THE PREVALENCE OF TRAUMATIC EVENTS, POSTTRAUMATIC STRESS DISORDER AND POSTTRAUMATIC STRESS SYMPTOMS AMONG PEOPLE SEEKING HIV TESTING

by
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Declaration

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Abstract

No previous studies have investigated the prevalence of traumatic events, Posttraumatic Stress Disorder (PTSD) and PTSD symptoms in HIV test seekers, and very few published studies in South Africa have used a structured clinical interview to measure these constructs. Despite there being a high prevalence of PTSD associated with persons living with HIV, little is known about the occurrence of the disorder amongst people seeking HIV testing. This study undertook a cross-sectional approach amongst individuals who enrolled for an HIV test at several testing centres in the Cape Town region. PTSD was assessed with the Structured Clinical Interview for the DSM (SCID) which was administered by trained researchers. In addition, a PTSD self-report scale was administered to the participants (PTSD Symptom Scale Self-Report version [PSS-SR]). Overall, the prevalence of traumatic events was 62.6%. Of the 493 participants, only 4.4% of the total sample fulfilled current for PTSD. The majority of the participants (60.5%) reported mild to moderate symptom severity.

The first aim of this study was to determine prevalence rate of traumatic events and PTSD among people seeking HIV testing. The second aim was to determine PTSD symptoms in the same sample of people seeking an HIV test. The third aim was to determine the optimal cut-off scores on the PTSD Symptom Scale using the SCID as the gold standard, using a Receiver Operator Characteristic curve (ROC) analysis

The PSS-SR demonstrated excellent sensitivity and specificity in identifying SCID defined PTSD (area under the receiver operator characteristic curve, 0.86). This finding suggests that the PSS-SR is robust measure for assessing PTSD caseness.

The current study's findings suggest that exposure to traumatic events does not necessarily lead to a diagnosis of PTSD but may make individuals susceptible to PTSD symptoms.

Opsomming

Die voorkoms van traumatiese gebeure, Posttraumatiese Stresversteuring (PTSV) en PTSV simptome by MIV toets-soekers is nog nie vantevore bestudeer nie. Baie min gepubliseerde studies in Suid-Afrika het gestruktureerde kliniese onderhoude gebruik om die voorafgenoemde te bepaal. Ten spyte van ’n hoë voorkoms van PTSV geassosieerde persone met MIV is daar min bekend oor die voorkoms van PTSV by MIV toets-soekers. Hierdie studie het gebruik gemaak van ’n deursnitarea aanslag om PTSV van individue by verskeie MIV toetssentrums in die Kaapstad omgewing te bepaal. PTSV is deur omgeleide navorsers bepaal deur middel van die *Structured Clinical Interview for the DSM (SCID).* Die PTSV self-verslag maatstaf, *PTSD Symptom Scale Self Report (PSS-SR)* is ondermeer ook gebruik. Die algehele voorkoms van traumatiese gebeure was 62.6%. Slegs 4.4% van die totale steekproef (n = 493) het aan PTSV voldoen. Die meerderheid van die deelnemers (60.5%) het ligte tot gemiddelde simptoom erns getoon.

Die hoof doelwitte van hierdie studie was om te bepaal wat die voorkoms van traumatiese gebeure en PTSV by MIV toets-soekers is. Tweedens is die PTSV simptome van dieselfde steekproef bepaal.

Die PSS-SR toon uitstekende sensitiwiteit en spesifisiteit by die identifisering van SCID gedefinieerde PTSV (die area onder die ontvanger operateur kenkromme = 0.86). Dit wil voorstel dat die PSS-SR ’n robuuste maatstaf van PTSV voorkoms is.

Die huidige studie se resultate suggereer dat die blootstelling aan traumatiese gebeure nie noodwendig na ’n PTSV diagnose lei nie. Nietemin maak dit individue meer vatbaar vir PTSV simptome. In die algemeen is dit duidelik dat die toetsing van PTSV en die behandeling daarvan ’n baie belangrike aspek van die identifisering en bestuur van individue met PTSV, veral by fasiliteite met skaars hulpbronne, is.

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Dedication

To my dad, mom and brother, you are everything to me.

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Definition of Terms

Posttraumatic Stress Disorder (PTSD) is a psychiatric disorder that occurs as a result from exposure to a traumatic event.

Trauma refers to direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate.

Specificity refers to the proportion of people without the disease who will have a negative result.

Sensitivity refers to the proportion of people with the disease who will have a positive result.

Receiver Operator Characteristic (ROC) curve analysis is a graph of sensitivity vs. 1 – specificity. It is used to determine a cut-off value for a clinical test.

False positive result indicates that a person has a specific disease or condition when the person actually does not have it.

False negative is a test result that indicates a person does not have a disease or condition when the person actually does have it.

Positive predictive values (PPV) of a test is the proportion of people with a positive test result who actually have the disease

Negative predictive values (NPV) of a test is the proportion of people with a negative test result who do not have disease.

Chapter 1: Introduction

This chapter outlines the research problem and provides a background to, and context for the study. This chapter addresses the knowledge gap within the field of Posttraumatic Stress Disorder among those who are seeking an HIV test in the South African context. This chapter concludes with the rationale, the aims and the outline of this thesis.

1.1. The Research Problem and Focus

Seeking an HIV test has become standard procedure in many parts of South Africa. Numerous studies have thus far linked receiving a positive HIV result with traumatisation and psychopathology (Beckerman & Auerbach, 2010; Young, 2011). However, far too little attention has been paid to the prevalence and incidence of psychological distress in the form of Posttraumatic Stress Disorder (PTSD) among individuals seeking HIV testing. While the disorder has appeared to be common amongst people living with HIV (Olley, Zeier, Seedat, & Stein, 2005), relating a diagnosis of PTSD to the distressing experience of an HIV diagnosis is questionable.

PTSD has a high prevalence rate in South Africa and can be triggered by various traumatic events. As a result, many health professionals and researchers have become increasingly interested in studying the phenomenon. Moreover, the country is reported to having a considerable number of people living with HIV than any other country in the world (Kalichman et al., 2005). In the same vein, Olley et al. (2005) found that although PTSD prevalence rates are significantly high in the general population, similar rates can be found amongst persons living with HIV in South Africa.

The literature suggests that almost 20% of the population are diagnosed as HIV/AIDS positive (UNAIDS, 2013), and approximately 30-60% have PTSD. In fact, the highest prevalence of HIV-related PTSD is documented in a study conducted by Martin and Kagee

(2011). In their study of 85 recently diagnosed HIV persons, Martin and Kagee (2011) found that 40% of their study population met criteria HIV-related PTSD. In their six month follow-up study, Olley, Seedat and Stein (2004) reported the prevalence of HIV-related PTSD to be 20% in their sample. In another sample of recently diagnosed HIV positive persons, 30% were reported to have met criteria for PTSD (Kelly et al., 1998). However, all the above-mentioned studies have examined the prevalence of PTSD in people already diagnosed with an HIV positive result, and did not account for the prevalence of PTSD prior to testing.

The current study sought to address the following issues. First, there is a lack of data about the baseline prevalence estimates of PTSD in people seeking HIV testing. It is unknown whether these individuals had a mental disorder prior to receiving an HIV test. Second, little is known about the use of commonly-used screening measures to identify cases of PTSD among HIV test seekers. In addition, literature on the positive and negative predictive values and the optimal cut-off points of the measures amongst our study population is not known.

1.2. The Research Rationale and Significance

The current study focused on aspects of PTSD that the literature overlooked, which could have significant implications for public mental health. Given the nature of trauma exposure (Edwards, 2005) and the high numbers of people living with HIV within South African communities, it has become necessary for research to focus on the negative impact both phenomena have on mental health. With PTSD and HIV increasingly being recognised as serious public health concerns, it would be necessary to record the number of people with undetected and untreated PTSD as this could have significant implications for public mental health services, and for treatment and planning interventions.

South Africa, which in the context of this study, is generally lagging in the area of access to mental health. The communities under study have few psychiatric amenities,

presents with under-resourced and under-staffed clinics or HIV testing centre. The study area is a peri-urban regions in the Western Cape, with a high prevalence of risk factors associated with PTSD development such as crime, violence alcohol and substance use. Many of the community members are faced with both psychological and psychosocial challenges (e.g. poverty, constant loss of loved ones, etc.), as well as high risk behaviours that elevate risk to HIV infection and could greatly affect their mental health in the long run.

Data from this study would have implications for policy and contribute to the development of planning and implementation of future interventions. A noteworthy policy implication is that the current study would provide evidence that could propel the government to pay greater attention to the psychosocial factors affecting the mental health of individuals within these communities, particularly those seeking HIV testing

1.3. The Aims and Objectives

The major objective of this study was to determine the prevalence of traumatic events, posttraumatic stress disorder and posttraumatic stress symptoms as measured by the Structured Clinical Interview for the DSM among people seeking HIV testing. Another aim of the study was to determine the specificity, sensitivity, and positive and negative predictive values of the PTSD Symptom Scale in predicting posttraumatic stress disorder caseness among individuals seeking HIV testing. By testing the utility of the PTSD Symptom Scale in determining PTSD caseness among people seeking HIV testing, this study aimed to address the gap in current literature concerning this topic. Furthermore in terms of the specificity, sensitivity and optimal cut-off points of the commonly used PTSD screening instrument in order to assess PTSD among people seeking HIV testing, using the SCID as a gold standard, research is also lacking. The study at hand used the SCID as a gold standard and the PTSD symptom scale as a screening instrument to determine the incidence of PTSD caseness and

the type of PTSD-like symptoms in people seeking HIV testing from specifically low-income communities in the Western Cape.

1.4. Chapter Outline

The overall structure of this thesis takes the form of five chapters, including this introductory chapter. Chapter Two begins by laying out a review of the literature on the aspects of PTSD particular to this study and the theoretical framework that has informed this study, which is the Bronfenbrenner ecological systems theory of development. The third chapter is concerned with the methodology used for this study and provides a detailed description of the procedures taken. The fourth section presents the findings of the research, focusing on the three aims that guided this study. The fifth and final chapter comprises the discussion and summary of the findings. This chapter also includes a conclusion of the thesis with some statements on the implications and limitations for future research into this area.

Chapter 2: Literature Review and Theoretical Framework

2.1. An Overview of Literature

The HIV epidemic has become one of the world's biggest threats to public health. In 2000, about 22 million HIV-related deaths were reported worldwide (Whiteside, 2002). Additionally, approximately 35.5 million people were living with HIV globally (UNAIDS, 2013), with recent evidence showing an estimated 34 million people living with the disease in 2011 (Velasco-de-Castro et al., 2014). Although the global prevalence rate has remained stable from years 2001 to 2010, there is still a significant proportion of the population that does not know their current HIV status (Veloso, & Bastos, 2014). While new cases are reported worldwide, sub-Saharan Africa countries remain the most affected. About 95% of new infections occur in individuals that live in these regions, where the majority of the population live in low and middle income households (UNAIDS, 2013).

Previous research has indicated that Africa has the largest number of people living with HIV; approximately 24.5 million of the 35.5 million worldwide reside on the continent (Whiteside, 2002). Even though other regions such as the Caribbean, Eastern Europe and Central Asia (UNAIDS, 2013) have large HIV positive populations, Africa still remains the epicentre of the pandemic. As a result, a number of prevention programs have been introduced in efforts to promote and encourage HIV testing in several African countries (Conserve, Sevilla, Mbwambo, & King, 2012). Despite such efforts, testing for HIV remains low in sub-Saharan Africa, with Tanzania as one of the countries with the lowest numbers of people seeking and testing for HIV (Conserve, et al., 2013).

Likewise, South Africa continues to see an annual increase in the number of people living with HIV. Recently, the South African National AIDS Council [SANAC] (2011) indicated that approximately 17% of adults aged between 15 and 49 are living with

HIV/AIDS. The annual increase of people living with HIV can be attributed to factors such as new infections, population growth, and the life-long effects of antiretroviral treatment (SANAC, 2011). Even though many people understand the need to be tested, and there has been a noticeable increase in the number of people seeking HIV testing, many people still do not seek an HIV test (Shisana et al, 2005). Moreover, the Human Science Research Council (HSRC) reported that only two-thirds of people in their sample had gone for HIV testing prior to the study, and of these, 16.3% had a positive diagnosis (Shisana et al, 2005).

Previous studies indicate that HIV testing is crucial among at-risk populations (e.g. sexual and physical abuse). This supports the notion that HIV testing is necessary, especially amongst at-risk populations, including individuals who are or have been subject to physical violence and/or intimate partner violence, as well as victims of rape and child abuse. Some studies have attempted to understand the relationship between exposure to a traumatic event and the likelihood of an HIV-positive test result.

However, despite the fact that HIV-testing having serious implications for the quality of life of those infected, there is still much that is unknown about the relationship between an HIV-positive diagnosis and psychological trauma in South Africa. Thus far, much of the research on the relationship between HIV-positive diagnosis and psychological trauma has been conducted in developed countries (Martin & Kagee, 2011) with little relevance to the South African context, which is all the more surprising given that South Africa carries such a heavy burden of HIV/AIDS (Department of Health, 2009).

Exposure to traumas such as rape and other sexual assault related events have been reported as factors fuelling the HIV/AIDS epidemic. For example, a new study at the University of California showed that individuals who were exposed to specific kinds of traumas such as rape and molestation (which have been known to increase the susceptibility to HIV) suffered from PTSD and, consequently sought HIV testing. Additionally, other

literature has shown that trauma contributes to the HIV/AIDS epidemic due to the fact that it is associated with a variety of risky behaviours and situations among at-risk HIV-negative individuals (Shisana et al, 2005). In addition, past trauma is generally seen as a factor strongly related to PTSD in HIV positive persons, suggesting the likelihood of PTSD prior to a positive diagnosis. Thus, one can assume that individuals who seek testing may have experienced a trauma or some form of distress at some point in their lives that may have laid the ground for the development or presence of PTSD. A few other factors that may contribute to the presence of PTSD prior to a diagnosis include environmental factors such as previous exposure to chronic stress; the lack of social support, and socio-demographic factors.

The past years have seen the rapid increase of academic interest, research, and debate in the development of traumatic stress both locally and globally (Suarez, 2013). Different traumatic experiences have also yielded some interest in the diagnosis and description of PTSD. Although most PTSD scholars would agree that exposure to stress or trauma can cause psychological damage, there has been considerable controversy about the importance of traumatic events to the development of psychopathology (Yehuda, Mcfarlane, & Shalev, 1998). The purpose of this chapter is to review the literature on traumatic events and posttraumatic stress disorder in relation to HIV test seekers. It begins by looking at the following points:

I. The description of PTSD and PTSD Symptoms
II. What is a Traumatic Event?
III. Prevalence of PTSD and Trauma among the General Population
IV. Trauma among Persons Living With HIV

2.2. Description of PTSD and PTSD Symptoms

Posttraumatic Stress Disorder (PTSD), a condition which develops in individuals who have been previously predisposed to traumatic events (American Psychiatric Association (APA), 2013), is a common cause of distress and anxiety in the general population (Kessler, 2000). The disorder made its first appearance as an official diagnosis in the DSM-III under the classification of *Anxiety Disorders*. However, before it was officially classified as a mental disorder, PTSD was referred to as "battle fatigue, shell shock, exhaustion, traumatic neurosis or the post-Vietnam syndrome" (Kaspar, 2002, p. 97) and was typically associated with combat or war veterans. The diagnosis has been developed over time and a definition thereof has likely to have been more refined over there years given the increasing number of people being exposed or experiencing traumatic events. As a result, the disorder is described by the American Psychiatric Association (APA) in the DSM-V as:

"the development of characteristic symptoms following exposure to one or more traumatic events that involve actual or threatened danger; characteristic symptoms of PTSD are recurrent, distressing memories and dreams, dissociative reactions (flashbacks and nightmares), intense psychological stress, avoidance of stimuli related to the trauma, and hyper-arousal (irritability, sleep disturbances and hyper-vigilance) (APA, 2013, p. 274)."

