21	71.56	2.5161	0.5775
(≥19)	48.39	82.05	72.48	2.6959	0.6290
(≥20)	38.71	88.46	74.31	3.3548	0.6928
(≥21)	38.71	94.87	78.90	7.5484	0.6460
(≥22)	38.71	97.44	80.73	15.0968	0.6290
(≥23)	22.58	97.44	76.15	8.8065	0.7946
(≥24)	19.35	97.44	75.23	7.5484	0.8277
(≥25)	12.90	98.72	74.31	10.0645	0.8823
(≥26)	9.68	98.72	73.39	7.5484	0.9150
(≥31)	3.23	100.00	72.48		0.9677
(>31)	0.00	100.00	71.56		1.0000

example, a history of previous suicidal behaviour, a family history of suicidal behaviour, a pre-existing history of mood/or other psychiatric disorders, alcohol or drug abuse, and related socio-demographic factors. Because of the nature of the study design, the relationship between seropositivity, hopelessness, depression and an ultimate suicide attempt could not be assessed.

Conclusion

Suicidal behaviour is a major public health concern in South Africa and elsewhere.^{5,36-37} The presence of hopelessness, depression and suicidal ideation are important psychological variables that should alert healthcare professionals to underlying suicide risks in HIV-positive patients. Early recognition of this and suicide prevention strategies should be incorporated into treatment at VCT HIV clinics.

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Conflict of interest. None.

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2.4 ARTICLE TWO

Key question: What is the prevalence of suicidal ideation in HIV-positive persons following VCT?

CITATION:

GOVENDER RD, SCHLEBUSCH L. SUICIDAL IDEATION IN SEROPOSITIVE PATIENTS SEEN AT A SOUTH AFRICAN HIV VOLUNTARY COUNSELLING AND TESTING CLINIC. *AFRICAN JOURNAL OF PSYCHIATRY* 2012; 15: 94-98.

ABSTRACT:

Objective. Suicidal behaviour and HIV/AIDS are significant public health concerns. The aim of this study was to investigate suicidal ideation in patients who were referred to a VCT clinic and who were found to be seropositive. This is in order to improve suicide prevention and intervention strategies among such patients.

Method. The sample studied consisted of volunteer adult patients referred over a three-month period to an HIV clinic based at a university-affiliated general state hospital. Patients completed a questionnaire on sociodemographic data. Suicidal ideation was measured using BHS and BDI, at two time-points (within 72 hours after notification and again at a six-week follow-up). All patients received extensive pre-and post-test counselling.

Results. HIV-test results were available for 189 (99.5%) of the original sample of 190 patients studied, with 157 (83.1%) testing positive. More females tested positive as did unemployed and single/divorced patients. The mean age for HIV-positive patients was 33.49 years (SD ± 9.449), and for HIV-negative patients it was 37.94 years (SD ± 15.238). Age was a significant factor in that for each year increase in age, the risk of testing HIV-positive decreased by 4.1%. Lower education and traditional beliefs were also significantly associated with testing HIV-positive. At 72 hours suicidal ideation was present in 17.1% (95% CI 12.16 - 23.45), and at 6 weeks in 24.1% (95% CI 17.26 - 32.39) of the seropositive patients. Their average BDI scores were 15.20 and 14.23, respectively, at the two time-points.

Conclusion. Suicidal ideation was present in a significant number of the seropositive cohort studied and increased over a six-week period among these patients. The average BDI scores at both time points imply a clinical depression. The findings also suggest an association between positive HIV-test results and certain sociodemographic variables that can act as indicators for suicidal ideation in HIV-infected persons, although this requires further research. Although the relationship between suicidal ideation and HIV-infection is complex, it is an important consideration when assessing patient suicide vulnerability at VCT clinics and when implementing suicide prevention and management strategies.

Suicidal ideation in seropositive patients seen at a South African HIV voluntary counselling and testing clinic

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Abstract

Objective: Suicidal behaviour and HIV/AIDS are significant public health concerns. The aim of this study was to investigate suicidal ideation in patients who were referred to a voluntary HIV counselling and testing (VCT) clinic and who were found to be seropositive. This in order to improve suicide prevention and intervention strategies amongst such patients. **Method:** The sample studied consisted of volunteer adult patients referred over a three-month period to a HIV VCT clinic based at a university-affiliated general state hospital. Patients completed a questionnaire on sociodemographic data. Suicidal ideation was measured using the Beck Hopelessness Scale and the Beck Depression Inventory (BDI), at two time points (within 72 hours after notification and again at a 6 week follow-up). All patients received extensive pre-and post-test counselling. **Results:** HIV-test results were available for 189 (99.5%) of the original sample of 190 patients studied, with 157 (83.1%) testing positive. More females tested positive as did unemployed and single/divorced patients. The mean age for HIV-positive patients was 33.49 (SD = 9.449), and for HIV-negative patients it was 37.94 (SD = 15.238). Age was a significant factor in that for each year increase in age, the risk of testing HIV-positive decreased by 4.1%. Lower education and traditional beliefs were also significantly associated with testing HIV-positive. At 72 hours suicidal ideation was present in 17.1% (95% confidence interval 12.16% to 23.45%), and at 6 weeks in 24.1% (95% confidence interval 17.26% to 32.39%) of the seropositive patients. Their average BDI scores were 15.20 and 14.23 respectively at the two time points. **Conclusion:** Suicidal ideation was present in a significant number of the seropositive cohort studied and increased over a six week period among these patients. The average BDI scores at both time points imply a clinical depression. The findings also suggest an association between positive HIV-test results and certain socio-demographic variables that can act as indicators for suicidal ideation in HIV-infected persons, although this requires further research. Although the relationship between suicidal ideation and HIV-infection is complex, it is an important consideration when assessing patient suicide vulnerability at HIV VCT clinics and when implementing suicide prevention and management strategies.

Keywords: Suicidal ideation; HIV-infection; Voluntary counselling and testing

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Introduction

Voluntary counselling and testing (VCT) offer patients an optional opportunity to be counselled and tested for the presence of HIV antibodies. Knowledge of their HIV status has major implications for HIV-positive persons. They include, inter alia, the need to disclose their status to their partner or partners, the need to change sexual behaviour,

accessing the availability of treatment and social support, as well as dealing with certain negative ramifications such as possible social stigmatization, employment uncertainty and adverse psycho-social-cultural factors. Additional considerations are: fear of adverse sequelae of the disease itself and psychiatric complications. The latter can include acute stress reactions, adjustment disorders, obsessive compulsive disorders involving obsessive ruminations and scrutiny for disease progression, bereavement reactions, neuropathology/cognitive impairment, personality disorders, depression, mania, psychoses, substance abuse, an exacerbation of pre-existing psychiatric disorders, neuropsychiatric side-effects that can result from ARV and

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psychotropic medication, anxiety reactions associated with the "worried well", "AIDS phobia", AIDS panic" or AIDS anxiety" and suicidal behavior.¹⁻⁴

South Africa, a developing country, is considered to be one of the countries in the world worst affected by HIV/AIDS where about 5.7 million people and one in three pregnant woman are living with HIV/AIDS.^{1-2,5} The province of KwaZulu-Natal (where this study was done) has one of the highest seropositive prevalence rates.² Various HIV prevention strategies have been launched in South Africa. Nearly 85% of all South African youth have been exposed to such national multi-media HIV education and awareness campaigns.⁶ However, these and other prevention campaigns have not diminished the progression of HIV-infection with heterosexual sexual intercourse being the main mode of HIV transmission. Infection rates remain high, especially amongst younger people with females more likely to be infected than males.^{5,7-13}

Likewise, suicidal behaviour in South Africa is a major public health concern accounting respectively for an average non-natural death rate of 9.5% in young people and 11% in adults, giving overall suicide rates that range between 17.2 and 25 per 100 000 of the population.^{2,14-16} It is estimated that for every suicide in the country there are at least 20 attempts², and studies show that suicidal ideation is present in 12% amongst adolescents¹⁷ and 9.1% amongst adults¹⁸ in the general population. Further, an increased risk of suicidal behaviour in South Africa has been reported in HIV/AIDS sufferers.^{1,2,14} Nevertheless, it has been pointed out that there is a hidden burden of suicidal behaviour in the country that requires further research.^{1,2} For example, studies elsewhere^{4,19-20} have examined the mental health status of persons with acute/early HIV-infection as well as suicidal ideation associated with HIV testing, but there is a dearth of knowledge in this regard in developing countries such as South Africa despite its high suicide and HIV prevalence rates.

In light of the foregoing, the present study investigated suicidal ideation in patients referred to an HIV VCT clinic and who were found to be seropositive in order to improve suicide prevention and intervention strategies in these patients. Because depression is frequently associated with suicidal behaviour and ideation^{2,4,16,19} the presence of depressive symptomatology in the seropositive patients was also studied.

Method

Participants/Setting

The sample studied consisted of adult volunteer patients referred to an HIV VCT clinic at a university-affiliated general state hospital, Durban, South Africa over a three month period. The study was ethically approved by the Biomedical Research Ethics Committee of the University of KwaZulu-Natal. Patients voluntarily signed an informed consent form, and were given the right of choice not to answer any questions that they did not want to. All patients entered into the study received extensive pre- and post-test counselling tailored to the individual needs of each patient, risk factors, patient vulnerabilities, coping/supportive resources and knowledge about HIV transmission and its treatment.

Measures

Suicidal ideation was measured using the Beck Hopelessness Scale (BHS) and the Beck Depression Inventory (BDI). The BHS is designed to measure hopelessness (negative expectations of the future) which can be used as an indirect indicator of suicide risk.²¹ It contains 20 true-false items and the severity of hopelessness is calculated by summing scores for the 20 items with the total score ranging from 0 = no hopelessness to 20 = maximum hopelessness.²¹ The BDI was developed to standardise the measurement of depression severity in order to monitor change over time.²¹ It covers 21 behavioural manifestations (items) describing symptoms from low to high. Items are scored individually from 0 to 3 and then summed to obtain a total score ranging from 0-63 with < 9 = minimal depression to > 30 = severe depression. Both the BHS and the BDI were individually completed by each patient entered into the study at two time points, that is, within 72 hours after notification and again at a six week follow-up by arranging for patients to return to the VCT clinic. This time frame is approximately in line with international studies^{4,19-20} on suicidal ideation and HIV-testing. On item 9 of the BDI (which was used to assess suicidal ideation) patients endorsed one of the following: 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"), or 3 ("I would kill myself if I had the chance"). As in other research for the purpose of the present study, "suicidal ideation" was defined as a score of 1 to 3 on this item of the BDI.¹⁹ In addition, on the BHS and BDI total summed cut off scores respectively of 9 and 10 were used to determine suicidal ideation and depression.²¹ The patients also completed a questionnaire on socio-demographic variables grouped into seven correlates (categories), viz.: age, gender, educational status, employment, marital status, ethnicity and traditional beliefs. To accommodate the isiZulu speaking patients in the sample (who constituted the largest African ethnic group), the BHS, BDI and socio-demographic questionnaire were translated into isiZulu and then back translated with the assistance of a professional translator.

Statistical Analysis of Data

The SPSS version 15.0 (SPSS Inc, Chicago, Illinois, USA) was used for analysis of data. Pearson's Chi-square (χ^2) test, t-tests and a binary logistic regression analysis of the socio-demographic variables were done. The latter used a backward stepwise method with entry and exit probabilities set at 0.05 and 0.1 based on likelihood ratio tests. The socio-demographic variables were entered into the model at step one. After five steps, the final model was reported with odds ratios and 95% confidence intervals.

Results

HIV-test results were available for 189 (99.5%) of the referred number of 190 patients. In total 83.1% (n=157) tested positive for HIV infection. A substantial portion of the patients studied had suicidal ideation at both time points which increased by 7% from the first to the second measurement (i.e. between 72 hours and the 6-week

follow-up). This consisted of endorsement about thoughts of killing themselves on item 9 of the BDI and an average BHS cut-off score of 9 or above. Their average BDI scores, indicating clinical depression, also remained elevated at both time points.

At 72 hours following HIV testing, suicidal ideation was present in 17.1% of the seropositive sample (95% confidence interval 12.16% to 23.45%). The average BDI score was 15.20 (SD=5.917). At 6 weeks following HIV testing, suicidal ideation was found in 32 of 133 patients who had tested positive, giving a 24.1% risk (95% confidence interval 17.26% to 32.39%). The average BDI score for these patients was 14.23 (SD=5.849).

Suicidal ideation was not separately analysed for each socio-demographic correlate studied, but as a secondary consideration, collectively they suggest aetiological implications for HIV-positivity and suicidal ideation. Some patients were lost on follow-up and not all respondents provided information on all the variables investigated. The sub-totals analysed, therefore, vary as indicated in the text.

The mean age for the seropositive patients was 33.49 years (SD=9.449), and for the seronegative patients it was 37.94 years (SD=15.238). Ages ranged from 16 years to 79 years, the statistical significance of which is reflected in Table I. There was a borderline statistically significant association between gender and HIV status (Pearson's Chi Square 3.89, $p=0.049$), in that females (85.6%) were more likely to test positive than males (73.1%).

A significant association was found between education levels and HIV-test results (Pearson's Chi Square =18.5, $p=0.001$). As education levels increased, the number of patients who tested positive for HIV infection decreased. As opposed to only 46.7% who tested positive in those with a tertiary education, (95.1%) tested positive in those with no formal or only a primary education. Compared to the other educational levels, 81.6% with a Grade 8, 84.6% with a Grade 10 and 83.7% with a Grade 12 educational level, respectively were HIV-positive.

Of the unemployed, 88.3% tested positive, compared to students (75.0%) and employed (75.8%) patients. However, this difference was not quite statistically significant (Pearson's Chi square = 5.2, $p=0.074$). The single/divorced group was most likely to test HIV positive (85%) compared to married adults (72.4%), but this difference was not statistically significant (Pearson's Chi square 2.7, $p=0.096$). There was a significant association between ethnicity and

HIV-test results (Pearson's Chi square 21.2, $p<0.001$). The African ethnic group was significantly more likely to test HIV positive than the other ethnic groups in the sample studied (86% vs 30%).

An association was also found between traditional beliefs and HIV-test results (Pearson's Chi square 25.8, $p<0.001$). Those who adhered to traditional African beliefs were significantly more likely to test HIV-positive than the non-traditional belief group (87.3% vs 37.5%).

The binary logistic regression analysis is shown in Table I. A significant association was found between the HIV-test results and age on the logistic regression (OR = 0.959, $p = .060$). With every one year increase in age, the risk of being positive decreased by 0.041 (4.1%). The highest rate of HIV-seroconversion for both men and women in this study was between the ages of 26 to 34 years. When all factors were accounted for, a higher age became a protective factor against HIV-infection. Education was significantly associated with testing HIV-positive. Having no education or only primary education resulted in an almost 20 times higher risk for testing HIV-positive compared to those with a tertiary education. Similarly those with only grade 8, 10 or 12 education were also significantly more at risk than those with a tertiary education. Traditional beliefs also indicated a 22.6 times higher risk for testing HIV-positive compared to those who subscribed to non- traditional beliefs.

Discussion

Suicidal behaviour is a complex phenomenon, and risk factors and aetiology are multifactorial and multidimensional. However, in the present study, results corroborate both South African^{1-2,16} and international research¹⁹⁻²⁰ findings that HIV/AIDS can be a risk factor in suicidal behaviour, and that in some patients suicidal ideation can be associated with HIV testing and notification. The findings also suggest an association between positive HIV-test results and certain socio-demographic variables that can act as indicators for suicidal ideation in HIV-infected persons. The high seropositive rate was expected in view of the facts that patients were referred and that the area serviced by the VCT clinic has one of the highest HIV-infection rates in the country. The ethnic distribution in the study was to be expected, as it reflects the demographics of the population served by the VCT clinic where the research was done.

Table I: Binary logistic regression

	Wald	df	p value	OR	95.0% C.I. for OR	
					Lower	Upper
Age (Years)	3.528	1	0.060	.959	.918	1.002
Education	10.284	4	0.036			
None vs tertiary	9.293	1	0.002	19.694	2.898	133.818
Grade 8 vs tertiary	4.715	1	0.030	5.545	1.182	26.020
Grade 10 vs tertiary	5.205	1	0.023	5.406	1.268	23.043
Grade 12 vs tertiary	4.425	1	0.035	4.738	1.112	20.188
Traditional African beliefs vs other beliefs	13.355	1	<0.001	22.630	4.247	120.571
Constant	1.453	1	0.228	.227		

The fact that there were more females than males and younger patients with suicidal ideation who tested positive for HIV-infection is supported by other research that shows women's and the youth's vulnerability in this regard.^{1-2,14,16} The age of sexual debut, especially in the young has been linked to having a greater number of sexual partners and therefore a greater risk of HIV infection.⁷⁻⁹ The effects of age mixing differ for males and females with young females who have older male partners also at a greater risk for HIV infection.⁸ These are important considerations given our findings, since in South Africa, as in many other countries, suicidal behaviour in young people is an increasing problem.^{2,15} This shift in relation to age is sometimes referred to as the "ungreying phenomenon."¹² In addition, consistent with international research, South African studies generally report a female preponderance in non-fatal suicidal behaviour in the younger age groups.^{2,14-15}

It is not surprising, that increasing age and higher education in this study were found to be protective factors against contracting HIV- infection and associated suicidal ideation, while lower education and traditional beliefs did not appear to offer the same protection. Educational attainment and the relationship between HIV-infection is closely correlated with income, gender, employment/ socioeconomic status, economic migration and urbanisation with related socio-economic implications.^{11-12,23-24} Although some studies on the relationship between socio-economic changes and suicidal behaviour have produced divergent results, others have highlighted the impact on suicidal behaviour of both adverse socio-economic factors as well as economic development.^{2,15-16} Contemporary research²⁵ has shown that low socio-economic status increase the risk of suicidal behaviour, as does low educational levels and long term unemployment. According to South African research^{2,15} the role of socio-economic correlates that contribute to suicidal behaviour risks in particular are: financial problems and associated feelings of loss of parental support, the effects of rapid urbanization, an increasing competitiveness in education and employment as well as rising expectations in the young as they move away from traditional value systems and norms. Regarding the role of traditional beliefs found in the present study, both international and African research¹⁶ has documented the potential influence of religious and cultural beliefs on suicidal behaviour.

