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RELATIONSHIP OF DIMENSIONS OF TRAUMA EXPOSURE AND RELATED SYMPTOMS TO FEAR OF CRIME AND APPRAISAL OF FUTURE RISK

LAUREN G. McCLURG

DECLARATION

I hereby declare that this dissertation is my own work. It is being submitted for the degree of Master of Arts (Clinical Psychology) at the University of the Witwatersrand, Johannesburg. It has not been submitted for any degree or examination at any other university.

_____ _____

Lauren G. McClurg Date

ABSTRACT

The central aim of the study was to investigate the relationships between dimensions of exposure to trauma (frequency, recency, perceived severity and type), posttraumatic stress symptomatology (PTSS), Fear of Crime (FoC) and Appraisal of Future Risk (AFR). The central goal was to refine current understandings of how the nature of traumatic exposure impacts psychological functioning, with regard to symptomatic responses and on-going sense of safety in the world. A secondary interest was to explore whether symptomatic responses might, together with exposure, be predictive of FoC and AFR. A quantitative cross-sectional research design was used. Measures included the standard and an adapted version of the Traumatic Stress Schedule (TSS), the Impact of Event Scale-Revised (IES-R), the Fear of Crime measure, and an open-ended question relating to AFR. The sample comprised of 167 university students at the University of the Witwatersrand in Johannesburg. Statistical analyses included descriptive statistics, Pearson's correlations and regression analysis, and thematic analysis was conducted on the one open ended question on AFR.

The results indicated very high levels of exposure to trauma with over 90% of the sample reporting exposure to trauma and 67.9% reporting multiple exposure. At least one crime-related exposure was reported by 81% of the sample and 60% reported an exposure unrelated to crime. High levels of both recent and severe exposure were reported. Levels of PTSS in the sample were very high, with 42.5% reporting symptoms at levels of clinical concern. Both Fear of Crime and expectation of future traumatization were rather pervasive in the sample. Findings show support for relationships between exposure to trauma and PTSS, FoC and AFR, frequency of traumatization demonstrating the most strong and consistent effect on all three outcome variables. PTSS was not found to significantly mediate the relationships between exposure and FoC or AFR. Several broad themes emerged from participants' descriptions around factors influencing AFR, including environmental risk and past traumatization, among others.

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CHAPTER 1
INTRODUCTION AND MOTIVATION FOR THE STUDY

1.1 INTRODUCTION

This study aimed to refine current understandings of how the nature of traumatic exposure impacts psychological functioning, with regard to symptomatic responses and assessment of current and future risk of further traumatization. It was an exploratory study that attempted to identify what aspects of trauma exposure may interact to affect levels of individual symptomatic responses and a person's on-going sense of safety in the world and appraisal of likelihood of future victimisation. In addition, the study sought to explore whether, in conjunction with exposure, symptomatic responses might be predictive of perceptions of current and future risk of victimization. Thus symptomatic responses were treated both as an outcome variable, and secondly, as a possible mediating variable between exposure and the other outcome variables. In order to investigate what dimensions of exposure appear to place people at the greatest risk of experiencing symptomatic reactions, behavioural changes and developing an expectation of future victimisation, the severity of posttraumatic stress symptomatology (PTSS) experienced in the past week, the level of Fear of Crime (FoC), and of Appraisal of Future Risk (AFR) were each assessed, together with reports of past trauma exposure with respect to frequency, type, recency, and perceived severity. Note that trauma type in this instance refers to the categorisation of reported events into crime and non-crime related events.

1.2 MOTIVATION

Exposure to trauma is pervasive around the world and in South Africa (Finkelhor, Ormrod, & Turner, 2007b; Jacobs, 2002; Spitzer, Barnow, Volzke, John, Freyberger, & Grabe, 2008). Nearly three-quarters of South African adults have been exposed to some form of violence, most commonly crime-related (Altbecker, 2007; Engelbrecht, 2009; Myer, Stein, Grimsrud, Seedat, & Williams, 2008; Williams, Herman, Kessler, Sonnega, Seedat, Stein et al., 2007). The enormity of the trauma exposure in South Africa is further emphasized by studies that have found that a significant portion of the South African population have experienced multiple traumatic events and live in an environment of recurrent community violence (Eagle & Kaminer, 2013; Kaminer, Grimsrud, Myer, Stein, & Williams,et al., 2008). Moreover, recent research findings that exposure to multiple, violent, and criminal traumatic experiences

are prevalent among university students in South Africa emphasizes that South African youth have alarmingly high levels of trauma exposure (Engelbrecht, 2009; Scott, 2012). These findings highlight that the nature of traumatic event exposure in South Africa is even more complex and insidious than the high incidence rate alone suggests.

It is widely accepted that living in a society like South Africa which has such high levels of trauma exposure, particularly to violent crime, has manifold effects on psychosocial and psychological wellbeing, including vulnerability to posttraumatic stress symptomatology (PTSS) (Breslau, Wilcox, Storr, Lucia, & Anthony, 2004; Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards et al., 1998; Thabet, Abed, & Vostanis, 2004; Zimering, Gulliver, Knight, Munroe, & Keane, 2006). The range of traumatic events that have been researched within the mental health literature is extremely diverse, as are the associated negative impacts on functioning (Herman, 1992a; 1992b; Murthy, 2007; Steel, Chey, Silove, Marnane, Bryant, & van Ommeren, 2009). The vast majority of traumatic stress research studies have focused on Posttraumatic Stress Disorder (PTSD) and related symptom constellations, however there is also significant evidence that exposure to trauma is linked to a wider array of mental health effects or outcomes, including depression and substance abuse (Curtois, 2004; Nurius, Russell, Herting, Hooven, & Thompson, 2009). The particular nature of the trauma exposure (for example, single versus multiple events, and the level of life threat experienced) can result in different psychological effects, yet prior research has often insufficiently accounted for the intricacy of relationships between aspects of exposure, and mental health and behavioural outcomes (Cohen, Mannarino, & Murray, 2011; Hoffman, Diamond, & Lipsitz, 2011).

Only relatively recently have contemporary researchers begun to postulate that some forms of trauma exposure and effects should be understood to be shaped by an environment of *on-going* threat or insecurity, as opposed to being restricted to a psychiatric condition triggered by one or more past traumatic events (Diamond, Lipsitz, Fajerman, & Rozenblat, 2010; Steel et al., 2009). There is growing recognition that trauma in the context of continuous community type violence (as experienced in South Africa and elsewhere in the world) is shaped by an environment of on-going threat or insecurity, and hence psychological wellbeing is significantly influenced by how an individual conceptualises their on-going sense of safety in the world following both direct and indirect trauma exposure. Continuous traumatic stress, which is currently undergoing revival in the literature (see 2013 special edition of the *Peace and Conflict*), is one such type of trauma exposure that incorporates the

notion of on-going threat by assuming a realistic appraisal of future risk and possible multiple traumatic exposure. While CTS is conceptualized with reference to quite a specific type of traumatic exposure where there is a very real probability of further victimisation, the current study aims to look more broadly at what types of traumatic exposure and levels of symptomatic responses may interact to influence subjective conceptualisations of future risk, and how these interactions may affect psychological outcomes. It is hoped that findings of this study could prove useful in informing research that could more specifically build theory around the notion of CTS despite being undertaken on a population living in what might be considered a normatively non-intensively traumatic environment in South Africa.

Research results support increased recognition that how an individual conceptualises their on-going sense of safety or future threat of victimization following traumatic exposure is significant in determining psychological wellbeing. Research investigating the clinical aspects of on-going trauma in the context of recurrent missile attacks in Israel provides empirical support for the idea that continuous or on-going traumatic exposure differs from current widespread understandings of PTSD (Diamond, et al., 2010), suggesting that investigation of appraisal of future risk may be an important area of exploration in trauma studies. In addition to PTSS and PTSD, high levels of exposure to criminal trauma specifically can lead to a heightened sense of vulnerability to crime, and in addition, arguably, high levels of trauma exposure in general can lead to increased anxiety regarding on-going and future threat of victimization. How an individual evaluates their future risk of victimization threat (as represented both in Fear of Crime (FoC) and in Appraisal of Future Risk (AFR) more generally) can strongly influence psychological distress levels (Kilpatrick, Resnick, Saunders, & Best, 1989; Lorenc et al., 2012; Oloffson, Lindqvist, & Danielsson, 2012; Straus et al., 2009). Developing a better understanding of factors that may influence perceived risk of future traumatization, or, what for the purposes of this study will be termed Appraisal of Future Risk (AFR), is of particular relevance in South Africa, where multiple, varied, and on-going trauma exposure is common. The nature of traumatic exposure in South Africa differs from the ongoing trauma experienced as a result of war or political and religious persecution; however, a significant proportion of the trauma experienced is linked to community violence that also appears to take place relatively unchecked and with sufficient frequency for there to be realistic anticipation of future threat and possibly continuous traumatic stress (Kaminer & Eagle, 2010).

The significant role that conceptualisations of on-going safety and future threat likely play in trauma outcomes in certain settings is further emphasized by the fact that not everyone who experiences a traumatic event develops chronic PTSS or PTSD. The diversity of wellbeing outcomes that result from traumatic exposure suggests that individual cognitive processing and behavioural responses play a key role in determining psychological consequences (Ehlers & Clark, 2000). It is not just the nature of the traumatic exposure, but also how one responds to it that is critical in determining vulnerability. How one subjectively evaluates one's on-going sense of safety in the world is one possible cognitive process that could inform further cognitive functioning and everyday behaviour. In addition, it is possible to conceive that PTSS should not be viewed simply as an outcome variable but rather also as a measure of self-identified impact or trauma response which can interact with other variables to produce a range of further psychological outcomes, including elevated anxiety about current and future risk. How an individual understands their on-going safety and future threat of trauma victimization is largely absent from consideration of trauma impact and there is little research investigating whether dimensions of exposure might interact with PTSS to be predictive of current anxiety levels and expectations of future traumatization. The investigation of this possible mediating relationship between symptoms experienced and reported and other outcomes is a secondary aim of the study. The study thus aimed to provide further insight into how the nature of one's exposure to traumatic events (including multiple traumas) and one's experience of PTSS might contribute to a state of heightened awareness, fear and expectation of future victimisation.

1.3 LAYOUT OF REPORT

An introduction to the study as well as motivation and aims were presented in this chapter. Chapter 2 reviews previous findings from both South African and international studies on various aspects of traumatic exposure, posttraumatic stress symptomatology (PTSS), and fear of crime (FoC). Literature relevant to the notion of Appraisal of Future Risk (AFR) is also presented in Chapter 2. In Chapter 3, the research objectives, methods implemented in the study, and the data analyses conducted are outlined. The results of the present study are reported and briefly described in Chapter 4, according to the research objectives. In Chapter 5, the results are further explored and discussed in relation to existing literature. Finally, Chapter 6 presents conclusions drawn from the findings, highlights limitations of the present study, and provides recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

This chapter reviews findings from both international and South African research on exposure to trauma and the resulting impact on psychological functioning. Firstly, literature pertaining to significant elements of exposure to trauma is reported, including that pertaining to the frequency, perceived severity, and recency of exposure, as well as to criminal victimisation as opposed to other forms of trauma exposure, and to on-going exposure to traumatic stress. Then, the possible impacts of exposure to trauma on well-being are explored. The aspects of well-being discussed are related to the three key outcome variables of interest in the study: traumatic stress responses (posttraumatic stress symptoms (PTSS)), evaluations of one's sense of safety in the world (Fear of Crime (FoC)), and judgements of one's risk of future exposure to traumatic stress (Appraisal of Future Risk (AFR)). This is followed by a discussion of literature that suggests that PTSS may sometimes operate as a mediator between exposure and other kinds of outcomes, such as panic attacks, and in this instance FoC and/or AFR, rather than operating purely as an outcome variable. Finally, a summary of the presented literature is provided.

2.1 EXPOSURE TO TRAUMATIC STRESS: DIMENSIONS OF SIGNIFICANCE FOR TRAUMA IMPACT

2.1.1 Frequency

Relatively high levels of lifetime exposure to trauma have been consistently found around the world suggesting that most individuals will be exposed to some form of traumatic stressor during their lives, with the majority of findings also indicating that multiple exposure to traumatic stress is not uncommon across different populations (Finkelhor et al., 2007b; Jacobs, 2002; Nurius et al., 2009). Survey-based research on the prevalence of potentially traumatic events in the United States has repeatedly found high levels of lifetime exposure (Norris, 1992; Elliott, 1997). For instance, in a mailed questionnaire study, 72% of participants reported exposure to some form of major traumatic event (Elliot, 1997). Similarly, in an adult community sample based study that assessed exposure to a range of traumatic stressors, over 50% of the participants reported exposure to at least one event

(Goldberg & Freyd, 2009). High trauma exposure rates have also been consistently found in the few trauma studies that have assessed exposure in older adult samples (Norris, 1992; Spitzer et al., 2008) with the most recent research reporting that 90% of participants had experienced one or more potentially traumatic events in their lifetime (Ogle, Rubin, Berntsen, & Siegler, 2013). Multiple exposures were reported by the majority (78.21%) of the older adults with a history of traumatic stress experience, with a mean of 5.31 events reported (Ogle et al., 2013). Interestingly, correspondingly high rates of singular and multiple exposures to traumatic stress have been found in youth populations. For example, large epidemiological studies in the United States found that 71% of children and youth aged 2 to 17 years were exposed to one or more victimization incidents within the past year (Finkelhor, Omrod, Turner, Hamby, 2005b). Moreover, 70% of these victimized children experienced multiple exposures, with an average of 3 different kinds of victimization reported.