Other PTSD symptoms include problems with concentration, self-destructive behaviours, negative alterations in cognitions and mood, and other forms of externalising and internalising behaviour problems (APA, 2013). PTSD is also characterised by a heightened sensitivity to potential threats related to the trauma (APA, 2013). However, in order for a diagnosis of PTSD to be met, an individual has to have experienced or been exposed to an actual traumatic event (Criterion A), thus, the disorder may be especially severe or long-lasting when an event is experienced directly, for example, sexual and/or physical assault. In addition, the individuals must report at least one out of five symptoms from Criterion B

(intrusive dreams and memories, dissociative states, intense psychological stress, and physiological reactions), one out of two avoidance symptoms (Criterion C), two out of seven altered cognition and mood states (Criterion D), and two out of six hyper-arousal symptoms (Criterion E), and the symptoms have to be experienced for a duration of longer than 1 month (APA, 2013).

Due to these many symptom clusters, individual clinical representations may vary, thus creating diagnostic heterogeneity. It is for this reason that many PTSD scholars hold the view that some symptoms are more pronounced of the condition than others. It is also worth noting that not all individual who may have experienced a trauma will develop PTSD, but it is likely that they may present with symptoms of PTSD (Halligan & Yehuda, 2000).

Overall, about a quarter of trauma-exposed individuals will develop PTSD (Perkonigg & Kessler, 2000). Risk factors that have been suggested for the disorder include but are not limited to previous psychiatric history, childhood abuse and/or history of other trauma (Zyl, Oosthuizen, & Seedat, 2008) In terms of the traumatic event itself, it appears that the severity rather than the type of trauma experienced, tends to be of significance as a risk factor, and may possibly be related to the frequency and severity of PTSD (Van Zyl et al., 2008). Even though PTSD leads to significant psychological distress and may increase the use of healthcare resources, it has been described as a "hidden diagnosis" that can easily be missed or under-diagnosed if not assessed properly. Often times, it is unlikely that patients will endorse traumatic experiences when they present with either physical or psychiatric problems, or may not think them relevant to their current condition (Van et al., 2008).

A large and growing body of literature has investigated prevalence estimates of the disorder in relation to traumatic experiences (e.g. rape, combat, physical/sexual abuse, natural disasters) in the community. In a study which set out to determine PTSD in the general population, Kessler (2000) found that prevalence rates ranged from 8-12% and that exposure

to trauma was greater in communities where crime and violence rates are noticeably high. Kessler (2000) mentions the special situation of the United States as an example of communities with elevated crime and violence rates, and increased incidence of exposure to traumatic events. For example, Breslau and her colleagues (1998) reported estimates of exposure to traumatic events in their National Comorbidity Survey (NCS) as surprisingly high. Looking at the different types of traumas, the authors found that almost 90% of the participants had been exposed to a one or more traumatic event(s) at one point in their lives. As reported by the survey, 37.7% of the participants experienced assaultive violence (e.g. rape and torture), while 59.8% reported to having been exposed to either a serious accident, a severe illness, or witnessed a traumatic event. The loss of a loved and having lived through a traumatic event accounted for approximately 60% of the participants.

Furthermore, the disorder is known to commonly co-occur with other disorders (Van Zyl et al., 2008). A national study in the USA revealed that 59% of men with PTSD and 44% of women with PTSD met the diagnostic criteria for other psychiatric disorders, mostly Major Depressive Disorder and other mood disorders, as well as Substance Abuse Disorders (Kessler, Sonnega, Bronet, Hughes, & Nelson, 1995) . Therefore, it seems that the presence of other co-morbid disorders is more the rule rather than the exception (Van Zyl et al., 2008).

While PTSD is a highly prevalent yet under-diagnosed psychiatric disorder among certain populations, it is rarely reflected in the primary or secondary diagnosis, and thus seldom becomes the focus of treatment (Van Zyl et al., 2008), and because South Africa has such a high rate of traumatic events, it has been recommended that routine screening for all traumas be included in all psychiatric interviews (Van Zyl et al., 2008). The authors suggest that during their interviews, clinicians should deliberately ask about traumatic events as many individuals will not voluntarily disclose such information because either talking about the events is too painful for the patients or they do not consider it to not have any bearing on their

presenting problem(s). Hence, it is important that the correct diagnosis be made, and that the trauma history be thoroughly assessed. This ties in well with the current study as knowledge of such information would enable counsellors in HIV settings to gain a virtual understanding of individual's current mental health status, particularly those seeking HIV testing.

2.3. What is a Traumatic Event?

Very often the term for *psychological trauma* has been used in so many contexts by a number of people that it lost its meaning along the way. Thus, a more generally accepted definition refers to adverse events that cause distress. However, the APA provides a more comprehensive definition of what constitutes a trauma. The revised text of the (DSM-IV-TR's (APA), 2000) defines a trauma as a:

"Direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate (p. 463)."

Other events which constitute as traumatic include war, the death of a loved one, physical and/or sexual assault, torture, natural disasters, being kidnapped, poverty, a serious car accident, or even witnessing a traumatic event. Further, although the DSM-IV provides a comprehensive explanation of what constitutes a trauma, the definition has been criticised by Briere (2004) for limiting what may constitute a trauma to "threatened death or serious injury, or other threat to one's physical integrity", and not emphasising exposure to other events even though they may not be life-threatening or cause serious injury. Henceforth the development of a more inclusive definition in the DSM-V, which states that in order for an event to qualify as traumatic, it has to have happened to the individual directly or the individual witnessed such events happen to a close friend or family member (APA, 2013).

Characteristic reactions following exposure to one such event include unpredictable emotions, flashbacks, strained relationships and even physical symptoms like headaches or nausea (APA. 2013).

Several studies have revealed that trauma is highly prevalent in the general population and even higher in selected clinical populations (Switzer et al., 1999) with similar trends in South Africa (Marais et al., 1999). In a study among two hundred and twenty South African population, Carey, Stein, Zungu-Dirwayi, and Seedat (2003)found considerable differences between men and women with respect to exposure to traumatic events. The results obtained from the study showed discovering a dead body as the most commonly endorsed trauma for women at 40.7% was, followed by 33.3% reporting having experienced a threat to the life of a loved one, and 26% of the women having experienced the sudden death of a loved one. By contrast, 52.6 % of men were more likely to be held up or threatened with a weapon, while 42.3% reported to having discovered a dead body, and additional 41% reported that they experienced assault by others. Their findings indicated that while men were more likely to be exposed to assaultive trauma, they were as likely to be diagnosed with PTSD (Carey et al, 2003).

2.4. Prevalence of PTSD, Trauma and PTSD Symptoms in the General Population

As mentioned above, PTSD is characterised by recurrent, distressing memories, dissociative reactions, avoidance of stimuli related to the trauma and hyper-arousal (APA, 2013). These symptoms occur as a result of having been exposed to one or more traumatic events which involve incidents such as those that cause actual or threatened danger (APA, 2013; Lukaschek et al., 2013). A critical distinction provided by the DSM is that exposure to a trauma is a necessary but not a sufficient enough factor to constitute a full diagnosis of PTSD. That is to say, in order to fulfil PTSD criteria, individuals have to, as a consequence of the stressor, experience the accompanying symptoms (Breslau, 2009). It has commonly been

assumed that exposure to one or the other kind of traumatic event results in PTSD diagnosis (Shalev et al., 1998), but at most times the experience or exposure thereof does not merit a diagnosis of PTSD. While this is the case, most individuals, following a traumatic event, will in most cases develop symptoms of PTSD instead. Inasmuch as individuals tend to not meet criteria for PTSD following exposure to trauma, the occurrence of the events may still negatively affect an individual either psychology or emotionally. This raises questions about the occurrence and intensity of PTSD symptomatology within populations that have prior exposure to adverse event, in this case amongst HIV test seekers, which this study will attempt to answer following the research findings.

As far as exposure to trauma and PTSD are concerned, it is worth noting that there are prominent differences of prevalence in different countries. Some studies examined prevalence rates for both trauma exposure and PTSD amongst German populations (Hapke et al., 2005; Perkonigg et al., 2000). The studies revealed that of the trauma-exposed individuals, a prevalence of approximately 1.4% were reported to have PTSD. In addition, Hauffe et al. (2011) stated that nearly 20% of the German populations had exposure to traumatic events at one or the other time in their lives. On the other hand, Breslau et al. (1998) reported an estimated PTSD prevalence of 12.2% in an adult population in the United States. Other epidemiological studies of individuals who have experienced a traumatic event reported a prevalence of 20–90 % in the general population various countries (Amstadter et al., 2013; de Vries, & Olff, 2009; Frans et al., 2005; Jeon et al., 2007, & Lukaschek et al., 2013). Comparing these findings, Breslau (2009) concluded that the United States had higher prevalence estimates than in other countries.

However, even though a considerable number of people in the general population have reported having been exposed to traumatic events or stressors, only a fraction will have developed full-blown PTSD. Interestingly enough, women tend to have greater likelihood to

develop full PTSD than their male counterparts (Breslau, Chilcoat, Kessler, & Davis, 1999; Perrin et al., 2014). . A possible explanation could be the unique role assaultive violence in the form of sexual assault and rape plays in women's response to the events (Breslau & Anthony, 2007).

Moreover, much of the literature suggests that the strongest risks of developing PTSD are in physical and sexual assault. For instance, among other types, rape, sexual assault, intimate partner violence, and child sexual abuse seem to be the types of trauma more strongly associated with the subsequent development of PTSD. This is true in the case of sexual assault. It is viewed as the type of trauma that gives rise to PTSD more often than other types of traumas, in both males and females (Frans, et al., 2005; Davis & Breslau, 1998). Thus, as has been mentioned, the rate of exposure is seemingly different between men and women. Thus, gender differences may, in part, reflect exposure to different trauma types and trauma experiences.

2.5. PTSD in the South African context

Traumatic stress and post-traumatic stress more particularly, has gained international status as a condition that affects people across the globe following exposure to extreme life events, be it collectively or individually. Given the history of political violence in South Africa (Williams et al., 2007; Edwards, 2005),, and the prevalence of violent crimes, it would seem likely that the majority of the population would suffer from one or the other type of traumatic events (Williams et al., 2007). In an investigation on the impact of traumatic stress in South African communities, Edwards (2005) argues that violence forms part of the broader picture. Instead, he draws our attention to other distinctive traumas within the South African context often observed in relation to traumatising events (for example economic and social hardships, and human rights abuses) and specific PTSD symptoms.

Further, Williams and his colleagues (2007) refer to South Africa as "having the unfortunate distinction of being considered a real life laboratory in which to study traumatic stress". This is due to the fact that the country is characterised by a high prevalence of assaultive crimes (e.g. crime, murder, robbery, and rape) and as such individuals are more likely to be exposed to the trauma of violent crimes. Important to note is that crime-related incidents are strongly associated with serious psychological consequences. In addition, other traumas such as exposure to interpersonal violence and rape have been found to cause increased psychological problems in South Africa (Jewkes, Levin, & Penn-Kekana, 2002). Approximately 24.6% of South African women had been exposed to interpersonal violence (Jewkes et al., 2002), while 7% accounted for rape cases (Williams et al., 2007).Furthermore, a nationwide study among 4 000 South African households, indicated that 23% of the population reported exposure to one or more traumatic event – such as being attacked or witnessing an attack (Hirschowitz & Orkin, 1997), while78% of the sample reported symptoms of posttraumatic stress disorder.

The SASH study (2007) reported an estimated 75% of the nation's general public had at some point been exposed to at least one traumatic event in their lives. In their findings, the authors found that the most reported trauma was the death of a family member or a loved one. Other traumas reported with relatively high prevalence rates included witnessing a traumatic event (27.9%), interpersonal violence (23.3%), being involved in a life-threatening situation (24.9%) and criminal victimisation (25.1%). Conversely, the least reported event was sexual assault (3.5%). Most of these experiences were associated with anxiety and depression symptoms. Furthermore, an analysis of the SASH study in 2013 (Atwoli et al., 2013) reported the prevalence of PTSD among individuals that had been exposed to past traumatic events as 3.5% and the prevalence of PTSD in the total SASH sample, including individuals not exposed to any event as 2.5% (p. 6). In contrast, a 12-month prevalence of PTSD was

estimated to be 0.7% (Atwoli et al., 2013).

Nevertheless, it appears that South Africa is characterised by a high prevalence of multiple traumas which, if left unattended, could have serious implications for the country's state of mental health (Williams et al., 2007). Therefore, it is important that future research focus on the prevalence of traumas in relation to mental health.

2.6. Prevalence of PTSD, Trauma and PTSD Symptoms in the Medical Setting

Although the concept of post-traumatic stress disorder was initially applied to survivors of combat, rape, and assault, it has increasingly been applied in the general medical setting (Bienvenu & Neufeld, 2011). Notably, PTSD seems particularly strongly associated with some medical subspecialties, such as, burn victims, surgical trauma patients and survivors of acute adult respiratory distress syndrome (Bienvenu & Neufeld, 2011; Stein et al, 2000).

There is also considerable evidence to indicate that greater attention should be paid to the prevalence and impact of PTSD in these settings (Bienvenu, &Neufeld, 2010). A study in a large health maintenance organisation found that 38.6% of patients referred for mental health services met diagnostic criteria for PTSD (Samson, Bensen, Beck, Price, &Nimmer, 1999). This high percentage of people with PTSD is likely to require treatment throughout the healthcare system. Psychological trauma, particularly sexual abuse and other forms of criminal victimisation such as domestic violence, has been found in numerous studies to be associated with adverse health outcomes and increased healthcare utilisation in medical patients.

PTSD in trauma-exposed victims is associated with increased somatic complaints, poorer physical health, and greater healthcare utilisation (Stein et al., 2000). This suggests that more studies should look into the occurrence and correlates of PTSD in primary care. This is due to the assumption that patients with other psychiatric disorders, for instance

depression and/or anxiety, are present more often in medical settings than in mental health clinics (Bienvenu & Neufeld, 2011).

2.7. Prevalence of PTSD, Trauma and PTSD Symptoms in the Primary Care Setting

Subsequent to the aforementioned, primary care has often been regarded as a crucial component of the mental health system due to the large numbers of individuals with mental health problems seen by general practitioners on a regular basis (Liebschutz et al., 2007). Previous studies had excluded PTSD in the primary care sector. However, it is only of recent that the disorder is being recognised as a serious problem in primary care (Liebschutz et al., 2007). Recent years have seen the definition of PTSD advance from a disorder known to afflict exclusively combat victims, to diverse groups of the general population. Some literature has estimated that the disorder affects approximately 9% of individuals within the primary care setting and only 5% of the general population (Stein et al., 2000).