The rates of suicidal ideation following HIV-testing in this study are comparable to those reported by other research, although on follow-up assessments the increases tend to vary.^{4,19} An important finding in the present research was that, despite extensive counseling, suicidal ideation increased from 17.1% in the patients who initially underwent voluntary HIV-testing to nearly one quarter six weeks later in those who tested positive. This change in the suicidal ideation rate is almost twice the rates reported for the general population in South Africa.¹⁷⁻¹⁸ Finally, the average elevated BDI score of patients at both time points imply the presence of a clinical depression in the sample studied, which is consistent with the established link between suicidal ideation and depression.^{2,16,25}

Limitations

Limitations of this study include the facts that the target population was urban based and that limited information on pre-existing psychiatric disorders, sexual history, and traditional and cultural beliefs restricted more in-depth exploratory analyses. Also, how the socio-demographic variables independently contribute aetiologically to suicidal ideation associated with seropositive HIV-test results requires further research. Although this study provided insight into suicidal ideation and seropositive results following HIV testing and notification, the results need to be interpreted with caution and cannot be axiomatically generalised.

Conclusion

Suicidal ideation which increased over a six week follow-up period was present in a significant number of the patients studied, and considerably higher than found in the general population reported in recent South African studies.¹⁷⁻¹⁸ Most suicidal acts are preceded by a process and suicidal ideation forms part of that process.^{2,25} However, as part of this process the dynamics are highly individual and the relationship between suicidal ideation, HIV-infection and the various socio-demographic factors found in this study are complex and interlinked. Nevertheless, it is hoped that the findings reported here will assist in assessing patient suicidal vulnerability at HIV VCT clinics when doing pre- and post-counselling and in implementing suicidal prevention and management strategies, especially given that suicidal ideation in these patients and their propensity for suicidal behaviour can be acute, chronic or latent and progress through various phases.¹ As has been recommended before¹, general suicide prevention guidelines^{2,25-27} can be adapted to be socio-culturally sensitive for use in HIV-positive patients.

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2.5 ARTICLE THREE

Key question: What is the relationship between sociodemographic factors and suicidal ideation following VCT?

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ABSTRACT:

Objective. The aim of this study was to determine the prevalence of suicidal ideation in patients who were tested for HIV-infection and whether, along with their HIV status, age and gender influenced their risk for suicidal ideation.

Methods. The sample consisted of 189 patients who attended a VCT clinic at a general state hospital in Durban, South Africa. Their mean age at baseline was 34.2 years, with an age range of between 16 and 79 years.

Results. Seropositivity, age and gender were significantly associated with suicidal ideation. The majority of these patients were in the younger age group, and young males had a 1.8 times higher risk for suicidal ideation than females. Although risk factors for seropositive-related suicidal ideation can be complex and multi-factorial, this study identified a young age and male gender as important high risk factors in the sample studied.

Conclusion. It is recommended that all, but especially young male HIV-infected patients seen at VCT clinics are screened for suicidal ideation and that early intervention to prevent subsequent suicides or suicidal attempts are included in pre- and post-test HIV counselling.

Article

Age, Gender and Suicidal Ideation Following Voluntary HIV Counseling and Testing

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Abstract: The aim of this study was to determine the prevalence of suicidal ideation in patients who were tested for HIV-infection and whether along with their HIV status, age and gender influenced their risk for suicidal ideation. The sample consisted of 189 patients who attended a voluntary HIV counseling and testing clinic (VCT) at a general state hospital in Durban, South Africa. Their mean age at baseline was 34.2 years, with an age range of between 16–79 years. Seropositivity, age and gender were significantly associated with suicidal ideation. The majority of these patients were in the younger age group, and young males had a 1.8 times higher risk for suicidal ideation than females. Although risk factors for seropositive-related suicidal ideation can be complex and multi-factorial, this study identified a young age and male gender as important high risk factors in the sample studied. It is recommended that all, but especially young male HIV-infected patients seen at a VCT clinic be screened for suicidal ideation and that early intervention to prevent subsequent suicides or suicidal attempts be included in pre- and post-test HIV counseling.

Keywords: age; gender; HIV-test results; suicidal ideation; voluntary counseling and testing

1. Introduction

Although there are geographic variations between and within certain countries and regions, suicidal behaviour and HIV/AIDS continue to be major global health care priorities [1,2]. In South Africa, many suicides and attempted suicides go unreported, but available statistics are alarming, with a prevalence rate of between 17–25 per 100,000 of the population and a suicide to attempted suicide ratio of about 1:20 [3–6]. Suicide accounts for about 9.5% of non-natural deaths in young people and 11% in adults in the country, with the average age of suicide being 35 years and for suicide attempts 20–29 years followed by the 10–19 year age group [7,8].

This situation is compounded by the HIV/AIDS pandemic. Nearly three decades after its initial diagnosis, HIV/AIDS is still a devastating and debilitating disease, especially in developing countries. Sub-Saharan Africa has one of the highest global prevalence rates of HIV/AIDS, accounting worldwide for 67% of current HIV-infections, 68% and 91% for new infections among adults and children respectively, and 72% of AIDS-related deaths [2]. Women and youth continue to be affected disproportionately [2]. South Africa has one of the biggest seropositive populations where some 5.7 million people are living with HIV/AIDS, although the country has one of the biggest antiretroviral therapy programmes in the world, which has produced substantial health benefits and various major preventative strategies [2]. Heterosexual exposure is the main mode of transmission. Despite the fact that more than 85% of South African youth have been exposed to multi-media HIV education and awareness campaigns, infection rates among both the youth and females remain high [9]. The epidemic differs considerably between provinces, but the province of KwaZulu-Natal (where the present study was done) has one of the largest provincial prevalence rates (39% or more of the population) and up to one third of patients seen in some ante-natal clinics are HIV-positive [2,4,10–12].

Earlier studies reported higher suicide risks in HIV/AIDS-infected people compared to the general population, but in some instances this seems to have improved with better treatment [4,12–14]. Figures, however, continue to vary. For example, although few published studies are available in the rest of Africa, South African studies have found that people suffering from HIV/AIDS have an increased suicide risk [4,12,15–18]. Likewise, studies on suicidal ideation in the general population in South Africa have produced diverse results. These range from 4% in young primary school children to 24% or higher in high school students and adolescents to 9.1% or higher in adults [4,7,19]. In a community survey in the port city of Durban, situated in the province of KwaZulu-Natal with its high HIV-infection rates, suicidal ideation was found to be as high as 25.4% [20].

Researchers have identified different patterns of increased risk for suicidal behaviour through the progression of HIV/AIDS, which are associated with, *inter alia*, the manner in which HIV testing is done; inadequate psychosocial support at the time; anxiety before the results are known; being diagnosed seropositive; the development of full-blown AIDS with its implications; later stages of the disease which may result in a decrease of quality of life characterized by physical and mental deterioration; sufferers who want to control the way in which they die, thus considering suicide as an option; and the vulnerability of survivors whose loved ones have died as a result of HIV/AIDS-related suicide, especially if they themselves are also seropositive [4,12,18]. Although there are some earlier studies done elsewhere on mental health states and suicidal ideation in acute HIV-infection [21–23] and some [22] have shown that within the context of confidential HIV-testing and extensive pre-post

counseling in over 15% of both seropositive and seronegative patients suicidal ideation can persist, there is a dearth of similar research in Africa. In this regard, in a previous South African study we reported a significant presence of suicidal ideation and clinical depression in seropositive patients who underwent voluntary HIV-testing [15]. However, despite the high South African suicidal behaviour and HIV/AIDS prevalence rates in the young, suicidal ideation in relation to age, gender and seropositivity at the time of testing for HIV-infection, has not been well-researched. In addition, studies are sparse on suicidal ideation and gender differences in HIV-positive persons, and findings are inconclusive [1,12,22]. One study [12] reported no gender differences in mood disorders which accounted for the most common psychiatric diagnosis in HIV-related suicidal behaviour. Therefore, as part of our ongoing research on HIV/AIDS-related suicidal behaviour, the aim of the present study was to determine the prevalence of suicidal ideation in patients tested for HIV-infection and whether along with their HIV status, age and gender influenced their risk of suicidal ideation.

2. Methodology

2.1. Sample and Procedure

The sample recruited consisted of 189 patients who were referred by various health professionals to an HIV Voluntary Counselling and Testing (VCT) clinic at a general state hospital in Durban, South Africa over a three-month period. The mean age of the initial sample at baseline was 34.2 years (SD = 10.7) with an age range of between 16–79 years. Of these, 157 (83.1%) tested HIV positive. The study was ethically approved and permission to conduct it was granted by the health institution. The patients entered into the study voluntarily and signed informed consent and received relevant pre-and post-test counseling. All those who did it were offered ARV treatment.

2.2. Measures

A research-designed questionnaire was used to record socio-demographic data, and patients were advised not to answer any questions that they deemed too personal and/or too sensitive if they so wished. In line with other studies [15,24,25] suicidal ideation was measured using the Beck Hopelessness Scale (BHS) and item 9 of the Beck Depression Inventory (BDI). These were administered to each patient at two time points, *viz.*: at 72 hours and again at six weeks following testing and after being advised of their HIV status. The time frame selected was approximately consistent with that reported before in studies on suicidal ideation and testing for HIV [21,23,26]. The BHS and BDI were both translated into isiZulu and then back translated with the assistance of a professional translator in order to accommodate the isiZulu speaking patients in the sample (who constituted the largest African ethnic group). A cut-off score of 9 or above on the BHS [27] along with item 9 on the BDI were used to measure suicidal ideation. Item 9 of the BDI deals specifically with thoughts of committing suicide, and patients endorsed 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”), or 3 (“I would kill myself if I had the chance”). As in previous research for the purpose of the present study, “suicidal ideation” was defined as a score of 1 to 3 [15,22].

2.3. Data Analyses

The SPSS version 15.0 was used to analyse the data. Pearson's Chi Square was used to perform univariate analyses, and a generalized linear regression modeling for the binomial family (binreg) was used to assess independent risks for suicidal ideation. A log link was specified to estimate risk ratios, while a backwards selection method was used to fit a model with only statistically significant independent variables. This model was used (in preference to the logistic regression model) because (according to the SPSS manuals) it expands the general linear model so that the dependent variable is linearly related to the factors and covariates via a specified link function and the model allows for the dependent variable to have a non-normal distribution and covers widely used statistical models, through its very general model formulation. It is, however, equally allowed to predict a binary variable with both methods.

3. Results and Discussion

3.1. Results

Because some patients from the original sample were lost on follow-up, and because of incomplete data for some patients, totals reflected in the text and tables vary. Also from a socio-demographic point of view, the seronegative patients as a group generally had higher educational levels than the seronegative patients and more were employed and in stable partner relationships. These variable, however, were not separately analysed in the present study.

Table 1. Suicidal ideation at 72 hours by HIV status.

		Suicidal ideation		Total	
		no	yes		
HIV-test result	negative	Count	30	0	30
		Row %	100.0%	0%	100.0%
	positive	Count	124	32	156
		Row %	79.5%	20.5%	100.0%
	Total	Count	154	32	186
		Row %	82.8%	17.2%	100.0%

Pearson's Chi Square = 7.433, $p = 0.006$.

Table 2. Suicidal ideation at 6 weeks by HIV status.

			Suicidal ideation		Total
			no	yes	
HIV-test result	negative	Count	21	0	21
		Row %	100.0%	0%	100.0%
	positive	Count	79	32	111
		Row %	71.2%	28.8%	100.0%
Total		Count	100	32	132
		Row %	75.8%	24.2%	100.0%

Pearson's Chi Square = 7.991, $p = 0.005$.

Tables 1 and 2 show that none of the HIV-negative patients displayed suicidal ideation after being informed of their seronegative status. However, at both 72 hours and at 6 weeks post HIV-testing, there was a significant association between HIV-positive test results and suicidal ideation. At 72 hours the risk of suicidal ideation in those who tested HIV positive increased statistically significantly from 20.5% to 28.8% at 6 weeks as indicated in the relevant tables.

Age was a significant risk factor for the presence of suicidal ideation in the seropositive patients at both time points, that is at 72 hours (RR = 1.031; Std. Err = 0.039; $z = 2.32$; $p = 0.020$; 95% CI = 1.004 to 1.059) and 6 weeks (RR = 1.050; Std. Err = 0.006; $z = 7.78$; $p = 0.001$; 95 % CI = 1.037 to 1.063). In this group, at 6 weeks both age and gender were significantly associated with suicidal ideation in seropositive patients (Table 3). Despite the fact that a wide age range was represented in the sample cohort, the majority of the seropositive patients with suicidal ideation fell within the younger age group (<30) which is consistent with the age-related spread of the disease and the increase in suicidal behaviour in younger people. Males had a 1.8 times higher risk of suicidal ideation than females ($p = 0.025$).

Table 3. Suicidal ideation at 6 weeks by Age and Gender.

	Risk Ratio	Std. Err.	z	P > z 	95% CI
Age	1.03143	0.00722	4.42	0.000	1.017376 to 1.045678
Gender	1.783475	0.4616398	2.24	0.025	1.07384 to 2.962064

3.2. Discussion

People react differently to a potentially life-threatening disease in which hopelessness and a sense of loss of control often correlate with suicidal ideation [4,12,14,28,29]. Also, suicidal risk factors associated with HIV/AIDS and HIV-testing are complex and multifactorial [4,12,15,22,23,30,31]. Common co-morbid factors in HIV/AIDS-related suicidal behaviour include amongst others: acute stress reactions; adjustment disorders; obsessive compulsive disorders involving obsessive ruminations and scrutiny for disease progression; bereavement reactions; neuropsychological/cognitive impairment; personality disorders; depression; mania; psychoses; substance abuse; pre-existing psychiatric disorders; neuropathology; neuropsychiatric side-effects of ARV and psychotropic medication; anxiety reactions associated with the “worried well”, such as “AIDS phobia”, “AIDS panic” or “AIDS anxiety”; poor social support; fear of disclosure/stigmatization; socio-economic pressures and fear of employment discrimination; as well as relationship problems and the fact that patients often blame their partners for infecting them [4,12,30,32]. The following have also been found to contribute to vulnerability in this regard in some African communities: a failure to meet the psychosocial needs of young people living with HIV/AIDS; a culture of silence related to a fear of being shunned; certain religious leaders who preach that the epidemic is punishment for sexual sin; a disdain towards HIV/AIDS prevention messages and safe sex; and retrogressive cultural beliefs blaming supernatural elements or witchcraft which are compounded by feelings that death is inevitable [4,12,33–35]. Additionally, negativity that pervades cognitive processes can be associated with symptoms of depression following HIV-testing in a developing society such as the one where the study was done, where HIV-infected patients often see their situation as overwhelming, filled with obstacles and as a result develop a negative view of their future [4,12,15,18,36].

Added to this, are our present findings that support the fact that voluntary HIV-testing associated with a positive test result can be a further risk factor for suicidal ideation, especially in the young in a developing society with its many challenges. Unlike research [22] in a First World context that did not find an increase in suicidal ideation following HIV-testing, we found a significant increase over a 6-week period. Our findings, furthermore, contribute an extra dimension to existing research in the general population which reflects an increase in suicidal behaviour in the younger age groups both in South Africa and elsewhere [1,4,37]. Younger HIV-positive persons have unique stressors which in South Africa have been identified *inter alia*, as those related to: family disruptions, financial implications, difficulty in accessing health care facilities, meeting the strict criteria for the antiretroviral roll-out programme, and various other psychosocial factors such as partner infidelity and multiple sexual partners [4,12,38,39]. All these factors can serve to further increase susceptibility to suicidal ideation.

Although, seropositive females were also found to be at risk for suicidal ideation, the fact that in the present study males had a higher risk for suicidal ideation is an interesting finding. As in most other parts of the world, more females in South Africa attempt suicide whereas more males commit suicide [4]. However, there is not always a clear association between suicidal ideation and suicide mortality rates [20]. Moreover, suicidal prevalence rates can vary across countries, within populations in specific countries and because of differences in data interpretations [1,40]. Although it is, therefore, difficult to compare data across different studies and cultures, our results of an increased male prevalence rate of suicidal ideation can be explained, in part, by adverse socio-economic considerations and factors such as labour migration which is still a way of life for a large percentage of black males in South Africa. Many of the seropositive patients in our study had lower educational levels, employment difficulties, and partner relationship problems. Males living away from their families because of employment and financial reasons have limited control over their family life, often leading to family breakdown, fragmentation of social networks, increased psychosocial stress, extended sexual networks, and a higher risk of HIV infection among young people who had recently changed their place of residence [4,41]. In addition, the unemployment rate remains high (24% or more in some areas) with a significant percent of young males nationally not being economically active [42]. Competing for limited job opportunities, victimization in the workplace, poverty and debt all have a multiplier effect on the negative emotional impact on young sero-positive males and, therefore, has the potential to increase their risk for suicidal ideation and suicidal behavior [4].

3.3. Study Limitations

Limitations of the study include the facts that it is preliminary and exploratory and that selective information about the patients were investigated. They were not required to offer any pre-existing psychiatric history, suicidal ideation or a history of suicide attempts. Although this study produced significant findings, the results cannot be axiomatically generalised and require further research.