Researchers and mental health practitioners are increasingly recognising that multiple form exposure to trauma has significantly more detrimental effects than single form exposure, and this needs to be more fully acknowledged (Finkelhor, Hamby, Omrod, & Turner, South African Police Service, 2013; Nurius et al., 2009). Multiple trauma exposure is associated with a higher risk of developing PTSD rather than temporary PTSS (Finkelhor, Ormrod, & Turner, 2007a; Green, Goodman, Krupnick, Corcoran, Petty, Stockton et al., 2000). Furthermore, youth who experience multiple traumas (including witnessing violence) have been found to be at greater risk of poor early adulthood adjustment than youth who experience single form victimization (Bernstein, Stein, Newcomb, Walker, Pogge, Ahluvalia et al., 2003; Finkelhor & Dzuiba-Leatherman, 1994; Nurius et al., 2009; Rossman & Rosenberg, 1998; Saunders, 2003).

Past research has not sufficiently accounted for the differences in mental health outcomes of multiple form exposure (polyvictimization) versus singular exposure (Finkelhor et al., 2005b). This oversight has resulted in misleading findings, such as misattributing negative psychosocial effects to only one or two forms of violence without proper consideration of co-occurring traumatic events. Recent surveys highlight the severity of this omission in past research by revealing substantially higher proportions of multiple form violence exposure than previously believed, and a consistently strong association with poorer levels of physical and mental health, substance use problems, and risk behaviours, in these cases, even after controlling for other factors (e.g. family and demographic characteristics) (Finkelhor et al.,

2007b; Kilpatrick, Ruggiero, Acierno, Saunders, Resnick, & Best, 2003). Thus it is important that the frequency and multiplicity of type of trauma exposure is specifically assessed when conducting trauma research. In most instances frequency can be assumed to reflect multiplicity of type since the more traumas an individual has experienced the more likely it is that these traumas will be of somewhat different nature. Repetitive type trauma exposure, such as domestic violence, would be the exception to this kind of assumption. For most research studies frequency of exposure and multiple form exposure are likely to be closely inter-related.

In addition to the more general detrimental effects on wellbeing outlined above, multiple trauma exposure may impact expectations of future traumatization, such as fear of becoming a victim of crime or other kind of traumatic stressor. In addition to the fact that more frequent or multiple exposure is associated with more severe psychological impairment than singular exposure, it is also reasonable to hypothesize that victims of multiple exposure would be more likely to expect that they will experience another traumatic event in the future since past experience tells them that victimization is more commonplace. In addition, given that more frequent exposure to traumatic stimuli is associated with greater risk of developing PTSD, it is reasonable to anticipate that multiple exposure victims would have more severe PTSS. It is also in turn possible, as will be further elaborated, that the higher levels of traumatic symptomatology associated with increased frequency of exposure to trauma might contribute to making stronger attributions regarding threat of future victimization (the potential mediatory role of PTSS is discussed in more detail in Section 2.3).

In reviewing the possible impact of frequency of exposure on mental health related outcomes, it is also important to note that multiple exposure is likely to be positively correlated with the perceived severity of past traumas, such that the more prior traumas an individual has experienced, the more likely it is that at least one of these past traumas may have been severely life threatening and/or had a severe psychological impact. Similarly, there may be an implicit connection between multiple traumatic exposure and recency of exposure - the more traumas experienced, the greater the chance that at least one trauma occurred more recently. These potential relationships between perceived severity, recency of exposure, and frequency of exposure are generally overlooked in trauma research (Finkelhor et al., 2007a). In order to account for potential confounds between severity, recency, and frequency, and thus better understand the intricacies and breadth of the impact of multiple traumatic exposure on

psychological outcomes, there is a need for trauma research to assess whether multiple traumatic exposure can explain variance in outcomes (such as PTSS and perceptions of future victimization) over and above that accounted for by perceived severity and recency effects.

2.1.1.1 South African Research Findings

South Africa has an alarmingly high level of exposure to traumatic events, such that trauma exposure may be considered a significant public health concern (Edwards, 2005). Research has consistently found that at least three-quarters of South Africans have been exposed to at least one traumatic event in their lifetime, with reported prevalence rates reaching up to 98% in some sampled populations (Seedat, Nyamia, Njenga, Vythilingum, & Stein, 2004; Ward, Flisher, Zissis, Muller, & Lombard, 2001; Williams, Williams, Stein, Seedat, Jackson, & Moomal, 2007). Furthermore, research studies have consistently found that a substantial portion of South Africans are repeatedly exposed to multiple traumatic events across a range of life domains.

Poly-victimization, defined as exposure to multiple forms of trauma rather than once-off exposure or repeated exposure to the same type of event, is highly prevalent in South Africa (Finkelhor et al., 2007a; Kaminer, du Plessis, Hardy, & Benjamin, 2013). Morojele and Brook (2006) found that one fifth of adolescent youth in Durban and Cape Town had experienced poly-victimization, with up to five types of violence reported as experienced. A similarly high prevalence of exposure to multiple forms of trauma was found in a recent sample of university students, with 52.85% reporting exposure to both crime-related and non-crime related trauma (Scott, 2012). More recent research has revealed even higher levels of poly-victimization. Kaminer and colleagues (2013) assessed exposure to six types of direct and indirect violence in adolescents in Cape Town, South Africa. Almost the entire sample had been exposed to community violence (98.9%), with the majority of these adolescents reporting exposure to multiple types of violence. Approximately 93% had experienced more than one type of violence and over 50% had experienced four or more types of violence. These findings indicate that exposure to violence in a variety of areas of life is a daily occurrence for large numbers of South African youth, and that ‘access to safe spaces is limited’ for these kinds of populations living in high risk environments (Kaminer et al., 2013, pp. 112).

The exacerbated detrimental effects of multiple exposure to traumatic stress reported in international studies has also been found in South Africa. In a large sample of adult South Africans, Williams and colleagues (2007) found that multiple trauma exposure had a cumulative effect on psychological impairment, with individuals who had experienced 6+ traumas found to be five times more likely to experience high psychological distress than those with single event exposure.

2.1.2 Perceived Severity of Traumatic Exposure

The way in which an individual perceives the level of threat to the physical integrity of self (or others present) during a traumatic event has been repeatedly found to impact their behavioural and psychological responses (Kaminer & Eagle, 2010). Traumatic events that involve violence are often perceived as highly threatening and are generally associated with more severe psychological impairment, including depression, anger, anxiety, dissociation, and PTSS (Singer, Anglin, Song, & Lunghofer, 1995). Both indirect and direct exposure can result in PTSS and other psychological difficulties; however in general, direct exposure is more likely to be highly correlated with perceived severity of exposure, as a direct experience is more likely to evoke feelings of life threat and also to be associated with more PTSS (Byrne, Leris, & Sullivan, 2006; Friedland, 1999; Kaminer & Eagle, 2010). In addition, deliberate human inflicted trauma also tends be associated with greater PTSD vulnerability, in part because the intentionality renders the experience more violating or more severe in this respect (Kaminer & Eagle, 2010).

It is worth questioning whether the severity of a potentially traumatic event can be assessed objectively. For instance, while incurring a type of physical injury may be objectively assessed (representing an objectively similar means of establishing severity across individuals), the subjective experience of the event that produced the injury could differ significantly and more so perhaps in the case of 'psychological injury'. Subjective assessments of potentially traumatic events incorporate an element of personally attached 'meaning' that influences the individual's experience of the event. The nature of the personal subjective meaning attached to the event, which is generally not incorporated into the objective severity assessment, may be the more impactful aspect of the experience. For example, a car accident may result in different financial consequences for two individuals which could in turn affect the level of perceived severity attached to the potentially traumatic

event of the accident. Or, the perceived severity of a death of a parent could differ depending on the strength of the relationship the child had with the parent. Accurately measuring subjective experiences in an objective manner is extremely difficult as objective judgments are often not able to incorporate or do justice to the meanings that an individual may have attached to the event, including sometimes preconscious meanings or associations. The traumatic stress literature has been marked by attempts to grapple with this dilemma, as illustrated for example, in the contestation around what constitutes a *traumatic* stressor for diagnostic purposes.

In their work on vicarious trauma, Pearlman and Mac Ian (1990) emphasize the impact of the subjective aspect of experiencing traumatic events. They assert that a psychotherapist's own history of trauma can influence the likelihood of their becoming vicariously traumatised through their work with clients, illustrating that the therapist's history (rather than the objective 'facts' of the client's trauma) may play a significant role in impact. Rubin and Feeling (2013) discuss the more recent literature that points to an inconsistency between the description of traumatic events severe enough to meet diagnostic criteria for PTSD, as defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), and the observed development of PTSD. More often than not, individuals who experience events that are objectively severe enough to meet the DSM-IV criteria may not develop PTSD (Breslau, Davis, Andreski, & Peterson, 1991; Kessler, Sonnega, Bromet, Hughes, & Nelson., 1995), whereas individuals who experience an event, the objectively judged severity of which does not meet the DSM-IV criteria, may well produce PTSD symptoms (Dohrenwend, 2010; Lancaster, Melka & Rodriguez, 2009; McNally & Robinaugh, 2011; Rubin, Bernsten, & Bohni, 2008). Researchers have continued to try to devise objective measurements of severity of events that are predictive of PTSD but have had inconsistent results (Breslau, 2012; Rubin & Feeling, 2013).

Several studies have examined whether different categories of potentially traumatic events, such as sexual assault or armed robbery as opposed to a mugging or a motor vehicle accident, are predictive of PTSD and more severe impairment outcomes (Brewin, Andres, & Valentine, 2000; Dedert et al., 2009). Other studies have selected one particular category of potentially traumatic events in which objective severity can be reasonably inferred in some way, such as distance from the epicentre of an earthquake, and measured the effects of the experience (Berntsen & Rubin, 2008; Brewin et al., 2000. Both of these approaches have successfully

found their measurement of severity to be predictive of PTSD to a certain extent, but the generalizability to other types of events is very limited (Rubin & Feeling, 2013). In an attempt to build on these previous empirical studies, Rubin and Feeling (2013) developed three ways of measuring the severity of events – a normed scale based on more universalist understandings of what constitute more or less severe stressors, five categories based on relative severity of exposure characteristics as compared to rest of a similarly exposed sample, and an average of ratings of the events' effect on six areas of life (the latter to some extent inferring severity from impact). Raters applied these three methods to participant's narrative descriptions of potentially traumatic events experienced. Although the three measures of severity correlated highly across the four samples used in the study (which comprised of both clinically diagnosed and non-clinically diagnosed samples), none were found to correlate with PTSD symptom severity. The variation in findings of these studies may be attributed to a failure to access and measure the array of personal meanings attached to potentially traumatic events and to accurately quantify the resulting impact. The discrepancy between objective severity of events and the development of PTSD symptoms, found by Rubin and Feeling across these studies, suggests that individual assessments of potentially traumatic events differ significantly, and that how one subjectively perceives the severity of the event experienced impacts consequent levels of PTSS. It would appear that asking victims of trauma or research participants to offer their own appraisals of event severity may be as valid a means of assessing this aspect of traumatization as attempting to quantify or pull out more universally established traumatizing features of events they have been exposed to, although the search for the latter kinds of variables continues.

Despite the uncertainty regarding how to incorporate subjective experiences of traumatic events into objective measures of severity, as mentioned previously, violent and direct trauma has in general been associated with greater perceived severity of past trauma (Singer et al., 1995). Thus, within the framework of this study, it is plausible that both violent and direct trauma would also be associated with higher levels of concern regarding threat of future victimization. Although there is significant evidence indicating that greater perceived severity is associated with poorer psychiatric and behavioural outcomes, there is very limited research that specifically investigates how perceived severity of past traumatic exposure may be linked to expectations regarding future victimization. Without digressing too far into discussion of meaning related aspects of impact, it is likely that traumas that are perceived as more severe are more likely to create deep ruptures in assumptive worlds, such as in assumptions about

the world as benign and/or predictable (Janoff-Bulman, 1982), which in turn may mean that felt vulnerability to future risk is heightened. In a study conducted by Allwood, Bell-Dolan, & Husain (2002) on Bosnian children directly exposed to war-trauma, the violent aspects of the trauma were found to most overwhelm the children's coping skills. However, Allwood and colleagues did not investigate whether the children perceived the violent trauma to be more severely threatening than non-violent trauma (although this could be largely assumed), and hence it is unclear whether it was perceived severity that specifically contributed to the break down in coping skills as well as other behavioural and psychological outcomes, such as increased anxiety regarding future threat. Understanding whether perceived severity of threat interrelates with expectation and anxiety regarding future risk to produce poorer mental health outcomes could help inform treatment goals and planning.

2.1.2.1 South African Research Findings

Very little South African trauma research has investigated the perceived severity of trauma exposure. Engelbrecht (2009) is one of the only studies that has specifically asked participants to report on the perceived severity of their reported exposure to traumatic events. In a sample of university students, she found that perceived severity of exposure to violent crime was significant positively correlated with PTSS, such that the more severe the individual judged their exposure to be, the higher their reported PTSS on all three clusters of symptomatology (intrusion, avoidance and hyperarousal).

Several studies have assessed perceptions of other variables, such as social support, in the context of potentially traumatic environments. For example, Cluver and colleagues investigated the role of perceived social support in protecting children who are exposed to multiple community traumas from developing PTSD (Cluver, Fincham, & Seedat, 2009). They found that perceived social support, as assessed by AIDS-orphaned children in Cape Town, moderated the relationship between trauma exposure and posttraumatic stress such that the children who perceived their social support to be high demonstrated significantly lower levels of PTSD symptoms after both low and high levels of trauma exposure, in comparison to the children who perceived themselves to have low social support. Similar results have been found in studies with adult populations (Martinez, Israelski, Walker & Koopman, 2002). Although this type of research does not assess the individual's perceptions of the severity of the trauma they experienced, the findings do advocate for research to

incorporate participants' own perceptions into traumatic stress research. It would have been interesting to examine whether the participant's own perceptions of their social support levels corresponded with an observer's objective assessment, as that could provide some insight into whether objective ratings can mirror subjective assessments.