To begin with, PTSD affects a large amount of primary care patients. Work done by Taubman-Ben-Ari, Rabinowitz, Feldman, and Vaturi (2001) indicated a national prevalence of 7.5% among Israeli men and 10.5% among Israeli women. Similarly, Liebschutz et al., (2007) diagnosed current PTSD in 23% of patients in a primary care centre.

Recognising PTSD in the primary care setting can have significant implications for most medical problems. There is some evidence to suggest that the disorder is associated with an increase in general medical complaint and higher usage of medical services. At the same time, people who have experienced a trauma are less likely to seek mental health, thus, making it challenging for mental health professionals to identify individuals who are facing mental health problems. There is some evidence showing that while 72% of assault victims sought help, only 19% actually sought mental health care (Jackson et al., 2007).

Even so, PTSD symptoms have been associated with poor health in primary care patients. Approximately 11%-12% prevalence of PTSD in primary care has been reported

amongst individuals in community based primary care facilities (Ouimette, Wade, Prins, & Schum, 2007). This is higher than the general population prevalence of 7.8% (Kessler et al., 1995).

2.8. Trauma among Persons Living With HIV

PTSD, alongside depression, is one of the most common mental disorders in HIV/AIDS (Olley et al., 2005). Previous research suggests that the majority of people living with HIV report symptoms of PTSD (Olley et al., 2005). Moreover, the experience of a trauma has been associated with negative psychological outcomes among people living with HIV. Thus, it is likely that persons newly diagnosed with HIV and those already living with HIV may have experienced past trauma. A positive diagnosis of HIV is closely associated with PTSD due to the trauma impact of being infected (Olley et al., 2005). In many cases, the experience of HIV and diagnosis thereof can be stressful. Individuals who are diagnosed with a positive HIV result may be faced with numerous physical symptoms, and may experience a decline in mental health. Simultaneously, individuals often have to deal with other stressful events associated with HIV such as access to treatment (Kagee, 2008), discrimination and stigma, and waning physical health (Kagee, 2008; Young, 2011). As a result, a positive diagnosis may be an additional stressor for persons already living with a number of other stressors (Martin & Kagee, 2011; Sherr et al., 2011).

The estimated prevalence of PTSD in the general population in South Africa has been reported to be 6.3.7% for women and 2.2 for men (Kaminer, Grimsrud, Myer, Stein, & Williams, 2008), however it is much higher in certain groups, including people living with HIV (Martin & Kagee, 2011). For instance, research conducted by Martin and Kagee (2011) found the rate of PTSD to be high amongst a diverse group of HIV-positive individuals. Moreover, the authors found that almost half of their total sample met full diagnostic criteria

for PTSD, the majority of whom were women (56.2%); men faired at 47.6% (Martin & Kagee, 2011).

In addition, some literature suggests that HIV-positive women are more likely to report a history of trauma, as well as meet diagnostic criteria for PTSD (Kimerling, Clum, & Wolfe, 2000).. Even though Martin and Kagee (2011) did not report any significant associations between gender and meeting criteria for PTSD in an HIV-positive population, they found that both male and female are equally at risk of developing the disorder. However, a significant association was found between a diagnosis of PTSD and traumas such as physical violence and sexual assault. These traumas also showed a strong association with heightened levels of trauma (Martin & Kagee, 2011).

Furthermore, in order for us to fully understand why there are such high rates of PTSD symptoms in people living with HIV, more research is needed on the phenomenon. For example, the increased rates among HIV-positive individuals may, in part, be due to lifestyle and contextual factors that are associated with elevated disease risk. Also, there is an extensive body of literature that reports that HIV-positive individuals are often either living in the presence of repetitive traumatic experiences or have an extensive history of trauma (Gore-Felton & Koopman, 2002; Martin & Kagee, 2011). A positive diagnosis that may be perceived as a traumatic stressor may have negative consequences on the mental well-being of individuals (Nightingale et al., 2011).

It appears that people living with HIV experience significant amounts of trauma. Despite what the reasons for this are, there is growing evidence that suggests that exposure to trauma or the experience thereof is associated with behaviour that may put individuals at risk of being infected. For instance, women who have been sexually assaulted are more probable to report having more than one sexual partners, engage in sexual risk behaviour, as well as

engage with a high-risk partner (Lang et al., 2003), in comparison to women without a history of sexual assault.

Sexual and physical assault, as well as other forms of childhood traumas are major factors that contribute to the HIV/AIDS epidemic in many low-income communities, and traumatised individuals, particularly women seem to be at a greater risk of being infected. What is more is that recent research indicates that HIV-positive women are exposed to trauma and suffer from PTSD at a higher rate than women in the general population. This may be partly due to the view that women fare worse in disease treatment than women who have not been suffered from traumatic stressor. The experience of trauma also puts women in situations where they are more likely to contract and transmit the virus. For instance, HIV-positive women are often times more likely to have PTSD, and just as likely to have been victims of intimate partner violence and/or rape. They are also more likely to engage in more risky sexual behaviour.

While this is the case, Young (2011) notes that little is known about the relationship between PTSD and HIV-positive persons in South Africa. He denotes that of the studies that were conducted in sub-Saharan Africa, South Africa being where most of the studies were conducted, most of them provide unclear representations of the prevalence of PTSD in HIV infected persons (Young, 2011). However, other traumatic life events such as the death of a loved one, physical and/sexual abuse, or other childhood traumas may also serve as indicators of previous incidences of PTSD in HIV infected persons (Olley et al., 2005; Young, 2011).

Thus, it is possible that the disorder may be common among people seeking HIV testing. Yet, after an extensive literature review, to my knowledge, no studies have investigated the prevalence of PTSD among individuals seeking an HIV test. The current study aims to fill this gap in literature.

2.9. The relationship between trauma exposure, PTSD, and Antiretroviral Treatment

In the history of HIV, mental health has been thought of as a key factor in adherence to HIV antiretroviral therapy (ART). The relationship between common mental disorders and people living with HIV has been widely investigated. Most empirical research has focused on depression, which is highly prevalent among people living HIV (Martin &Kagee, 2010), and is commonly considered as an important barrier to adherence (Ammassari et al., 2004). In addition, substance and alcohol abuse have also been shown to be common in some HIV populations, particularly in sub-Saharan Africa (Brandt, 2003).

As with depression, PTSD has also been associated with poor adherence to treatment. As pointed out earlier, PTSD may be relatively common amongst people living with HIV, and the few studies that are available suggest that PTSD poses challenges to adherence (Boarts et al., 2009). The influence of PTSD-related symptoms on treatment adherence is complex. Delahanty, Bogart and Figler (2004) demonstrated a negative relationship between symptoms of PTSD and ART adherence. Yet, other data reported by Schönnesson and co-workers (2006) have challenged this conclusion, arguing that amongst persons receiving ART, those who displayed HIV-related PTSD symptoms were more likely to report high levels of schedule to adherence (OR = 0.316, 95%, CI = 0.146-0.683). The authors attribute this relationship to the likelihood that PTSD symptoms may result in patients "experiencing self-protective alertness and vigilance concerning their health, and thus increased motivation for adherence to treatment". Similarly, Do et al., (2010) suggests that psychosocial characteristics including having past traumatic events, life events, general levels of stress and patient provider relationships are highly correlated with ART adherence, and increased motivation to engage in more adherent behaviour (Lyimo, 2012). This interpretation is different from that of Wagner, Bogart, Galvan, Banks and Klein (2012) who argue that the experience of trauma and other psychosocial characteristics reduced motivation to engage in

adherent behaviour, and in fact, can place demands on individuals' cognitive ability (Barret et al., 1996),and thus affect one's ability to remember medication instructions and when to take doses.

Depression may also be a contributing factor in the relationship between PTSD and ART treatment adherence (Vranceanu et al., 2008). This is because, in most cases, the primary cause of adherence may not necessarily be PTSD but rather the presence of a co-morbid depressive disorder (Peterson, Togun, Klis, Menten & Colebunders, 2012). In addition, the occurrence of both PTSD and depression may have a greater effect on adherence and could be more severe than the effect of either disorder in isolation. Nevertheless, the specific mechanisms that drive this relationship are yet to be fully explored.

2.10. South Africans living with HIV or seeking testing more likely to have more trauma than the general population

It is reported that persons exposed to different kinds of past and current trauma, such as intimate partner violence, physical assault, childhood sexual and physical abuse or psychological abuse, very often have to deal with negative behavioural, physical, mental and social outcomes (LeGrand et al., 2015). Considerable research suggests that HIV positive persons report disproportionately high levels of exposure to trauma in childhood and adulthood at rates greater than those experienced by the general population (Brezing, Ferrara & Freudenreich, 2015; Raja, Holland, Du Bois, McKirnan, Allgood & Glick, 2015). For example, the rate of intimate partner violence has been reported to be high amongst people living with HIV, particularly women and men who have sex with men. Also, the rates of violent trauma amongst HIV-positive persons were found to range from 10% to 90%. Although this was a wide range, most studies found traumas that were reportedly higher than those found in the general population. A study in South Africa found the prevalence of PTSD among HIV/AIDS positive persons to be 14% (Olley et al., 2005), greater than that of 4.6%-

9.2% in the general population (Carey et al., 2003). Other South African studies showed prevalence rates between 5% and 19%, still typically higher than those found or compared to the general population (Sherr et al 2011). A suggested explanation for the high rates of PTSD in relation to HIV can be attributed to the increased likelihood of engaging in high-risk behaviours as a result of prior trauma, as well as increased stigmatisation of the disease (Myer et al., 2008). Living with the disease includes managing many stressful disease-related situations such as pre-morbid mental conditions, the effects of the disease on the nervous system, the psychological impact of living with the disease, and dealing with the side-effects of medication. Living with the disease also presents a number of complicated social factors. For instance, having to disclose a positive HIV status to family members and friends and in doing so, having to face possible social rejection, coupled with poverty and disease management.

HIV negative persons may also be exposed to stressful and traumatic events, for example, living in poverty or being a recipient of sexual abuse and/or domestic violence in the form of intimate partner violence. Many times such events tend to take place in low socio-economic settings. This is true in the case of South Africa; in that it is an unequal society. This type of environment is known to place people at risk of violence, accidents, illnesses, etc. The country's high rates of trauma have the potential to affect PTSD, crime and violence (Statistics SA, 2011). Many individuals at the lower socio-economic level who are exposed to high crime rates and have limited resources are driven into situations where they are likely to be exposed to traumatic events. Individuals who reside in poorer communities are eighty times more likely to be killed than those in more affluent communities (Steinberg, 1999).

Williams et al., (2007) report that though many have not directly experienced a trauma, but have indirectly been traumatised by having or bearing witness of trauma having

happened to either a close friend or family member. More times than not, individuals infected with HIV living in non-metropolitan have access to fewer resources, experience greater social stigma, and are likely to suffer from poor mental health than those in the metropolitan areas. Trauma experienced by those with the disease is determined by a number of factors, such as how they became infected, as well as the level of their support system dealing with the disease and its progression.

Both HIV positive persons and individuals in the general population have experienced lots of trauma. The experience to trauma poses the challenge of person's ability to cope with trauma and access to resources/social support. Others are resilient and deal well with the trauma whilst others show vulnerability and distress which may result in the development of psychiatric conditions such as depression and/or PTSD (Williams et al., 2007). Nonetheless, it is important for healthcare workers to address trauma among people living with HIV, test-seekers, and people in the general population.

2.11. Bronfenbrenner's ecological theory of development

Despite the vast body of literature regarding exposure to traumatic events, PTSD, and PTSD symptomatology, not much has been documented on the ways through which the relationship develops (Overstreet & Braun, 2000). As suggested by the authors, exposure to traumatic events and associated distress may lead to conflict within the immediate environment, which may play a part in heightened emotional stress and PTSD related symptoms. Thus, Bronfenbrenner's proposed theory of ecological systems theory best describes the occurrence of this relationship. The central tenet of this theory is that a person's development is dependent on the interaction between the individual and their environment. Proximal processes within the social context have a negative impact on individuals and might impact the kinds of trauma exposure which increases the individual's likelihood to responses to trauma and PTSD symptomatology.

According to Bronfenbrenner (1994), the ecological system is classified according to four major interconnected structures namely, the micro-, meso, exo-, and macrosystems. As can be seen in the *Figure 2.1*, the first three structures are embedded within the macrosystem.

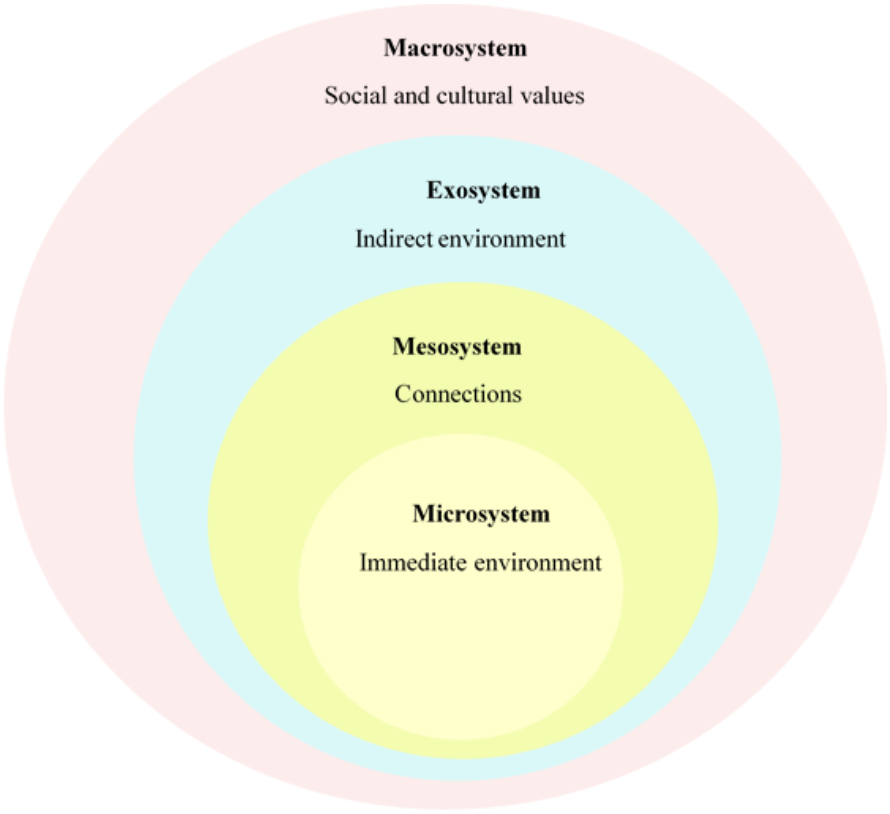

Figure 2.1. The four systems of Bronfenbrenner (1994) Ecological Model/Theory

The microsystem pertains to an individual's interactions with their immediate environment. Examples include family, school, friends, community members and neighbours (Bronfenbrenner, 1994; Overstreet & Mazza, 2003). It is at this level that an individual is able to build social networks and establish a valuable support system. For example, in the home setting, the lack of cordial interactions between spouses or cohabiting couples could include verbal and physical abuse. This could result in one individual in that setting being exposed to abuse (as a form of traumatic event), which could account for the development of PTSD symptoms such as, having upsetting memories of the event, flashbacks, or feeling distressed when reminded of the event.