4. Conclusions

This study adds to the current literature on suicidal ideation in the HIV-infected population who attend a VCT clinic, and highlights the role of age and gender and positive HIV-test results in this regard. The hidden nature of suicidal ideation, inaccurate statistics, misclassification on death

certification regarding suicide due to confidentiality issues and various other difficulties in the HIV/AIDS population in developing societies, indicate that the situation may be worse than we have found and require further research. Although suicidal ideation is not always a sufficient determinant for suicidal behaviour in its own right, it is an important risk factor that requires early detection. Research has shown that the manner in which a person interprets a negative life experience can influence suicidal ideation, in that an optimistic explanatory style as opposed to a pessimistic one, mitigates the influence of the negative life event and therefore suicidal ideation [43]. In addition to ensuring appropriate access to medical healthcare, it is, therefore, important to increase optimistic cognitions and hopefulness (as opposed to hopelessness) in seropositive patients who attend a VCT clinic. As has been noted before, it is not always the fear itself of a potentially life-threatening disease that act as a suicide risk factor, but how the disease and its sequelae are perceived and managed [12,29]. The high levels of suicidal ideation associated with their positive HIV status in the patients in the present study, confirms the importance of early psychological/psychiatric intervention in these patients. It is recommended that all, but especially young male HIV-infected patients seen at a VCT clinic be screened for suicidal ideation and that early intervention to prevent subsequent suicides or suicidal attempts be included in pre- and post-test HIV counseling. Mental health problems are a significant part of the HIV/AIDS pandemic especially in developing countries where mental health care should be integrated into HIV/AIDS programmes as seen in many developing countries [44]. In this regard, peer mentoring and community involvement constitute innovative strategies that can be used in effective intervention and programme development [5,33,45].

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Conflict of Interest

The authors declare no conflict of interest.

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CHAPTER 3

PHASE TWO: DEVELOPMENT AND VALIDATION OF A SUICIDE RISK SCREENING SCALE FOR USE FOLLOWING A POSITIVE HIV DIAGNOSIS

3.1 INTRODUCTION

The objective of **Phase Two** was to develop an SRSS for suicidal ideation in HIV-positive persons following HIV counselling and testing.

This chapter challenged the researcher. The question beckoned: Can a suicide risk scale be developed without ‘re-inventing the wheel’ and make a lasting contribution to society? The challenges experienced can be summarised as follow: are self-reported assessments or structured interviews more effective and reliable at assessing high-risk persons for suicidal behaviour? The literature also showed that a shortened BHS with either a single-item or a 4-item questionnaire was reliable and valid. Yip and Cheung (2006) conducted a cross-sectional study assessing whether a single item (‘My future seems dark to me’) and a 4-item component of BHS (including positive and negative items describing the perception of the future in terms of success, darkness, lack of opportunity and faith) could summarise most of the information that BHS provides. Results showed that the 4-item component was a useful alternative to BHS. Shortening of the psychometric instrument should be considered so as to reduce the burden on patients and to improve the response rate (Yip and Cheung, 2006). An item analysis of BHS was conducted, looking specifically at item endorsement and item-total correlations. Three abbreviated versions (3-item, 7-item and 13-item) were developed based on certain denoted item-total correlation cut-offs. Reliability and validity of the original 20-item BHS were then compared with that of the newly developed abbreviated versions. All scales were found to be reliable and valid measures of hopelessness. The three abbreviated versions were more strongly correlated with the distress measures than the original version. The 7- and 13-item subscales outperformed the original BHS in the prediction of suicidal ideation (Abbey *et al.*, 2006).

The results for BDI are supportive of its reliability and validity across various cultures. A brief form consisting of 13 items developed for general practitioner use correlated 0.96 with the total on the standard form and the internal consistency ranged from 0.70 to 0.90. Suicidal ideation can be assessed only on item 9 of BDI (Perry *et al.*, 1990); results suggest that patients who score 2 or higher on the BDI suicide item are 6.9 times (95% CI 3.7 - 12.6) more likely to commit suicide than patients who score less than 2.

In a recent study conducted among HIV-positive persons in South Africa, suicidal ideation increased over a six-week period and was present in 24% of the HIV-positive participants following HIV counselling and testing (Govender *et al.*, 2012). These statistics serve as compelling evidence to assess for suicide risk and intervene as early as possible.

3.2 METHODOLOGY

3.2.1 STUDY DESIGN

Phase Two was a validity and reliability study.

3.2.2 STUDY AREA AND STUDY POPULATION

The sample consisted of HIV-positive adults presenting to an academic, district-level hospital in Durban, KwaZulu-Natal, South Africa. One hundred and fifty consenting participants were enrolled for the validity and reliability testing of an SRSS and participants returned three weeks later for a re-test. The study was approved by the Biomedical Research Ethics Committee of the University of KwaZulu-Natal and permission was granted by the relevant health institution.

3.2.3 INSTRUMENTS

Two well-known and extensively used scales were used to assess aspects of suicidal behaviour in various population groups, *viz.* BHS and BDI. Co-morbid conditions have been found to affect the specificity of

severity ratings at both the low- and high-end scores (APA, 2000). Several researchers have used items from both of these scales to validate the use of shorter versions in specific populations (APA, 2000; Yip and Cheung, 2006). For the purposes of the present study, 11 items were selected from BHS and 1 item from consists of 3 different responses to construct a short 14-item SRSS for clinical use in an HIV/AIDS VCT setting (Table 1). The 11 BHS items are negatively phrased questions that represent expectations of failure or motivational components (items 2, 9, 11, 16, 17 and 20), and those that reflect future uncertainty or cognitive components (items 4, 7, 12, 14 and 18). The components that this scale measures have been addressed in previous research (APA, 2000; Aish and Wasserman, 2001). Therefore, the rationale in the present study for item selection incorporated several additional considerations. Firstly, it was considered that those patients with extreme pessimism would endorse the negative items selected and thus be more likely to exhibit suicide risk (Aish and Wasserman, 2001; Yip and Cheung, 2006). Secondly, the item size pool is underscored by a theoretical framework that the patients' perceived hopelessness about their situation and their future could be linked to suicide risk. This stems from the premise that hopelessness is an important psychological and cognitive construct that can be used to predict suicidal risk in a clinical setting (Beck *et al.*, 1974). In line with the scoring of BHS, the 14 items of the SRSS were scored: true = 1; false = 0. A cut-off score greater than or equal to 4 was considered to be positive for suicidal ideation.

3.2.4 STATISTICAL ANALYSIS

3.2.4.1 TEST-RETEST RELIABILITY

A Pearson's correlation coefficient (r) of 0.70 and above deemed the test to be reliable. The SRSS was administered to HIV-positive participants at baseline and 3 weeks thereafter – a time interval shown to have an r -value of 0.79 in detecting content validity and reliability. The scores were correlated against each other using Pearson's correlation coefficient. The coefficient was used to determine the reliability of the SRSS; i.e. the closer to 1, the more reliable the scale.

3.2.4.2 INTERNAL CONSISTENCY

Measures of internal consistency are used to evaluate the extent to which different items on a test measure the same characteristics; i.e. they serve as a measure of agreement among the components of an instrument. This assesses the reliability of the test by assessing consistency among the items as represented by high reliability values. However, low reliability values should not be dismissed and may be acceptable in comparing groups. Different desirable reliability values are quoted for various psychological measurements. The internal consistency of the items that measure these two constructs were tested using Cronbach's alpha. An alpha value greater than or equal to 0.7 was considered to indicate that the scale showed good internal consistency.

3.2.4.3 VALIDITY TESTING: SUPRE-MISS

The WHO Multisite Intervention Study on Suicidal Behaviours (SUPRE-MISS) was launched on five continents (including Durban, South Africa on the African continent) to increase knowledge about suicidal behaviours and effective interventions for those individuals from culturally diverse societies attempting suicide. The SUPRE-MISS instruments were pilot tested, translated into different languages and validated for the prediction of suicidal behaviour. Accordingly, the SUPRE-MISS items which were used to test the validity of the SRSS in the present study were:

1. Have you ever seriously thought about committing suicide?
2. Have you ever made a plan for committing suicide?
3. Have you ever attempted suicide?

The SRSS and SUPRE-MISS were administered to HIV-positive participants at baseline. The SUPRE-MISS was used as the standard to classify participants as either positive or negative for suicidal ideation. Similarly, the SRSS was used to classify the same participants using the cut-off points described above. The results of the two tests were cross-tabulated against each other and sensitivity, specificity and

positive and negative predictive values were calculated. This was anticipated to show either convergent or discriminant validity and thus construct validity.

3.3 ARTICLE 4

Key question: Can a brief suicide risk screening scale be used to screen recently diagnosed HIV-positive persons for suicidality in order to assist with treatment and suicide prevention?

CITATION:

GOVENDER RD, SCHLEBUSCH L. A SUICIDE RISK SCREENING SCALE FOR HIV-INFECTED PERSONS IN THE IMMEDIATE POST-DIAGNOSIS PERIOD. *SOUTHERN AFRICAN JOURNAL OF HIV MEDICINE* 2013; 14(2): 58-63.

ABSTRACT:

The risk of suicidality in HIV-positive persons appears to be significant among vulnerable individuals within the context of the HIV pandemic, and may be paralleled with an increased prevalence of suicidal behaviour in South Africa. The aim of this study was to construct a brief SRSS to screen recently diagnosed HIV-positive persons for suicidality in order to assist with treatment and suicide prevention. The sample consisted of a randomly selected cohort of 150 HIV-positive, consenting adults who presented at an HIV/AIDS VCT clinic at an academic district level hospital in Durban, South Africa. The participants were not taking antiretroviral medication. Participants returned three weeks after their initial assessment for a re-assessment. The SRSS utilised selected items from two established relevant tests and this consisted of 12-items. It was compared with an appropriate psychological instrument that measures suicidality. Inter-item characteristics, internal consistency, reliability and validity were determined. The results were statistically significant and showed adequate sensitivity and specificity. The findings suggest that, despite certain limitations, the SRSS can be used as a valuable screening tool for suicidality at VCT clinics as part of a clinical interview for the assessment of suicide risk. It is recommended that suicide risk assessment should form a routine aspect of comprehensive patient care at such clinics, which can assist with effective prevention and treatment of possible suicidal behaviour in HIV-positive persons.



ORIGINAL ARTICLE

A suicide risk screening scale for HIV-infected persons in the immediate post-diagnosis period

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Background. The risk of suicidal tendencies in HIV-infected persons appears high and may parallel the increasing prevalence of suicidal behaviour in South Africa.

Objective. To construct a brief suicide risk screening scale (SRSS) as a self-administered instrument to screen for suicidal ideation in recently diagnosed HIV-infected persons.

Methods. An SRSS was developed, drawing 14 items from two established screening tests, and assessed using a sample of 150 HIV-infected consenting adults identified at a voluntary counselling and testing (VCT) clinic at an academic district level hospital in Durban, South Africa. Participants returned three weeks after their initial assessment for a re-assessment.

Results. The internal consistency of the SRSS was good (Cronbach's alpha, 0.87), and its sensitivity (81%) was higher than its specificity (47%). The findings suggest that, despite certain limitations, the SRSS may be a valuable screening tool for suicidal ideation at VCT clinics.

Conclusion. Screening for suicide risk and possible suicidal behaviour in HIV-positive persons may form a routine aspect of comprehensive patient care at VCT clinics to assist with effective prevention and treatment.

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Globally, suicide and HIV/AIDS remain two of the greatest healthcare issues, particularly in low- and middle-income countries where approximately 85% of suicides occur.^[1-3] The World Health Organization (WHO) predicted that global suicide mortality will increase to 1.53 million per annum by the year 2020.^[2] Suicide mortality rates have changed significantly in South Africa (SA) since apartheid, with differences evident across cities, races and gender.^[4] SA has a relatively high 12-month prevalence of anxiety and mood disorders compared with other countries, which adds to the burden of suicide risk.^[5] In 2007 the overall rates for suicide in SA were high (0.9/100 000),^[6] and there is an increasing occurrence of suicide among youth and men, consistent with the international trend.^[7] At least one suicide is committed every hour in SA, and 20 more unsuccessful attempts are made in the same time-span, with one-third of non-fatal attempts recorded among youth.^[6-8]

The risk factors for suicide are diverse and inter-related, and may be particularly complex in HIV-infected individuals. One systematic literature review showed a high suicidal risk in persons with HIV: 19.7% were described as generally suicidal, 26.9% as having suicidal ideation and 9.4% completed suicides.^[9] There is also a high rate of lifetime suicide risk associated with depression.^[10] The prevalence of depression

and anxiety in people living with HIV/AIDS is almost double that of HIV-negative individuals.^[11]

There is growing evidence that this is true in SA and other African countries.^[12,13] The risk of suicide appears to be increasing in the context of the HIV epidemic.^[14,15] Several SA studies have documented a correlation between suicidality and HIV at different points in disease progression,^[12,13-18] including the high prevalence of suicidal ideation among HIV-positive pregnant mothers.^[16] In a recent study conducted among HIV-positive persons in SA, suicidal ideation increased over a 6-week period and was present in 24% of the HIV-positive participants following HIV counselling and testing.^[17] This correlated with results of the WHO Multisite Intervention Study on Suicidal Behaviours (SUPRE-MISS) community survey, where the highest rates of lifetime suicidal thoughts and plans were found in Durban (25.4% and 15.6%, respectively).^[17,19] Despite the introduction of antiretroviral therapy (ART), the suicide rate remains more than 3 times higher among HIV-positive persons than in the general population.^[20] Although the international findings on the correlation between suicide and HIV/AIDS are diverse,^[10] the results show compelling evidence to screen for suicide risk and intervene as early as possible.^[9,10-12] Despite this, the assessment of suicide risk is not a routine aspect of HIV patient care in SA.

The lack of consistent definitions of suicidal behaviour across studies has led to confusion in the field of suicidology. Suicidality encompasses a range of suicidal behaviours, which in turn involve degrees of self-destruction that may be fatal or non-fatal. Suicidal ideation is defined as having the intent to commit suicide, wanting to take one's own life or thoughts about suicide without actually making plans to commit suicide. To prevent suicides, healthcare professionals need to understand the reasons why people have suicidal thoughts or display suicidal behaviour. While there are a number of psychometric, clinical and biological measures to detect suicide risk,^[21-23] this risk in itself is difficult to measure and predict with high degrees of accuracy^[23] because of its multifactorial and multidimensional nature.

Suicide risk can be assessed by a variety of self-report and interviewer-administered measures. Selecting a self-report and/or a structured-interview format to measure suicidal symptoms is a critical decision. For example, although interviewer-administered measures may allow for greater flexibility for conducting appropriate assessments of suicidal behaviour, these measures usually require more time and expense (for administration and training) than self-report measures. In contrast, self-report questionnaires may be inadequate for measuring suicidality in cognitively impaired or highly emotional

individuals with concentration difficulties, although findings in this regard are mixed.^[24,25] Although self-report measures are often used as screening tools, an adequate evaluation of suicidality should include both self-report and interviewer-administered measures.

Since its publication in 1974, Beck's Hopelessness Scale (BHS) has become an internationally-accepted and widely used measure in suicide prevention.^[26] The scale has been extensively researched and validated as a measure to predict suicide and is still being used worldwide.^[27,28] Although depression, hopelessness and suicide correlate closely, hopelessness was identified as one of the most important psychological, predictive and modifiable risk factors.^[27,28] In this context, the aim of the present study was to construct a short, reliable and valid instrument with high screening and clinical utility with which to screen for suicide risk in recently diagnosed HIV-infected persons at a voluntary counselling and testing (VCT) clinic in Durban. This was intended to identify individuals whose suicidal ideation was severe enough to warrant treatment and suicide prevention.

Methods

Participants and setting

The sample consisted of 150 HIV-infected adults, presenting for the first time to be tested for HIV at a VCT clinic in an

academic district-level hospital in Durban. All participants who tested HIV-positive following VCT were informed about the study by the resident VCT counsellor. Participants who consented voluntarily were enrolled in the study and were asked to complete the suicide risk screening scale (SRSS) and the SUPRE-MISS instrument at baseline and three weeks later. The study was approved by the Biomedical Research Ethics Committee of the University of KwaZulu-Natal (BF202/09) and permission to conduct the study was granted by the relevant health institution.

Instruments

Two well-known and extensively used scales were utilised to assess aspects of suicidality in various population groups, *viz.* the BHS and the Beck Depression Inventory (BDI). Although these items do not directly assess suicidal behaviour, they measure hopelessness and immediate suicide risk. The BHS contains 20 true/false items (11 negatively and 9 positively phrased), with the severity of hopelessness (an indirect indicator of suicide risk) calculated by adding the scores for the 20 items. The total scores range from 0 (no hopelessness) to 20 (maximum level of hopelessness). The BDI, developed as a standardised measurement to assess the grades and severity of depression in order to monitor the change over time, contains 21 behavioural manifestations (items) of depression, which

Table 1. Suicide risk screening scale

This questionnaire consists of 14 statements (sentences). Please read the statements carefully one by one and answer them. If the statement describes your attitude for the past week, including now, write 'T' in the block provided. If the statement is false for you, write 'F' in the block.