2.1.3 Recency of Traumatic Exposure

The time elapsed since the trauma exposure can be important in determining mental health and behavioural functioning. Generally, the more recent one's exposure to a traumatic event the more likely one is to still be affected by the event. Many individuals experience a decrease in PTSS in the months following the traumatic event, indicating that time can influence the cognitive processing and behavioural responses to the trauma such that events become less disturbing over time (Ehlers & Clark, 2000). The diagnoses relevant to trauma in the DSM-IV-TR, Acute Stress Disorder (ASD) and Posttraumatic Stress Disorder (PTSD), reflect that the immediate impact of a trauma is often intense but does not necessarily persist (APA, 2000). Many individuals diagnosed with ASD do not develop PTSD, which implies that their PTSS decreases with time such that their symptomatology is no longer severe enough to meet diagnostic criteria after 4 weeks. For instance, 28% of individuals diagnosed with ASD 4 weeks after a motor vehicle accident (MVA) did not meet the criteria for PTSD 4 to 6 months after the accident (Holeva, Tarrier, & Wells, 2001). Of course, the severity of the event experienced could interact with recency, such that events that were more severe could produce higher symptom levels for a longer duration.

Neurobiological evidence supports the idea that recency affects symptoms, with findings suggesting that how recently the trauma occurred affects PTSS and brain functioning associated with PTSD (Ganzel, Casey, Glover, Voss, & Temple, 2007). Ganzel and colleagues (2007) found that as the time since trauma increased, participants' amygdala activity levels moved from overactive towards normal activation in response to pictures of fearful vs. calm faces. Their PTSD symptomatology also decreased with increased time since trauma exposure. Thus, more recent events are likely to be associated with more severe PTSS, and may also be correlated with increased anxiety levels regarding safety, and a greater expectation of future victimization. However it appears that the association between recency of trauma and appraisals of risk of future traumatization has not been explicitly assessed.

2.1.3.1 South African Research Findings

In addition to the high levels of exposure and multifaceted nature of lifetime exposure to trauma, research has found that a substantial portion of South Africans consistently report relatively recent exposure to trauma (Engelbrecht, 2009; *Victims of Crime Survey*, 2012). The findings indicate that there may often be short periods of time between experiencing different traumatic events in South Africa. In the most recent National Victims of Crime Survey (NVCS), 16.8% of adults reported experiencing a criminal event in the preceding 12 months (Statistics South Africa, 2012). Although general levels of victimisation across the population appear to be decreasing since the NCVS was first administered in 1998, the levels of crime reported as having been experienced in the yearly period preceding each new survey remain high. Notably, the rate of housebreaking/burglary increased from 4.5% of households in 2010 to 5.4% in 2011, which suggests that South Africans may have experienced a decrease in their sense of safety at home in recent years. The few studies outside of national survey-type research that have investigated the recency of traumatic exposure in South Africa also indicate high levels of recent traumatisation, including exposure to non-crime related events. For example, in a sample of tertiary education students, 80% of the population reported exposure to trauma in the preceding 12 months (Engelbrecht, 2009). It should be noted that Engelbrecht's study included indirect exposure to traumatic events and exposure to both crime and non-crime related traumatic events. It is apparent, however, that much of the South African research on trauma exposure suggests that there is a risk of on-going traumatisation that should be further investigated. This is suggested by both the frequency of exposure and risk of poly-victimization and by the high prevalence of exposure within the preceding 12 month period tapped in several research studies.

2.1.4 Criminal Victimization

Crime related victimization appears to occur frequently around the world (Morris, Reilly, Berry, & Ransom, 2003; Hanson & Self-Brown, 2010). National studies conducted in the United States have reported varying rates of victimization that all tend to be consistently high (Kilpatrick & Acierno, 2003; Hanson & Self-Brown, 2010). For instance, the National Violence Against Women (NVAW) survey indicated that 52% of women and 66% of men had been physically assaulted during their lifetime while the National Women's Survey (NWS) found that 22.7% of adult women had been victims of sexual assault and 10.3% of adult women had been victims of aggravated assault (Kilpatrick & Acierno, 2003). The

National Crime Victimization Survey in the United States found that individuals aged 12 and older experienced approximately 22 million crimes in 2008, with nearly one quarter categorized as violent crimes (Rand, 2009). High crime victimisation statistics were similarly found in the New Zealand National Survey of Crime Victims which reported that on average, 27.4% of individuals or households experienced violent victimisation in 2001 (Morris et al., 2003). Actual numbers of crime victims are likely ever higher, as these statistics did not include homicide survivors or count multiple incidents in the crime totals. Furthermore, research suggests that up to one third of crime victims who have recently disclosed their experiences to the police do not report these experiences in victimization surveys (Hanson & Self-Brown, 2010; Reiss & Roth, 1993).

Crime related victimization has been found to negatively impact multiple life domains, including parenting skills, occupational functioning and intimate relationships (Hanson, Sawyer, Begle, & Hubel, 2010). Studies generally indicate that crime related victimization adversely impacts quality of life, finding that victims of crime have a higher risk for future trauma related victimization, and experience a variety of deleterious mental health consequences including PTSS (Hanson et al., 2010; Kessler et al., 1995; Kilpatrick et al., 2003; O'Brien, 2010). Further, criminal victimization is generally associated with greater intentionally than other potentially traumatic experiences, such as car accidents or the contraction of a life threatening illness (Janoff-Bulman, 1985; Yeung & Leadbeater, 2007) and thus produces a greater sense of betrayal in victims. Janoff-Bulman (1985) asserts that being the victim of intentional harm by another person results in particularly strong challenges to one's beliefs about the world and oneself, which exacerbates the victim's difficulties in healthily overcoming the experience.

2.1.4.1 South African Research Findings

Criminal victimization, (defined in the study as exposure to crime-related trauma), is of particular concern in South Africa, which has had one of the highest crime rates globally since the 1990s (Altbeker, 2007; Kaminer & Eagle, 2010; Shaw, 2002; *Victims of Crime Survey*, 2012). In the recent South Africa Stress and Health study (SASH) survey, conducted on South African adult participants, 38% reported exposure to trauma that was both crime-related and violent (Kaminer et al, 2008; Williams et al., 2007). Similarly, in a Johannesburg sample of university students, 74.8% of the sample reported experiencing some form of crime

over their lifetime (Scott, 2012). Additionally, in a self-report questionnaire study administered to high school students in Cape Town, over 82% of the participants reported that they had been exposed to at least one type of criminal violence (Ward et al., 2001). Furthermore, it was found that exposure to violence perpetrated by someone known to the victim and being victimized by a stranger were positively correlated, perhaps suggesting that children who are exposed to violence within a home or similarly 'safe' environment may have an increased risk for experiencing violence in community settings, possibly due to avoidance of the home.

Previous research by Engelbrecht (2009) and Scott (2012) found that exposure to violent crime was significantly correlated with higher levels of PTSS. However, Engelbrecht's results indicated that there was no cumulative effect of exposure to violent crime on PTSS, which is surprising given other research that has found an increasingly deleterious effect on well-being with increased exposures (see Section 2.1.1). Additionally, the participants exposed to violent crime reported a much higher level of Hyperarousal symptoms than those not exposed to violent crime (but who might have been exposed to other types of traumatic events); this suggests that exposure to violent crime is associated with a particular type of behavioural reaction such as irritability, sleep difficulty and concentration problems and hypervigilance. Additionally, self-report questionnaires administered to high school students in Cape Town found that posttraumatic stress disorder symptomatology and depression were related to most types of exposure to violence (Ward et al., 2001). However, anxiety symptoms were found to only be related to exposure to violence perpetrated by someone known to the individual, either in the home or more generally. These findings suggest that the psychological impacts of exposure to crime seem to vary according to the specific nature of the crime experienced, even down to details such as the relationship of the victim to the perpetrator.

The intricacies of the findings of previous research with regards to the relationship between criminal victimization and psychological wellbeing warrant further investigation into how crime-related and non-crime related trauma exposure impacts on PTSS and on expectations of future victimization. Further, given the high rates of crime related victimization experienced in South Africa, it may be important for mental health practitioners to establish a more intricate understanding of how past crime-related trauma, in comparison to non-crime trauma, is related to psychological functioning as assessed by PTSS, as well as current fears

of crime victimization (FoC) and appraisal of future risk (AFR) of a more general kind. Although much of the common sense or everyday portrayals of risk of traumatization in South Africa foreground exposure to crime and violent crime in particular, it is important not to lose sight of exposure to other forms of traumatic events, such as unexpected bereavements, and the role these may play in levels of trauma related symptomatology in the population and people's sense of likelihood of exposure to damaging events in the future. High rates of exposure to trauma that is unrelated to crime have also been reported in South African research, with some findings as high as 95% (Scott, 2012). Therefore the impact of traumatic events unrelated to crime should not be discounted. Furthermore, the vast majority of South African citizens have experienced multiple traumatization, both in terms of frequency of exposure and in terms of the range of different types of events they have been exposed to (Kaminer & Eagle, 2010; Williams et al., 2007). Hence, although crime-related traumatization is exceedingly common in South Africa, there are other characteristics of trauma exposure that need to be explored as well in understanding patterns of exposure and impact.

2.1.5 On-going Exposure to Traumatic Stress

The notion of on-going risk of traumatisation is gaining recognition in current traumatic stress writing and research as evidenced by the revival of interest in 'continuous traumatic stress' (Diamond, Lipsitz, & Hoffman, 2013; Eagle & Kaminer, 2013; Stevens, Eagle, Kaminer, & Higson-Smith, 2013). Researchers postulate that the continuous nature of traumatisation that many South Africans, amongst other populations, are exposed to, differs in a number of ways from that outlined as producing Posttraumatic Stress Disorder and also that producing 'Complex PTSD' (Eagle & Kaminer, 2013).The term 'Continuous Traumatic Stress' (CTS) was first coined in the mid-eighties by anti-apartheid mental health activists in South Africa (Straker & The Sanctuaries Counselling Team, 1987). In recent years the interest in CTS has grown, with researchers arguing that current traumatic stress diagnosis and terminology does not sufficiently account for individuals who are actively living in potentially perilous environments in which the danger of future victimization is real (Kaminer & Eagle, 2010; Stevens et al., 2013).

There are two characteristics of CTS that primarily separate this form of traumatisation from others - the temporal aspect of the stressor/s and the contextual nature of the situation (Eagle

& Kaminer, 2013). CTS requires that the trauma exposure is both current and realistically anticipated as likely to occur in the future; thus the trauma is continuous or on-going. The contexts in which CTS is likely to occur include conflict-affected zones, areas with chronic community violence, and regions where people have been displaced due to persecution or war and now reside in a xenophobic society (Stevens et al., 2013). The combined temporal and contextual elements of CTS highlight that individuals living with CTS are likely to focus on and be preoccupied with their current and future safety (Eagle & Kaminer, 2013).

The central component of preoccupation with on-going safety in the world is further highlighted in other aspects that are also suggested to be commonly present in CTS. Continuous traumatic stress can arise as a consequence of exposure to repeated community violence, often on a daily basis, which includes gang violence, neighbourhood gun warfare, domestic abuse, opportunistic criminal attacks, sexual assaults and school violence, as well as on-going civil conflict (Stevens et al, 2013). Unlike Complex PTSD (Curtois, 2004; Herman, 1992a), continuous traumatic stress does not focus on one type of traumatic event that occurs in an extended, somewhat predictable but uncontrollable way (such as torture or physical abuse); rather, it incorporates a wide range of traumas that could be experienced on any day in regular life, such as hijackings, rape, car accidents, and robbery, i.e., what is sometimes referred to as polyvictimization (Eagle & Kaminer, 2013). Individuals may have been victimised multiple times, by multiple perpetrators, in multiple locations, by both strangers and people they may know (Kaminer & Eagle, 2010). Hence the trauma is common but unpredictable in terms of where it may happen, who the perpetrator may be, and what form it may take. Furthermore, the traumatic exposure can be experienced directly or in an indirect manner, such as, for example, being exposed to hearing friends and family tell stories of their own traumatic experiences or seeing weapons used or witnessing car accidents. Thus exposure to CTS extends beyond poly-victimization per se to incorporate, perhaps somewhat paradoxically, both more unpredictability in the nature of the trauma and yet a realistic expectation that future traumatization will occur.

Researchers theorize that living with this constant exposure to traumatic events, described by some as ‘stably unstable’, results in a constant fear and anxiety for personal safety as well as for the safety of loved ones (Eagle & Kaminer, 2013; Murray, Cohen, & Mannarino, 2013). Unlike the case in PTSD, there is no clearly demarcated post-trauma period, and the environment following exposure to any particular trauma may remain dangerous, or at least

be realistically perceived to be potentially such. Thus the continuous nature of the traumatisation experienced in South Africa and other parts of the world highlight that it is important for conceptualisations of traumatic exposure to move towards incorporating the notions of fearful anticipation of future victimization and perceived sense of personal safety in the world. Both of these possible aspects of trauma outcome have been largely neglected within existing theories of traumatic stress exposure, which predominately focus on PTSS and associated disorders of ASD and PTSD. The construct of Fear of Crime (FoC) and a concept termed Appraisal of Future Risk (AFR), specifically operationalized for the purposes of this study, are two constructs that were deemed relevant in attempting to access this fear of unpredictable yet expected future traumatization that researchers assert is relevant in a society like South Africa, where CTS appears to be present and perhaps pervasive in many communities.