Secondly, the mesosystem involves connections or interactions between the microsystems, which contribute to the development of the individual (Bronfenbrenner, 1994). For example, interactions between the individuals home and neighbourhood environments. It is worth noting that although these aspects interact with one another, they do not affect the individual directly but do, to a great extent, influence the person's development. For example, the presence of defective social interactions within a home as well as an unsafe environment may yield a negative affect the development of the individual, and could predispose exposure to traumatic events either in the home environment. Therefore, if adverse events occur within the environment, it may prove challenging to seek help from the home due to the absence of social support, increasing the tendency of exposure to trauma.

The exosystem is the third component of the ecological model. This level refers to the connections between two or more settings, in which one setting does not include the developing individual (Bronfenbrenner, 1994). Nevertheless, events within these settings indirectly influence the immediate environment of the individual.

The final component of the model is made up of the macrosystem. This level can be seen as an umbrella for the aforementioned structures, and refers to the culture in which the individual lives(Bronfenbrenner, 1994). This includes religion and medicinal practices, customs, government, economic systems, and other system within the other structures. For example, South Africa has a culture that predominantly, in South African context could propagate violent behaviour within communities. Violent behaviour stemming from macro level culture of violence, which increases susceptibility to trauma and in turn the development of PTSD symptomatology.

2.12. Conclusion to Chapter

The preceding chapter has highlighted some studies that have been conducted in the field of trauma and Posttraumatic Stress Disorder, specifically in relation to prevalence

estimates. A review of the literature revealed that these concepts may be related. The studies reviewed were predominantly from the West with few from Africa, more specifically South Africa. Further, there is no research pertaining to PTSD rates among HIV test seekers. Additionally, it is evident that PTSD is a common mental disorder likely to cause psychological distress amongst community members if left untreated.

One theme that theme that was repeatedly mentioned in the studies that were reviewed was the association of trauma to PTSD. The ecological theory was applied in an attempt to understand this theme. The following chapter is a discussion of the methodology used in gathering data for this present study.

Chapter 3: Methodology

This chapter explains the methods used to generate data in this study. A great deal of this chapter is devoted to an overview of the study area, study design, and description of participants. This is followed by a description of the measures as well as a brief overview of the outcomes of the pilot study. Following this sections are details of the procedures during the data collection phase. The chapter concludes with a review of the framework used for analyse data as well as the limitations and potential problems that arose throughout the study.

3.1. Study Area

The study was conducted at five Wellness Centres in the Western Cape area namely Living Hope (Mfuleni), Masincendane (Somerset West), Reliable Action (Eersteriver), Sizophila (Nomzamo, Strand), and Phambili (Broadlands, Strand). The centres are located in peri-urban areas, and are registered as non-profit organisations. All five testing centres have introduced easily accessible health screening and HIV testing programmes, with the purpose of addressing various health challenges that many community members are faced with, including the risk of being infected with HIV (personal interviews, 2015). In addition, the centres also provide pre-test and post-test counselling as part of their HIV testing programme with the aim of providing individuals with information on medical, social and psychological implications of being diagnosed with either a positive or negative HIV result (Meursing & Sibindi, 2000). Moreover, the centres were primarily selected based on the fact that they cater for HIV testing to a resource-limited population, and because they see high volumes of outpatients.

If needed, the centres, except one, also go on outreach to neighbouring communities. This means that they extend their services beyond the centre because they can only reach a

certain percentage of people who require HIV testing, thus restricts the number of people who seek their services.

3.2. Study Design

We employed a cross-sectional design to study a population of individuals seeking HIV testing at the above-mentioned centres. The centres were contacted telephonically through the assistance of our primary investigator, Professor Kagee, and it was arranged that participants be recruited as they present themselves for HIV testing. Therefore, the participants were approached by the researcher on site, as well as through the help of staff members from the various study sites, to invite them to participate in the study. This was done after they were informed about the study.

This study was descriptive in nature, and utilised a quantitative-descriptive methodology. Burns and Grove (2005) state that researchers concerned with adopting quantitative research methods seek statistical interpretations of the world. Thus, it was considered that a quantitative approach would produce a statistical outcome of the main objectives of the study, which were:

1. To determine the prevalence of traumatic events among people seeking HIV testing and;
2. To determine the prevalence of posttraumatic stress disorder and posttraumatic stress symptoms as measured by the Structured Clinical Interview for the DSM.
3. To determine the specificity, sensitivity, and positive and negative predictive values of the PTSD Symptom Scale- Self report version in predicting posttraumatic stress disorder caseness among individuals seeking HIV testing, using Receiver Operator Curve (ROC) analysis to determine the area under the

curve (AUC); thus yielding the optimal cut-off point on the PTSD Symptom Scale using the SCID as the gold standard.

Additionally, the use of a quantitative method helped to provide a descriptive summary of the findings. In the process of collecting quantitative data, limited qualitative data were collected to further understand these phenomena. This required obtaining detailed information about participants' experience of a traumatic event(s). For example, participants were asked to briefly provide a detailed description of the event(s) experienced or exposed to, as well as the year and month, and the participants' age when they witnessed or experienced the traumatic event. The inclusion of the qualitative responses was to allow me to provide a direct description of the participants' experiences. However, because this was a quantitative study, the qualitative data were not included in the write up of this thesis.

3.3. Participants

This study used a convenience sample of four hundred and thirty-nine participants who presented themselves for an HIV test at the above-mentioned testing centres. The age range for the participants was 18-65 years old. Demographic information collected included race, gender, marital status, employment, and educational background. The participants voluntarily participated in the study after they were approached and invited by the researcher on site, or after being informed a clinic staff member to participate in the study. Informed consent was obtained from all participants. With the help of staff members, as aforementioned, all patients attending the clinics were invited to participate in the study. However, not all of them agreed to take part in the study. Out of the 479 who were approached, 40 refused to participate.

3.3.1. The inclusion criteria included:

(i) Participants who were 18 years and older and who sought HIV testing

(ii) HIV test seekers who could understand English and/or Afrikaans, however, an interpreter was on standby for participants who understood but could not express themselves in both languages

3.3.2. Whilst the exclusion criteria consisted of*:*

Participants who had already received an HIV test prior to data collection days, as well as individuals who refused to give consent.

3.4. Measures

Data for this study was collected using both a structured interview – Structured Clinical Interview for the DSM as a gold standard determine PTSD caseness – and a self-report questionnaire - the Posttraumatic Stress Disorder Symptom Scale- Self-report version to assess the presence of PTSD symptoms. These measures are discussed in more detailed in the following section.

3.4.1. Description of Measures.

3.4.1.1. Diagnosis of PTSD as assessed by a structured interview.

Structured Clinical Interview for the DSM (SCID). The diagnostic interview used in the present study was a research version of the Structured Clinical Interview for the DSM. The SCID, as it is commonly known, is a fully structured diagnostic instrument for assessing *DSM* disorders (First, 2014) but can also be used as a psychotic screening tool. The SCID is organised into a number of diagnostic modules, and assesses mood disorders, substance use disorders, anxiety disorders, trauma-and-stressor related disorders, as well as a few others. Studies of the SCID have yielded good test-retest reliability (from 0.54 to 0.85) in clinical samples and a similar range of 0.49 to 0.85 in non-clinical samples (Spitzer et al., 1992; Williams et al., 1992). The test-retest reliability in non-clinical samples has been reported to range from 0.22 to 0.65 as compared to those in clinical samples. It is designed for use by

trained clinicians in order to clarify whether individuals meet the relevant diagnostic criteria for disorders (Silove et al., 2007).

Additionally, the SCID was revised by the research team to appropriately correspond with the new DSM-V. The draft version of the SCID for the DSM-V was obtained from the creator of the instrument, Michael First, a Professor of Clinical Psychiatry from Columbia University whose focus is on diagnostic criteria for mental disorders, and the scale items were compared and altered according to the draft version in order to ensure an exhaustive assessment based on the DSM-V. Unlike other structured interviews, the SCID can be used to identify comorbidity amongst various disorders (Briere, 2014), in which it becomes particularly important to investigate due to the fact that disorder comorbidity is common amongst PTSD patients. The PTSD module of the SCID has been used widely amongst trauma exposed populations, e.g. serious accidents, victims of sexual and physical assault, and among HIV-positive individuals (Tsao & Soto, 2009).

In the present study the PTSD module of the SCID was used as a gold standard to establish PTSD caseness and non-caseness. The module assesses whether an individual has or has not experienced a traumatic event at any point in their lives. Questions pertaining to these include asking whether they ever experienced a traumatic, life-threatening event. We modified the PTSD-SCID module by adding a list of traumatic events in order to prompt individuals who answered that they had experienced a traumatic event when they were asked. The module further asks for a brief description of the traumatic events experienced. It also asks about the experience of PTSD symptoms as outlined in the diagnostic criteria of the DSM. These include a history of exposure to a traumatic event that meets specific conditions and symptoms from each of the four symptom clusters: intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity (APA, 2013).

3.4.1.2. Symptoms of traumatisation.

Posttraumatic Symptom Scale, Self-Report version (PSS-SR). The PSS-SR consists of 17-item self-report scale that assesses the presence and severity of PTSD symptoms (Coffey, Gudmundsdottir, Beck, Palyo, & Miller, 2006; Mirzamani, Mohammadi, Mahmoudi-Gharaei, & Mirzamani, 2007; & Sin, Abdin, & Lee, 2012) as assessed by the DSM. The items are divided into three groups of symptoms namely: Re-experiencing, Avoidance and Hyper arousal. The severity of each item is rated on a 3-point Likert scale ranging from 0 (not at all or only one time) to 3 (almost always or five or more times per week) (Foa, Riggs, Dancu and Rothboam, 1993).The scale is reported to have good internal consistency (Cronbach's $\alpha = 0.97$) and high test-retest reliability coefficient of 0.95 (Coffey et al., 1998). The psychometric properties of the PSS were evaluated in a study among a group of treatment-seeking substance-used disorder patients. The scale was in accordance with the above-mentioned results demonstrating good internal consistency and high test-retest reliability (Mirzamani et al., 2007).

Further, in their study amongst rape and non-sexual violence victims Foa et al. (1993) demonstrated the scale satisfactory internal consistency with a total alpha of 0.91. The authors also reported a total test-retest reliability of 0.74, which proved to be satisfactory. The validity of the PSS-SR was examined amongst other trauma instruments such as the Impact of Events Scale and the State-Trait Anxiety Inventory, and the instrument demonstrated good concurrent validity, with correlations ranging from 0.52 to 0.81 (Foa et al., 1993).

To my knowledge, the PSS-SR has not yet been calibrated to provide standardised cut-off scores that can be generalised across the South African population. It has also not been validated amongst HIV test-seekers in the country, although it has been used among HIV-positive populations South Africa (Kagee & Seedat, 2014). Thus, this study aimed to use the instrument to assess the prevalence and severity PTSD symptoms amongst HIV test

seekers. The scale was used in conjunction with the SCID as a gold standard and criterion reference.

3.5. Preliminary Preparation for the Study

3.5.1. Training assessors to administer the SCID.

The training process started by the whole team viewing a series of videos, which acted as the basis of our training. The team consisted of the principal investigator, Professor Kagee, and the co-investigator, Dr Bantjes, whom both are trained clinicians and registered psychologists with the Health Professions Council of South Africa. Furthermore, two additional data collectors (Ms. Carla Nortje and Mrs Camilla Rankin) were studying towards a master's degree in psychology, and two are postgraduate students in psychology, who hold an honour's degree in psychology, whom both are also studying towards a Master's degree in psychology. Another data collector is a postgraduate student with a master's degree in psychology, studying towards a Ph.D.

The videos were used as a training instrument and guideline, provided by the creator of the SCID, Dr Michael First to demonstrate how to conduct a SCID interview. The interview schedule was then administered in numerous training sessions, under the supervision of a registered psychologist, Professor Ashraf Kagee, who has been trained in administering SCID interviews. The structured interview was then developed into an electronic version using Sun Surveys, through the help of a computer programmer. The team conducted a pilot study in which we observed the primary investigator complete two SCID interviews. The model interview was to test each data collector for competence in administering the SCID. Further, the interviews were conducted in Mfuleni, at the Living Hope HIV testing centre.

3.5.2. Pilot study.

The pilot study of the current research was the first practical application step of the newly modified "SCID V". The primary investigator's clinical experience complemented our reframing of the SCID to translate the instrument into an understandable face-to-face interview.

The process involved going to only one of the data collection sites (Living Hope Centre in Mfuleni) and administering the interview schedule to individuals who came in for testing. Interviews were conducted on approximately ten individuals presenting themselves for HIV testing. These interviews were conducted by the principal investigator and three other data collectors.

Furthermore, what we found was that the interview was impracticably long, and our intention was to shorten the interview schedule to a maximum of 45 minutes. However, the schedule could not be made any shorter than 60 minutes, thus it was kept at that length. Hence, in order to shorten the schedule a few changes were made to the SCID, including re-wording and/or taking out some items, and since the SCID is based on a number of modules, most of them were also taken out. Only six modules were included in the interview schedule namely: Major Depressive Episode, Persistent Depressive Disorder, Alcohol Use Disorder, Posttraumatic Stress Disorder, Generalised Anxiety Disorder, and Adjustment Disorder. However, the focus of my study was on the PTSD module.

An error we encountered during the process was assuming that all individuals would understand the language of the SCID. Thus, because our aim was to keep as close to the SCID phrasing as possible, we were unable to alter the language accordingly. However, further explanation and clarification was provided in cases where questions were not fully comprehended.

3.5.3. Algorithm

Given the complexity of the DSM criteria in reaching a diagnosis, we compared clinical diagnosis with an algorithm diagnosis. Professor Kidd from the Department of Statistical Consultation assisted in developing a written algorithm. The initial step involved the inclusion of scoring instructions for criterion as revised in the SCID manual. Included in the scoring instructions were the overall total numbers of criteria needed for a diagnosis. Thus, in writing the algorithm, we needed to examine the DSM in order to identify all criteria-related items that are crucial for a diagnosis. The aim in doing so was to guarantee that we interpret the DSM diagnostic criteria as accurately as possible during analysis.

Further, items on the SCID were scored as follows: “threshold” (3), “subthreshold” (2), and “false” (1). We used this scoring to identify items that would need to be coded as either positive (1) or negative (0) – for the purposes of writing this algorithm, cases which were identified as having scored ‘threshold” were selected as positive. In putting together the final algorithm, only the number of critical criteria-related items were included in the algorithm, which was then copied onto an excel spreadsheet, ready for use after exporting responses.

3.6. Data Collection

The study was conducted in the form of a survey, with data being gathered using a Lenovo tablet. Data collection was a combination of site outreach and walk-ins. Individuals who sought HIV testing at Living Hope (Mfuleni), Masincendane (Somerset West), Reliable Action (Eersteriver), Sizophila (Nomzamo, Strand), and Phambili (Broadlands, Strand) Wellness Centres were approached and asked by the researcher or a member of staff at the various clinics to take part in the study prior to testing. Once they registered at the clinic reception, participants were handed an information leaflet (Appendix E) and were invited to

meet with the researcher in a private room at the clinic, who explained the nature of the study to the participant and assessed eligibility for the study.