Item	Statement	T or F
V1	I might as well give up because there's nothing I can do about making things better for myself	
V2	I can't imagine what my life would be like in 10 years	
V3	My future seems dark to me	
V4	I just don't get the breaks, and there's no reason to believe that I will in the future	
V5	All I can see ahead of me is unpleasantness rather than pleasantness	
V6	I don't expect to get what I really want	
V7	Things just won't work out the way I want them to	
V8	I never get what I want, so it's foolish to want anything	
V9	It is very unlikely that I would get any real satisfaction in the future	
V10	The future seems vague and uncertain to me	
V11	There's no use in really trying to get something I want because I probably won't get it	
V12	I have thoughts of killing myself, but I would not carry it out	
V13	I would like to kill myself	
V14	I would like to kill myself if I had the chance	

describe the symptoms from low to high. The items are scored individually from 0 to 3; these are added to obtain a total score of 0 - 63. A value <9 represents no or minimal depression, 17 - 29 moderate depression and >30 severe depression. Co-morbid conditions have been found to affect specificity of severity ratings at both the low- and high-end scores.^[27] Several researchers have used items from both scales to validate the use of shorter versions in specific populations.^[27,29,30]

For the present study, 14 items were selected from these scales to construct the SRSS (Table 1). The 11 BHS items selected are negatively phrased questions that reflect expectations of failure or motivational components (items V2, V9, V11, V16, V17, V20) and future uncertainty or cognitive components (items V4, V7, V12, V14, V18). Item selection was based on patient responses in the related previous studies, by choosing those with the highest and lowest scores at the two time-points using the complete BHS and BDI.^[17,18] What the components measure has been addressed in other research.^[29,31]

Our rationale for item selection incorporated several additional considerations. Firstly, patients with extreme pessimism would endorse the negative items selected and thus be more likely to be scored to have a higher suicide risk.^[29,30] Secondly, the item-size pool is underscored by a theoretical framework that the patients' perceived hopelessness about their situation and future could be linked to suicide risk. This stems from the premise that cognitions mainly centre around an uncertain future and the loss of perspective in finding solutions to problems, which lead to hopelessness and consequently to suicidal ideation or attempt.^[26] In line with the BHS scoring, the items of the SRSS were scored: true = 1; false = 0.

In the absence of a gold standard, an instrument previously tested in the general population in Durban was used as a proxy: the community survey aspect of SUPRE-MISS, based on the European Parasuicide Study Interview Schedule, which had been applied in the WHO/EURO Multicentre Study on Suicidal Behaviour.^[19] The following questions were asked: (i) 'Have you ever seriously thought about committing suicide?'; (ii) 'Have you ever made a plan for committing suicide?'; (iii) 'Have you ever attempted suicide?'. The SUPRE-MISS instruments were pilot-tested, translated into different languages and validated. Since the SUPRE-MISS instrument was deemed reliable to predict suicidal behaviour, it was used as the reference to test the validity of the SRSS.

Statistical analysis

SPSS version 10.0 was used for data analysis. Receiver operating characteristic (ROC) analyses were used to determine the sensitivity, specificity and optimal cut-off points of the SRSS to predict suicidal ideation. Inter-item characteristics, internal consistency, reliability and validity analyses were also performed.

Results

The mean age of participants at baseline was 33.5 years (standard deviation (SD) ± 9.4). The cut-off points of the SRSS scores and their corresponding sensitivity and specificity values are shown in Table 2. A cut-off score of 4.5 (≥ 4 being a positive result) achieved 68% sensitivity and 64% specificity in predicting suicidal ideation and is therefore the recommended cut-off for the SRSS. In

establishing cut-off points on the SRSS that would optimise sensitivity and specificity via ROC analysis, it was decided that, ideally, the test should be more sensitive than specific to identify as many probable suicidal patients as possible. Sensitivity is paramount to suicide prediction and was our rationale for maximising sensitivity in the present analysis. The area under the curve (AUC) in ROC analysis was 0.730 at baseline (95% CI 0.64 - 0.81) and 0.776 at three weeks (95% CI 0.68 - 0.87) (Figs 1 and 2, respectively).

Inter-item characteristics and internal consistency

Table 3 displays the corrected item-total correlation at baseline and three weeks later. The corrected item total was >0.30 for all items except for V2 ('I can't imagine what my

Table 2. SRSS cut-off points and corresponding sensitivity and specificity to predict suicidal ideation at baseline and at three weeks

Time-point	Cut-off	Sensitivity	Specificity
Baseline	-1.0000	1.000	1.000
	0.5000	1.000	0.914
	1.5000	0.947	0.774
	2.5000	0.912	0.624
	3.5000	0.807	0.527
	4.5000	0.684	0.355
	5.5000	0.632	0.301
	6.5000	0.579	0.258
	7.5000	0.526	0.204
	8.5000	0.439	0.161
	9.5000	0.368	0.129
	10.5000	0.281	0.108
	11.5000	0.175	0.000
	12.5000	0.053	0.000
	13.5000	0.035	0.000
	15.0000	0.000	0.000
Three weeks	2.5000	0.811	0.532
	3.5000	0.757	0.455
	4.5000	0.676	0.364
	5.5000	0.676	0.273
	6.5000	0.649	0.195
	7.5000	0.622	0.182
	8.5000	0.568	0.130
	9.5000	0.568	0.104
	10.5000	0.459	0.0091
	12.0000	0.405	0.000
	13.5000	0.351	0.000
	15.0000	0.000	0.000

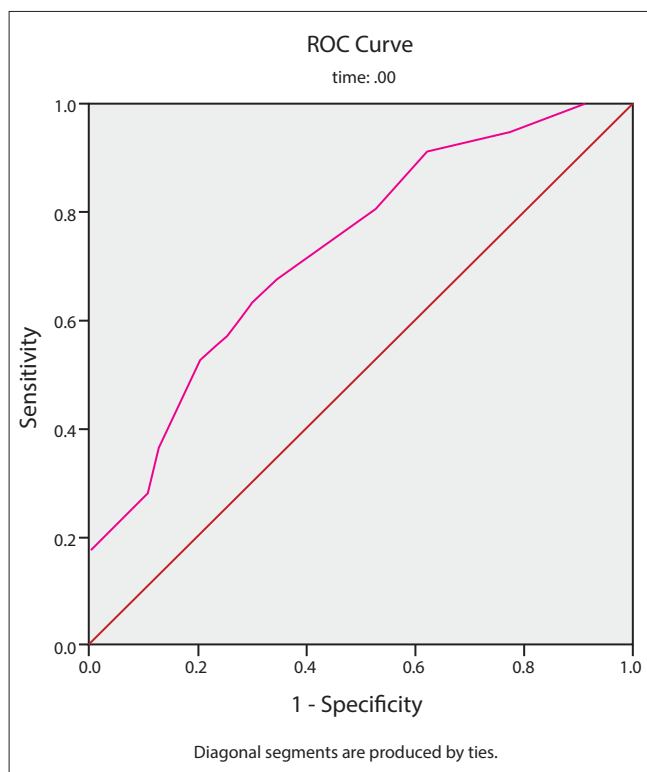


Fig. 1. ROC curve of SRSS scores for suicidal ideation immediately post-diagnosis (baseline) in HIV-infected adults.

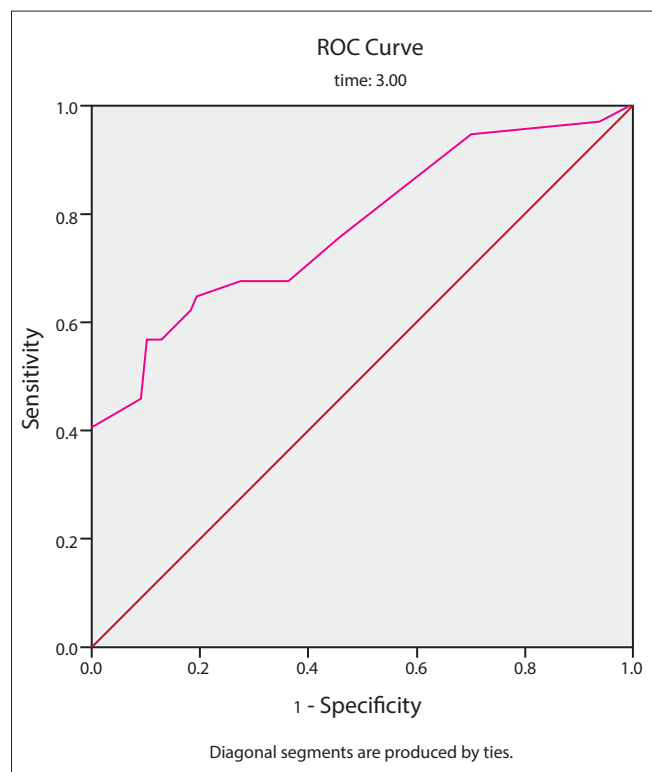


Fig. 2 ROC curve of SRSS scores for suicidal ideation three weeks post-diagnosis in HIV-infected adults.

Table 3. Corrected item-total correlations

Item	Baseline					Three weeks				
	Corrected item-total correlation	Cronbach's alpha*	Scale mean*	Mean	SD	Corrected item-total correlation	Cronbach's alpha*	Scale mean*	Mean	SD
V1	0.475	0.870	5.1333	0.3933	±0.49013	0.7300	0.919	5.1982	0.3964	±0.49137
V2	0.333	0.875	4.6667	0.8600	±0.34815	0.277	0.931	4.7297	0.8649	±0.34342
V3	0.567	0.865	5.0333	0.4933	±0.50163	0.669	0.921	5.0991	0.4955	±0.50225
V4	0.613	0.862	5.1400	0.3867	±0.48862	0.741	0.918	5.2072	0.3874	±0.48936
V5	0.612	0.862	5.0333	0.4933	±0.50163	0.701	0.920	5.1441	0.4505	±0.49980
V6	0.602	0.863	5.0400	0.4867	±0.50150	0.618	0.923	5.0991	0.4955	±0.50225
V7	0.619	0.862	5.0000	0.5267	±0.50096	0.573	0.924	5.0811	0.5135	±0.50208
V8	0.670	0.859	5.1533	0.3733	±0.48531	0.695	0.920	5.1892	0.4054	±0.49320
V9	0.624	0.861	5.0533	0.4733	±0.50096	0.740	0.918	5.1712	0.4234	±0.49634
V10	0.675	0.858	5.0733	0.4533	±0.49949	0.715	0.919	5.2162	0.3784	±0.48718
V11	0.605	0.862	5.1467	0.3800	±0.48701	0.802	0.916	5.2613	0.3333	±0.47354
V12	0.400	0.872	5.4000	0.1267	±0.33371	0.675	0.921	5.4414	0.1532	±0.36177
V13	0.318	0.875	5.4867	0.0400	±0.19662	0.675	0.921	5.4414	0.1532	±0.36177
V14	0.318	0.875	5.4867	0.0400	±0.19662	0.650	0.922	5.4505	0.1441	±0.35283

SD = standard deviation.

* If item is deleted.

life would be like in ten years'). This item had a corrected item-total correlation of 0.333 at baseline and 0.277 three weeks later. Due to its potential for ambiguity in some non-clinical samples, it has been described as an outlier; in other studies it represented one of the highest-scoring item responses at different time intervals.^[13,17,18] This apparent

discrepancy can be explained partially by considering various factors. For example, for some patients, being told that they have a positive HIV status can be an extremely stressful experience that constitutes a life crisis. For many, their psychological response can include the perception of 'a death image,'^[7] if they assume that they have been dealt

a death sentence. This, along with the myriad of possible other misconceptions, cognitive distortions, psychiatric and life-disruption complications, a shortage of healthcare resources and the fear of not being eligible for, or having access to ART,^[1] makes it difficult for HIV-positive persons to visualise a long-term future.

The item-total correlations ranged from 0.318 to 0.675. At baseline, item V10 ('The future seems vague and uncertain to me') had the best corrected item total (0.675), while item V11 ('There's no use in really trying to get something I want because I probably won't get it') had the best corrected item total (0.802) at three weeks. The Cronbach's alpha for a deleted item showed that none of the items were problematic. The level of internal consistency for the SRSS was, therefore, acceptable for clinical purposes and was consistent with the findings of other studies.^[27]

Reliability and validity

The overall Cronbach's alpha for the SRSS at baseline and three weeks was 0.874 and 0.915, respectively. To determine the validity of the SRSS, it was compared with the accepted instrument for SUPRE-MISS. Using a cut-off score of 4, the sensitivity for the SRSS at baseline was 81% with a positive predictive value of 48%, a specificity of 47% and a negative predictive value of 80%. At three weeks, the sensitivity was 79%, the specificity 55%, the positive predictive value 44%, and the negative predictive value 82%.

Discussion

This study demonstrated the potential utility of a simple screening tool to detect suicidality in HIV-infected individuals newly diagnosed through a VCT programme. Although the sensitivity and specificity of the SRSS were not very high (around 68%), these compared favourably with those obtained in other research.^[26,29] Unlike other studies, where item 7 or the 4 items of the BHS were not administered individually, in our study the full version of the BHS was administered and the responses to the 20 items were used to deduce final scores.^[29] Notably, there was a likelihood of a high level of false-positives through the use of the SRSS. The results indicate a good sensitivity at both time-periods and a comparatively low rate of false-positives. Further research and the incorporation of additional assessment items in the questionnaire are likely to have a more successful result in suicide prevention.

Equally important for screening instruments to be effective is the prevalence of risk within the population. It is well documented that SA – especially the city of Durban, where the research was conducted – has a high prevalence of HIV/AIDS, and a recent study showed that sero-positivity, age and gender were significantly associated with suicidal ideation.^[17,18] It can therefore be concluded that the SRSS can be used, in conjunction with a clinical interview, as a valid screening instrument to assess for suicide risk in this setting. The use of a clinical interview, which remains the fundamental basis of suicide risk assessment, should incorporate an understanding of the patient's suicidal crisis from both an objective/descriptive as well as an experiential perspective.^[23-25] The former includes objective patient data to assess suicide risk, a clinical (psychiatric/psychological) history and identification of overt suicidal manifestations and risk factors.^[23-25] The latter perspective goes beyond delineation of clinical symptoms in an attempt to understand the patient's actual feelings, personal narrative, perspective, sustaining resources and beliefs about suicide.^[23-25]

The assessment of hopelessness is extremely important in clinical practice, since high levels of hopelessness can lead to isolation and the inhibition to seek help timeously. Given this, VCT offers patients an option to be counselled and tested for the presence of HIV and, at the same time, provides an opportunity to identify any underlying level of hopelessness and suicide risk related to receiving a life-altering diagnosis of HIV-positivity.^[17,18] The self-administered questionnaire can be completed while patients are awaiting their HIV test results. The questionnaire is easily scored and a risk assessment is performed with relative ease. A suicide intervention to be included in the post-test counselling is presently being evaluated, including re-administering the SRSS at the next clinical visit. This may decrease the rate of false-positives obtained.

Study limitations

The construction of the SRSS involved selecting items from two sub-scales, which were grouped and analysed as a single scale. The main limitation of this study was that there was no gold standard to use as a baseline reference within the context of the population studied. Furthermore, there was no reference to the participants' views on living with HIV, which can be part of a clinical interview; this should form the focus of further research.

Conclusion

Analyses have demonstrated the importance of brief scales with high clinical validity for assessing suicidal risk in daily clinic settings.^[21,22] Our research shows that the SRSS can be a valuable screening tool for suicidality as part of a standard clinical interview and good clinical assessment in HIV/AIDS VCT clinics. Suicide risk assessment in patients seen at such clinics should be a routine aspect of comprehensive patient care, to assist with effective management and the prevention of possible suicidal behaviour. The SRSS is not intended as a stand-alone diagnostic tool to assess suicidal behaviour, but may be used as a triage tool to assist in the identification of high-risk patients.

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CHAPTER 4

PHASE THREE: EVALUATION OF A BRIEF SUICIDE PREVENTIVE INTERVENTION FOLLOWING HIV DIAGNOSIS

4.1 INTRODUCTION

The objective of **Phase Three** was to evaluate a brief suicide preventive intervention and assess the outcomes thereof.

4.2 METHODOLOGY

4.2.1 STUDY DESIGN

Phase Three comprised a controlled clinical trial with an experimental arm.

4.2.2 STUDY AREA AND STUDY POPULATION

The study was conducted at Wentworth Hospital, a university-affiliated hospital. Patients aged 18 years and older and who were HIV-positive following VCT were included in the study. Persons who were WHO HIV/AIDS stage 3 and 4 were not considered to be eligible for the study.

Once patients ($N=129$) were diagnosed as being HIV-positive following VCT, they were subjected to SPTC. Thereafter, every alternate participant was given one extra hour of a BSPI. The research protocol was approved by the relevant ethics committee and all enrolled participants gave written informed consent.

4.2.3 STANDARD POST-TEST COUNSELLING

All participants were subjected to the SPTC that is provided to all patients who test HIV-positive. The principles of SPTC include:

1. Delivering the result in a private and confidential manner;
2. The need to discuss with the patient the impact of disclosure of the test result;

3. TEST RESULT: POSITIVE;
4. Telling the patient the result and showing him/her the result;
5. Allowing the patient to digest this information;
6. Giving the patient time to explore his/her feelings and fears; understanding that the client may become emotionally 'shocked'; reassuring him/her that he/she will not be abandoned by the clinician; and explaining that coming to terms with the result may take some time;
7. The need to understand that the health services have much to provide in terms of the different modalities of treatment: 'You can remain healthy if you take care of yourself, eat healthy foods, do not smoke, do not drink, do not take drugs and see a doctor as soon as you feel ill. You can also be given HIV medication that will not cure you, but will keep you healthy. The ART will be given once your CD4⁺ count drops below 200 cells/ μ l and you join the ART programme at the hospital. The drugs can also make you sick, but you can be treated if you go early to the hospital or doctor.';
8. Expressing the need to understand the different modes of transmission and how the patient could transmit the virus to others; and encouraging safe sex practices, stressing condom use.
9. Explaining the natural history of the progression of the disease and the intervention programmes available to assist in the patient's treatment and how it can prolong his/her health with a change in lifestyle and treatment programmes;
10. The hospital social worker will be a part of the ART programme and will assist with social support and support resources.

4.2.4 BRIEF SUICIDE PREVENTIVE INTERVENTION (BSPI)

Participants in the intervention group were offered a suicide preventive intervention that included addressing the psychosocial issues related to HIV-positivity at the time of presentation. This therapy entails identifying and helping to resolve interpersonal difficulties that cause or exacerbate psychological

distress. The BSPI session was one hour in duration and encompassed the following aspects to render it effective and relevant to the target population:

1. **Feedback** on the research outcomes regarding the percentage of those who are at risk for suicidal ideation following HIV counselling and testing; risk factors and protective factors were encompassed, together with the manner in which patients should deal with risk factors;
2. **Empathy**: the situation was seen in light of the person's situation while maintaining objectivity and being non-judgemental;
3. **Advice**: simple advice on how to live positively;
4. **Responsibility**: it was considered the responsibility of the person to take the onus to change;
5. **Self-efficacy**: the person's belief in their ability to make meaningful changes was encouraged;
6. **Sociodemographic factors**: protective factors;
7. **Psychosocial factors**: stigmatisation, disclosure and gender issues.