2.2 IMPACT OF TRAUMATIC STRESS

2.2.1 Traumatic Stress Responses

The DSM-IV-TR describes trauma as a stimulus to developing Acute Stress Disorder (ASD) or Posttraumatic Stress Disorder (PTSD) (APA, 2000). Responses to trauma, as defined by the DSM-IV-TR, involve immediate reactions involving "intense fear, helplessness, or horror" (APA, 2000, p.467) and longer-term reactions divided into three clusters of symptoms – intrusion, avoidance, and hyperarousal. Intrusive symptoms involve persistently re-experiencing the traumatic event, for instance in dreams, thoughts or flashback episodes. Avoidance symptoms involve persistently avoiding stimuli associated with the trauma and a numbing of the individual's general responsiveness which may, for example, take the form of diminished interest in activities or a restricted range of affect. Hyperarousal symptoms involve persistently experiencing a heightened state of arousal that results in difficulties such as sleeping problems or an irritable mood.

The vast majority of traumatic stress research has focused on PTSD, probably because ASD is a short-term condition (less than 4 weeks), with most research focusing on war veterans or to a lesser extent on victims of specific types of traumas (Kilpatrick & Acierno, 2003). Findings of multiple studies have revealed that the association between being a victim of

trauma and subsequently developing PTSD is not as strong as one might expect. Less than 10% of trauma victims in general develop PTSD (Breslau, 2009). Research has consistently found that the levels of exposure to traumatic events that meet the requirements for PTSD diagnosis, as defined by the DSM-IV, are much higher than the numbers of individuals who develop PTSD. Epidemiological estimates indicate that incidence and lifetime prevalence rates for PTSD in the general population usually range from 1% to 11% (Breslau, 2009; Hamber & Lewis, 1997), whereas exposure to trauma rates are typically at least 40 to 60% (Goldberg & Freyd, 2006; Finkelhor et al., 2007b; Nurius et al., 2009; Williams et al., 2007) and often much higher as elaborated previously. Findings within South Africa have varied quite significantly. The South African Stress and Health Study (SASH), which examined the prevalence of PTSD in the general South African population, found a low lifetime prevalence of only 2.3% despite up to 40% of participants reporting exposure to trauma (Williams et al., 2007). In contrast, 19.9% PTSD lifetime prevalence was found in an urban Xhosa primary care population (Carey, Stein, Zungu-Dirwayi & Seedat, 2003). These two PTSD prevalence findings vary quite significantly and it is likely that a number of factors could contribute to explaining this difference. For example, different data collection methods were used in the two studies, both in terms of instruments and collection procedures, which could have affected the findings. Alternatively, the variation in findings could indicate that the nature of the traumatic exposure experienced in community samples in South Africa is associated with higher levels of threat to life than the trauma experienced by the general population. Regardless of the source of the variation in PTSD prevalence findings, in both of these South African studies and in international research, there has been a large difference between exposure rates and PTSD rates where PTSD prevalence is consistently lower than reported exposure levels. The difference between exposure and PTSD rates indicates that there are a number of factors, beyond exposure to a traumatic event as defined by the DSM-IV-TR, that contribute to the development of PTSD.

However, there is acknowledgement that many individuals may respond to traumatic events with sub-clinical forms of traumatic stress response (Kaminer & Eagle, 2010). For example, despite results indicating a low level of PTSD in the SASH study, high levels of general distress (e.g. nervous, irritable, hopeless, and depressed) were reported by the population (Williams et al., 2007). Moreover, the levels of distress were significantly correlated with exposure to trauma such that those who experienced six or more traumatic events were five times for likely to suffer high distress levels than individuals who had not experienced a

trauma. Furthermore, findings from a prospective study that assessed ASD, PTSD and subclinical levels also highlight the relevance and importance of subclinical symptoms following trauma (Harvey & Bryant, 1998). One month following a motor vehicle accident, 13% of participants met criteria for ASD and an additional 21% had subclinical levels of ASD symptomatology. When assessed six months after the car accident, 78% of the ASD participants and 60% of the participants who presented with subclinical symptomatology met criteria for PTSD. These findings indicate that subclinical symptoms are important and can be indicate of longer term mental health functioning. Thus it is evident that large numbers of people exposed to traumatic stressors develop responses such as sleep disturbances and hyper-vigilance, but that symptoms may not be enduring to the extent required for diagnosis or may not reach levels of severity such as to compromise everyday functioning to the extent required to make a psychiatric diagnosis of disorder. Although these behavioural and psychological responses may not warrant psychiatric diagnosis, they must be taken into consideration as they do provide evidence of mental health impacts of exposure to traumatic stress.

2.2.2 Fear of Crime (FoC)

Many studies have investigated 'fear of crime' in the context of traumatic exposure. Although a largely sociological construct, Fear of Crime (FoC) is an attitudinal set that can be used to assess subjectively perceived likelihood of immediate and future victimization (and behavioural correlates of this), and thus the level of distress an individual may be experiencing in failing to (re)establish the sense of the world as a largely safe and trustworthy place in which to live.

2.2.2.1 Fear of Crime Levels: International Patterns and Comparisons

International research has frequently reported extensive fear of crime across a number of populations, with European survey findings indicating that fear of crime is both common and reflective of a particular attitudinal stance that is not necessarily directly tied to actual levels of crime (Beukenhorst, Huys, Oudhof, & Roduijn, 1993; European Commission, 2003; Hale, 1996; Skogan, 1987; Van Kesteren, Mayhew, & Nieuwbeerta, 2000; Widdop, 2007). The 2004 British Crime Survey (BCS) found that 12-16% of respondents were 'very worried' about crime, while the Aberwyth Crime Survey found that approximately 25% of respondents

reported feeling ‘a bit unsafe’ or ‘very unsafe’ in their environments (Allen, Dodd, & Salisbury, 2005; Koffman, 1996). Studies conducted in the United States of America have revealed that fear of crime is similarly pervasive in American communities (Chiricos, 1997; Ditton & Farrall, 2000). In a survey of 12 cities across the U.S., 20% to 48% of the sample reported significant fear of crime (Smith, Steadman, Minton, & Townsend, 1999).

The levels of fear of crime reported in South African research are often much higher than that reported in Europe and other international studies, thus indicating that fear of crime is of even more concern in South Africa than has been identified internationally (Engelbrecht, 2009; Roberts, 2008; *Victims of Crime Survey*, 2012). The International Crime Victims Survey (ICVS) asked respondents to report how safe they felt at night and found that over half the populations in the surveyed regions indicated that they felt either ‘very safe’ or ‘fairly safe’ at night (Alvassi del Frate & van Kesteren, 2003). Reported feelings of safety reached up to 85% in the European Union (EU) member countries (Demark). Even in the three countries with the lowest safety ratings in the EU (Italy, Greece and Britain) over half (57%) of respondents reported that they felt safe walking alone at night. Of the non-Western regions, the African sample reported the strongest feelings of safety (60%), followed by Latin America (56%) and then Asia (55%). In contrast, only 36.5% of South African reported feeling either ‘very safe’ or ‘fairly safe’ at night in the National Victims of Crime Survey (NVCS) (Statistics South Africa, 2012). Additionally, more than one third of respondents felt ‘unsafe’ or ‘very unsafe’ on most days in a 2006 South African Social Attitudes Survey (SASAS) (cited in Davids & wa Kivulu, 2008). Moreover, 57% of the South African sample reported fearing experiencing crime in their own homes whereas only 34% of samples in other African countries reported fearing victimisation at home (Afrobarometer Briefing 1, 2005). This finding emphasizes that many South Africans do not feel able to create a reliably safe environment for themselves, and fear victimisation across a range of settings, including within their homes and immediate environments. Although different assessment measures were employed in these studies, all investigated how safe or unsafe citizens feel in their environments. Comparisons of findings across contexts provides convincing evidence that South Africans feel far less safe with regard to fears of criminal victimization than citizens of other nations, both on the African continent and abroad.

2.2.2.2 Fear of Crime Trends in South Africa

According to the NVCS reports which are periodically released, feelings of safety in South Africa have fluctuated over the last 15 years (*Victims of Crime Survey*, 2012). Between 1998 and 2007, feelings of safety, both at night and during the day, dropped from 85% to 76% (daytime) and 56% to 23% (at night) respectively. Both safety levels then rose again in 2010, with safety feelings during the day (88.2%) slightly surpassing the 1998 level, but the increased night-time safety feelings (37%) remaining approximately 20% lower than that reported in 1998. However feelings of safety then declined again between 2010 and 2011, even if minimally, to 85.7% during the day and 36.5% at night. This data indicates that feelings of safety are not stable, which perhaps indicates that there is a sense of unpredictability and inconsistency in fear of exposure to crime in South Africa that may reflect both exposure patterns and social and ideological influences.

It is interesting to consider the recent slight decrease in feelings of daytime and night-time safety in the context of perceptions about the changes in levels of crime as evidenced in further survey data. About 37% of households reported that they believed the level of both violent and non-violent crime had decreased in their area of residence between 2009 and 2011, while 35% said they thought that crime had increased (*Victims of Crime Survey*, 2012). Less than 30% reported that they believed the crime level had remained constant between 2009 and 2011. The statistics indicate that more people believed crime had decreased than that it had increased and thus it would have been appropriate to hypothesize that there would be an accompanying slight decrease in fear of crime, not increase as was observed. However, there appear to be substantial differences in the occurrence and reporting of crimes in South Africa, which could partially account for the discrepancy between the trends in fear of crime levels and perceptions of crime occurrence. In the 2011 NVCS only 60% of people who had experienced housebreaking, deliberate damage of dwelling, and home robbery indicated that they had reported these events to the police (*Victims of Crime Survey*, 2012). Additionally, it is likely that assault and sexual offences were even more significantly under-reported to the police. Sexual assaults are typically underreported in South Africa (Jewkes & Abrahams, 2002) particularly when the perpetrators are known to the victim. In the 2011 NVCS it was found that 44.1% of victims of sexual offences were attacked by a known community member in their area, 17% by a relative, and 14.4% by people they know outside of the community. Only 15.4% of sexual assault victims reported that their perpetrator was

unknown to them. In addition, in relation to more general reported assaults, 27.9% of assault victims were attacked by a known community member. It seems plausible that victims of sexual offenses and assault underreported their victimisation to police due, at least in part, to their familiarity with the perpetrators. In contrast, murder and car theft were the crimes most likely to be reported to the police (98.2% and 92.2% respectively). Thus, although statistics reported by the South African Police Service (SAPS) indicate that crime levels have declined over the last 9 years (but still remain high), if the underreported crimes were included then that trend may not be as convincing as it would appear (South African Police Service, 2013).

Interestingly, there seems to be some mirroring between what crimes survey respondents believed to be most prevalent and fear most, with crimes that according to national crime statistics have increased most over the last year (*Victims of Crime Survey*, 2012; South African Police Service, 2013). Almost 60% of households reported a belief that housebreaking or house burglaries are one of the most common types of crime, followed by street robbery (41.4%) and then pick-pocketing (32.1%). Regarding crime within areas of residence, 57.4% of households perceived that housebreaking or house burglaries are the most feared, followed by street robbery (39.6%) and murder (38.8%). These fears and perceptions of prevalence of types of crime seem to somewhat resemble the actual 2012/2013 crime trends, in that these are the crimes that have increased in the last financial year. Murder has increased by 7.1%, aggravated robbery increased by 1.2%, and house breaking (residential and other) rose by 5.0% (South African Police Service, 2013). However these crimes are not necessarily statistically the most prevalent, they are events that have shown an increase in prevalence. Thus fear of crime levels seem to somewhat coincide with actual crime trends but have also been shown to be affected by a range of further factors, including perceptions of how effective the criminal justice system is and perceptions of social justice (Box, Hale & Andrews, 1988; Joseph, 1997; Kury & Ferdinand, 1998; Rountree, 1998; Warr, 1987). These kinds of considerations would also seem to be pertinent in South African society.

2.2.2.3 Fear of Crime: Objectively or Subjectively Motivated?

As indicated, an individual's FoC level may not always be associated with objectively measured probabilities of victimisation or actual experiences of victimisation (Farrall, Gray, & Jackson, 2007; Hale, 1996). This may be because FoC assessments incorporate subjective

or emotional responses to the possibility of crime, which integrate general perceptions of the social and physical environment and hence cannot necessarily isolate the individual's evaluation of personal future crime victimization risk from general opinions concerning crime in the specific society (Farrall, Bannister, Ditton, Gilchrist, 1997; Garofalo & Laub, 1978; Lorenc et al., 2012; Taylor & Jamieson, 1998). For example, females tend to report higher levels of fear of crime despite being less likely to be victims of crime than men (Engelbrecht, 2009; Farral et al., 2007; Sutton & Farral, 2005). There are a number of plausible hypotheses regarding why this gendered pattern seems to exist in fear of crime (see Engelbrecht, 2009) most of which are related to aspects of gender socialisation, thus highlighting that the fear of crime construct is influenced by subjective perceptions of the environment beyond those related to statistical probabilities or past experiences.

Additionally, findings regarding the relationship between exposure to crime and fear of crime have been contradictory. In a meta-analysis of 25 empirical studies, only 11 found a positive relationship between victimisation and fear of crime while 14 studies found no relationship (Hagan, 1989). Yet a number of other studies, including South African research, have found significant relationships between experience of crime (both direct and indirect) and reported fear of crime (Engelbrecht, 2009; Joseph, 1997; Newhart, 1991; Rountree, 1998; Skogan, 1987), even when controlling for social background characteristics (Smith & Hill, 1991). The relationship between exposure to crime and fear of crime appears to be affected by the nature of the criminal event experienced, with interpersonal and violent crimes more strongly associated with fear of crime. In a study by Rountree (1998), exposure to violent crime was found to increase both fear of violence and fear of property crime, while property crime victimisation only increased fear of property crime (Rountree, 1998). These findings suggest that violent crime has a more pervasive effect on fear of crime, which seems to indicate that directly physically threatening events may influence fear of crime levels more than other types of crime. Therefore, perhaps the contradictory findings in the relationship between exposure to crime and fear of crime may be partly due to inconsistencies in the types of criminal exposures assessed.