The researcher further explained that the interview would be recorded and that a grocery voucher would be available upon completion of the interview and a set of self-report questionnaires. Prior to the start of the interview, participants first signed a consent form (Appendix D). Once informed consent was obtained, individuals were asked to provide their contact details, the researcher then administered the diagnostic interview (Appendix A). Upon completion of the interview process, participants were provided with a R50 grocery voucher, and continued with HIV testing. The interviews lasted approximately sixty to ninety minutes. The following data was collected before participants underwent an HIV test:

(i) Data on demographic information such as race and gender, level of education, employment status, living circumstances and food security,

(ii) The SCID was used to determine the prevalence of PTSD.

The PTSD Symptom Scale self-report version (PSS-SR) was used to measure symptoms of PTSD (Appendix B).

3.7. Ethical Considerations

This study was part of a larger study, which had already obtained ethical approval from the Research Ethics Committee. Due to the nature of the study, as well as to ensure its quality and integrity, appropriate and rigorous training and preparation for conducting the research was done. In order to ensure the rights and anonymity of the research participants were protected, confidentiality was ensured at all times during and after the study. Thus, all information provided was kept confidential, and was only made available to the research team. Individuals who agreed to take part in the study were asked to sign an informed consent form and were informed that participation was voluntary.

Furthermore, no major risks were associated with the study. However, it was expected that participants would experience psychological distress as a result of participating in the study. For that reason, during the informed consent process, participants were informed that they were allowed to discontinue the interview at any point if they experienced any discomfort or distress. In addition, in the event that participants experienced psychological distress, they were provided with the contact details of various counselling centres where they could seek psychological assistance (Appendix F).

Also, there were no direct benefits to taking part in the study besides from a supermarket voucher which was given to participants who completed the full interview schedule, together with the questionnaire battery. Lastly, this study was conducted in accordance with the ethical guidelines of the Psychology Department of Stellenbosch University.

3.8. Analysis

The first step of data analysis involved exporting the data from the Stellenbosch University web-based electronic survey service (sun surveys) to an excel spreadsheet. Data included incomplete and open-ended responses, as well as responses with aliases (unique code identifiers for each response). The reason for exporting incomplete responses was so that the data collected was easily managed in an Excel spreadsheet, as well as to make sure that every response was exported successfully. Following this step, I cleaned up the data were cleaned up by removing all the test responses from the pilot study and training period as well as those of individuals who had either already had an HIV test less than three months prior to the interview and/or those whom an interpreter was used during the interview. It was decided to remove the latter due to concerns with regards to the accuracy of the question-interpretation to the participants. Once sorted and cleaned up, data for both PTSD and trauma exposure was then copied over to a separate spreadsheet with the algorithm (see 3.5.3) to

assess for caseness. This information was then transferred into a statistical package for statistical analysis.

All statistical analyses were performed using IBM SPSS Statistics 22.0, with α set at 0.05. The frequencies (f), percentages (%) and ranges were calculated for the variables relevant to the study. Contingency tables were analysed by making use of the classification variables, namely: PTSD and trauma exposure. Furthermore, data for these tables were divided into cells, reflecting an estimated prevalence of the above-mentioned variables as determined by the diagnostic interview.

ROC curve analysis was used to determine the sensitivity and specificity, as well as determine the optimal cut-off points of the PSS-SR. In addition, t-tests were used to calculate the difference in means between gender and race.

The 95% confidence interval for the prevalence rates for current PTSD and experience of a trauma in the sample was determined.

3.9. Summary of Methods

In this Chapter, the research design and methodology chosen for the study were described in detail and justified. A quantitative approach was used, which investigated prevalence rates of traumatic events and PTSD among the chosen sample. This was determined by using a structured interview administered by a trained data collector as well as a self-report measure, which were later analysed by descriptive statistics.

Chapter 4: Results

The current study sought to determine the prevalence of traumatic events, PTSD, and PTSD symptomatology among HIV test seekers. Descriptive statistical analysis was used to determine prevalence rates. The first set of analyses examined the prevalence of traumatic events and PTSD caseness across gender. The ROC analysis method was used as the second set of analysis in order to examine the accuracy of the self-report measure. Thus, this chapter comprises a presentation of the findings of the study.

4.1. Demographic characteristics of the sample

A total of 439 participants were recruited for the present study. The results showed that of the 439 individuals seeking an HIV test, 222 (50.6%) were female, and 217 (49.4%) were male. These results suggest that the proportion of individuals attending HIV testing centres was higher in women than in men.

The majority of the participants identified as Coloured 312 (71.1%), and 121 (27.6%) identified themselves as African. More than half of the sample was single (54.2%) and 142 (32.3%) of these participants were either married or living together. Furthermore, approximately 307 (69.9%) showed that they lived with other adults and children, and only 32 (7.3%) indicated that they lived alone.

A significant proportion of the sample 262 (59.7%) indicated that they attended high school but did not complete matric, and few 17 (3.9%) revealed they had been educated beyond tertiary level. Nearly half of the sample (47.6%) indicated they were unemployed, while only 87 (19.8%) reported that they were employed full-time. One hundred and seventy-seven (40.3%) indicated that their annual family income was between R10 001 and R40 000, while only 4 (0.9%) indicated their annual family income as beyond R240 000. The demographic characteristics of the present sample are shown in Table 4.1.

Table 4.1

Demographic characteristics of the sample

		N	*f*	(%)
Gender		439		
	Male		222	50.6
	Female		217	49.4
		439		
	African		121	27.6
	Coloured		312	71.1
	White		5	1.1
	Other		1	0.2
Relationship status		439		
	Divorced		24	5.5
	Married/living together		142	32.3
	Separated		26	6.9
	Single		238	54.2
	Widowed		9	2.1
Living situation		439		
	Live alone		32	7.3

	Live with children	26	5.9
	Live with other adult(s), no children	74	16.9
	Live with other adults and children	307	69.9
Level of education		439	
	Attended high school but did not complete matric	262	59.7
	Attended university, college or technikon but did not graduate	18	4.1
	Completed matric	105	23.9
	Completed primary school	19	4.3
	Graduated from university, college or technikon	17	3.9
	No formal education	18	4.1
Employment status		439	

	Disabled	4	0.9
	Employed full-time	87	19.8
	Employed part-time	90	20.5
	Homemaker	10	2.3
	Retired	12	2.7
	Student	27	6.2
	Unemployment	209	47.6
Annual family income		439	
	Less than R10 000	180	41.0
	R10 001-R40 000	177	40.3
	R40 001-R80 000	51	11.6
	R80 001-R110 000	16	3.6
	R110 001-R170 000	6	1.4
	R170 001-R240 000	5	1.1
	R240 001 and above	4	0.9

Note. All participants were HIV test-seekers. The number of each cell is provided, followed by the associated percentage of the sample.

4.2. Prevalence of traumatic events

The pie chart below shows the breakdown of the different trauma types by category. Respondents were asked to indicate whether they had previously been exposed to or experienced trauma.

Table 4.2 shows that 275 (62.6%) of the participants stated they had previously been exposed to a traumatic event. The figure below reports the prevalence of the different types of events experienced in the population. In reference to the most traumatic event, approximately 20% of the participants reported witnessing a traumatic event as the most experienced. Subsequent to witnessing a traumatic event was the unnatural death of a family member or friend (15.7%) followed by serious accident, fire or explosion (15.0%), non-sexual assault by someone you know (12.8%), and the murder of a family member or friend (8.9%). In contrast, the lowest reported events were ill health without medical care, combat situation, brainwashing, and lost or kidnapped at 0.5%. The prevalence of all traumatic events that were less than 5% were suppressed and grouped together as "other" and this represented 13.4% of the full sample. Of the women in the sample, 58.6% reported having been exposed to a traumatic event versus 66.8% of men within the sample.

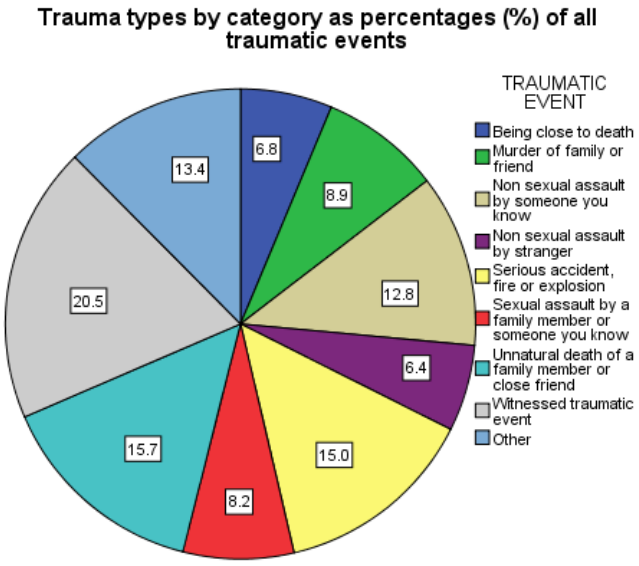

Figure 4.2. Trauma types by category as percentage(%) of all traumatic events

Table 4.2.

Cross-tabulation between trauma exposure and gender

			Exposure to trauma		
			No	Yes	Total
Gender	Female	Count	92	130	222
		% within Gender	41.4%	58.6%	100.0%
	Male	Count	72	145	217
		% within Gender	33.2%	66.8%	100.0%
Total		Count	164	275	439
		Total	37.4%	62.6%	100.0%

As can be seen in Table 4.3, relatively common events experienced by HIV test seekers included witnessing traumatic events, serious accidents, and the unnatural death of a family member or friend. While it was not expected that some events would be equally distributed across genders, for example torture, and being lost or kidnapped, Chi-square analyses were run to explore potential gender differences for each event. For this sample, the findings indicated that there was no significant difference in men compared to women who experienced events such non-sexual assault either by someone they knew or by a stranger, and the unnatural death of a close family member or friend. Therefore no relationship was found between gender and some commonly experienced traumatic events (see Table 4.3). Conversely, a significantly larger proportion of women compared to men experienced sexual

assault (e.g. rape, attempted rape, molestation, sexual abuse) by a close friend or family member, X^2 (1, N = 439) = 23.04, $p < 0.05$, while more men than women were involved in a serious accident, fire or explosion, X^2 (1, N = 439) = 5.01, $p < 0.05$. However, even though data indicated that more women than men experienced sexual assault by a stranger, results did not indicate a significant gender difference, X^2 (1, N = 439) = 3.22, p = 0.073. The same was true in the case of being close to death, where more men than women reported having been close to death but the results showed no significant difference between gender and the mentioned traumatic event, X^2 (1, N = 439) = 3.83, p = 0.050. Even so, a chi-square test indicated a significant association between gender and witnessing a traumatic event in general X^2 (1, N = 439) = 10.21, $p < 0.05$, (see Table 4.3).

Table 4.3.

Differences in prevalence of traumatic events among male and female participants

Event	Men (%)	Female (%)	X^2 (1, N=439)
Non sexual assault by someone you know	15.2	10.4	.128
Serious accident, fire or explosion	18.9	11.3	.025
Sexual assault by family member or someone you know	1.8	14.4	.000
Non sexual assault by stranger	8.3	4.5	.104
Sexual assault by stranger	1.8	5.0	.073

Imprisonment	4.1	2.3	.259
Lack of food/water	1.8	2.3	.762
Ill health without medical care	0.5	0.5	.987
Combat situation	0.9	0.0	.152
Lack of shelter	0.9	0.9	.982
Lost or kidnapped	0.5	0.5	.987
Unnatural death of family member of close friend	18.9	12.6	.071
Murder of family or friend	11.5	6.3	.055
Being close to death	9.2	4.5	.050
Forced isolation from others	0.9	0.9	.982
Torture	0.9	0.9	.982
Brainwashing	0.5	0.5	.987
Witnessed a traumatic event	26.7	14.4	.001

4.3. Trauma and PTSD

Furthermore, a cross-tabulation was performed in order to determine whether people who have been exposed to traumatic events would meet criteria for PTSD caseness and this information has been presented in Table 4.4. Given the general assumption that those exposed to adverse events are likely to develop PTSD or meet diagnostic criteria for the disorder, it was found that there were more individuals who experienced a traumatic event

but did not have PTSD (*N* = 254) than did individuals who had both experienced adverse events and met criteria for the disorder (*N* = 21); therefore, there was a significant difference between those who experienced a traumatic event, than those who met the criteria for PTSD (see Table 4.4).

Table 4.4.

Trauma exposure and PTSD

			PTSD		
			No	Yes	Total
Exposure to trauma	No	Count	164	0	164
		% Exposure within PTSD	39.2%	0.0%	37.4%
	Yes	Count	254	21	275
		% Exposure within PTSD	60.8%	100.00%	62.6%
Total		Count	418	21	439
		% of Total	95.2%	4.8%	100.0%

4.4. Diagnosis of PTSD as assessed by a structured interview

Using the SCID as a diagnostic tool for PTSD from a sample of 439 participants, only 21 (4.8%) fulfilled DSM-V criteria for current PTSD. Of the 16 who met criteria for PTSD caseness, 12 participants (5.4%) were female and 9 participants (4.1%) male. Thus, there

were no significant gender differences across both groups regarding positive PTSD caseness. These results are illustrated in Table 4.5.

Table 4.5.

Cross-tabulation between PTSD and Gender

			PTSD		
			Yes	No	Total
Gender	Female	Count	210	12	222
		% within Gender	94.6%	5.4%	100.0%
	Male	Count	208	9	217
		%Total	95.9%	4.1%	100.0%
Total		Count	418	21	439
		%Total	95.2%	4.8%	100.0%

4.5. Symptoms of PTSD

The study participants showed elevated scores for particular PTSD-related symptoms. Table 4.6 shows the number of the sample endorsed on each item. It appeared that participants reported experiencing more of the symptoms within the avoidance and numbness symptom cluster (77.5%), as compared to symptoms within the hyper-arousal (55.3%) and re-experiencing subscales (31.8%).

The PSS-SR has been extensively used in studies for PTSD and has shown good

reliability in various studies. In the present study, a total of 439 participants completed the PSS-SR, and comparison between the SCID and the PSS-SR indicated that 18.9% of the participants were correctly classified by the PSS-SR. The scale consists of three subscales: re-experiencing, avoidance and hyperarousal subscales. The re-experiencing subscale consisted of 5 items ($\alpha = 0.87$), the avoidance subscale consisted of 7 items ($\alpha = 0.88$), and the hyperarousal subscale consisted of 5 items ($\alpha = 0.89$). Overall, the PSS-SR was found to be highly reliable (17 items; $\alpha = 0.95$) in our sample.

Figure 4.3 presents an overview of the proportion of individuals in the sample who scored within the mild, moderate and severe range for symptom severity. A large percent of the sample (60.5%) scored within the mild and moderate range, whereas only 26% ranged between moderate and severe. Nearly 16% ranged within the clinical range for severe PTSD symptoms.