During the session, the pattern of questioning and answering was avoided. This pattern, which gives the impression that the counsellor has all of the answers to all of the questions, might have led the patient to play a passive role, counter to the objective of the BSPI. Importantly, the counsellor continually reinforced positive counselling and made no attempt to apportion blame or to be judgemental towards the patient.

4.2.5 INFORMATION

4.2.5.1 WHAT IS SUICIDAL IDEATION?

Suicidal ideation is defined as having the intent to commit suicide, wanting to take one's own life or thinking about suicide without actually making plans to commit suicide.

4.2.5.2 HOW MANY PEOPLE THINK ABOUT SUICIDE?

In a recent study (detailed in *section 2.3 of Chapter Two*), we found that 17.1% of patients had suicidal ideation 72 hours after being told that they were HIV-positive, and 6 weeks thereafter, 24.1% of the same patients were still at risk for suicidal ideation (Govender and Schlebusch, 2012).

4.2.5.3 WHAT PUSHES PEOPLE TOWARDS THINKING ABOUT SUICIDE?

This negative view about a life situation may be intolerable, and suicidal ideation may provide a safety valve for feelings of fear and distress; i.e. it is a path that the affected person feels compelled to take, seeing no way out of his/her problems, pain and misery. In this instance, a counsellor may be required to point out to the patient that there are other ways out, and to assist and support the patient to engage with alternate solutions.

4.2.5.4 RISK FACTORS FOR SUICIDAL IDEATION

4.2.5.4.1 DEPRESSION

Depression is characterised by a feeling of sadness for most of the day. While everyone feels depressed, sad and lonely at certain times, these feelings usually pass. If they persist for longer than two weeks, then the individual needs to seek help. Common symptoms of depression include:

- a markedly diminished interest or pleasure in all, or almost all activities for most of the day, nearly every day;
- significant weight loss when not dieting, or weight gain, or a decrease or increase in appetite nearly every day;
- insomnia or hypersomnia nearly every day;
- psychomotor agitation or retardation nearly every day;
- fatigue or loss of energy nearly every day;

- feelings of worthlessness or excessive or inappropriate guilt;
- a diminished ability to think or concentrate, or indecisiveness, nearly every day;
- recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt or specific plan for committing suicide.

4.2.5.4.2 GENDER

As detailed in *section 2.5 of Chapter Two*, among a cohort of patients attending a VCT clinic at a general state hospital in Durban, we found that HIV-positive males had a 1.8 times higher risk for suicidal ideation than females. Cautiously, however, this does not mean that females are *not* at risk (Nock MK, *et al*, 2008; Schlebusch and Govender, 2012).

4.2.5.4.3 AGE

Recent statistics have indicated that there has been a shift in the prevalence of suicidal behaviour in South Africa, from previously, more common among the elderly, to recently, more common among the younger generation (Nock MK, *et al*, 2008; Schlebusch and Vawda, 2010). As detailed in *section 2.5 of Chapter Two*, we found that as the age of HIV-positive subjects increased by one year (age range 16 - 79 years), the risk for suicidal behaviour increased by a factor of 1.03 (Schlebusch and Govender, 2012). Cautiously, although this means that the older an individual is at the time of a positive HIV diagnosis, the higher the likelihood of experiencing trouble in dealing with the diagnosis and the greater the risk for suicidal ideation, even young people may experience difficulty accepting a positive HIV-test result.

4.2.5.4.4 MARITAL STATUS

In the general population, single, divorced and widowed persons are at greater risk for suicidal behaviour (Nock MK, *et al*, 2008; Fukuchi N *et al.*, 2013). Among HIV-positive persons, however, research has not singled out any marital status that confers a higher risk for suicidal ideation.

4.2.5.4.5 OCCUPATION

In the general population, the loss of a job, rather than being unemployed, has a higher risk for suicide (Blakely TA, *et al.*, 2003; Cooperman, *et al.*, 2005). In HIV-positive persons, however, unemployment has been cited as the major contributory factor among 44% of a cohort who reported suicide risk (Schlebusch L, 2006).

4.2.5.4.6 EDUCATION

There is available statistical data or clinical data to suggest that level of education is a major contributory factor to the suicide potential of an individual (Nock MK, *et al.*, 2008; Govender and Schlebusch, 2012).

4.2.5.4.7 MIGRATION

Post-1994 migration is still a way of life for 60% of men in South Africa, and is associated with challenges that may render these men at risk for suicidal ideation. This migration is associated with a degree of emotional instability considering a move from a rural to an urban environment, the loneliness associated with being away from their families, fears that their partners may be unfaithful to them, and fears that their children will grow up without a father's guidance (Hosegood and Timaeus, 2006).

4.2.5.4.8 STIGMATISATION

Being HIV-positive is associated with its own social stigma (Skinner and Mfecane, 2004). Promoting individuals to talk openly about HIV/AIDS, prevention and treatment will help to de-stigmatise this illness.

4.2.5.5 FACTORS PROTECTIVE AGAINST SUICIDAL IDEATION (Mann,*et al.*, 2005; WHO, 2012)

4.2.5.5.1 FAMILY PATTERNS

Good family patterns have been found to be protective against suicidal ideation, including:

- encouraging good relationships and support from family;
- encouraging family therapy, if agreeable by the patient;
- devoted and consistent parenting.

4.2.5.5.2 COGNITIVE STYLE AND PERSONALITY

Cognitive styles and personalities found to be protective against suicidal ideation include:

- confidence in oneself and one's own situation and achievements;
- a sense of personal value;
- seeking help when difficulties arise;
- seeking advice when important choices must be made;
- openness to other people's experiences and solutions;
- openness to learning;
- an ability to communicate.

4.2.5.5.3 CULTURAL AND SOCIODEMOGRAPHIC FACTORS

Cultural and sociodemographic factors that are protective against suicidal ideation include:

- encouraging good social networking, sporting activities, religious activities, etc.
- higher education and employment – especially for women, but the same applies to men – offers some protection, i.e. it gives women economic power and therefore the ability to negotiate with their male counterparts, to plan a family, to have better socioeconomic status and to have improved healthcare;
- the adoption of specific cultural values and traditions;
- good relationships with friends, workmates, neighbours;
- support from relevant people;

- non-substance-using friends;
- social integration, e.g. through work, participation in sport, different clubs and religious activities;
- a sense of purpose with one's life.

4.2.5.5.4 ENVIRONMENTAL FACTORS

Environmental factors protective against suicidal ideation include:

- a good diet;
- good sleeping patterns;
- exposure to sunlight;
- physical exercise;
- a non-drug, non-smoking environment.

4.2.5.6 WHAT SUPPORT IS AVAILABLE?

If the interviewer identified a participant to be at high risk for suicide, then the relevant referral for help was made for more intensive treatment. Available facilities in the study setting included: a resident clinical psychologist at Wenworth Hospital; the option to admit high-risk patients as in-patients; and LifeLine support services.

4.2.6 OUTCOME MEASURES

The SRSS is a 14-item instrument that assesses suicidal ideation by measuring hopelessness and a patient's thoughts about committing suicide. An SRSS score greater than or equal to 4 was considered to be clinically significant for suicidal ideation.

4.2.7 STATISTICAL ANALYSIS

Strata software (version 12) was used for statistical analysis. Generalised linear modelling was used to categorise participants with suicidal ideation (positive ideation was defined as a score of ≥ 4). Pearson's chi-square test was used to determine the statistical significance of differences between the control and intervention groups. McNemar's chi-square test was used for paired binary proportions.

4.3 ARTICLE FIVE

Key question: What is the effect of a brief psychosocial intervention on suicide risk following a positive HIV test result?

CITATION:

Govender RD, Schlebusch L, Esterhuizen T. Brief suicide preventive intervention in newly diagnosed HIV-positive persons. *African Journal of Psychiatry* 2014; 17: 543- 547.

ABSTRACT:

Background. In South Africa, suicide rates range from 11.5 to 25/100 000 among the general population with non-fatal suicides occurring predominantly among females. South African studies have found that people diagnosed with HIV/AIDS have an increased suicide risk.

Objective. We evaluated the effect of a brief psychosocial intervention on suicide risk following a positive HIV-test result.

Methods. The study was conducted at a university-affiliated hospital in Durban, KwaZulu-Natal, South Africa. Consenting adult patients (age 18 years and older) diagnosed as being HIV-positive following VCT were enrolled in the study. Participants ($N=126$) were assigned to SPTC; thereafter, every alternate patient was counselled using a BSPI. Patients were assessed at baseline, 72 hours and 6 weeks after a positive HIV-test result.

Results. Sixty-two participants received SPTC only (control group), whereas 64 were also subjected to the BSPI (intervention group). The crude incidence rate ratio for suicidal ideation for the BSPI, compared with SPTC only, was 0.80 (95% CI 0.52 - 1.23); therefore, the intervention proved protective against suicidal ideation.

Conclusion. Although both groups benefitted from post-test counselling, results from the BSPI group demonstrated a clinically significant decrease in suicidal ideation over the time period studied. The results provide preliminary evidence on the efficacy of a BSPI for recently diagnosed vulnerable HIV-positive persons and the importance of educating such patients on suicide-prevention strategies.

Brief suicide preventive intervention in newly diagnosed HIV-positive persons

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Abstract

South African studies have found that country wide suicide rates are high and that people diagnosed with HIV/AIDS can have increased suicidal ideation and resultant suicide risk. In this study, we evaluated the effect of a brief psychosocial intervention on preventing suicide ideation after a positive HIV test result. Suicidal ideation was assessed by both groups of patients having to complete a suicide risk screening scale (Annexure 1). The study was conducted at a university-affiliated hospital in Durban, KwaZulu-Natal, South Africa. Consenting adult patients (age 18 years and older) recently diagnosed as being HIV-positive following voluntary HIV counselling and testing were enrolled in the study. Participants (N=126) were assigned to standard post-test counselling (SPTC). Thereafter, every alternate patient (N= 64) was counselled using a brief suicide preventive intervention (BSPI). Patients were assessed at baseline, 72 hours later and 6 weeks after a positive HIV test result. The balance of 62 participants who received SPTC only were the control group, and compared with the BSPI group. Although both groups benefited from post-test counselling, results from the BSPI group demonstrated a clinically significant decrease in suicidal ideation over the time period studied. The results provide preliminary evidence on the efficacy of a BSPI for recently diagnosed vulnerable HIV-positive persons and the importance of educating such patients on suicide-prevention strategies.

Keywords: Brief suicide risk screening; HIV

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Background

Worldwide, suicide rates have increased by 60% in the last few decades, with a projected global suicide mortality rate of about 1.5 million people per annum by 2020.¹ Similarly, suicide has been recognised as a significant public health concern in South Africa (SA) where the national suicide mortality rate has steadily increased over the past few decades from about 1% in the 1980's to approximately 11% or more currently of all unnatural deaths.²⁻⁴ Aside from the numerous complexities associated with suicide, the country faces the added burden of the HIV/AIDS pandemic with one of the largest seropositive populations globally and KwaZulu-Natal province (where the present study was done) bearing one of the highest proportions of this load.⁵

Suicidal ideation is defined as having the intent to commit suicide, wanting to take one's own life or thinking about committing suicide with or without actually making plans to do so.⁶ Although there is a paucity of suicide and HIV/AIDS research in Africa⁷, the studies done, have shown a high suicide risk in this population.⁸⁻¹⁰ As early as 1995, AIDS phobia was cited as a trigger in 17% of parasuicide cases among youth in SA.¹¹ HIV-positive people are at risk for suicide^{2,6} and when first diagnosed with HIV, many individuals react with disbelief, anxiety and fear for what

lies ahead. In a previous study, the most commonly endorsed statement by recently diagnosed HIV-positive persons was, "I can't imagine what my life would be like in 10 years".⁶ It is known that in many cases a positive HIV diagnosis can be linked to hopelessness and depression with the potential risk for suicidal ideation^{6,12-14}, and that one of the most vulnerable periods for suicide risk is in the immediate post HIV-diagnosis period.^{9-10,14} Depression and anxiety are common in people living with HIV/AIDS.^{6,12,13} Not only have studies shown that HIV infection is associated with a greater risk for such disorders,¹³ but untreated depression increases the risk of suicidal behaviour and or suicidal ideation.^{6,13}

Suicide prevention is defined as any self-injury prevention or health-promotion strategy that is generally or specifically aimed at reducing the incidence and prevalence of suicidal behaviour.¹⁵ Amongst others, suicide intervention includes: early recognition and assessment of risk; immediate response to suicide risk; resource referrals; and follow-up management and treatment of at-risk individuals.¹⁶ Although various intervention approaches have been described to prevent suicidal behaviour,¹⁶ a complete and comprehensive preventive model is the universal/selective/indicated (USI) model, which targets the general population, vulnerable populations and persons at high risk for suicide. Universal preventive interventions are directed at entire populations; selective interventions are directed at individuals who are at greater risk for suicidal behaviour; and indicated preventions target individuals who have already begun to display self-destructive behaviour.¹⁶ In addition, a systematic review of suicide-prevention

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strategies has suggested five key areas for intervention, viz.: (i) education and awareness; (ii) screening for at-risk persons; (iii) treatment of psychiatric disorders; (iv) restricting access to lethal means; and (v) media reporting of suicide.¹⁷

There is growing evidence that suicide is increasing in the context of HIV/AIDS with HIV-positive persons having a 3 times higher prevalence than the general population despite the introduction of Antiretroviral therapy (ART).¹⁸ Extensive research¹⁹ as part of the World Health Organization's worldwide initiative for the prevention of suicide across five continents, found that brief intervention can be an important component of suicide prevention programmes and confirmed that indicated suicide prevention strategies should complement universal and selective suicide prevention strategies. Given this, the aim of the present study was to assess the effect of a brief suicide preventive intervention on suicidal ideation in HIV-positive persons immediately post-test, within 72 hours and 6 weeks later.

Patients and Methods

The study was conducted at a university-affiliated hospital in Durban, South Africa. The study site was at a district level health facility in the KwaZulu-Natal province which has one of the highest local provincial HIV prevalence rates.⁵ Patients attending the hospital clinic for voluntary counselling and testing (VCT) for the HIV were informed about the study. Those meeting the inclusion criteria (age 18 years and older and testing seropositive, i.e. HIV Stage 1 and 2) were approached for voluntary participation ($N=126$). Participants received standard post-test counselling (SPTC) administered by the resident hospital VCT nurse counselor and conducted individually. Thereafter, every alternate patient was counselled utilizing a brief suicide preventive intervention (BSPI) administered by a trained BSPI counsellor. Both the SPTC and the BSPI were done in patients' preferred language of either English or isiZulu (the predominant languages spoken). The counsellor was certified-trained in HIV pre-post test counselling. Additionally demographic data was collected (age, gender, educational status, marital status, ethnicity and religion). The BSPI participants constituted the intervention group ($N=64$) and were then compared with the balance of patients ($N=62$) who received SPTC only (the control group). Because some patients were lost on follow-up and not all patients provided relevant data, patient samples varied as depicted in the tables.

After counselling, participants in both groups were asked to complete a self-administered suicide risk screening scale (SRSS)²⁰ (Annexure 1) at baseline, after 72 hours and 6 weeks later. The 14-item SRSS was developed previously from a shortened version of the Beck Hopelessness Scale (BHS) and the Beck Depression Inventory (BDI).²⁰ The scale was tested for validity, internal consistency and a receiver operating characteristic (ROC) analysis was performed for sensitivity and specificity for suicidal ideation (positive at a score of ≥ 4). The area under the ROC curve (AUC) was regarded as the probability of correct prediction. The AUC was 0.730 ($p<0.001$; 95% confidence interval (CI) 0.64 - 0.81) at baseline and 0.776 ($p<0.001$; 95% CI 0.68 - 0.87) 3 weeks thereafter. Accordingly, the SRSS score was considered to be a good predictor of suicidal ideation in the population studied.²⁰ Hopelessness was also assessed using a pre-determined score of ≥ 5 (items V1-V11; Annexure 1) and direct suicidal risk using a score of ≥ 1 (items V12-V14; Annexure 1). The SRSS was translated into isiZulu and

back-translated to accommodate isiZulu speaking patients (one of the largest language groups served by the clinic) so as to avoid possible language bias. The translation was performed by a professional linguist and had been through rigorous review by the ethics committee.

In the model used for the SPTC group the main principles included:

1. Addressing the impact of disclosure of the HIV test result, allowing the participant to digest this information, and giving the participant time to explore his/her feelings and fears.

2. Considering that the participant may be emotionally 'shocked', and giving reassurance that he/she would not be abandoned by the team of healthcare professionals who have much to provide in terms of different treatment modalities.

3. Explaining to each participant that coming to terms with the result may take some time and that he/she can remain healthy by taking care of him-/herself, which includes following the recommended treatment plan and an appropriate diet, and seeing a doctor when necessary.

4. Addressing the need to understand the different modes of HIV transmission and how the virus can be transmitted to others, emphasising safe-sex practices and condom use, and explaining the natural history of the progression of the disease.

5. Explaining the intervention or treatment programmes available and changes in lifestyle, and emphasising that hospital social workers would be a part of the programme and would assist with social and support resources.

The BSPI included an extra one-hour individual therapy session that addressed additional psychosocial issues related to HIV-positivity at the time of presentation, and entailed identifying and helping to resolve interpersonal difficulties which may cause or exacerbate psychological distress. To render the BSPI effective and relevant to the target population, it was conducted according to a protocol that encompassed:

1. Feedback on research-based epidemiology and the risk for suicidal behaviour as indicative of psychological and/or social distress following VCT and a seropositive result.