Nevertheless, the variance in findings across studies suggests that the relationship between exposure to crime and fear of crime is complex and is influenced by both objective and subjective factors. Frequency and perceived severity of past exposure, personality of the victim, and demographic characteristics, have all been highlighted as influential variables in

determining fear of crime levels, in addition to the objective violent versus non-violent nature of the crime (Kury & Ferdinand, 1998; Roundtree, 1998; Warr, 1987). In addition, subjectively determined neighbourhood characteristics, such as sense of responsibility in neighbourhood residents, have been identified as affecting fear of crime levels (Box et al., 1988). Moreover, regardless of the mixed findings regarding the relationship between actual exposure to crime and reported fear of crime, research suggests that an individual's perception of personal risk is a better predictor of their fear, and hence psychological functioning in the context of traumatic exposure, than objective assessments of these problems (Taylor, 1995; Taylor & Hale, 1986). In the context of the current study FoC was assessed largely as a proxy for understanding participants' everyday experience of safety in their environment with reference to perceived vulnerability to criminal victimization.

2.2.2.4 Fear of Crime and Mental Health

There is significant research linking both reported levels of crime and FoC to mental health and wellbeing, indicating that they may act as potential mediators between neighbourhood characteristics and psychosocial outcomes and other functioning (Burke, O'Campo, Salmon, & Walker, 2009; Jenkins et al., 2008; Lorenc, et al., 2012). Repeated victimisation or the threat of victimisation is thought to particularly affect women, ethnic minorities and people of lower socio-economic status (Spalek, 2008; Walklate, 2007).

Lorenc and colleagues (2012) propose four potential pathways connecting fear of crime to health and wellbeing outcomes. Firstly, anxiety is closely linked to fear of crime and may negatively impact mental health. The anxiety may be caused by fear of crime, or fear of crime may be a means through which anxieties are expressed. Numerous studies have found that fear of crime is associated with poor mental health (Beatty, Grimsley, Lawless, Manning, & Wilson, 2005; Green et al., 2000; Roberts, Stickley, Petticrew, & McKee, 2009; Stafford, Chandola, & Marmot, 2007). Secondly, poorer health – especially mental health – may augment fear of crime (Lorenc et al., 2012; Whitley & Prince, 2005). Allen (2006) found that people in poor health are more likely to report that fear of crime impairs their quality of life.

A further pathway identified by Lorenc and colleagues (2012) is that fear of crime may lead to avoidance behaviours in an attempt to decrease perceived risk of victimisation, which may

have a negative impact on social interaction and wellbeing and physical activity and consequently may negatively affect mental wellbeing. Recent findings in South Africa provide support for the existence of this kind of pathway. In 2011 more than a third of South African households (35.1%) reported that they avoided going to open spaces alone because of their fear of crime (*Victims of Crime Survey*, 2012). Almost one quarter of households (23.2%) said they would not permit their children to play freely in their neighbourhood or move around unsupervised by an older person. Furthermore, 15.7% of households stated that they would not allow their children to walk to school alone. These behaviours constrain social and interpersonal interaction, the limiting of which has been shown to lead to poorer mental health (Stafford et al., 2007). Furthermore, if avoidance behaviours become internalised to a significant extent, this may result in a constant state of hypervigilance, which has deleterious effects on wellbeing and overlaps with one of the three main clusters of posttraumatic stress symptomatology (Campbell, 2005; Stanko, 1997).

In sum, fear of crime appears to be more pervasive in South Africa than in most other nations, both internationally and within Africa. Although levels of fear of crime amongst South African citizens have fluctuated over the past ten years, they have consistently remained high. The extent of fear of crime experienced by the South African population is of concern, as fear of crime is associated with poorer mental and physical wellbeing. The factors determining fear of crime levels are complex, as there does not appear to be a consistent direct relationship between fear of crime and actual crime levels. This appears to be linked to the observation that fear of crime measures rely on subjective assessments and perceptions of risk and safety. It can be argued that in seeking to tap into and describe psychological well-being and distress (with respect to perceived risk of harm) this may be a strength rather than a limitation of FoC measures. It should be noted that fear of crime only addresses a person's perception of how likely they are to experience crime related victimization, it does not address perceptions of the threat of falling prey to traumatic events more generally, i.e., to threats that are unrelated to crime such as the death of a loved one due to illness. Thus, within the framework of the study it was felt that including a separate assessment of expectations of future trauma exposure more broadly, would help to provide a broader picture of anticipation of current and future risk of traumatization. Understanding some of the differences between FoC, and more pervasive expectations of risk of future threat exposure could aid in clarifying the relationships between previous trauma exposure (across various dimensions),

posttraumatic stress symptomatology (PTSS), and perceived on-going risk of exposure to traumatic stressors.

2.2.3 Appraisal of Future Risk (AFR) of Trauma Exposure

As discussed in Section 1, there is increased recognition of the continuous or on-going nature of the trauma that populations around the world are exposed to. Consequently, many individuals live in an environment in which they have a realistic expectation of danger and on-going threat (Kaminer et al., 2013; Murray et al., 2013). As noted, literature suggests that perceptions of vulnerability to a high level of risk of crime is linked with poorer health outcomes, thereby highlighting the significance of cognitive assessments of trauma risk (Kitchen & Williams, 2010; White, Kasl, Zahner, & Will, 1987). Studies consistently indicate that subjective appraisals of future outcomes, such as fear of permanent injury or further attacks by the perpetrator or others, are significant factors in determining psychological distress resulting from trauma (Davidson & Foa, 1991; Ehlers & Clark, 2000; Janoff-Bulman, 1982; Kilpatrick et al., 1989; Straus et al., 2009). Living in environments in which exposure levels are statistically high can contribute to appraisals of the environment as potentially threatening and may mean that cognitive work needs to be done in anticipating what to expect and how to deal with this.

2.2.3.1 Appraisal of Future Risk and Mental Health

Cohen, Mannarino, and Murray (2011) recognise the significance of continued threat to individuals, identifying future risk as a key issue in the context of on-going trauma. According to Cohen and colleagues (2011), youth who live in an on-going threatening environment may not be able to differentiate between historical danger, realistic present danger, and over-generalization to trauma reminders. This likely prevents successful implementation of coping strategies, and hence contributes to greater functional impairment. Similarly, research conducted on Zambian and American youth experiencing multiple forms of traumatic stress, including domestic violence, sexual abuse and/or living with HIV, is supportive of the notion that how the victim appraises their chances of being victimized again influences their ability to reflect on and process past traumas in a healthy or adaptive manner (Cohen et al., 2011). Research conducted by Diamond and colleagues in Israel also points to the significance of perceived future risk for trauma impact and symptoms (Diamond et al., 2010). The researchers examined the clinical aspects of ongoing trauma in relation to the

Second Intifada in Israel, and found that PTSD symptoms were not linked temporarily to a specific traumatic event, but to the individual's perception that a realistic threat continued to exist (Diamond et al., 2010).

Other researchers have highlighted the non-pathological and adaptive role that appraisal of future risk can play in establishing healthy psychological functioning in contexts of on-going traumatic stress. Janoff-Bulman (1982) argues that behavioural self-blame after rape, in which the victim tries to re-establish control by imagining engaging in different protective type behaviour in the face of future similar risk, is representative of a potentially adaptive response because it allows victims to minimize their perception of future vulnerability and maximize their confidence in a safe future, thus facilitating healthier psychological functioning. Similarly, Diamond and colleagues (2013) present a new theoretical framework within which to consider reactions to on-going traumatic stress, arguing that what they term an on-going traumatic stress response (OTSR) is non-pathological. Although Diamond and colleagues describe OTSR as being determined by real and external environment factors in the present, their discussion highlights the importance of developing a more intricate understanding of how one appraises these real external factors.

2.2.3.2 Incorporating Appraisal of Future Risk in Trauma Treatments

Part of the reason for attempting to understand the impact of on-going trauma exposure, including appraisal of future risk, is to better inform intervention approaches for populations living under these kinds of conditions. Researchers and clinicians have begun to assert that current therapies used to treat traumatized individuals are not adequate for treating individuals who are exposed to ongoing trauma, such as continuing community and domestic violence (Murray et al., 2013). Currently available treatments are based on understanding trauma as a past event, or series of past events, that are no longer a threat. However, those living in societies with high levels of multifaceted traumatic occurrences, such as South Africa, may well live with a realistic expectation of danger (Eagle & Kaminer, 2010). Mental healthcare practitioners frequently question the suitability of traditional therapies, which incorporate exposure treatment, in the context of on-going traumatic exposure (Murray et al., 2013).

Modified treatment approaches, which attempt to better account for the continuous nature of trauma exposure, are starting to be developed and researched in communities around the world. These treatment strategies emphasize the necessity of establishing a healthy balance between the "need to constantly reflect and act upon the level of danger, and learn to distinguish between real danger and overgeneralized trauma reminders." (Murray et al., 2013, p. 182). This healthy balance is extremely difficult to establish, and failure to do so can impair the individual's ability to apply effective coping strategies and may well induce feelings of hopelessness. Findings from projects in which these modified versions of treatments have been implemented in communities with high levels of on-going traumatic threat show greater improvement in mental health outcomes, such as lower anxiety and PTSD levels, than other therapies (Cohen, Mannarino, & Iyengar, 2011; Murray, Skavenski, Familiar, Bass, Bolton, & Jere, 2010). This suggests that accounting for how one appraises future risk of traumatisation may be instrumental in improving psychological functioning in the context of traumatisation. Hence, it is important that effort is made to establish a more in-depth understanding of the cognitive processes and factors that influence one's appraisal of future risk of traumatisation – a key aspect of the present study.

2.2.3.3 Assessing Appraisal of Future Risk

Several researchers contend that current PTSD assessments do not sufficiently address subjective appraisal of the sense of continuing danger or risk that affected individuals feel as a consequence of the traumatic and stressful events they have experienced directly and indirectly over their lifetime (Cohen et al., 2011; Hoffman et al., 2011; O'Hare, Sherrer, & Shen, 2006). In recognition of the importance of directly addressing perceived assessment of risk of future traumatic exposure, Hoffman and colleagues (2011) suggest that qualitative questions should be added to standard PTSD questionnaires to assess the links that clients are making between past exposure and potential likelihood of future traumatization. Hoffman and colleagues (2011) argue that in the context of ongoing traumatic stress, current assessments do not adequately differentiate reasonable or adaptive responses to trauma from pathological reactions, and propose that questions such as: "Do you feel like the symptoms/behaviours above are appropriate responses to the realistic possibility of future danger?" are necessary to better understand the nature of traumatic effects. Future traumatic stress research needs to incorporate these suggestions in order to better comprehend and elaborate the impact of various dimensions of trauma exposure on sense of current and future safety and risk, which,

as previously argued, are likely to play a significant role in long-term psychological outcomes.

The impact of exposure to traumatic stress on mental health functioning is multifaceted and varies across individuals. Responses to traumatic stress range from shorter-term reactions, such ASD, to longer-term clinical conditions, such as PTSD. Additionally, many individuals may have sub-clinical forms of traumatic stress responses that represent a significant change in behaviour and mental health functioning from that present prior to the stressor exposure, but that do not reach the level of duration or severity required to make a disorder diagnosis. Furthermore, FoC and AFR are two additional forms of impact on mental health distress that may result from exposure to traumatic stress. Both FoC and AFR incorporate a subject psychological state that is manifested in, for example, symptomatic responses. However it is possible that it might not be traumatic exposure itself that produces FoC and AFR, but rather that the symptomatic responses created by one's sense of damage following traumatic exposure affects one's ongoing sense of vulnerability in the world and hence contributes to FoC and AFR levels.

2.3 PTSS AS IMPLICATED IN FURTHER TRAUMA RELATED RESPONSES

Several lines of research have begun to indicate that posttraumatic stress symptomatology (PTSS) may play a mediating role between exposure to trauma and later outcomes associated with traumatic experiences (Ehlers & Clark, 2000; Foa, Steketee, & Rothbaum, 1989; Orcutt, Erickson, & Wolfe, 2002; White, McManus, & Ehlers, 2008).

Ehlers & Clark (2000) argue that how an individual interprets their behavioural responses to the traumatic event can influence their sense of current threat, and thus it is plausible that PTSS may be understood as an interactive variable in relation to the broad range of trauma related responses, not solely as an outcome variable. For example, if common traumatic responses such as flashbacks, numbing and mood swings, are not seen as 'normal' reactions that are part of a recovery process, then the individual may view the symptoms as permanent and highly threatening, which would likely increase anxiety and produce a cascade of behavioural and psychological effects. Hence an interaction may occur between PTSS and the individual's cognitive responses, and thus PTSS may sometimes operate to produce

further responses to trauma exposure, such as, for example, an increased sense of vulnerability to harm and possible inability to cope with future threats because of the sense of disability that comes with being symptomatic.
Similarly, Foa and colleagues (1989) contend that PTSS and cognitive appraisals interact to produce the long-term outcomes of traumatic exposure. In accordance with Kilpatrick and colleagues' two-factor theory of rape (1985), it is argued that victims perceive the rape as a life-threatening event and react automatically with extreme fear (Kilpatrick, Veronen, & Best, 1985). The fear may lead to increased anxiety levels that endure in the months following the trauma, which causes the victim to be on high alert and can result in a greater propensity to perceive threat in the individual's daily environment and associated avoidance behaviours. The dynamic interactions an individual experiences between appraisals and symptomatic responses could explain why some people develop chronic PTSD and others do not.