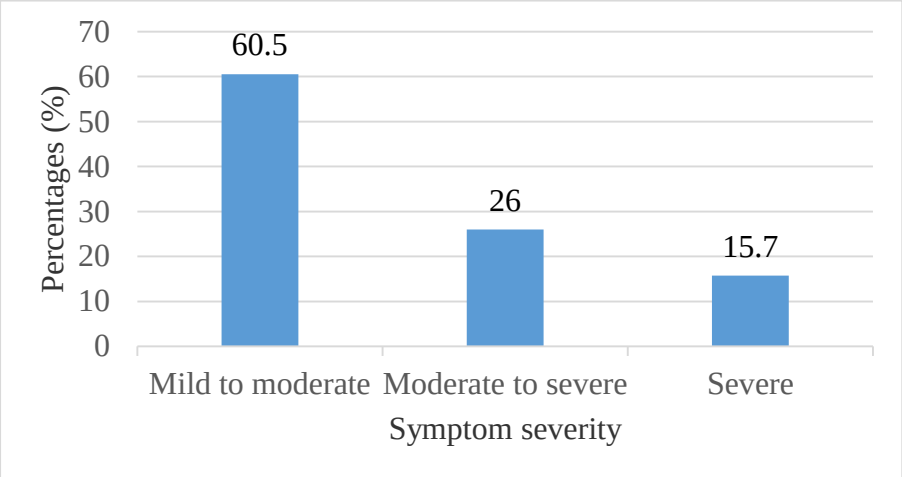

Figure 4.3. Percentages of self-reported PTSD Symptoms

Table 4.6.

Proportion of the sample endorsing items on PSS-SR

Item no.	*Item name*	*Not at all*	*Once per week or less/ a little bit/ once in a while*	*2 to 4 times per week/ somewhat/ half the time*	*3 to 5 or more times per week/ very much/ almost always*
1	Having upsetting thought or images about the traumatic event that come into your head when you didn't want them to	63.1.	22.8	8.9	5.2
2	Having bad dreams or nightmares about the traumatic event	67.9	19.8	6.2	6.2
3	Reliving the traumatic event (acting as if it were happening again)	68.6	19.1	8.4	3.9
4	Feeling emotionally upset when you are	48.7	31.0	10.0	10.3

	reminded of the traumatic event				
5	Experiencing physical reactions when reminded of the traumatic event (sweating, increased heart rate)	62.6	20.3	11.2	5.9
6	Trying not to think or talk about the traumatic event	58.5	20.0	8.4	13.0
7	Trying to avoid activities or people that remind you of the traumatic event	54.7	17.3	10.3	17.8
8	Not being able to remember an important part of the traumatic event	73.6	14.6	6.2	5.7
9	Having much less interest or participating much less often in important activities	65.4	18.0	9.3	7.1
10	Feeling distant or cut off from the	59.5	18.9	11.6	10.0

	people around you				
11	Feeling emotionally numb (unable to cry or have loving feelings)	63.6	18.0	9.6	8.9
12	Feeling as if your future hopes or plans will not come true	55.1	20.0	9.8	15.0
13	Having trouble falling or staying asleep	56.3	19.8	9.8	14.1
14	Feeling irritable or having fits of anger	65.1	16.9	8.0	10.0
15	Having trouble concentrating	58.8	21.9	8.7	10.7
16	Being overly alert	56.3	19.6	12.3	11.8
17	Being jumpy or easily startled	64.5	15.7	11.2	8.7

4.6. Performance of the PSS-SR as a screening measure

Analysis of the ROC curve (*Figure 4.4*) presents an overview of the PSS-SR scale's ability to discriminate between PTSD caseness and non-casesness when the SCID PTSD diagnosis is used as a gold standard. The AUC was determined to be 0.86 (95% CI: 0.81-0.90), suggesting good diagnostic accuracy of the PSS-SR in identifying PTSD positive cases.

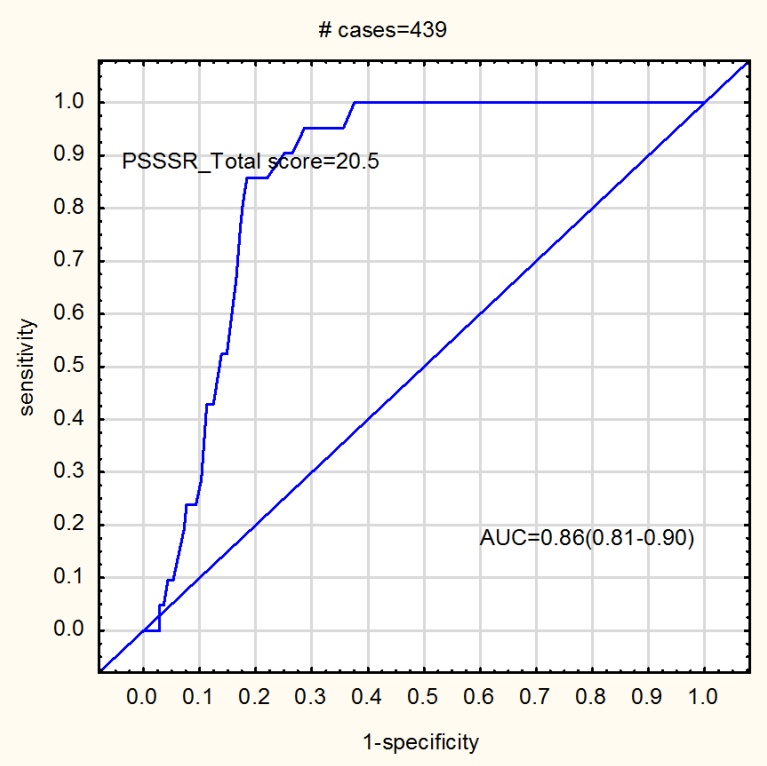

Figure 4.4. Receiver operating characteristic curves (ROC) for PSS-SR using the SCID as a gold standard (area under the curve = 0.86, 95% CI: 0.81-0.90).

Table 4.7 shows the cut-off scores, sensitivity and specificity for the PSS-SR. The score representing the optimal cut-off point for the PSS-SR was 20.5, as can be seen in Table 4.7. Using the total cut-off score of 20.5, the PSS-SR was able to classify 18 of the 21 current PTSD-positive participants correctly for a sensitivity rate of 86%, a specificity rate of 82%, and an overall correct classification of 85%. The cut-off point of 20.5 was selected so as to maximise sensitivity in order to capture the highest number of PTSD-positive cases without unduly compromising specificity. The negative predictive value (NPV), which refers to the number of cases correctly classified as not

having PTSD, was 99.1%, while, the positive predictive value (PPV), which refers to the number of cases correctly classified as having PTSD, was estimated at 18.9%. Thus, it can be concluded that the low PPV was as a result of the small number of individuals who met PTSD caseness.

Table 4.7.

Cut-off scores, sensitivity and specificity for the PSS-SR.

Cut-off	Sensitivity	Specificity
10.50	1.00	0.62
11.50	0.95	0.64
12.50	0.95	0.66
13.50	0.95	.69
14.50	0.95	0.70
15.50	0.95	0.71
16.50	0.90	0.73
17.50	0.90	0.75
18.50	0.86	0.78
19.50	0.86	0.80
20.50*	0.86	0.82
21.50	0.81	0.82
22.50	0.76	0.83

Note. *Maximum sensitivity and specificity.

Table 4.8.

Percentage of sample who met the criteria for PTSD (n=24) and who scored above and below the clinical cut-off of 20.5 on PSS-SR

	N	*%*
> 20.5	21	86
< 20.5	3	14

Table 4.8 shows that out of the 21 individuals who were diagnosed as having PTSD, 18 (86%) scored above the clinical cut-off point of 20.5 and only 3 (14%) scored below the optimal cut-off point. A comparison of the two results suggests that a small proportion of those who were correctly identified as having the disorder were below threshold for PTSD.

4.7. Summary of findings

The results in this chapter showed the estimated rates of traumatic events and PTSD, while the self-report version of the PTSD Symptom Scale revealed the presence of PTSD symptoms within the study population. Furthermore, a ROC curve analysis illustrated relevant information about the PSS-SR as a screening tool for PTSD. The scale demonstrated highly satisfactory reliability, as well as yielded acceptable sensitivity and specificity coordinates for determining PTSD-positive cases. The next chapter, therefore, is a presentation of the above findings in light of the literature.

Chapter 5: Discussion and Conclusion

This chapter is a presentation of the discussion findings outlined in chapter four. These findings will be discussed in light of existing scholarly literature. Lastly, this chapter concludes with a summary of the major findings, as well as present viewpoints on the limitations and implications of the current study. Recommendations for future research are also presented in this chapter.

The first question of the study sought to determine the prevalence of traumatic events and PTSD, as well as assess the presence of PTSD symptoms in a population of people seeking HIV testing. Prior studies that have been published focused on the disorder within a population of people already living with HIV, thus, to my knowledge this study is the first in South Africa to focus on PTSD amongst HIV test seekers, which helps to eliminate the suggestion that PTSD and/or issues associated with the disorder are as a result of an HIV diagnosis. Moreover, the application of the quantitative methods used to gather data presented a unique platform on which to fill in the gaps in the lack of literature in this area, as well as expanding on HIV services to include mental health services. Also, with the increase in HIV-related PTSD, the study presents the opportunity to not just focus on the gaps in literature but also on expanding HIV services to include mental health services,

In reviewing the literature, it was found that both the SCID and PTSD Symptom Scale Self-Report (PSS-SR) were valid and reliable measures for PTSD. Therefore, the second question of the study was to determine an optimal cut-off point on the self-report measure using the SCID as a gold standard. In doing so, this helped in correctly identifying positive PTSD cases, as well as those individuals who did not fulfil criteria for current PTSD but had PTSD symptoms.

The results indicated that the PSS-SR has good reliability with an alpha coefficient of 0.95. Thus, the scale demonstrated excellent internal consistency.

5.1. Prevalence of Traumatic Events

This study resulted in the following findings among a sample of HIV test-seekers. There was a relatively high prevalence of trauma exposure among individuals who sought an HIV test.

The results are interpreted bearing in mind that traumatic events, in the context of South Africa oftentimes tend to refer to cases associated with violence and crime, given the country's violent history. Although just over 20 years post-apartheid, South Africa still has a high rate of interpersonal violence. Studies within the general population argue that it is common for people to experience at least one traumatic event in their lifetime. Firstly, the reported rate of exposure to trauma in this sample is 62.6%, which is similar to both Northern Ireland and Japan with rates of approximately 60% (Kawakami, Tsuchya, Umeda, Koenen & Kessler, 2004; Ferry, Bunting, Murphy, O'Neill, Stein & Koenen, 2013). In comparison, the South African Stress and Health (SASH) study reported a lifetime trauma exposure of 73.8% (Williams et al., 2007; Atwoli et al., 2013).

Furthermore, the findings of the current study are consistent with those of Kessler et al. (1995) who presented a trauma exposure rate of 60% in the general population as well as those found in US studies, but lower than rates reported in the SASH study (Williams et al., 2007). These differences are likely to be attributed to social and political contexts unique to each country. For instance, state-orchestrated violence and exposure to trauma in South Africa may explain the high rates of exposure to trauma, whereas trauma exposure in the US can be linked to the country's high rates of violent crime. Northern Ireland's history of civil war, on the other hand, may explain in large part the high rates of traumatic events exposure.

Furthermore, police statistics (Crime Information Analysis Centre – CIAC, 1997) indicate that the Western Cape has one of the highest homicide and assault rates in South Africa. The high rates of traumatic events within this study's context, as well as that of South Africa in general can be associated with the issue of social inequality seen across many South African communities. As it is often stated that impoverished people bear the brunt of violence more than those who are not

poor. However, caution should be taken not to presume that high levels of poverty always result in increased levels of violent crime and related traumatic events in communities. Nevertheless, many South Africans are still exposed to high levels of various forms of violent crime or events (e.g. rape, hijacking, murder, assault, interpersonal violence, etc.).

Secondly, contrary to expectations that categories of physical and sexual assault would constitute the most adverse events individuals experienced or were exposed to, the results showed that witnessing events and the unexpected death of a loved one were reported by the highest proportion of individuals in the study sample. This was followed by serious accident, fire or explosion and non-sexual assault by someone known to the victim. The higher prevalence rates of witnessing a traumatic event and experiencing the unexpected death of a loved one accounted for just over 30% of individuals exposed to trauma. These results were similar to the findings of the SASH study, in which seeing an atrocity and the unexpected death of a loved one were expressed as events experienced most by their respondents (Atwoli et al., 2013). This was a rather novel finding as other studies proposed that interpersonal violence is more common and prevalent in South Africa (Jewkes, Penn-Kekana, Levin, Ratsaka & Schreiber, 2001; Doolan, Ehrlich & Myer, 2007). It is therefore likely that these findings presented are due to the criminal violence that often occurs in many South African communities.

In the Western Cape in particular, exposure to or the experience of a traumatic event is very often as a result of criminal activity and conflicts between in- or out-group gang members (Hamber & Lewis, 1997). Thus, it is no surprise that many of the individuals in the study population reported to having either been exposed to and witnessed a traumatic event, or physically experienced a trauma. The negative effects of witnessing traumatic events can greatly impact the individual's well-being, as well as that of the family and community. Additionally, where directly experiencing a traumatic event can leave an individual greatly traumatised and distressed, witnessing atrocities may effect memory and evoke feelings of helplessness that may be important in PTSD aetiology (Atwoli et al., 2013). Thus, studies that focus on direct experience of adverse events are likely to

underestimate the impact of witnessing experiences, particularly within the South African context where the focus is on victims of direct exposure to a particular event rather than on individuals who experience trauma indirectly.

Lastly, men's exposure to trauma was non-significantly higher than that of women. These results are consistent with those of the Detroit Area Survey of Trauma (DAST) and suggest that men were more likely to experience adverse trauma than women. As stated by Breslau (1998), a possible explanation might be that, males experience assaultive violence more frequently than females than it is generally assumed. Assaultive violence as a category is comprised of rape, sexual assault other than rape, military combat, being held captive, being tortured or kidnapped, being shot or stabbed, being mugged, held-up, or threatened with weapons, and being badly beaten up.

While females experience fewer assaultive events than males, they do experience significantly higher rates of one type of assaultive violence, namely rape and sexual assault. However, this does mean that the rate of rape and sexual assault between both groups accounts for the rates of PTSD; this will be discussed in more detail in the section below. Traumatic events are commonly experienced in many communities, but most events do not lead to a PTSD diagnosis.

5.2. Prevalence of PTSD

As was pointed out in Chapter two of this paper, PTSD prevalence has been well documented among individuals who have been exposed to specific types of trauma (e.g. physical and sexual assault, serious accidents and combat). An important finding in this study was the current PTSD prevalence of 4.4% within the full sample which represented lower rates than those found in European (7.4%) and American studies (6.8%) (Frans et al., 2005). Similarly, the findings of the current study were consistent with those of Resnick et al. (1993) who found an overall prevalence of 4.6% for current PTSD.

As reported by Frans et al.(2005), 7.4% of the women and 3.6% of the men in their sample met diagnostic criteria for PTSD, showing a significant difference between genders. However, this current study did not find any significant differences between men and women's diagnosis of PTSD, with 4.3% of the women and 4.5% of the men meeting diagnostic criteria for PTSD. However, the findings of the current study do not support the previous research on gender differences that women are more likely than men to be diagnosed with PTSD, even though men are at greater risk of being exposed to a traumatic event (Carey et al., 2003). It is difficult to explain this result, but it might be related to the unfavourable situations in which our sample lives that minimise the gender differences as identified in other studies.

Though the overall prevalence of SCID defined prevalence was 4.4%, this estimate proved to be higher when compared to estimates in one of the most well-known PTSD-related studies conducted in South Africa. An analysis of the particular study (SASH study) found that the lifetime and 12-month prevalence rates of PTSD were 2.3% and 0.7% respectively, while the conditional prevalence of PTSD after trauma exposure was 3.5% (Atwoli et al., 2013). This inconsistency may be due to the contextual meaning and interpretation of definition of a trauma in the different regions where studies were conducted. It is worth noting that this study did not assess PTSD based on individual traumatic events. It would therefore be interesting to investigate the association between these aspects among the study population, and use these findings to compare with other studies.