2. Exploring potential suicide risk and protective factors and how patients should deal with such risk factors.

3. Expressing empathy and discussing the situation in light of the participant's personal circumstances, while maintaining objectivity and being non-judgemental.

4. Providing simple advice on how to live positively and encouraging personal responsibility to change behaviour, and encouraging self-efficacy and the participant's belief in his/her ability to make meaningful changes.

5. Highlighting sociodemographic protective factors.

6. Discouraging personalisation of psychosocial factors such as stigmatisation, fear of disclosure and discriminatory gender issues.

7. Openly discussing HIV/AIDS, including prevention and treatment, to help to de-stigmatise the disease, and discussing alternative coping mechanisms in case of suicidal ideation.

8. To prevent participants from playing a passive role, the counsellor focussed on re-enforcing a positive participant mindset, discussing referral options where more intensive psychological/psychiatric treatment was required, encouraging the possibility of family therapy if the patient was agreeable increasing the patient's sense of personal value, advising the patient to seek help when difficulties arise, encouraging openness to exploring potential suicide risk factors, garnering support from social networking and relevant people, and developing a renewed sense of purpose in life.

Ethics considerations

The research protocol was approved by the University of KwaZulu-Natal Biomedical Research Ethics Committee. All enrolled patients provided written informed consent for participation. All patients considered to be at high risk for suicidal ideation were referred for appropriate psychiatric/psychological treatment.

Statistical analyses

Strata software (version 12) was used for statistical analysis. Generalised linear modelling was used to categorise participants with suicidal ideation. Pearson's chi-square test was used to determine the statistical significance of differences between the control and intervention groups. McNemar's chi-square test was used for paired binary proportions.

Results

Table 1 depicts the assessment of suicidal ideation among participants following SPTC and BSPI at the 3 time-points (baseline, 72 hours and 6 weeks after a positive HIV test result). Although Pearson's chi-square tests showed no statistically significant outcome between the SPTC and BSPI at all 3 time-points, the trend analysis for suicidal ideation from baseline, to 6 weeks (Table 2) showed a suicidal ideation incidence of 0.19.79/1000 person days (95% CI 14.31 - 25.28) in the SPTC group and 0.15.87/1 000 person days (95% CI 11.07 - 20.67) in the BSPI group. In comparison with the control group, the crude incidence rate ratio for suicidal ideation among the intervention group was 0.80 (95% CI 0.52 - 1.23). Therefore, although both groups benefitted from post-test counselling, the BSPI proved more protective against the possibility of suicidal ideation in the patients studied. In addition, there was a significant change from positive (suicidal ideation) to negative (no suicidal ideation) from baseline to 72 hours and from baseline to 6 weeks. The change from 72 hours to 6 weeks was not statistically significant. This suggests

Table 1: Suicidal ideation following SPTC and BSPI at 3 time-points after a positive HIV test result

Time-point	Outcome (suicidal ideation ≥4)		p-value ^a
	Negative n (%)	Positive n (%)	
Baseline			0.275
Control ^b	25 (40.3)	37 (59.7)	0.610
BSPI	32 (50.0)	32 (50.0)	
72 hours			0.189
Control ^b	44 (71.0)	18 (29.0)	
BSPI	48 (75.0)	16 (25.0)	0.189
6 weeks			
Control ^b	42 (67.7)	20 (32.3)	0.189
BSPI	50 (78.1)	14 (21.9)	

^a Pearson's chi-square test.

^b SPTC only.

Table 2: Crude incidence rate ratio for suicidal ideation following BSPI

	BSPI	Control ^a	Total
Cases (n)	42	50	92
Patient time	2 646	2 526	5 172
Incident rate	0.015873	0.0197941	0.0177881
	Point estimate ^b		95% CI
Incident rate difference	-0.0039211		-0.0112113 - 0.0033691
Incident rate ratio (exact)	0.8019048		0.5191035 - 1.233345
Previous fraction explained (exact)	0.1980952		-0.2333446 - 0.4808965
Previous fraction for population	0.1013457		

^aSPTC only.

^b(midp) Pr(k≤42) = 0.1466 (exact)

(midp) 2*Pr(k≤42) = 0.2932 (exact)

Table 3: Chi-square tests

Group	Number of valid cases (n)	Exact Sig. (2-sided) ^a
Control ^b	62	0.000
BSPI	64	0.000
Total	126	0.000

^aMcNemar's chi-square test; Binomial distribution used.

^bSPTC only.

that the maximum change from positive to negative took place in the first 72 hours after the BSPI. Table 3 depicts the corresponding statistical significance (using McNemar's chi-square test) of the effectiveness of the BSPI, from having suicidal ideation (positive) at baseline to having no thoughts of suicide (negative) 6 weeks later.

The first 11 items of the SRSS (Annexure I) measures features of hopelessness. Consistent with previous findings, 6 descriptive statistics for each of the SRSS statements revealed that the statement, "I can't imagine what my life would be like in ten years" (Annexure 1) had the highest affirmative score in both the control and intervention groups at all 3 time-points, although in the BSPI group there was a significant abnormal reduction in this view over the time period studied (Table 4).

Discussion

HIV/AIDS has been shown to be associated with a higher risk for suicide in certain patients.^{2,6-10} Brief interventions have consistently been found to be effective in different patient populations.¹⁹⁻²¹ In this study, the implementation of a brief suicide preventive intervention along with the standard post-test counselling decreased suicidal ideation in seropositive patients particularly within the first 72 hours. We can consider these first 72 hours as the 'golden hours of suicide prevention' in HIV-positive persons. The added advantage is that during this early period those patients that are lost to follow up over a longer time frame would still have the benefit of suicide intervention treatment. Within the South African context, this is an absolute advantage, given that so many HIV-positive persons are lost to follow up. More importantly, in South Africa, suicide risk assessment and interventions are limited by the shortages of adequately trained health care professionals, suicide risk screening and suicide preventive intervention guidelines. HIV counsellors

Table 4: Descriptive results for the SRSS^a

SRSS item	Baseline		72 hours		6 weeks	
	Control ^b (%)	BSPI (%)	Control (%)	BSPI (%)	Control (%)	BSPI (%)
V1	51.6	43.8	43.5	42.2	38.3	39.7
V2	83.9	78.1	62.9	56.3	63.3	55.6
V3	32.3	25.0	17.7	18.8	21.7	17.5
V4	35.5	32.8	21.3	20.3	13.3	11.1
V5	47.5	42.2	24.2	23.4	21.7	20.6
V6	50.0	40.6	19.4	14.1	18.3	19.0
V7	50.8	45.3	17.7	15.6	31.7	22.2
V8	36.1	31.3	17.7	12.5	18.3	14.3
V9	50.0	40.6	23.0	20.3	23.3	14.3
V10	38.7	37.5	16.1	14.1	23.3	12.7
V11	37.1	31.3	6.5	3.1	15.0	4.8
V12	3.3	3.1	4.8	3.1	5.0	1.6
V13	0.0	0.0	0.0	0.0	0.0	0.0
V14	11.5	10.9	1.6	1.6	0.0	0.0

^aRefer to Annexure 1.^bSPTC only.

and primary care physicians who are responsible for pre- and post-test HIV counselling and psychosocial education can easily be task-shifted to screen and provide suicide interventions resulting in effective reduction of suicidal ideation at a reasonable cost and minimal training.

Although the BSPI was intended as an intervention to reduce suicidal ideation in recently diagnosed seropositive patients, its value to potentially prevent eventual suicidal behaviour at a later stage cannot be underestimated because of the various suicide risk phases HIV/AIDS patients may go through.^{2,6} Importantly, a multi-site research study using standardised methodology²² has shown that suicidal ideation can be construed as a sign of distress and that there is a strong cultural underpinning underlying suicidal behaviour.²² Our findings suggest that within this context the BSPI assisted in decreasing hopelessness and psychosocial stress, thereby helping the patients to cope better and attenuate suicidal ideation. This is supported by other studies,²³⁻²⁶ which showed that people living with HIV/AIDS can develop enhanced coping skills if they have access to medical treatment and a strong and supportive social network.

Resilience in individuals facing adversity is considered to be attributed to a combination of personal and contextual resources that enable effective adjustment to challenges and life situations.²³ This implies that with appropriate help, HIV-seropositive individuals can overcome the perception of adversity brought on by the infection, and in some patients it may be this resilience that serves as a protective factor or coping mechanism²⁷ which can also be postulated to be one of the effects of the BSPI. Furthermore, studies have shown that the duration of psychosocial intervention can be relevant to its effectiveness.^{28,29} In the present study the maximum change in reducing suicidal ideation occurred within the first 72 hours following a positive HIV diagnosis, which confirms the value of early intervention to prevent suicidality in these patients.

Study limitations

Although the results of the present study provide valuable information on how to reduce suicidal ideation in newly diagnosed HIV-positive individuals, important limitations

should be considered when interpreting the research findings. Firstly, the study's overall generalisability needs to be considered. The sample sizes were not large and the study was confined to the post-HIV-test period, with the biggest part of the study population being urban-based. Thus, the results should be interpreted with caution. Secondly, the participants should be followed up for a longer period than 6 weeks to determine the prolonged effectiveness of the intervention. This together with the relatively small sample size might have contributed to a lower statistical significance in this study, as suggested in a meta-analysis of studies on psychosocial interventions.²⁸ Further research is required to gain greater clarity regarding the presence of suicidal ideation at the different stages of HIV infection and the effectiveness of suicide preventive intervention at these different stages within the context exposure to anti-retroviral treatment.

Conclusion

In the present study, suicidal ideation was reduced in both the SPTC and BSPI groups, but to a greater degree in the latter, suggesting that although general counselling can have a positive psychological outcome, the BSPI was more effective in reducing suicidal ideation. We showed a decrease in the levels of suicidal ideation in newly diagnosed HIV-positive persons following appropriate counselling and BSPI. Thus the findings of our study support the value of such an approach in recently diagnosed HIV-positive persons in the primary care setting and especially for those presenting with either overt or covert signs of hopelessness, depression and suicidal ideation. All health care workers at HIV/AIDS clinics, but especially in poorly resourced countries, should be trained to increase their knowledge regarding suicide prevention and reduce suicidal ideation in vulnerable HIV-positive patients.

Declaration

The authors declare that this is original work and has not previously been published.

Conflict of Interest

None.

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CHAPTER 5

CONCLUSION

In this chapter, the most significant research findings of the overarching study are summated. The limitations of the research are discussed and recommendations are made for future studies.

5.1 SUMMARY OF THE EMPIRICAL FINDINGS

The overarching aim of this study was to measure the effectiveness of an SRSS among HIV-positive persons, in order to assess and implement a BSPI post VCT to reduce suicidal ideation in recently diagnosed HIV-positive persons.

5.1.1 SUICIAL IDEATION

Of the 157 participants (83.1%) who tested HIV-positive, the risk of suicidal ideation was 20.5% at 72 hours; while 6 weeks thereafter, the risk was 28.8%. Although the number of suicidal patients was the same at both time-points ($n=32$), only 8 participants were classified as suicidal at both points. There were 23 new cases of suicidal ideation between 72 hours and 6 weeks, i.e. these participants were not suicidal at 72 hours, but became suicidal by the 6-week time-point. This represents a suicidal incidence risk of 20.9% (95% CI 13.97 - 29.92). The incidence of suicidal ideation between 72 hours and 6 weeks was significantly associated with HIV status ($p=0.013$). None of the HIV-negative patients displayed suicidal ideation after being informed of their seronegative status. Suicidal ideation increased from 17.1% (95% CI 12.16 - 23.45) at 72 hours to 24.1% (95% CI 17.26 - 32.39) 6 weeks thereafter, confirming a significant association between HIV-positive VCT test results and suicidal ideation.

5.1.2 SOCIODEMOGRAPHIC FACTORS

The mean age was 33.49 years (SD ± 9.449) for HIV-positive patients and 37.94 years (SD ± 15.238) for HIV-negative patients, with a participant age range of 16 - 79 years. The majority of participants (38.5%) fell within the 21 - 30-year age category. Despite the fact that a wide age range was represented in the cohort, the majority of seropositive patients with suicidal ideation fell within the younger age group (age < 30 years), consistent with the age-related spread of the disease and the increase in suicidal behaviour in younger people. The sample comprised 70.8% females and 59.4% unemployed individuals.

HIV-positive respondents showed a significantly increased risk of suicidal ideation at both time-points (72 hours and 6 weeks), associated with increasing age. As age increased by one year, the risk of being suicidal increased by a factor of 1.03 (95% CI 1.005 - 1.059; $p=0.020$ and $p<0.001$, respectively). At 6 weeks, both age and gender were significant predictors of suicidal ideation with males having a 1.8 times higher risk of suicidal ideation than females ($p=0.025$). No other demographic variable was significantly associated with suicidal ideation at 6 weeks.

Table 1. Suicidal ideation according to age and gender

	Age; 72 h	Age; 6 weeks	Gender; 6 weeks
Risk ratio	1.031831	1.03143	1.783475
Standard error	0.0139276	0.00722	0.4616398
<i>z</i>	2.32	4.42	2.24
$p> z $	0.020	0.000	0.025
95% CI	1.004892 1.059493	- 1.017376 - 1.045678	1.07384 - 2.962064

Age was the only significant risk factor for incidence of suicidal ideation between 72 hours and 6 weeks (RR 1.05; 95 % CI 1.037 - 1.063; $p<0.001$).

The risk for HIV seropositivity correlated with a greater number of females testing HIV-positive. Age was a significant factor in that for each year increase in age, the risk of testing HIV-positive decreased by 4.1%. A lower level of education and the presence of traditional beliefs were also significantly associated with testing HIV-positive.

5.1.3 HOPELESSNESS AND DEPRESSION

Thirty-two HIV-positive participants (20.5%) had a hopelessness score of greater than or equal to 9 on BHS at 72 hours after HIV diagnosis, and 32 (28.8%) had a score in this range at 6 weeks. These findings demonstrate an increase in hopelessness over 6 weeks; and importantly, many studies have shown that hopelessness correlates with the risk for suicide. One hundred and thirty HIV-positive participants (82.8%) were depressed according to the BDI scores at 72 hours after diagnosis, while 86 (78.2%) were depressed at 6 weeks. The average BDI scores were 15.20 and 14.23, respectively, at the two time-points. Pearson's correlation coefficients for the hopelessness and depression scores were 0.556 ($p<0.001$) at 72 hours and 0.625 ($p<0.001$) 6 weeks after diagnosis, illustrating a moderately positive correlation at both points.

Although research in high income countries has shown that suicidal patients are depressed (Cooper-Patrick L, *et al.*, 1994; Wolfersdorf M, 2008), the results in this study has shown an opposing trend where depression decreased over the 6 week period while suicidal ideation increased over the same period.

'My future looks dark' is the statement representing item 7 of BHS. The mean scores for this item were 0.561 at 72 hours and 0.421 at 6 weeks. At 72 hours, 28% of the respondents who endorsed this statement had a score sufficiently high and statistically significant ($p=0.002$) to predict suicidal ideation. At 6 weeks, 57% of the respondents endorsed this item, confirming a predisposition for suicidal ideation, with a statistically significant association ($p<0.001$).

Item 9 of BDI is represented by the following options: ‘I don’t have any thoughts of killing myself’, ‘I have thoughts of killing myself, but I would not carry it out’, ‘I would like to kill myself’ and ‘I would like to kill myself if I had the chance’. The mean scores for this item were 0.154 at 72 hours and 0.076 at 6 weeks. A significant association was shown between the responses to this item and suicidal ideation as defined by BHS (by the standard cut-off scores), with p -values of 0.036 and 0.008 at 72 hours at 6 weeks, respectively; 36% and 66% of the patients showed evidence of suicidal ideation on both item 9 of BDI and on BHS at both time-points.

The AUC of the ROC curve of the BDI scores used to predict suicidal ideation was 0.757 ($p<0.001$) at 72 hours and 0.788 ($p<0.001$) at 6 weeks, indicating that the BDI score was a good predictor of suicidal ideation, and proving the strong correlation between hopelessness, depression and suicidal ideation. These results support the evidence of previous studies (Chiles JA, *et al.*, 1989; Beck AT, *et al.*, 1993; Priester and Clum, 1992).

5.1.4 SUICIDE RISK SCREENING SCALE

A 14-item, self-administered scale (*section 3.3, Chapter Three*), developed from 11 items of BHS and 1 item from BDI, was used to screen for suicidal ideation in recently diagnosed HIV-infected persons. The cut-off score of 4 and above demonstrated 68% sensitivity and 64% specificity in predicting suicidal ideation. Ideally, the test should be more sensitive than specific to identify as many probable suicidal patients as possible, hence the basis of our rationale for maximising sensitivity in this analysis. The AUC in ROC analysis was 0.730 at baseline (95% CI 0.64 - 0.81) and 0.776 at 3 weeks (95% CI 0.68 - 0.87).

The validity of the SRSS was determined by comparing it with the accepted instrument for SUPRE-MISS. Using a cut-off score of 4, the sensitivity of the SRSS at baseline was 81% with a positive predictive value of 48%, a specificity of 47% and a negative predictive value of 80%. At

3 weeks, the sensitivity was 79%, the specificity 55%, the positive predictive value 44%, and the negative predictive value 82%. The overall Cronbach's alpha for the SRSS at baseline and at 3 weeks was 0.874 and 0.915, respectively, suggesting that the SRSS is a valuable screening tool for detecting suicidal ideation among patients attending VCT clinics.