Other research has found that patients with PTSD tend to overestimate the probability and cost of experiencing all types of future traumatic events (White et al., 2008). Furthermore, those with PTSD were found to more severely overestimate the probability and cost of experiencing the specific type of traumatic event that they had been exposed to, relative to both an 'anxious' control group as well as a group without any psychiatric pathology. These findings were specific to traumatic events and were not found when evaluating negative future events in general. When the patients with PTSD underwent cognitive therapy, these specific judgement biases were reduced to below statistically significant levels. Thus, findings from the White et al research study indicate that PTSS may be accompanied by changes in cognitive functioning that enhance fear of future traumatization, thus providing support for the notion that PTSS may act as a mediator between trauma exposure and other mental health and behavioural outcomes.

Using a sample of Gulf War veterans, Orcutt and colleagues (2002) specifically investigated whether PTSD symptomatology mediated the link between trauma exposure and increased risk of later trauma, as had been found in previous research. Using a series of regression models PTSD was found to partially mediate the link between combat exposure and later traumatic experience. Specifically, PTSD symptomatology was found to mediate 48% of the total effect of combat exposure on risk for subsequent exposure to trauma. The three clusters of PTSS were also analysed separately, with results suggesting that manifesting re-

experiencing symptoms (intrusion symptom cluster) may lead to more risk of retraumatization than reports of avoidance and hyperarousal related symptoms.

On the basis of this kind of research, it could be hypothesized that both initial and subsequent behavioural reactions to traumatic stimuli (in the form of symptomatic responses) may influence FoC and AFR levels in addition to aspects of exposure per se. Thus, PTSS may play a mediating role in the associations between exposure to trauma and various outcomes, including psychological functioning and the study was designed to explore this as a secondary aim.

2.4 CONCLUDING REMARKS

Psychological outcomes of trauma exposure are significantly influenced by how one manages to adjust to one's environment after the trauma through re-establishing a view of safety in the world and sense of safety in daily activities (Ehlers & Clark, 2000; Janoff-Bulman, 1982; Kilpatrick et al., 1989). It therefore appears important to explore such aspects of trauma exposure impact in greater depth and detail than has been done by previous research. This study aimed to assess which specific aspects of previous trauma exposure may increase the likelihood of increased levels of PTSS, FoC and of concern about risk of future traumatization (AFR). In addition, it has been argued that the symptomatic response to traumatic events may have knock-on effects in the sense of producing increased anxiety in survivors and increased preoccupation with lack of safety in the world. The possibility that PTSS may contribute as a causal or mediating variable to FoC and AFR is therefore worthy of investigation since behavioural and cognitive responses to trauma dynamically interact and impact psychologically on wellbeing (Foa et al., 1989). Appraisal is particularly important in the context of CTS; a type of traumatic exposure that mental healthcare practitioners are arguing may be common in South Africa. However, it should be noted that in the proposed study appraisal of future risk cannot be assumed to assess realistic risk of future harm, and therefore the evaluation of AFR does not truly reflect the kinds of contexts associated with CTS, where the threat of future victimization is understood to be commonly recognized. Rather, in the present study appraisal is investigated as a purely subjective judgement. However, it was hoped that this type of exploration of perceptions of future risk of victimization and FoC might reveal information that could be used to inform future research

into CTS. It was also assumed that given the high levels of exposure to traumatic events, and particularly multiple such events, identified in previous research on South African student populations in Johannesburg, there might be some approximation of CTS type exposure amongst this population, even if in a tempered form.

Having discussed key theory and research underpinning the study the following chapter describes the method employed to undertake the study.

CHAPTER 3
METHOD

3.1 AIMS OF THE STUDY

The central aims of the study were as follows:

1. To explore the relationships between aspects of exposure to trauma (frequency, perceived severity, recency, type), posttraumatic stress symptomatology (PTSS), fear of crime (FoC), and appraisal of future risk (AFR). (Note that the present study considered type to be criminal or non-criminal.)

2. To explore the role of PTSS as a possible mediator between exposure to trauma (frequency, perceived severity, recency, type), and FoC and AFR.

3.2 RESEARCH QUESTIONS

The study aimed to answer the following research questions:

1. *Exposure versus non-exposure*
   What is the nature of the relationships between Exposure to Trauma (ET), Posttraumatic Stress Symptoms (PTSS), Fear of Crime (FoC) and/or Appraisal of Future Risk (AFR)?

2. *Frequency of Exposure*
   Are more frequent levels of exposure to traumatic events associated with higher levels of PTSS, FoC and AFR?

3. *Perceived Severity of Exposure*
   Is the perceived severity of past traumatic events associated with, PTSS, FoC and AFR, such that PTSS, FoC and/or AFR increase with increased perceived severity?

4. *Recency of Exposure*
   Are more recently experienced traumatic events associated with higher levels of PTSS, FoC and AFR?

5. *Type of Exposure*
   Are traumatic events that are criminal as opposed to non-criminal associated with higher levels of PTSS, FoC and AFR?

6. *Comparison of Aspects of Exposure*
   Which element/s of exposure appears to be most strongly related to elevated levels of PTSS, FoC and AFR?

7. *Post-traumatic Stress Symptomatology (PTSS)*
   Are higher levels of PTSS associated with increased FoC and/or AFR?

8. *Mediating Relationship*
   Does PTSS mediate the relationship between Exposure to Trauma (ET) and FoC and/or AFR?

3.3 RESEARCH APPROACH

The present study employed a cross-sectional research design in which data collection occurred at a single time point. The research design is considered to be descriptive or non-experimental, as it did not involve a controlled experimental intervention or manipulation of variables (Heiman, 2001). Rather, the study sought to investigate the relationships between various measures reflecting 'real life' experience as reported by South African university students. All variables were assessed using self-report measures and analysed using quantitative statistical analyses, complemented with some descriptive information and thematic analysis of an open ended question related to AFR.

3.4 SAMPLE

The sample consisted of first, second, and fourth year Health Science students enrolled in psychology and education courses at the University of the Witwatersrand (WITS). This was a non-probability sample as some participants (within the population of university students as a whole) had a higher probability of being selected than others (Field, 2005; 2012). As the participants were WITS students, they were expected to have sufficient English language proficiency to adequately comprehend the self-report measures, enhancing reliability and

validity of results (Heppner & Heppner, 2004). Permission to approach the students was obtained from the relevant course coordinator.

A total of 167 university students participated in the research. This sample size afforded sufficient statistical power to run the analyses conducted and to provide good reliability of findings (Hepper & Hepper, 2004; Wilson Van Vooris & Morgan, 2007). In accordance with the central limit theorem, a larger sample size increases the chance that the variables will have a normal distribution, thus allowing for stronger statistical analyses (Field, 2012; Howell, 2002). Additionally, the sample size was large enough to allow for the elimination of incomplete data sets without compromising statistical accuracy. Not all of the 167 questionnaires collected consisted of a complete data set; however, the incomplete questionnaires were still usable in relation to certain variable analyses. Where there was data missing for any one variable, it is indicated (n = x) in the Results chapter. The sample size, even when reduced by missing data, was considered adequate to run the statistical procedures outlined later in this chapter.

3.4.1 Demographic Profile of the Sample (see Appendix A)

The mean age of the sample was 21.64 years (21 years and 7.7 months). Of the sample, 85.60% were female (n = 143), 13.20% were male (n = 22), and 1.20% did not specify their gender (n = 2). There were slightly more (self-identified) Black African participants (41.90%; n = 70) than White participants (38.90%; n = 65), and much smaller numbers of Indian (9.60%; n = 16), Coloured (6.60%; n = 11), or Asian participants (1.20%; n = 2). One subject reported identifying with a race other than those specified above (0.60%) and two subjects did not specify a racial identification (1.20%). The vast majority of the sample were single (90.40%; n = 151), 6.00% were married, (n =10) 1.20% were divorced (n = 2) and 2.40% did not specify their marital status (n = 4). Almost three-quarters of the sample identified as Christian (73.70%; n = 123), 7.80% as Islamic (n = 13), 3.60% as Jewish (n = 6), and 1.20% as Hindu (n = 2), while 3.00% reported practicing a religion other than those stated above (n = 5), and 11% reported no religious identification (n = 18). Over half the sample reported English to be their home language (54.50%; n = 91), with 10.80% identifying Zulu (n = 18), 9.60% Xhosa (n = 16), 5.40% Tswana (n = 9), 5.40% Sotho (n = 9), and 3.00% Afrikaans (n = 5) as their home language, and 11.40% stating that they used a home language other than those reported here (n = 19).

3.5 DATA COLLECTION

After permission of the lecturers and course coordinator was obtained, the researcher went into three different university classes and invited students to participate in the research. The invitation, briefing about the study, and data collection took place either at the beginning or end of a course lecture, according to the lecturer's preference. The nature of the research and relevant participation information (e.g. confidentiality and time requirement) was verbally explained, and a participant information letter containing these details, a brief discussion of risks and benefits, as well as contact information for both the researcher and counselling services was provided to those who participated (see Appendix G). It was emphasized that participation was voluntary, and that completion of the questionnaires represented provision of consent by the subjects. The researcher handed out the self-report measures to those students who chose to participate and supervised their immediate completion. Subjects took approximately 15 to 20 minutes to complete the questionnaires. The completed questionnaires were collected directly from participants by the researcher and packed into boxes. No directly identifying information was collected and thus participant anonymity was preserved. Participants were thanked for their participation and told that a summary of the study's results would be made available to them upon request (the researcher's email address was supplied on the detachable informed consent sheet – see Appendix G). The researcher transferred all physical data into electronic form and the original questionnaires are being stored in a secure location by the researcher for a period of five years.

3.6 MEASUREMENT OF VARIABLES

3.6.1 Demographic Questionnaire

A short demographic questionnaire was used to obtain biographical information on the participants (see Appendix A). Information gathered was descriptive in nature and included items such as age, sex, ethnicity, marital status, religion, and home language. These questions were posed primarily so as to be able to describe characteristics of the sample, and are reported in Section 3.4.1 above.

3.6.2 Measuring Dimensions of Trauma Exposure and Appraisal of Future Risk: The Traumatic Stress Schedule (TSS)

Two adapted versions of the Traumatic Stress Schedule (TSS) were used for the purposes of this study. The first version assessed the participants' exposure to trauma, including the frequency, type, and recency of exposure, and their subjective evaluation of severity of threat. The second version was used to gather data on the participants' appraisal of future risk. Operationalization and scoring methods used for each version of the TSS are outlined below.

The TSS was developed by Norris (1990) to assess exposure to ten categories of extreme events over both lifetime and only the past year (Wilson & Keane, 1997; Scott, 2012). The measure has been found to have good reliability in American populations (Friedman, 2006) and has been successfully used on the South African university population as well (Scott, 2012; Webster, 2012). A one week test-retest correlation of .88 was reported between English and Spanish versions of the self-report questionnaire completed by 53 bilingual volunteers (Norris & Perilla as cited in Wilson & Keane, 1997). As the TSS is a descriptive measure, the adaptations to the questionnaire for the purposes of the study are not believed to have affected the broad psychometric properties, including validity and reliability. The two versions of the adapted TSS are provided in Appendix B and C, and the adaptations for administration in the context of this particular study are outlined below.

***TSS Version 1 and 2*:**

Past experience of 'homicide' was deleted from item 4 ('Did a very close friend or a close family member ever die because of an accident, homicide, or suicide?'), and a new item (item 5) was added that specifically asked about past exposure to a 'homicide or murder'. This change was made in order to distinguish between crime and non-crime trauma related to death. The new item 5 included reference to 'murder' to avoid any linguistic confusion should any participant have been unfamiliar with the term 'homicide'. Thus item 4 asked about death of a close friend or family member due to accident or suicide while item 5 asked about death due to homicide or murder. Therefore the modified TSS used in this study has 11 items in total.

TSS Version 1 (Appendix B):

In line with the goals of this study, which included assessing how recency of exposure interacts with PTSS, FoC and AFR, the temporal categories of the TSS were altered. Although traumatic events that occurred years earlier could still be influencing psychological functioning, the present study was primarily interested in isolating how more recent exposures interact with PTSS, FoC and AFR. Hence the adapted TSS asked participants to indicate if they experienced the relevant event 0-1 months ago, 2-3 months ago, 3-6 months ago or 6-12 months ago. However, when analysing the data it was noted that a large portion of participants specified events that occurred longer than 12 months ago, hence an additional temporal category of >12 months ago was added and incorporated into the data analyses.

An additional item was added at the end of the questionnaire in order to assess the participant's subjective evaluation of severity of past exposure 'Please look at the events listed above and select the one event that has affected you the most strongly. Please provide a brief description of this event, and indicate how life threatening you found this event using the scale provided'. As shown in Appendix B, a 5-point Likert scale was used, with the following categories: 1 = Not at all, 2 = A little, 3 = Moderately, 4 = A lot, and 5 = Extremely.

Operationalization and Scoring:

1. Frequency of exposure was scored as the total number of 'yes' responses across all items. No participants indicated that an event had occurred more than once (e.g. circling two temporal categories, writing in 'three times'); if they had, those additional occurrences would have been included in the total.
2. Type of trauma exposure (crime-related and non-crime related) was operationalized as the total number of 'yes' responses to the relevant items categorized as either criminal or non-criminal trauma. The items on the TSS were coded as either crime-related exposure (items 1, 2, 3, 5, 6) or non-crime related exposure (4, 7, 8, 9, 10), with the exception of item 11, which was coded depending on the content of the participant's response.
3. The score for recency of exposure was based on the most recently experienced event that was reported. A value was be assigned to each of the four recency of exposure temporal categories (e.g. 0-1 months ago = 4, 2-3 months ago = 3, 3-6 months ago = 2 and 6-12 months ago = 1).

4. Perceived severity of exposure was operationalized as the number indicated on the 5 point Likert scale, with 1 corresponding to the least severity and 5 to the high level of severity (Section B, Question 12). Note that the score for perceived severity is therefore operationalized as the level of life threat assigned to the event the participant subjectively felt most affected by.