While a traumatic event is necessary to make a diagnosis of PTSD, not everyone who experiences a traumatic event develops PTSD. The experience of the trauma is a necessary but not sufficient condition for a diagnosis. Also, in assessing the prevalence of trauma, questions were asked in relation to the worst trauma experienced. Focusing on the worst trauma may have overestimated the risk of PTSD, narrowing the events that could possibly lead to a diagnosis of PTSD. Another possible explanation for this is that low PTSD caseness may reflect the likelihood that that isolated trauma symptoms are endemic to many South African communities. However, they do not necessarily have any clinical significant impact on functioning. That is, people living in violent communities may have just adapted to living with these symptoms, and possibly have to be numb and avoidant in order to function optimally in such contexts. In general, therefore, it seems that many South Africans living in violent communities have adapted to living with these symptoms and become avoidant, thereby reducing the chance of getting a PTSD diagnosis.

These low rates not discredit the importance and introduction of mental health resources and trauma services as is recommended in the sections to follow, especially in this population, as the disorder is not the sole response to traumatic events. Emotional responses and other psychological issues (e.g. grief in the case of the death of a family member or close friend) may be elicited subsequent to trauma exposure. Also, especially in our study community, distressing social circumstances oftentimes make it challenging for individuals to focus on dealing with past psychological traumas.

It is likely that there exists, of those who were classified as having PTSD, individuals who battle to deal with past psychological traumas. As a result, long-term traumatisation may give rise to a number of other current difficulties such as, difficulty forming relationships, substances abuse, occupational problems, etc. (Hamber & Lewis, 1997).

5.3. Prevalence of High Scores on Self-report Measures

The study also examined PTSD symptomatology among a sample of patients seeking HIV testing at a public testing centre in the Western Cape region of South Africa. The results may be discussed in terms of the proportion of the sample scoring in the elevated or clinical range on the PSS-SR. To summarise the findings, more than half the of the participants scored in the clinically significant range on the PSS-SR and close to thirty percent of the participants scored in and above the moderately distressed range on the PSS-SR. The results appear to be in keeping with those of a few studies conducted in Iran (Mirzamani et al., 2007) and the US (Coffey et al, 1998).

If the data from this study are to be generalised to the population in the Western Cape, it would appear that a significant proportion of the people seeking HIV testing may be experiencing elevated symptoms of posttraumatic stress disorder. This finding brings into focus the need for treatment for these individuals whose quality of life, relationships, adherence to medical treatment and likelihood of depression may be affected by psychological distress and anxiety. These results indicate the need for health professionals in community clinics, more so nursing staff rather than medical professionals, to be encouraged to attend to the evidence of symptoms of PTSD among their patients. Further, these findings have implications for mental health care at the primary level.

It has traditionally been assumed that primary health care nurses are trained to provide care for patients with mental health disorders. Yet, in the context of large patient numbers, nursing staff experience overwork and burnout, and a general lack of infrastructural and other resources in primary care clinics; it is unlikely that patients receive the care they need. Thus, alternative mental health treatment facilities for individuals who attend public clinics in South Africa need to be evaluated.

5.4 Performance of the Self-report Measure with regards to the Gold Standard

The current study provides evidence for the reliability of the PSS-SR as a screening tool for identifying PTSD caseness in persons seeking HIV testing. The scale, together with its subscales, showed excellent internal consistencies. The Cronbach's alpha for the instrument was 0.95. Also, the Cronbach's alpha coefficients for all three subscales were 0.87, 0.88 and 0.89, which validated the satisfactory internal consistency levels. These results match those observed in earlier studies, one conducted among an Iranian sample (Mirzamani et al., 2007) affected by natural disasters in Iran (Cronbach's alpha = 0.84), and another among psychiatric patients (Sin et al., 2012), which demonstrated a Cronbach's alpha of 0.88. The latter study also showed overall good internal consistencies for the three subscales, re-experiencing (Cronbach's alpha = 0.75), avoidance (Cronbach's alpha = 0.70), and arousal (Cronbach's alpha = 0.72).

The PSS-SR also appeared to have good screening properties for identifying PTSD cases in this sample with an area under the curve (AUC) of 0.86. This means that the instrument has an 86% chance of correctly classifying individuals without the disorder from those who do based on the ordering of the scale's rating scores from the sample. These findings imply that the cut-off score of 20.5 is a convenient value, which in this sample yields optimal value for both sensitivity and specificity for screening purposes.

Furthermore, using the cut-off score of 20.5, the PPV was 18.9% and the NPV was 99.1%. The decision on the cut-off score does not differentiate between sensitivity and specificity, as each are both of equal importance. In his work, Youden (1950) agreed that these two properties appropriate criterion for the success if a test. Important considerations should be taken into account when determining appropriate cut-off scores such as the presence and effect of false positives and false negatives, as well as the advantages and disadvantages of using a screening tool versus a diagnostic interview.

Nevertheless, one of the strengths of this study was the use of the SCID to identify PTSD by trained interviewers, who were oblivious to PSS-SR scores. This limited interviewer bias greatly.

To my knowledge, this is the first study to validate the use of the PSS-SR in distinguishing PTSD cases among persons seeking HIV testing.

5.5 Contributions of this study

Firstly, the current study is the only study (to my knowledge) that has questioned the prevalence of PTSD among HIV test seekers and applied the *Ecological Systems Theory* to better understand the phenomena within a particular region in a South African context. Previous has research has focussed on PTSD in relation to HIV, its treatment and prevention.
Secondly, the current study contributed to the body of literature concerned with understanding the PTSD in relation to trauma exposure. The study demonstrated which traumas are likely to contribute to the presence of PTSD symptomatology, as well as PTSD caseness. These findings have implications for planning interventions.

Third, given that both instruments used in the study proved to be excellent screening tools for PTSD, the inclusion of the diagnostic interview, together with the self-report questionnaire provided a unique opportunity for assessing and determining PTSD caseness in the study population, as well as understanding the nature of the disorder within the particular community.

Lastly, a salient contribution of the current study is a theoretical understanding of the potential development of PTSD due to the elevated risk of being exposed to traumatic events, especially within the South African context.

5.6 Implications for policy, clinical practice and future research

The findings of this study have a number of important implications for policy, practice and future practice. These implications are outline in the following paragraphs. First, PTSD, in response to a traumatic event, is a serious and unavoidable mental health burden and public health concern, particularly within the South African public health system where mental health is under-funded and poorly resourced. This implies that limited resources make it difficult to reach people who are in need of mental health care. A reasonable approach to tackle this issue could be for the government

to ensure that the necessary resources are fairly distributed across the different health sectors. Moreover, more governmental support geared towards providing appropriate mental health frameworks and monitoring systems should be made available to ensure that quality mental health services are accessible and incorporated at all levels of the health sector.

An implication of these findings is that both screening and assessment, as well as referrals for PTSD treatment should be taken into account in all HIV settings, including testing centres, and other health care settings. Specific PTSD symptoms such as "feeling detached from others and emotionally numb", "intrusive, upsetting memories of the event" or "having a sense of a limited future" are important indicators of PTSD for health care professionals working the study population at question. This information can be used to develop targeted interventions aimed at providing effective mental health training of health care workers in the HIV community in informing which treatment plans would be suitable for such individuals. Together with assessments and referrals for treatment, information should be made available to clinic staff and other health care professionals about alternative treatment options such group therapy and psychopharmacology for individuals identified as having PTSD.

Another important practical implication is that individuals who are unemployed or lack any formal education may be at risk for PTSD could predispose them to feeling hopeless about their future. A key policy priority should therefore be to reduce unemployment in such communities and creating education opportunities that could in turn give them hope for the future.

Other important implications can be drawn from the Bronfenbrenner Ecological Model (1994) which states that both dispositional and environmental factors play a role in the well-being of an individual. This implies that certain support systems should be adopted that reduce tendencies of exposure to traumatic events, particularly within the community under question. Other types of support systems could include: 1) developing laws guiding crime or violent behaviour and, 2) providing community-based rehabilitation programmes for perpetrators of crime in order to reduce

the likelihood of criminal activity in the particular community. Police presence may also need to be enforced in order to create a safe environment for all individuals.

Lastly, the gender differences with exposure to traumatic events have implications for research and practice. One implication for research is that there is a need for further theoretical explanations on the observed differences in similar settings. In addition, treatment plans aimed at improving mental health and coping strategies must be implemented with respect to possible gender differences.

5.7 Limitations of the study

Although contributing hugely to research on PTSD within a particular South African context, a number of caveats need to be noted regarding the present study. These limitations and recommendations are outlined in the paragraphs to follow. The most important limitation lies in the fact that the study used a cross-sectional design which means that data were collected at one time point only. One major drawback of this approach is that it suffers from a progressive limitation, in that PTSD may fluctuate over time in response to external influences. A further study could assess the long-term effects of the construct under study.

A second limitation was that of sampling (for reasons under the researcher's control) which pertained to the sample not being fully representative of the initial target sample. This is due to participants showing interest in the study because of grocery vouchers provided upon completion of the interview schedule. It is also worth noting that as a result of limited access to our desired sample, participants outside the initial target sample were also represented in the study. Furthermore, although the sample size was relatively large, caution must be applied as these findings might not be generalizable to the greater South African population due to its geographical restriction to one region of the country, which is the Western Cape. A possible area of future research would be a cross-national replica of the current study across other metropolitan cities within South Africa.

Thirdly, it is likely that those who were already psychologically and emotionally distressed prior to participation in the study may have believed that partaking in the study would benefit them, resulting in possible overestimation of the prevalence of PTSD. This limitation means that study findings need to be interpreted cautiously.

Fourthly, rates of traumatic events may be underreported, particularly sexual traumas. Though rates for women were similar to previous studies, the rate for men was tremendously low. A possible explanation for underreporting could be that men who experienced sexual violence may not label it as such or may be disinclined to report out of fear of stigmatisation.

Another limitation for the study pertains to retrospective reporting of traumatic events, which may have likely affected this study's estimated prevalence rates. This can be attributed to reasons: 1) impaired memory recall of traumas that occurred over a long period of time, and/or 2) it is possible that individuals with heightened stress responses remembered more traumatic events. In addition, because this study did not assess PTSD based on individual trauma types, it is suggested that the association of these factors is investigated in future studies.

Sixth, the study consisted predominantly of IsiXhosa and Afrikaans home language speakers, which may have influenced individual responses to the interview schedule. This poses as a limitation due to questions being misinterpreted or misunderstood. Thus, we cannot be sure that responses were fully understood.

Seventh, the use of quantitative methods did not allow the researcher to fully explore he negative impact of PTSD on the social functioning and day-to-day activities on the participants. Perhaps the most serious disadvantage of this method is that it quantifies individual experiences. A possible area of future research would be to assume qualitative method in efforts to gain a greater understanding of individual experiences and perceived notions of exposure to trauma and traumatic events. It would be interesting to compare experiences of individuals within the same setting.

Although the PSS-SR has successfully demonstrated that it is an effective screening tool for PTSD, there are a few concerns worth noting: 1) the scale does not feature formal items that would

help identify faking, thus making it liable to malingering, and 2) the scale does not incorporate does not have any reverse-scored items, which may lead to over-reporting of symptoms due to the tendency to answer "Yes". Including reverse-scored items in the scale may counter chances for malingering.

Finally, caution should be made to not confuse this study's assessment of PTSD caseness with a PTSD diagnosis.

5.8 Overall conclusions

Overall, the findings of the study revealed that a significant proportion of individuals who sought HIV testing were at one point in their lives exposed to one or more traumatic events. However, given the relatively low prevalence of PTSD among such individuals, exposure to trauma did not necessarily account for PTSD caseness. Another salient finding of this study was that even though individuals did not meet criteria for PTSD, the majority of them showed elevated PTSD symptoms within the mild to moderate range.

These results suggest that the prevalence of PTSD, compared to that of exposure to trauma, in persons seeking HIV testing is not alarmingly high. Even though it may appear that individuals are not at high risk of developing the disorder, it may still be worthwhile for local governments to introduce proper care and treatment services for mental health across various HIV testing centres.

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Appendices

Appendix A: Structured Clinical Interview

Structured Clinical Interview for Posttraumatic Stress Disorder

SCID: Exposure to actual or threatened death

1.) **Have you ever been exposed to actual or threatened death, serious injury, or sexual violence? IF NO: What about feeling empty or hopeless most of the day nearly every day?**
2.) **Did any such events happen to you directly?**
3.) **Did you hear about or learn about the event(s) happening to a close family member or close friend?**
4.) **As part of your job, are you or have you been repeatedly exposed to upsetting details of traumatic events?**

SCID: Traumatic Events List

- ☐ **Non sexual assault by someone you know (e.g., being mugged, physically attacked, shot, stabbed, or held at gunpoint)**
- ☐ **Serious accident, fire or explosion**
- ☐ **Sexual assault by a family member or someone you know (e.g., rape or attempted rape).**
- ☐ **Non sexual assault by stranger**
- ☐ **Sexual assault by a stranger (e.g., rape/ attempted rape)**
- ☐ **Imprisonment**
- ☐ **Lack of food/ water**
- ☐ **Ill health without medical care**
- ☐ **Combat situation**
- ☐ **Lack of shelter**
- ☐ **Lost or kidnapped**
- ☐ **Unnatural death of family or friend**
- ☐ **Murder of family or friend**
- ☐ **Being close to death**

☐ **Forced isolation from others**

☐ **Torture**

☐ **Brainwashing**

☐ **Witnessed a traumatic event**

SCID: Brief Description of Event

1.) Were you afraid of dying or being seriously hurt? Were you seriously hurt?)

***Note to interviewer: It is important to obtain a thorough account of the traumatic experience**.

Date of Event 1 (Month/Year)

***Age at Time of Event 1**

Brief description of Event 2

***Date of Event 2 (Month/ Year) 2**

***Age at Time of Event 2**

Brief description of Event 3

***Date of Event 3 (Month/ Year) 3**

***Age at Time of Event 3**

Brief description of Event 4

Brief description of Event 5

Brief description of Event 6

Brief description of Event 7

If more than one trauma was experienced, which one affected you the most? Why?

Note to interviewer:

It is important to obtain a thorough account of the participant's experience of the trauma.

SCID: Recurrent, involuntary and intrusive distressing memories of the traumatic event

1.) **Now I'd like to ask you a few questions about specific ways that (the trauma) may have affected you at any time since (the trauma), For example... since the trauma, have you had memories of (the trauma), including feelings, physical sensations, sounds, smells, or images, when you didn't expect to or want to?**
too much?

2.) **Has this also happened in the past month, since (ONE MONTH AGO)? If yes, how many times?**

SCID: Recurrent distressing dreams

1.) **Since the (TRAUMA),have you been having upsetting dreams that reminded you of (TRAUMA)? (Has this also happened in the past month? How many times?)**

SCID: Dissociative reactions

1.) ...what about having found yourself acting or feeling as if you were back in the situation? Have you had 'flashbacks' of (TRAUMA)? (Has this also happened in the past month? How many times?)