5.1.5 BRIEF SUICIDE PREVENTIVE INTERVENTION

Twenty-four (38.7%) participants in the SPTC group were determined to have features of hopelessness at baseline; this was reduced to 5 (8.1%) participants after 72 hours, and increased to 11 (18.3%) after 6 weeks. The BSPI group showed a similar trend with 21 (32.8%) initially, 5 (7.8%) 72 hours later and 8 (12.7%) after 6 weeks. The direct suicide risk in both the SPTC and BSPI groups, respectively, was 11.5% and 10.9% at baseline, and 3.2% and 1.6% at 72 hours; none were suicidal at 6 weeks. Upon assessment of suicidal ideation among participants following SPTC ($n=37$) and BSPI ($n=32$) at the three time-points (baseline, 72 hours and 6 weeks after a positive HIV-test result), the intervention group showed a lower prevalence of suicidal ideation than the control group.

The crude incidence rate ratio for suicidal ideation for the intervention group was 0.80 (95% CI 0.52 - 1.23). Upon comparison of this ratio with that of the control group, the intervention was deemed protective against the incidence of suicidal ideation. There was a highly significant change from being positive (suicidal ideation) to negative (no suicidal ideation) from baseline to 72 hours thereafter. The BSPI was shown to be highly effective in reducing suicidal ideation, especially in the first 72 hours following a positive HIV diagnosis.

5.2 STUDY CONTRIBUTIONS

This study is the first of its kind conducted in South Africa. It has been invaluable in establishing baseline data on suicidal ideation in recently diagnosed HIV-positive persons in KwaZulu-Natal

Province. No research previously focused on assessing suicidal risk in HIV-positive persons with the objective of implementing an appropriate suicide preventive intervention.

This research saw the development of a self-administered, quick and simple screening scale to identify HIV-positive patients at high risk for suicidal ideation. The newly developed and tested SRSS may be used in under-resourced settings without the need for additional trained staff. It is easily scored (with TRUE=1 and FALSE=0), with an overall score of 4 and above indicative of a high risk for suicidal ideation. Many similar studies have shown the effectiveness of brief interventions for alcohol and drug abuse (Kypri *et al.*, 2008; Winters *et al.*, 2012).

The rationale of this research was to implement a BSPI immediately following a positive HIV diagnosis, as this would be the most opportune time to administer such an intervention. The implementation of a BSPI with the SPTC was shown to decrease suicidal ideation, particularly within the first 72 hours after conveyance of a positive HIV diagnosis. We can consider these first 72 hours as the ‘golden hours of suicide prevention’ in HIV-positive persons; all patients who are lost to follow-up would still have the benefit of suicide intervention. Particularly within the South African context, this is an absolute advantage.

In the resource-limited context of South Africa, suicide risk assessment and interventions are limited by a shortage of adequately trained healthcare professionals, suicide risk screening in general, and guidelines for suicide preventive interventions. HIV counsellors are typically responsible for pre- and post-test HIV counselling and psychosocial education, and they can easily be task-shifted to screen for suicide risk and provide suicide interventions. At a reasonable cost and with minimal training, this approach would see the effective reduction of suicidal ideation.

5.3 STUDY LIMITATIONS

Several limitations of this research warrant discussion. The overall study's generalisability needs to be considered. The sample sizes were not large and the overall study was confined to the post-HIV-test period, with the target part of the population being urban-based. Thus, the results should be interpreted with caution. Other variables which were not measured in the study could have affected the outcomes, e.g. there was no information on pre-existing psychiatric disorders, previous suicide attempts or family history of suicide, and this restricted more in-depth exploratory analyses. Furthermore, in some instances it may be considered more insightful to explore participants who have had related experiences with suicide, e.g. participants who have previously attempted suicide or who have previously had suicidal ideation. Although this may provide valuable insight into suicidal behaviour in general, generalisations would be more difficult to make if such participants formed the bulk of the study cohort.

It must be noted that suicide data is obtained from a research-based database, the South African National Injury Mortality Surveillance System (NIMSS) (NIMSS, 2007), and data from the Durban Parasuicide Study (PDS) (Schlebusch, 2004). These data bases are not accurate for many reasons and the NIMSS is biased towards the urban areas. South Africa post-1994, is presently updating its previously 4 data bases to compiling a single, comprehensive one. Therefore the national statistics are a rough estimate and should be interpreted with caution.

Although Beck's cognitive model has been confirmed by multiple studies, it has to be used with caution because the relationship among suicidal behaviour, depression, and hopelessness has been shown to be affected by the cultural, demographic, and psychological factors.

Weaknesses in the study design must be noted. In this context, the relationship between seropositivity, hopelessness, depression and ultimate suicide could not be assessed for ethical

reasons. An added limitation and due to ethical constraints, is that pre-test assessments were not done which would have strengthened the hypothesis testing.

The construction of the SRSS involved selecting items from two sub-scales, which were grouped and analysed as a single scale. Although the SRSS has potential to be utilised as a simple screening tool to detect suicidality in HIV-infected individuals, it needs to be further evaluated in future research. Moreover, challenges arose with the lack of a gold standard against which the SRSS could be validated. The SRSS assesses hopelessness as a mediator for suicidal ideation and therefore indirectly evaluates participants' views about their positive HIV diagnosis, although it would have been more useful to assess the participants' views on living with HIV directly. This information could form part of a clinical interview in future research.

Importantly, time is a consideration in determining outcome. In the intervention study, the follow-up period was only 6 weeks; consequently, it is uncertain as to whether the BSPI could sustain significant long-term outcomes. More rigorous, longitudinal and controlled studies need to be conducted to delve into this aspect of the intervention.

5.4 RECOMMENDATIONS AND FUTURE RESEARCH

This research is novel exploring the relationship between hopelessness, depression and suicidal ideation using a theoretical model based on Beck's cognitive model within a multicultural, HIV-infected cohort. It is recommended that further research into the structural relationships between depression, hopelessness, and suicidal ideation be evaluated as originally suggested.

The results from this research support the use of a SRSS and BSPI in HIV-positive persons following a positive HIV diagnosis. It is recommended that this should become routine comprehensive care.

Researchers agree that suicidal behaviour is a multifaceted and complex phenomenon. It is consequently important that researchers gain greater clarity concerning the length of time that an individual may be deemed to be at risk for suicidal ideation and behaviour following a traumatic event such as being diagnosed HIV-positive. In a review of 36 randomised controlled trials of screening and brief intervention for hazardous drinking, interventions were shown to be effective for 12 months or longer (Kypri K *et al.*, 2008). Longitudinal studies are therefore recommended to determine the effectiveness of screening and BSPIs for HIV-infected persons over various follow-up time periods.

It is further recommended that suicidal ideation should be explored with due consideration for additional variables, including: a family history of suicide; a past history of suicide attempts; specific personality traits; and the combination of risk and protective factors as determinants of suicidal ideation. Longitudinal studies are recommended to enable researchers to observe and differentiate between the variables that are more prevalent at different stages of the disease, as well as the impact of the introduction, and even discontinuation of ARVs on suicidal behaviour.

It is recommended that screening for suicide risk should include clinical interviews in addition to a questionnaire-based approach, especially for those patients who are deemed to be at high risk for suicidal behaviour. Comparative research encompassing these two screening approaches may provide invaluable insights into their effect on the intervention outcome.

For future evaluation of the BSPI, a clinical trial is recommended.

Going forward, further research should be embarked upon to explore suicidal behaviour in HIV-positive persons in the context of changing suicidal behaviour patterns and to explore other variables that may influence suicidal behaviour – especially in the milieu of ARV treatment, and considering that 2014 represents 10 years since the public sector rollout of antiretroviral therapy in South Africa.

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ANNEXURE ONE

SOCIODEMOGRAPHIC QUESTIONNAIRE (ENGLISH)

SOCIODEMOGRAPHIC QUESTIONNAIRE		Computer-generated No.:	
Age:			
Sex:	<input type="checkbox"/> Male	<input type="checkbox"/> Female	
Educational qualifications: (Tick v the highest qualification, where applicable)	<input type="checkbox"/>	Primary	
	<input type="checkbox"/>	Grade 8	
	<input type="checkbox"/>	Grade 10	
	<input type="checkbox"/>	Grade 12	
	<input type="checkbox"/>	Diploma (teaching/engineering)	
	<input type="checkbox"/>	Degree (BSc/BComm)	
	<input type="checkbox"/>	None	
Occupation:	<input type="checkbox"/>	Unemployed	
	<input type="checkbox"/>	Scholar	
	<input type="checkbox"/>	Unskilled (gardener/painter)	
	<input type="checkbox"/>	Skilled (technical/diploma)	
	<input type="checkbox"/>	Professional (university degree)	
	<input type="checkbox"/>	Pensioner	
	<input type="checkbox"/>	Other	
Marital status:	<input type="checkbox"/>	Married	
	<input type="checkbox"/>	Single	
	<input type="checkbox"/>	Divorced	
	<input type="checkbox"/>	Living together with a partner	
Cultural group:	<input type="checkbox"/>	Zulu	
	<input type="checkbox"/>	Xhosa	
	<input type="checkbox"/>	Hindu	
	<input type="checkbox"/>	Muslim	
	<input type="checkbox"/>	Christian	
	<input type="checkbox"/>	Other	
If other then specify:			

SOCIODEMOGRAPHIC QUESTIONNAIRE (ISIZULU)

UHLA LWEMIBUZO		Computer-generated No.:		
Iminyaka yobudala:				
Ubulili:		<input type="checkbox"/> Owesilisa	<input type="checkbox"/>	<input type="checkbox"/> Owesifazane
Izinga lemfundo: (Bhala uphawu v kwibanga lemfundo owalizuza)		<input type="checkbox"/> Primary		
		<input type="checkbox"/> Grade 8		
		<input type="checkbox"/> Grade 10		
		<input type="checkbox"/> Grade 12		
		<input type="checkbox"/> Diploma (teaching/engineering)		
		<input type="checkbox"/> Degree (BSc/BComm)		
		<input type="checkbox"/> None		
Umsebenzi owenzayo:		<input type="checkbox"/> Unemployed		
		<input type="checkbox"/> Scholar		
		<input type="checkbox"/> Unskilled (gardener/painter)		
		<input type="checkbox"/> Skilled (technical/diploma)		
		<input type="checkbox"/> Professional (university degree)		
		<input type="checkbox"/> Pensioner		
		<input type="checkbox"/> Other		
Ushadile/awushadile:		<input type="checkbox"/> Ushadile		
		<input type="checkbox"/> Awushadile		
		<input type="checkbox"/> Wehlukanisile		
		<input type="checkbox"/> Uhlala ndawonye nomlingani		
Uhlanga:		<input type="checkbox"/> Zulu		
		<input type="checkbox"/> Xhosa		
		<input type="checkbox"/> Hindu		
		<input type="checkbox"/> Muslim		
		<input type="checkbox"/> Christian		
		<input type="checkbox"/> Other		
Isizathu sakho sokufuna ukuhlolwa nokwelulekw:				

ANNEXURE TWO

BECK'S HOPELESS SCALE (ENGLISH)

HOPELESSNESS SCALE	Computer-generated No.:	
<p>This questionnaire consists of twenty statements (sentences). Please read the statements carefully one by one and answer them. If this statement describes your attitude <i>for the past week, including now</i>, write down 'T' in the block provided. If the statement is false for you, write 'F' in the block provided. You do not have to answer questions to which you do not want to respond.</p>		
Statement		T or F
1. I look forward to the future with hope and enthusiasm		
2. I might as well give up because there's nothing I can do about making things better for myself		
3. When things are going badly, I am helped by knowing that they can't stay that way forever		
4. I can't imagine what my life would be like in ten years		
5. I have enough time to accomplish the things I most want to do		
6. In the future I expect to succeed in what concerns me most		
7. My future seems dark to me		
8. I happen to be lucky and I expect to get more of the good things in life than the average person		
9. I just don't get the breaks, and there's no reason to believe that I will in the future		
10. My past experiences have prepared me well for my future		
11. All I can see ahead of me is unpleasantness rather than pleasantness		
12. I don't expect to get what I really want		
13. When I look ahead to the future, I expect I will be happier than I am now		
14. Things just won't work out the way I want them to		
15. I have great faith in the future		
16. I never get what I want so it's to want anything		
17. It is very unlikely that I would get any real satisfaction in the future		
18. The future seems vague and uncertain to me		
19. I can look forward to more good times than bad times		
20. There's no use in really trying to get something I want because I probably won't get it		

SCORING																																								
<p>One point is scored each time the respondent endorses the item in the following ways: (maximum total = 20)</p>																																								
<table border="1"> <tbody> <tr><td>1.</td><td>T</td></tr> <tr><td>2.</td><td>T</td></tr> <tr><td>3.</td><td>F</td></tr> <tr><td>4.</td><td>T</td></tr> <tr><td>5.</td><td>F</td></tr> <tr><td>6.</td><td>F</td></tr> <tr><td>7.</td><td>T</td></tr> </tbody> </table> <table border="1"> <tbody> <tr><td>8.</td><td>F</td></tr> <tr><td>9.</td><td>T</td></tr> <tr><td>10.</td><td>F</td></tr> <tr><td>11.</td><td>T</td></tr> <tr><td>12.</td><td>T</td></tr> <tr><td>13.</td><td>F</td></tr> <tr><td>14.</td><td>T</td></tr> </tbody> </table> <table border="1"> <tbody> <tr><td>15.</td><td>F</td></tr> <tr><td>16.</td><td>T</td></tr> <tr><td>17.</td><td>T</td></tr> <tr><td>18.</td><td>T</td></tr> <tr><td>19.</td><td>F</td></tr> <tr><td>20.</td><td>T</td></tr> </tbody> </table>	1.	T	2.	T	3.	F	4.	T	5.	F	6.	F	7.	T	8.	F	9.	T	10.	F	11.	T	12.	T	13.	F	14.	T	15.	F	16.	T	17.	T	18.	T	19.	F	20.	T
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18.	T																																							
19.	F																																							
20.	T																																							
<p>0 – 3: None or minimal 4 – 8: Mild 9 – 14: Moderate (May not be in immediate danger, but requires frequent regular monitoring. Is the life situation stable?). 15+: Severe (definite suicidal risk)</p>																																								

BECK'S HOPELESS SCALE (ISIZULU)

NGAPHAMBI KOKUHLOLWA I HIV		
ISILINGANISO SOKUPHELELWA I THEMBA	Computer-generated No.:	
<p>Loluhla lwemibuzo lunemisho engu 20. Funda umusho ngamunye ngokucophelela, uwuzwisise. Uma umusho uchaza indlela obuzizwa ngayo kuleliviki kuhlanganisa namanje bhala u "T" esikweleni esiqondene. Uma umusho ungelona iqiniso kuwe bhala u "F" esikweleni esiqondene.</p>		
Statement		T or F
1. Ngilangazelela ikusasa ngethemba nokuzimisela		
2. Kungcono ngikhohlwe ngoba akukho engingakwenza ukwenza izinto zibengcono		
3. Uma izinto zingahambi kahle, ngisizwa ukwazi ukuthi ngeke zihlale zinjalo		
4. Angazi ukuthi impilo yami yobe injani esikhathini esiyiminyaka elishumi		
5. Nginesikhathi esenele sokwenza izinto engifisa ukuzenza		
6. Ngizimisele ukwenza konke engifisa ukukwenza		
7. Ikusasa alicacile kimina		
8. Nginenhlanhla futhi ngilindele ukuba nazozonke izinto ezinhle empilweni kunanoma yimuphi umuntu		
9. Angiphumeleli futhi alikho ithemba lokuthi ngiyoke ngiphumelele		
10. Izinto esezenzekile zingilungiselele ikusasa		
11. Ngibona ikusasa linokunganami kunokunama		
12. Angilindele ukuthola engikufuna ngempela		
13. Uma ngibuka ikusasa ngilindele ukuthokoza kunamanje		
14. Izinto ngeke zilunge ngendlela engilindele ngayo		
15. Nginethemba elikhulu ngekusasa		
16. Angikaze ngikuthole engikufunayo ngakho angeke ngifune lutho		
17. Ngeke ngikuthole ukweneliseka ngomuso		
18. Ikusasa alisho lutho kimi futhi alinasiqiniseko		
19. Ngilindele izikhathi ezimnandi kunezimbi		
20. Akusizi ukuzama ukuthola engikufunayo ngoba ngeke ngikuthole		

ANNEXURE THREE

BECK'S DEPRESSION INVENTORY (ENGLISH)

Please read each group of statements carefully. Then pick out the one statement in each group that best represents *the way you feel right now*. **This questionnaire will take about 20 minutes to fill. Should you not wish to answer any questions, you have the option not to do so.**

1. I do not feel sad
 2. I feel sad
 3. I am sad all the time and I can't snap out of it
 4. I am so sad or unhappy that I can't stand it
-
1. I am not particularly discouraged about the future
 2. I feel discouraged about the future
 3. I feel I have nothing to look forward to
 4. I feel that the future is hopeless and that things cannot improve
-
1. I do not feel like a failure
 2. I feel I have failed more than the average
 3. As I look back on my life, all I can see is a lot of failures
 4. I feel I am a complete failure as a person
-
1. I get as much satisfaction out of things as I used to
 2. I don't enjoy things the way I used to
 3. I don't get real satisfaction out of anything anymore
 4. I am dissatisfied or bored with everything
-
1. I do not feel guilty
 2. I feel guilty a good part of the time
 3. I feel guilty most of the time
 4. I feel guilty all the time
-
1. I don't feel I am being punished
 2. I feel I may be punished
 3. I expect to be punished
 4. I feel I am being punished
-
1. I don't feel disappointed in myself
 2. I am disappointed in myself
 3. I am disgusted with myself
 4. I hate myself
-
1. I don't feel I am worse than anyone else
 2. I am critical of myself for my weaknesses or mistakes
 3. I blame myself all the time for my faults
 4. I blame myself for everything bad that happens
-
1. I don't have any thoughts of killing myself
 2. I have thoughts of killing myself, but I would not carry it out
 3. I would like to kill myself
 4. I would like to kill myself if I had the chance
-
1. I don't cry any more than usual
 2. I cry more than I used to
 3. I cry all the time now
 4. I used to be able to cry, but now I can't cry even though I want to