***TSS Version 2 (Appendix C)*:**

A second modified version of the TSS was used to assess Appraisal of Future Risk (AFR). In this second version, the participants were asked to 'rate how likely you think you are to experience the following events in the future'. A 5-point Likert scale was provided as follows: 0 = No chance, 1 = Slight chance, 2 = Moderate chance, 3 = Strong chance, and 4 = Very strong chance. As shown in Appendix C, the language in all items was changed from past tense to future tense so that participants were clear that they were being asked about potential future events, not past exposure.

Operationalization and Scoring:

A score for AFR was obtained by adding the numerical Likert score responses for all 11items. The minimum possible AFR score was therefore 0 and the maximum was 44.

3.6.3 Measuring Traumatic Stress Symptomatology: The Impact of Event Scale-Revised (IES-R)

The revised version of the Impact of Event Scale (IES) was used to measure the participants' traumatic stress symptomatology, including in relation to the three sub-scales of intrusion, avoidance and hyperarousal (see Appendix D). The IES was originally developed by Horowitz, Wilner, and Alvarez (1979) to measure the level of subjective symptomatic responses to a specific event or traumatic stressor. The scale focuses on the degree of distress or symptomatology that has manifested over the seven days prior to completion of the measure, tapping into the intrusion and avoidance symptoms of PTSD (Engelbrecht, 2009; Horowitz, 1976). Weiss and Marmar (1997) modified the IES by adding several items that assess the domain of hyperarousal symptoms, thus allowing for a more complete assessment of the response to traumatic events (Engelbrecht, 2009, Weiss & Marmar, 1997) and this scale became known as the IES-R and is more commonly used in contemporary research as is the case in this study.

The IES-R consists of 22 items measured on a Likert scale. Prior research indicates that the IES-R has good reliability and validity, with internal consistency: alpha coefficients ranging from .91 - .92 (Intrusion subscale), .84 -.85 (Avoidance subscale) and .89 -.90 (Hyperarousal subscale) (Marmar, Weiss, Metzler, Ronfeldt, & Foreman, 1996; Weiss, Marmar, Metzler, & Ronfeldt, 1995). The internal consistency of the entire scale is sufficiently high (alpha = 0.96) to validate the IES-R as a diagnostic tool for assessing posttraumatic stress related symptoms (Creamer, Bell, & Failla, 2003; Scott, 2012). Reported test-retest correlation coefficients are also good, ranging from .89 to .94 across the three subscales (Weiss et al., 1995). Several international and South African studies on traumatic stress on a variety of populations (university students, emergency care workers, children, police officers, journalists, correctional officers, urban communities, and fire-fighters) have used the IES-R, indicating that the measure can be appropriately and successfully used in a variety of contexts including in the South African context (Asukai et al., 2002; Beck et al., 2008; Edwards, 2005; Engelbrecht, 2009; Davidson, 2001; Gwandure, 2007; Kassen, 2002; Marais & Stuart, 2005; Mostert, 2001; Norman et al., 2010; Olde, Kleber, van der Hart, & Pop, 2006; Peltzer, 2000; Renk, Weisath, & Skarbo, 2002; Scott, 2012; Viedge, 2001).

Operationalization and Scoring:

The possible total score range on the IES-R is 0 to 88, with a range of 0 to 4 for each item (22 items). The total IES-R score as well as the total scores for each of the three subscales (Intrusion, Avoidance, Hyperarousal) were calculated for each participant.

3.6.4 Measuring Fear of Crime: The Fear of Crime Measure

The Fear of Crime (FoC) measure was used to assess the participants' fear of crime level (see Appendix E). The form of the measure that was used is the same adapted version used by Engelbrecht (2009) and Scott (2012) in traumatic exposure research also conducted on WITS university students. The adapted FoC measure consists of 6 items rated on a 4-point Likert scale. In order to try to assess perceived personal safety with regards to measuring fear of crime, Engelbrecht (2009) added a sixth item to the original five items developed by von Klemperer (2009) on the basis of existing survey instruments. The sixth item, namely "How safe do you feel walking and/or driving alone in your neighbourhood during the day?" was obtained from the measure used in a 2003 National Victims of Crime Survey (NVCS) conducted in South Africa (ISS, 2004). The 5-item measure was deemed to have adequate validity in a South African study (von Klemperer, 2009) and the 6-item scale has been

successfully used in at least two studies conducted on South African university populations (Engelbrecht, 2009; Scott, 2012).

Operationalization and Scoring:

The FoC measure has a possible total score range of 6 to 24, with a range of 1 to 4 for each item (6 items).

3.6.5 Qualitative Exploration of Appraisal of Future Risk (AFR)

Finally, the participants were asked an open-ended question designed to gather information on what features appeared to influence their Appraisal of Future Risk (AFR). As AFR is a novel construct, there is no previously outlined measure for operationalizing AFR as a variable. Hence including an open-ended qualitatively oriented question in the study provided rich data and valuable insight into what impacts AFR. As shown in Appendix F, the question read as follows: 'When you think about how likely, or unlikely, you are to be exposed to a traumatic event in the near future, what factors come to mind? Please write about two lines outlining what factors influenced your thinking.'

3.7 DATA ANALYSIS

Descriptive and inferential statistics were employed in order to describe and analyse the variable data, and address the research questions outlined in Section 3.2 above.

3.7.1 Descriptive Statistics

Descriptive statistics were conducted on each of the measures, including calculation of frequencies, means, standard deviations, skewness, and kurtosis values (Field, 2012). Additionally, several statistical analyses were conducted on each multiple regression model developed in order to determine whether the relevant data met the underlying assumptions of multiple linear regression analysis, and hence whether the findings could be generalized outside of the population sample used (Field, 2006; Pallant, 2010). The following six assumptions were assessed – that data is normally distributed at the interval or ratio level (assessed by means of descriptive statistics), that there is no perfect multicollinearity of variables (assessed by Pearson-moment Correlation coefficients in a correlation matrix of all predictor variables), that there is no auto-correlation (assessed using the Durbin-Watson test),

that there are not enough outliers to significantly facilitate deviation from normality (assessed using the standardised residual plot), that there is linearity (assessed visually on the standardized residual plot), and that there is homoscedasticity (assessed by examination of the pattern of points on a scatterplot of standardized residuals and standardized predicted values) (Field, 2005; Pallant, 2010). In order to allow for conclusions to be drawn about a more general population from the results of this study, based on the regression analyses conducted using data from this sample, the above six assumptions had to be true and were established to be so.

3.7.2 Inferential Statistics

The IBM Statistical Packages for the Social Sciences (SPSS) were used to carry out the statistical analyses. Inferential statistics, consisting of a combination of Pearson product-moment correlations and multivariate regression analyses, were employed to examine the statistical significance of the relationships between the variables, including determining relationships between aspects of exposure and PTSS, FoC and AFR.

Firstly, Pearson product-moment correlation coefficients were used to determine the nature of relationships between exposure to trauma (frequency, crime-related/non-crime related, perceived severity, recency), PTSS, and the other two outcomes variables, FoC and AFR. Secondly, multivariate regression models were developed in order to determine whether certain dimensions of traumatic exposure explain a statistically significant amount of variance in PTSS, FoC and AFR, and what combination of these variables may account for the greatest amount of variance, at a statistically significant level. Different combinations of the dimensions of exposure (frequency, crime-related, non-crime related, perceived severity, recency) were included in the models as independent variables with PTSS, FoC or AFR as the model outcome variable. Thirdly, multivariate regression models were then developed with PTSS (total symptomatology, intrusion symptoms, avoidant symptoms, hyperarousal symptoms) included as a possible determining variable in conjunction with the traumatic exposure variables, and FoC and AFR as outcome variables. Lastly, in order to assess whether PTSS acted as a mediator between exposure to trauma and FoC and/or AFR, a series of regression models were used in accordance with the method outlined by Baron and Kenny (1986). To supplement and further investigate the significance of any mediation findings from the regression models, online Sobel tests were conducted (Sobel, 1982).

3.7.3 Analysis of the Findings Related to the Qualitative Exploration of AFR

Thematic Content Analysis was carried out on the responses to the exploratory AFR question (Appendix F) in order to identify key themes regarding what factors were reported as influencing appraisal of future risk of traumatization (Braun & Clarke, 2006).

The results of the study are presented in the next chapter.

CHAPTER FOUR
RESULTS

First the reliability of the measures used in the study is stated. The basic descriptive statistics for all variables are then reported on, followed by a more in-depth account of the patterns of exposure to traumatic events, and of PTSS, AFR and FoC scores. The relationships between variables are then reported, according to the research objective of the study. First, the relationships between the exposure (independent) variables (frequency, crime/not crime related, recency, and perceived severity), and the dependent variables of AFR and FoC are reported on, followed by presentation of the relationships between the dimensions of exposure and PTSS (including symptom subscales). Then, the relationships between PTSS (including symptom subscales) and AFR and FoC are presented. Following this, the results concerning the possibility that PTSS may act as a mediator between independent and dependent variables are reported. Finally, the chapter concludes with a mixed quantitative-qualitative presentation of the findings related to AFR.

4.1 RELIABILITY OF THE MEASURES

As shown in Table 1, the Cronbach alpha coefficients for the FoC measure and IES-R (both total symptomology and subscales) were within the acceptable range (George & Mallery, 2003). (Given the nature of the variables related to AFR and to dimensions of exposure to trauma (frequency, type, recency, and perceived severity), as well as the way these variables were assessed, these variables cannot be logically subjected to reliability analyses of this kind.) It was evident that for those scales for which reliability was calculated there evidence of good reliability on the FOC and on the IES-R within the sample.

Table 1. *Cronbach Alpha Coefficients: Internal Consistency of the FoC Measure and IES-R*

Measure/Scale	Cronbach alpha
FoC measure	0.87
IES-R	0.96
Intrusion subscale*	0.93
Avoidance subscale**	0.90
Hyperarousal subscale***	0.84

* Items 1, 2, 3, 6, 9, 14, 16, and 20
** Items 5, 7, 8, 11, 12, 13, 17, and 22
*** Items 4, 10, 15, 18, 19, and 21

4.2 BASIC DESCRIPTIVE STATISTICS OF VARIABLES

The main tendencies of all variables (means, standard deviation, skewness and kurtosis) are shown in Table 2. Skewness (lack of symmetry) and kurtosis (pointyness) values were calculated to assess whether the data was normally distributed, as characterized by the bell-shaped curve (Field, 2006; Pallant, 2010). All variables have skewness and kurtosis values that can be considered to lie within a normal range (-1 to +1); hence the data meets the criteria for a normal distribution and all variables can be said to be normally distributed (Field, 2006).

Table 2. *Descriptive Statistics of All Variables*

	Frequency of Exposure	**Crime Related Exposure**	**Noncrime Related Exposure**	**Recency of Exposure**	**Perceived Severity of Exposure**	**PTSS**	**AFR**	**FoC**
N	165	165	165	122	141	146	158	164
Mean	2.28	1.51	.78	3.66	3.40	29.42	14.29	14.90
Median	2.00	1.00	1.00	4.00	4.00	27.00	14.00	15.00
Mode	2	1	1	4	4	0	16[a]	19
Std. Deviation	1.517	1.108	.760	1.334	1.336	22.911	7.627	4.927
Variance	2.303	1.227	.577	1.779	1.785	524.936	58.169	24.278
Skewness	.683	.576	.739	-.890	-.503	.383	.582	-.220
Std. Error of Skewness	.189	.189	.189	.219	.204	.201	.193	.190
Kurtosis	.144	.060	.153	-.354	-.952	-1.016	.905	-.687
Std. Error of Kurtosis	.376	.376	.376	.435	.406	.399	.384	.377

a. Multiple modes exist. The smallest value is shown

4.3 PATTERNS OF EXPOSURE TO TRAUMA

4.3.1 Frequency of Exposure

As shown in Table 3 below, only 9.70% of the sample reported that they had never been exposed to a traumatic event, and 22.42% reported exposure to only one event in their lifetime. Nearly 68% of the sample population reported having been exposed to two or more traumatic events with numbers of those exposed to multiple trauma tapering off at the level of 5 or more exposures. The high level of multiple exposures to traumatic events is consistent with that found in previous South African research (Engelbrecht, 2009, Williams et al., 2007) as will be elaborated in the next chapter.

Table 3. *Frequency of Exposure to Trauma*

Number of traumatic events experienced	*n*	Percentage of Sample (%)
0	16	9.70
1	37	22.42
2	52	31.52
3	27	16.36
4	17	10.30
5	10	6.06
6	5	3.03
7	1	0.61

Frequency of Exposure by Type of Traumatic Event

Table 4 lists the traumatic events that participants reported as experienced, from most frequently experienced to least experienced. Hijacking was the most frequently experienced event (50.90% of participants), followed by the death of a close family member or friend in an accident or suicide (44.91% of participants) and an event in which someone has attempted to, or succeeded in, forcefully taking something e.g. robbery, mugging, smash and grab, holdup (44.31% of participants).