SCID: Intense or prolonged psychological distress

1.) ...have you had a strong emotional or physical reaction when something reminded you of (TRAUMA) such as seeing a person who resembles the person who attacked you? NOTE: IF DENIES EMOTIONAL REACTION OR PHYSICAL REACTION TO REMINDERS, CODE "1" FOR BOTH EMOTIONAL REACTION AND PHYSICAL REACTION. IF YES, what kind of reaction did you have? Did you get very upset or stay upset for a while, even after the reminder had gone away? (Has this also happened in the past month, since (ONE MONTH AGO)? How many times?)

SCID: Physiological Reactions

1.) IF ACKNOWLEDGES STRONG EMOTIONAL OR PHYSICAL REACTION: what

about having physical symptoms like breaking out n sweat, breathing heavily or irregularly, or feeling your heart pound or race when something reminded you of (TRAUMA)? How about feeling tense or shaky? (Has this also happened in the past month, since (ONE MONTH AGO)? How many times?)

SCID: Avoidance of distressing memories

1.) **...have you done things to avoid remembering or thinking about (TRAUMA) like keeping yourself busy, distracting yourself, or using drugs or alcohol to "numb" yourself or try to forget what happened? Since (TRAUMA), how long has this gone on? IF NO: how about doing things to avoid having feelings similar to those you had during (TRAUMA)? (Since (TRAUMA), how long has this gone on?) Has this also happened in the past month, since (ONE MONTH AGO)? How many times?)**

SCID: Avoidance of or efforts to avoid external reminders

1.) **...have there been things, places, or people that you have tried to avoid because it brought up upsetting memories, thoughts or feelings about (TRAUMA)? (Since (TRAUMA), how long has this gone on?) IF NO: How about avoiding certain activities, situations, or topics of conversation? (Since (TRAUMA), how long has this gone on?) Has this happened in the past month? How many times?**

SCID: Inability to remember an important aspect of the traumatic event(s) (typically due to dissociative amnesia and not to other factors such as head injury, alcohol, or drugs).

1.) **...have you been unable to remember some important part of what happened? IF YES: did you get a head injury during (TRAUMA)? Were you drinking a lot or were you taking any drugs at the time of (TRAUMA)? (Has this also happened in the past month, since (ONE MONTH AGO)? How many times?)**

SCID: Persistent and exaggerated negative beliefs or expectations about oneself, others, or the world (e.g., "I am bad," "No one can be trusted," "The world is completely dangerous," "My whole nervous system is permanently ruined").

1.) **...has there been a change in how you see other people think about yourself? (Like feeling you are "bad", or permanently damaged or "broken"? Since this started, have you felt this way most of the time?) IF NO: has there been a change in how you see other people or the way the world works? (Like the world is a completely dangerous place? Since this started, have you felt this way most of the time?)**

SCID: Persistent, distorted cognitions about the cause or consequences of the traumatic event(s) that lead the individual to blame himself/ herself or others.

1.) **...have you blamed yourself for the (TRAUMA) or how it affected your life? (Like feeling that (TRAUMA) was your fault or that you should have done something to prevent it? Like**

feeling that you should have gotten over it by now?) IF YES: Since this started, have you felt this way most of the time? IF NO: Have you blame someone else for (TRAUMA)? What did they have to do with (TRAUMA)?

SCID: Persistent negative emotional states (e.g., fear, horror, anger, guilt, or shame).

1.) **...have you had bad feelings much of the time, like feeling sad, angry, afraid, guilty, ashamed, "in shock"? IF YES: Is this different from the way you were before (TRAUMA)?**

SCID: Markedly diminished interest or participation in significant activities.

1.) **...have you been less interested in things that you were interested in before (TRAUMA), like spending time with family or friends, or reading books? IF NO LOSS OF INTEREST: Are you still doing as many activities as you used to?**

SCID: Feelings of detachment or estrangement from others.

1.) **...have you felt distant or disconnected from others or have you closed yourself off from other people?**

SCID: Persistent inability to experience positive emotions (e.g., inability to experience happiness, satisfaction, or loving feelings).

1.) **...have you been unable to experience good feelings, like feeling happy, joyful, satisfied, loving, or tender towards other people?**

2.) **IF YES: Is this different from the way yo were before (TRAUMA)?**

SCID: Irritable behaviour and angry outbursts (with little or no provocation) typically expressed as verbal or physical aggression toward people or objects

1.) **...have you lost control of your anger, so that you threatened or hurt someone or damaged something? (Was this over something little or even nothing at all?)**

SCID: Reckless or self-destructive behaviour

1.) **... have you done reckless things, like driving dangerously, or drinking or using drugs without caring about the consequences?**

SCID: Hypervigilance.

1.) **...have you noticed that you have been more watchful or on guard?**

SCID: Exaggerated startle response

1.) **...have you been jumpy or easily startled, like by sudden noises? (Is this a change from before the (TRAUMA)?)**

SCID: Problems with concentration

1.) **...have you had trouble concentrating? (Is this a change from before the (TRAUMA)?)**

SCID: Sleep disturbance (e.g., difficulty falling or staying asleep or restless sleep).

1.) **...have you had trouble sleeping? (Is this a change from before the (TRAUMA)?)**

2.) **...do your symptoms interfere with your ability to do your job/socialise with others?**

3.) **...are the symptoms you describe related to a substance you were taking or another medical condition?**

SCID: Duration of the disturbance (Criteria B, C, D, and E) is more than 1 month.

1.) About how long did these problems last for? Was it longer than 1 month?

SCID: The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning

1.) Do you feel like these problems negatively impact your relationships, work or other important areas of your life?

SCID: The disturbance is not attributable to the physiological effects of a substance (e.g., medication, alcohol) or another medical condition.

1.) **Do you think these problems are in any way related to a medical condition or substance use problem that you may have?**

2.) What substance did you use or what medical condition did you have?

Appendix B: PTSD Symptom Scale Self-Report

Below is a list of problems that people sometimes have after experiencing a traumatic event. Please rate on a scale from 0-3 how much or how often things have occurred to you in the last two weeks:

	0 = Not at all	**1 = Once per week or less/ a little bit/ one in a while**	**2 = 2 to 4 times per week/ somewhat/ half the time**	**3 = 3 to 5 or more times per week/ very much/ almost always**
1. Having upsetting thought or images about the traumatic event that come into your	0	1	2	3
2. Having bad dreams or nightmares about the traumatic event	0	1	2	3
3. Reliving the traumatic event (acting as if it were happening again)	0	1	2	3
4. Feeling emotionally upset when you are reminded of the traumatic event	0	1	2	3
5. Experiencing physical reactions when reminded of the traumatic event (sweating,	0	1	2	3
6. Trying not to think or talk about the traumatic event	0	1	2	3
7. Trying to avoid activities or people that remind you of the traumatic event	0	1	2	3

8. Not being able to remember an important part of the traumatic event	0	1	2	3
9. Having much less interest or participating much less often in important activities	0	1	2	3
10. Feeling distant or cut off from the people around you	0	1	2	3
11. Feeling emotionally numb (unable to cry or have loving feelings)	0	1	2	3
12. Feeling as if your future hopes or plans will not come true	0	1	2	3
13. Having trouble falling or staying asleep	0	1	2	3
14. Feeling irritable or having fits of anger	0	1	2	3
15. Having trouble concentrating	0	1	2	3
16. Being overly alert	0	1	2	3
17. Being jumpy or easily startled	0	1	2	3

Appendix C: Approval Notice by the Health Research Ethics Committee

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jou kennisvennoot · your knowledge partner

Approval Notice
New Application

19-Jul-2013
Kagee, Shaheen S

Ethics Refernce #: N13/05/062

Title: **Common mental disorders and psychological adjustment among individuals seeking HIV testing : implications for mental health care**

Dear Professor Shaheen Kagee,

The **New Application** received on **10-May-2013,** was reviewed by members of **Health Research Ethics Committee 1** via Expedited review procedures on **19-Jul-2013** and was approved.
Please note the following information about your approved research protocol:

Protocol Approval Period: **19-Jul-2013 -19-Jul-2014**

Please remember to use your **protocol number** (**N13/05/062**) on any documents or correspondence with the HREC concerning your research protocol.

Please note that the HREC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

After Ethical Review:
Please note a template of the progress report is obtainable on www.sun.ac.za/rds and should be submitted to the Committee before the year has expired.
The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly for an external audit.
Translation of the consent document to the language applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372
Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

Provincial and City of Cape Town Approval

Please note that for research at a primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health (healthres@pgwc.gov.za Tel: +27 21 483 9907) and Dr Helene Visser at City Health (Helene.Visser@capetown.gov.za Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.
For standard HREC forms and documents please visit: www.sun.ac.za/rds

If you have any questions or need further assistance, please contact the HREC office at 0219389657.

Included Documents:
CV KAGEE
DEC LETTER BANTJES
CV BANTJES
APPENDIX2
BUDGET
CHECKLIST
ADVERTISEMENT
DEC LETTER KAGEE
IC FORM
SYNOPSIS

IC FORM
APPENDIX1
APPLIC FORM
PROTOCOL

Sincerely,

Franklin Weber
HREC Coordinator
Health Research Ethics Committee 1

Appendix D: Informed Consent Form for Individual Interviews

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

Research Project: Common mental health problems among persons seeking HIV testing.

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PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: Common mental health problems among persons seeking HIV testing.

REFERENCE NUMBER:

PRINCIPAL INVESTIGATOR: Prof. SA Kagee

ADDRESS: Department of Psychology, Stellenbosch University, Private Bag X1, Matieland, 7602

CONTACT NUMBER: 0218083442

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the study staff any questions about any part of this project that you do not fully understand. It is very important that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decide not

to participate. If you say no, this will not affect you negatively in any way. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the **Health Research Ethics Committee at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research. You have the right to be told of any new information that arises during the course of the study.

What is this research study all about?

The study will be conducted at Mfuleni Clinic and we plan to have a total of 300 take part. The aim of the study is understand common mental health problems among persons who are taking an HIV test and to follow them after receiving their test results over a period of one year.

Participants will be assessed for common mental disorders before they receive an HIV test. Immediately after the HIV test, participants will be assessed again for psychological distress and then six and twelve months later. If you choose to participate in the study, your participation will be for one year.

The research results will help to identify ways to support persons who experience psychological difficulties after receiving an HIV positive test result.

Procedures

When someone comes to the clinic for an HIV test, the person will register at the clinic reception. The person will then be given a flyer informing them of the study and inviting them to meet with a researcher in a private room. If you agree to meet with the researcher you will be informed about the study in person and will be invited to participate in the study. You be asked to complete a number of questionnaires three times over the course of one year. You will thus be contacted six months and one year after today.

Once you sign the informed consent form, you will be asked to participate in a diagnostic interview and complete some questionnaires. The diagnostic interview will be audio recorded. You will then be taken to the clinic nurse to receive an HIV test and will be given post-test counselling. After receipt of your HIV test result, you will again be asked to complete a questionnaire.

You will then be contacted six and twelve months later to complete a further battery of tests.

Why have you been invited to participate?

You have been invited to participate in the research because you are taking an HIV test and will be receiving your test results today.

What will your responsibilities be?

At the first time point, you will be asked to participate in a clinical interview and to complete a paper and pencil questionnaire that will take approximately 60-75 minutes. At the second and third time points, six and twelve months later, you will be asked to complete a paper and pencil set of questionnaires that will take about twenty minutes.

Will you benefit from taking part in this research?

There are no direct benefits to participants for taking part in this study as it is a descriptive and not an intervention study. However, if you are identified as being psychologically distressed, you will be referred for mental health services at Mfuleni Clinic. Also, answering questions related to psychological symptoms will give you information about your psychological state. The research will help researchers understand the psychological concerns of persons who receive their test results. It may help inform future psychological interventions for persons living with HIV. If you complete the assessment today, you will receive a grocery voucher.

Are there in risks involved in your taking part in this research?

There are no major risks associated with this study as participants will only be asked to complete a paper and pencil questionnaire battery. Some participants might become distressed after receiving an HIV positive test result. They will be counselled by clinic staff. It is possible that some participants might become distressed by completing the questionnaire battery. These participants will be referred for psychological counselling at the clinic.

If you do not agree to take part, what alternatives do you have?

If you do not take part, you will still receive HIV testing. You have the alternative not to take part in the study.

Who will have access to your medical records?

The researchers who will be conducting the study will have access to your records. The information collected will be treated as confidential and protected. If it is used in a publication or thesis, the identity of the participant will remain anonymous. Only the researchers and no one else will have access to your medical information. Member of the Research Ethics Committee may need to inspect research records.

What will happen in the unlikely event of some form injury occurring as a direct result of your taking part in this research study?

There are no injuries that could occur as a result of participation in the study. No compensation will be available to persons who injure themselves during the time of study participation.

Will you be paid to take part in this study and are there any costs involved?

No, you will not be paid to take part in the study but your transport costs will be covered for each study visit. There will be no costs involved for you, if you do take part. You will, however, receive a R50 shopping voucher as a token of gratitude for your participation in the study.

Is there anything else that you should know or do?

You can contact Prof. Ashraf Kagee at

0834433002 if you have any further queries or encounter any problems.

You can contact the Health Research Ethics Committee at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by your study doctor.

You will receive a copy of this information and consent form for your own records.

Declaration by participant

By signing below, I ……..……. agree to take part in a research study entitled Common mental health problems among persons seeking HIV testing.

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) .....…..…….. on (*date*) ……...…….. 2005.

.....	.....
Signature of participant	**Signature of witness**

Declaration by investigator

I *(name)* ……..…… declare that:

- I explained the information in this document to ……..
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter. (*If an interpreter is used then the interpreter must sign the declaration below.*

Signed at (*place*) .....…..…….. on (*date*) ……...…….. 2005.

.....	.....
Signature of investigator	**Signature of witness**

Declaration by interpreter

I *(name)* ……..…… declare that:

- I assisted the investigator (*name*) ……. to explain the information in this document to (*name of participant*) ……..…….. using the language medium of Afrikaans/Xhosa.
- We encouraged him/her to ask questions and took adequate time to answer them.
- I conveyed a factually correct version of what was related to me.
- I am satisfied that the participant fully understands the content of this informed consent document and has had all his/her question satisfactorily answered.

Signed at (*place*) .....…..…….. on (*date*) ……...……..

.....	.....
Signature of interpreter	**Signature of witness**

Appendix E: Information leaflet

Appendix F: Referral flyer

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Common mental health problems amongst persons seeking HIV testing:

Implications for mental healthcare

Should you wish to go for counselling or require any psychiatric services, these are the clinics and contact persons available for referral:

Idas Valley: Sr Chanel Nothling (psychiatric nurse) – 0218872721 **or** Chanel.nothling@westerncape.gov.za

Cloetesville: Sr N. Toffar (psychiatric nurse) – 021 883 2676 **or** ntoffar@westerncape.gov.za

Stellenbosch Provincial Hospital - 021 887 0310 (Corner Roux Rd & Merriman Street)

Victoria Street Clinic - 021 808 8470

Vlottenburg Mobile Clinic - 021 888 5825

Kylemore Clinic - 021 885 2504

Welgevallen Clinic, Stellenbosch – 021 808 2696

Jamestown clinic - 021 880 1390

For further information please contact the researcher at:

Laing de Villiers

Tel: 082 420 4267 // email: laingdevil@gmail.com