1. I am no more irritated now than I ever am
 2. I get annoyed and irritated more easily than I used to
 3. I feel irritated all the time now
 4. I don't get irritated at all by the things that used to irritate me
-
1. I have not lost interest in other people
 2. I am less interested in other people than I used to be
 3. I have lost most of my interest in other people
 4. I have lost all my interest in other people
-
1. I make decisions as well as I ever did
 2. I put off making decisions more than I used to
 3. I have greater difficulty in making decisions than before
 4. I can't make decisions at all anymore
-
1. I don't feel I look any worse than I used to
 2. I am worried that I am looking old or unattractive
 3. I feel that there are permanent changes in my appearance that makes me look unattractive
 4. I believe I look ugly
-
1. I can work as well as before
 2. It takes an extra effort to get started at doing something
 3. I push myself very hard to do anything
 4. I can't do any work at all
-
1. I can sleep as well as usual
 2. I don't sleep as well as I used to
 3. I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
 4. I wake up several hours earlier than I used to and cannot get back to sleep
-
1. I don't get more tired than usual
 2. I get more tired than I used to
 3. I get tired from doing almost anything
 4. I am too tired to do anything
-
1. My appetite is no worse than usual
 2. My appetite is not as good as it used to be
 3. My appetite is much worse now
 4. I have no appetite at all anymore
-
1. I haven't lost weight, if any lately
 2. I have lost more than 5 kilograms
 3. I have lost more than 10 kilograms
 4. I have lost more than 15 kilograms
-
1. I am purposely trying to lose weight
- ☐ Yes
 ☐ No
-
1. I am no more worried about my health than usual
 2. I am worried about physical problems such as diarrhoea, vomiting, pains
 3. I am very worried about physical problems and it's hard to think of much else
 4. I am so worried about physical problems, that I cannot think of anything else
-
1. I have not noticed any recent change in my interest in sex
 2. I am less interested in sex than I used to be

- | |
|--|
| 3. I am much less interested in sex now
4. I have lost interest in sex completely |
|--|

SCORING

The individual statements are scored from 0 to 3 and the sum total ranging from 0 to 63.
--

0 – 9: Not depressed

10 – 15: Mildly depressed

16 – 24: Moderately depressed

25+: Severely depressed

NGEMUVA KOKUHLOLWA I HIV

Funda lamaqoqo emisho alandelayo bese ukhetha umusho osho indlela **ozozwa ngayo njengamanje**

1. Angidangele
 2. Ngidangele
 3. Ngihlezi ngidangele, akupheli
 4. Ngidangele kakhulunoma angijabule angikwazi ukubekezela
-
1. Angilahlekelwe yithemba ngekusasa
 2. Ngilahlekelwe yithemba ngekusasa
 3. Ngizwa ngingenanto engingayilangazelela
 4. Ngibona ikusasa lingenathemba nobungcono angiboni buzobakhona
-
1. Angiziboni ngiyisahluleki
 2. Ngizibona ngihluleke ngokweqile
 3. Uma ngibuyela emuva nempilo yami,ngibona ukwehluleka kodwa
 4. Ngizibona ngiyisehluleki
-
1. Ngithola ukweneliseka njengakuqala
 2. Angizenameli izinto njengakuqala
 3. Angikutholi ukweneliseka kunoma yini njengakuqala
 4. Angenelisekile ngako konke
-
1. Ngizizwa nginecala
 2. Ngizizwa nginecala isikhathi esiningana
 3. Ngizizwa nginecala isikhathi esiningi
 4. Ngizizwa nginecala ngasosonke isikhathi
-
1. Angiboni ukuthi ngiyajeziwa
 2. Kungenzeka ukuthi ngiyajeziwa
 3. Ngilindele ukujeziwa
 4. Ngizwa sengathi ngiyajeziwa
-
1. Angiphoxekile ngami
 2. Ngiphoxekile ngami
 3. Ngenyanyile ngami
 4. Ngiyazizonda
-
1. Angiboni ngimubi ukwedlula wonke umuntu
 2. Ngiyazishaya ngobuthaka bami namaphutha
 3. Ngiyazisola ngamaphutha ami
 4. Ngiyazisola ngakokonke okubi okwenzekayo
-
1. Angicabangi ukuzibulala
 2. Ngiyacabanga ukuzibulala, kodwa kunzima ukukwenza lokho
 3. Ngifisa ukuzibulala
 4. Ngingathanda ukuzibulala uma nginethuba
-
1. Angikhali ngokweqile kokujwayelekile
 2. Ngikhala ngokudlulela kunakuqala
 3. Sengihlala ngikhala
 4. Ngangikwazi ukukhala, kodwa manje angisakwazi nakuba ngifuna
-
1. Angicasukile manje kunokujwayelekile
 2. Ngicasuka kalula kunakuqala
 3. Ngihlala ngicasukile manje
 4. Angisacasulwa yizinto ezazingicasula kuqala

1. Angisabakhathalele abanye abantu
 2. Angisabakhathalele njengakuqala abanye abantu
 3. Sengilahlekelwe okuningi ukukhathalela abantu
 4. Sengilahlekelwe yiko konke ukukhathalela abanye abantu
-
1. Ngithatha izinqumo ezingcono kunakuqala
 2. Ngihlehlisa ukuthatha izinqumo ngaphezu kwakuqala
 3. Ngithola kunzima ikuthatha izinqumo kunakuqala
 4. Angisakwazi ukuthatha izinqumo
-
1. Angizizwa ngibukeka kabi kunakuqala
 2. Ngiphatheke kabi ukuthi sengibukeka ngigugile ngingakhangisi
 3. Ngicabanga ukuthi kunezinguqoko ezingqala ezingenza ngingabukeki
 4. Ngikholwa ukuthi ngibukeka ngimubi
-
1. Ngisengasebenza njengakuqala
 2. Sekubanzima ukuqala ukwenza nomayini
 3. Ngiyazabalaza ukwenza noma yini
 4. Angikwazi ukusebenza nhlobo
-
1. Ngisalala kahle njengokujwayelekile
 2. Angisalali njengokujwayelekile
 3. Ngivuka kusasele amahora angu 1-2 kunokujwayelekile kungabe kusalaleka
 4. Ngivuka kusasele amahora ambalwa kungabe kusalaleka
-
1. Angikhathali ngokudlula okujwayelekile
 2. Ngikhathala ngokudlula okujwayelekile
 3. Ngikhathazwa ukwenza cishe noma yini
 4. Ngikhathele angikwazi kwenza lutho
-
1. Angisakuthandi kakhulu kunakuqala ukudla
 2. Angisakuthandi njengakuqala ukudla
 3. Angisakuthandi kakhulu ukudla manje
 4. Angisakuthandi kwasampela ukudla
-
1. Asikehli isisindo sami
 2. Isisindo sami sehle ngokungaphezulu kuka 5 kg
 3. Isisindo sami sehle ngokungaphezu kuka 10 kg
 4. Isisindo sami sehle ngokungaphezulu kuka 15 kg
-
1. Ngizama ukwehlisa isisindo sami
- ☐ Yes
 ☐ No
-
1. Angisayikhathalele ampilo yami njengakuqala
 2. Ngiphatheka kabi uma ngicabanga ngezifo ezinjenge diarrhea, ukubuyisa, izinhlungu
 3. Ngiphatheka kabi uma ngicabanga ngezifo kulukhuni ukucabanga okunye
 4. Ngiphatheka kabi kakhulu uma ngicabanga ngezifo ngendlela yokuthi angikwazi ukucabanga enye into
 1. Angikaluboni ushintsho ekuthandeni kwami ucansi
 2. Angisalukhathalele njengakuqala ucansi
 3. Angisenandaba kakhulu nocansi
 4. Angisaluthandi sampela ucansi

ANNEXURE FOUR

PATIENT INFORMATION SHEET (ENGLISH)

Study title: Suicidal ideation in patients with HIV/AIDS following voluntary counselling and testing

Principal investigator: Dr R D Govender

Telephone No: 031-260 4485

GREETING

I am Dr Govender and I am presently doing research to find out if any patients who are HIV-positive have thoughts of suicide. Research is just a process to learn the answer to a question and to determine whether there is a link between suicidal behaviour and HIV positivity.

While awaiting your test you will be asked to complete one questionnaire about yourself. You will be asked to return after 72 hours and again at 6 weeks to complete some questionnaires. Although you will be asked to return after 72 hours and again at 6 weeks, should you be agreeable to be interviewed telephonically, this can easily be arranged. Other than your request for a HIV test, no additional tests will be performed. The initial interview should last about 30 minutes and the subsequent interviews should last about 45 minutes. There will be many other patients who will be interviewed as well.

Voluntary counselling and testing (VCT) will include pre- and post-test counselling. This will be conducted by the VCT Counsellor at the King Edward VIII VCT clinic.

YOUR PARTICIPATION IS VOLUNTARY

Your participation is entirely voluntary. You can refuse to answer any questions that you find too embarrassing or personal. Please note you are free to decline to participate or withdraw at any time from the study without suffering any disadvantage or prejudice to you as a patient or to your treatment.

CONFIDENTIALITY

The information you share with me is confidential and you will be identified in the research by a computer-generated number. No person will be able to link your name with this computer-generated number. Once you understand the study and agree to participate, you will be asked to sign a consent form. You should not agree to take part unless you are completely happy with the study and that you have understood the information given to you. The informed consent form will be locked away in a cupboard that will be accessible to the researcher only. No personal information will be disclosed, unless required by the law or if the Ethics Committee requests this information.

RISKS AND/OR DISCOMFORTS

There are no risks to participating in this study. You may be embarrassed, worried or anxious by some of the questions; please remember that you can refuse to answer any questions that you find too embarrassing or personal.

BENEFITS

This study may not help you directly, but may help others in the future. This study may help doctors and other health professionals to render counselling more able to assist other people living with HIV/AIDS. The results of this study will be published.

COST OF THE STUDY

There is no cost to you to take part in the study. As you will be requested to come within 72 hours and again at 6 weeks, you will be given a fee of R60.00 per visit to cover travelling expenses; or, should you wish to have the interview done telephonically, the telephone expense will be borne by the researcher.

COMPENSATION

You will not receive any financial compensation for taking part in this study.

CONSENT

You are required to sign a consent form if you agree to participate in this study.

LANGUAGE

NB. A translation into the home language of the patient will also be provided where subjects are isiZulu-speaking.

CONTACT DETAILS OF RESEARCHER(S)

For further information/reporting of study-related adverse events:

Dr R D Govender 031-260 4485

PATIENT INFORMATION SHEET (ISIZULU)

Isihloko socwaningo: Ukuziphatha ngokuyela ngasekuzibulaleni kwbahaqwe yigciwane lesandulela ngculazi kanye nengculazi

Umcwaningi omkhulu: Dr R D Govender

Telephone No: 031-260 4485

ISANDULELO

Ngingu Dr Govender kanti njengamanje ngenza ucwaningo ngokuthi bangaki abane HIV/AIDS asebeke bazama ukuzibulala, nokuthiyini eyenza abantu bafune ukuzibulala. Ucwaningo luyindlela yokufunda impendulo yombuzo

Ngesikhathi ulindele imiphumela uzocelwa ukuba ugcwalise amaphepha anemibuzo ehlukeni amathathu. Uyocelwa ukuba ubuye emva kwamahora angu-72, nasemva kwamaviki ayisithupha ukuze ugcwalise amaphepha anemibuzo. Nakuba uyocelwa ukuba ubuye emva kwamahora angu-72 nasemva kwamaviki ayisithupha, uma uvumelana nokubuzwa imibuzo ocingweni, lokho kungahlelwa kalula. Ngaphandle kwesicelo sakho sokuhlolwa igciwane le-HIV, akukho okunye ukuhlolwa okuyokwenziwa. Ukuphenywa ngemibuzo kokuqala kuyothatha imizuzu angu-30, bese kuthi okulandelayokuthathe imizuzu engango-45. Baningi nabanye abayophenywa ngemibuzo.

UKUBAMBA KWAKHO IQHAZAAKUPHOQELEKILE:

Ukubamba kwakho iqhaza akuphoqelekile. Ungenqaba ukuphendula imibuzo oyithola inganambithisiseki kuwe. Qaphela ukuthi ukhululekile ukwenqaqba ukubamba iqhaza noma ukuphuma kuloluphenyo noma nini, ngaphandle kokulahlekelwa yilungelo lakho lokuthola imishanguzo.

UKUBAYIMFIHLO

Ulwazi onginika lona luyimfihlo kanti uyokwaziwa ocwaningweni kuphela ngenombolo eyokhishwa yi-computer. Akekho oyokwazi ukweyamanisa lenombolo negama lakho. Uma sewazi ngocwaningo, futhi uvuma ukubamba iqhaza, uyocelwa ukuba usayine ifomu elisho ukuthi uyavuma. Ungavumi ukubamba iqhaza ngaphandle kokuba uluthokozela lolucwaningo nolwazi olunikiwe uluzwisisa kahle. Ifomu lokuvuma liyovalelwa endaweni aphephile, kube umcwaningi kuphela oyofinyelela kulo. Ulwazi ngawe ngeke ludalulwe ngaphandle uma loku kufunwa ngumthetho noma yiKomidi Elibhekele ukuziphatha. Uma usitshela ukuthi kungenzeka ukuthi wadlwengulwa, umcwaningi uphoqwa ngumthetho ukuba akwazise ukuthi lokho ngeke kube yimfihlo, ukuze kungaphindi kwenzeke lokho, noma uma kushushiswa lowo owenze lesosenzo. Umcwaningi uphoqwa ngumthetho nendlela yokuziphatha ukuba abike ukudlwengulwa kwabomthetho, nawe akweluleke ukuba wenze njalo.

UBUNGOZI KANYE/NOMA UKUNGAPHATHI KAHLE

Abukho ubungozi akubeni kulolucwaningo. Eminye yemibuzo ingenza ube namahloni noma uphatheke kabi kodwa ukhumbule ukuthi ungenqaba ukuphendula imibuzo ekuphatha kabi.

OKUZUZAYO

Lolucwaningo kungenzeka lungakusizi wean ngqo, kodwa lungabasiza abanye ngomuso. Lolucwaningo lungabasiza odokotela nabanye ongoti amkhakheni wezeMpilo ukuba benze ukweluleka kube ngcono kusizakale abahaqwe yigciwane le HIV/AIDS. Imiphumela yocwaningo iyoshicilelwa.

UKUBIZA KOCWANINGO

Ukubamba iqhaza kulolucwaningo kumahhala. Njengoba uyocelwa ukuba ubuye esikhathini esingamahora angu-72 kanye nasesikhathini esingamaviki ayisithupha, uyokhokhelwa imali engu-R60.00 yohambo, noma uma ufisa ukuphenywa ngemibuzo ngocingo, izindleko zocingoziyobhekana nomcwaningi.

UMVUZO

Ayikho imali oyokhokhelwa yona ngokubamba iqhaza kulolucwaningo.

Kulindeleke ukuba usayine ifomu lokuvuma , uma uvuma ukubamba iqhaza kulolucwaningo.

ANNEXURE FIVE

CONSENT DOCUMENT (ENGLISH)

Study title: Suicidal ideation in HIV-positive patients following voluntary counselling and testing

Consent to Participate in Research

You have been asked to participate in a research study.

You have been informed about the study by **DR R D GOVENDER**

You have been informed about any available compensation or medical treatment if injury occurs as a result of study-related procedures.

You may contact **D R R D GOVENDER** at **031-260 4485** during office hours if you have questions about the research or if you are injured as a result of the research.

You may contact the **Biomedical Research Office** at the Westville Campus on **031-260 4769 or 031-260 4553** if you have questions about your rights as a research subject.

Your participation in this research is voluntary, and you will not be penalised or lose benefits if you refuse to participate or decide to stop.

If you agree to participate, you will be given a signed copy of this document and the participant information sheet, which is a written summary of the research.

The research study, including the above information, has been described to me orally. I understand what my involvement in the study means and I voluntarily agree to participate.

Signature of participant

Date

Signature of witness
(Where applicable)

Date

Signature of translator
(Where applicable)

Date

NB: A translation into the home language of the patient will also be provided for isiZulu-speaking subjects.

CONSENT DOCUMENT (ISIZULU)

IFOMU LOKUVUMA

Isihloko socwaningo: Ukuziphatha ngokuyela ngasekuzibulaleni kwabane HIV/AIDS

Ukuvuma ukubamba iqhaza ocwaningweni

Uceliwe ukba ubambe iqhaza ocwaningweni.

Wazisiwe ngocwaningo ngu **DR R D GOVENDER**.

Wazisiwe ngesinxephezelo esingakhona noma ukwelashwa uma kungakhona ukulimala okwenzeka ngenxa yenqubo ehambisana nocwaningo.

Ungaxhumana no **DR R D GOVENDER** kulenombolo **031-260 4485** (ngamahora okusebenza) uma unemibuzo noma uma ulimele ngenxa yocwaningo.

Ungaxhumana **neMedical Research Office** eNelson R Mandela School of Medicine kulenombolo **031-260 4769 / 031-260 4553** uma unemibuzo ngamalungelo akho njengomuntu osocwaningweni.

Ukubamba iqhaza kwakho kulolucwaningo akuphoqelekile futhi ngeke ujeziswe noma ulahlekelwe uma wenqaba ukubamba iqhaza noma uyeka sewuqalile.

Uma uvuma ukubamba iqhaza uyonikezwa iphepha elifana naleli elisayiniwe nephepha elinika ulwazi kobambe iqhaza, eliwucwaningo ngokufingqiwe.

Ngichazelwe ngocwaningo kubandakanya nolwazi olungenhla. Ngiyazi ukuthi ukubamba kwami iqhaza ocwaningweni kusho ukuthi ngizivumela ngokwami ukubamba iqhaza.

Isignesha yobamba iqhaza

Date

**Isignesha kafakazi
(Uma ekhona)**

Date

**Isignesha yimhumushi
(Uma ekhona)**

Date