Table 4. *Prevalence of Traumatic Events*

Event	*n*	Percentage of Sample (%)^
Hijacking (personally or a close friend/family member)	85	50.90
Death of close friend/family member - accident or suicide	75	44.91
Robbery / Mugging / Smash & Grab / Holdup	74	44.31
Death of close friend/family member – homicide	39	23.35
Been attacked or beaten up	32	19.16
Motor vehicle accident involving injury to self or others	29	17.37
Other	27	16.17
Unwanted sexual activity	22	13.17
Suffered injury or extensive property damage due to severe weather or a natural/manmade disaster	19	11.38
Suffered injury or extensive property damage due to fire	5	2.99
Served in combat	1	0.60

^ Total $n = 167$

4.3.2 Crime-related Exposure

Exposure to crime-related traumatic events was reported at significantly higher rates than exposure to traumatic events unrelated to crime. Almost twice as many crime-related events were reported (see Table 5). Additionally, more participants reported multiple exposures (2 or more) to events of a criminal nature than to non-crime type trauma (see Table 6 and Table 7). Over 47% of the sample population reported exposure to multiple traumatic events that are of a criminal nature, whereas just less than 13% reported experiencing multiple non-crime traumatic events. Similarly, far fewer participants reported no exposure to crime-related trauma (19%) than non-crime traumatic events (40%). This highlights the large number of participants who have been exposed to multiple crime-related traumas. The levels of crime-related exposure (single and multiple) are greater than those previously reported by research

on South African university students (Engelbrecht, 2009), but closely resemble those reported in general South African populations (Williams, 2007). Similarly, the levels of non-crime related trauma found in this study are lower than those found in previous student populations (Engelbrecht, 2009) and similar to those found in wider South African populations (Williams, 2007).

Table 5. *Exposure to Crime and Non-crime Trauma*^

	Total	**Crime-Related**	**Unrelated to Crime**
Number events	377	249	128
Percentage (%)	-	66.05	33.95

^ *n* = 165

Table 6. *Frequency of Exposure to Crime-Related Trauma*

Number of crime-related traumatic events experienced	***n***	**Percentage of Sample (%)^**
0	31	18.79
1	56	33.94
2	52	31.52
3	16	9.70
4	9	5.45
5	1	0.61

^ Total *n* = 165

Table 7. *Frequency of Exposure to Trauma Unrelated to Crime*

Number of traumatic events experienced unrelated to crime	***n***	**Percentage of Sample (%)^**
0	66	40
1	74	44.85
2	21	12.73
3	4	2.42

^ Total *n* = 165

4.3.3 Recency of Exposure

Almost 32% of participants had been exposed to at least one traumatic event within the last six months, and almost 69% of participants reported experiencing a traumatic event within the last twelve months (see Table 8). Thus it was evident that a large proportion of the sample had experienced a traumatic event in the fairly recent past.

Table 8. Most *Recent Exposure to Trauma*

How recently event occurred	*n*	Percentage of Sample (%)^
0-1 months ago	16	13.11
2-3 months ago	8	6.56
3-6 months ago	15	12.30
6-12 months ago	45	36.89
>12 months ago	38	31.15

^ Total $n = 122$

4.3.4 Perceived Severity of Exposure

Participants were asked to choose the event they have been most affected by, provide a description of the event and rate the level of life threat they felt the event presented. As shown in Table 9, the majority of participants rated that the event they denoted as most severe was ‘a lot’ (34%) or ‘extremely’ (23%) life threatening. In contrast, less than 13% of participants reported that there was no life threat associated with the event they had been most affected by, indicating that for the majority of participants their subjectively perceived most threatening event was of a severe nature.

Table 9. *Subjective Appraisal of Life Threat (associated with the event reported to be most severe)*

Level of Life Threat	*n*	Percentage of Sample (%)^
Not at all	18	12.77
A little	21	14.89
Moderately	21	14.89
A lot	48	34.04
Extremely	33	23.40

^ Total $n = 141$

Crime-related traumatic events that were enacted using violence were most commonly reported as the most severe event experienced. As portrayed in Table 10, approximately 69% of participants described a criminal event in which violence was used. Of these violent crime related events, the most frequently reported involved the perpetrator attempting to take something from the victim by force in the form of a mugging or personal robbery (13.87%) or hijacking (13.14%). The murder of a close friend or family member was the next most frequent event described as the most severe trauma experienced (10.22%), followed by house robbery (8.76%), rape (8.03%), abuse (5.11%), smash and grabs (4.38%), attacks without specified purpose (3.65%) and attempted rape (2.19%).

Events described as most severe in the non-crime category, in descending frequency, were the death of a close friend or family member (29.93%), car accidents (17.52%), feared death (own or of close friend/family member) (5.84%), and environmental damage (3.65%).

Of the events that involved the death of a close friend or family member, the most common cause of death was accidental (usually car accidents) or murder (10.22% in both instances). Approximately 6.57% of the events reported as most severely experienced involved the suicide of a close friend or family member. A small minority of deaths were related to illness or unspecified (1.46% each). Of the events that involved fearing death, 3.65% were related to fearing the death of a close friend or family member, and 2.19% involved the participant fearing their own death in relation to the traumatic event. Thus perhaps unsurprisingly, in the case of both broad categories the infliction of deliberate harm by others and the possibility of death or actual death produced subjective reports of high impact severity.

Table 10. *Prevalence of the Types of Traumatic Events Described as Most Severely Experienced**

Types of Traumatic Experiences Described**	Number of Events Described	Percentage of Events Described (%)^
Crime enacted using violence	**95**	**69.34**
Mugged/Personal robbery	19	13.87
Hijacking	18	13.14
Murder	14	10.22
House robbery	12	8.76
Rape	11	8.03
Abuse (physical or emotional)	7	5.114
Smash and grab	6	4.38
Attack with unspecified purpose	5	3.65
Attempted rape	3	2.19
Death of close friend/family member	**41**	**29.93**
Accident	14	10.22
Murder	14	10.22
Suicide	9	6.57
Illness	2	1.46
Unspecified	2	1.46
Car Accident	**24**	**17.52**
Feared death	**8**	**5.84**
Feared death of close friend/family member	5	3.65
Fear of own death	3	2.19
Health related	**5**	**3.65**
Environmental damage	**5**	**3.65**

^Total $n = 137$

*Note that some events described as most severe fall into multiple categories, therefore total events reported > total *n* (e.g. murder is categorized as both a 'crime enacted using violence' and as 'death of close friend/family member', or the description of a car accident specified fear of dying and hence that event is categorized as both 'car accident' and 'fear of own death')

** Note that events described as most severe included both direct and indirect exposure

4.4 POSTTRAUMATIC STRESS SYMPTOMATOLOGY

PTSS was measured using the IES-R (22-item), which has a possible total score range of 0 to 88, with a range of 0 to 4 for each item. Table 11 presents the descriptive statistics for the total sample on the IES-R.

Table 11. *Descriptive Statistics for Posttraumatic Stress Symptomatology in the Preceding 7 days*

Subscale/Measure	*n**	Mean Item Score	Mean Item Score SD	Mean Total Score	Mean Total Score SD
Intrusion subscale	156	1.47	1.41	11.74	9.41
Avoidance subscale	153	1.44	1.45	11.35	8.90
Hyperarousal subscale	155	1.17	1.36	6.83	6.06
IES-R (Total)	146	1.38	1.41	29.42	22.91

*Some participants did not complete the full scale but responded to all items relevant to individual subscales.

Generally, the mean item scores suggest that intrusion and avoidance symptoms fell between "a little bit" and "moderately" distressing, whereas the hyperarousal symptoms were reported most often as "a little bit" distressing. The overall posttraumatic stress symptomatology generally fell about midway between "a little bit" and "moderately" distressing. Note that in keeping with the scale design the participants were requested to only report symptoms experienced over the previous seven days.

The distribution of total IES-R scores is shown in Figure 1 and Table 12 below. As illustrated, reported levels of posttraumatic stress symptomatology were high, since endorsement of items at all, even if at the low levels described just previously, suggests some trauma related response. Although the IES-R is not recommended to be used for diagnostic purposes, there is some evidence that total scores of 33 and above may be associated with a diagnosis of Post-Traumatic Stress Disorder (PTSD) (Beck et al., 2008; Creamer et al., 2003). A large portion of the sample (42.5%) scored 33 or above on the IES-R, with 17.1% scoring above 55. This pattern of total IES-R scores indicates that traumatic stress symptomatology levels were generally high in the population sample. The high PTSS level is consistent with

past research conducted on a South African university student population (Engelbrecht, 2009).

Figure 1. *Histogram: Distribution of Total Posttraumatic Stress Symptomatology in the Preceding 7 days*

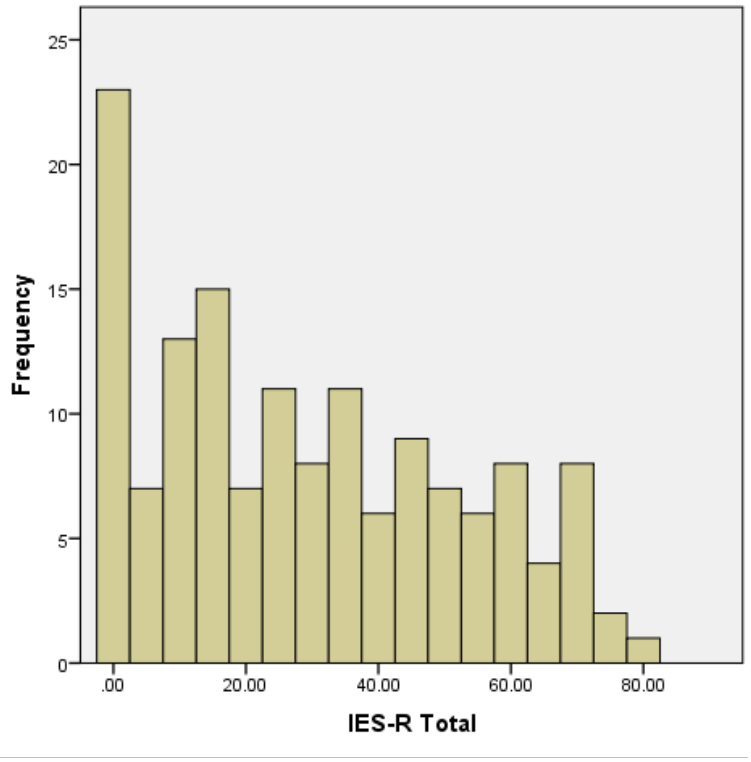

Table 12. *Distribution of Total Posttraumatic Stress Symptomatology in the Preceding 7 days*

IES-R Total	*n*	Percentage of Sample (%)^
0-10	40	27.4
11-21	23	15.8
22-32	21	14.4
33-43	17	11.6
44-54	20	13.7
55-65	12	8.2
66-76	12	8.2
77-88	1	0.7

^ Total $n = 146$

4.5 APPRAISAL OF FUTURE RISK

Participants were asked to rate how likely they believe they are to experience a variety of traumatic events in the future using the TSS as the basis for this evaluation. The AFR measure (10-items) categorizes the trauma exposure events into ten types. There is a possible total score range of 0 to 44, with a range of 0 to 4 for each item. The mean score of the total sample (n = 158) on the AFR measure was 14.29, with a mean item score of 2.06 (SD = 0.53) which is closest to the "moderate chance" rating.

An item analysis revealed the descriptive data shown in Table 13. The events are listed in descending order (most likely to least likely to be experienced) according to the percentage of participants who selected each likelihood rating (data sorted by each rating level, firstly according to "very strong chance" and lastly according to "no chance").

Table 13. *AFR: Subjective Appraisal of Future Prevalence of Traumatic Events*

Traumatic Event	Percentage of Sample (%)					
	n	**No chance**	**Slight Chance**	**Moderate Chance**	**Strong Chance**	**Very Strong Chance**
Robbery/Mugging/Smash & Grab/Holdup	164	7.19	10.18	44.31	23.95	11.98
Hijacking (self or close friend/family member)	163	15.57	16.77	31.14	22.16	11.98
Motor vehicle accident involving injury to self or others	163	14.97	20.36	35.93	15.57	10.78
Death of close friend/family member - accident or suicide	162	11.38	20.36	37.72	18.56	8.98
Death of close friend/family member - homicide	164	17.37	31.14	32.93	11.38	5.39
Attacked/Beaten Up	163	17.37	37.13	30.54	7.78	4.79
Unwanted sexual activity	163	43.11	25.15	20.36	4.79	4.19
Suffer injury or extensive property damage due to severe weather or natural/manmade disaster	162	25.75	40.72	25.75	1.20	3.59
Suffer injury or extensive property damage due to fire	163	32.93	42.51	17.96	0.60	3.59
Will serve in combat	163	75.45	13.77	5.39	0.00	2.99

Most likely ↓ **Least likely**

From the evaluations it appeared that subjects were able to project themselves into the future in terms of thinking about the likelihood of exposure to future events and crime related events and motor vehicle accidents were rated as most likely to occur, with natural disasters, fires and combat experience related as least likely to occur.

4.6 FEAR OF CRIME

The FoC measure (6-items) has a possible total score range of 6 to 24, with a range of 1 to 4 for each item. The mean score of the total sample (n = 163) on the FoC measure was 15.00, with a mean item score of 2.50 (SD = 0.31). An item analysis revealed the descriptive data for the total sample shown in Table 14.

Table 14. *Prevalence of Fear of Crime*

Item	*n*	Percentage of Sample (%)			
		Very safe	*Somewhat safe*	*Somewhat unsafe*	*Very unsafe*
How safe did you feel walking and/or driving alone in your neighbourhood during the *day*?	164	35.37	32.93	26.22	5.49
How safe did you feel walking and/or driving alone in your neighbourhood at *night*?	163	8.59	27.61	34.36	29.45
		Never	*Rarely*	*Sometimes*	*Often*
How often did this influence your plans or prevent you from doing the things you like to do in and around your neighbourhood?	164	27.44	28.05	27.44	17.07
		Not worried	*Somewhat worried*	*Moderately worried*	*Very worried*
How worried were you that you would experience being a victim of crime *outside* your neighbourhood?	164	14.02	21.34	33.54	31.10
How worried were you that you would experience being a victim of crime *in* your neighbourhood?	164	21.34	28.66	26.22	23.78
How worried were you that you would experience being a victim of crime in your *own home?*	163	30.06	20.25	25.15	24.54

It was evident that there were fairly strong levels of concern about crime and related anxiety and inhibition of movement.

4.7 RELATIONSHIPS BETWEEN EXPOSURE TO TRAUMA, AFR, AND FoC

In exploring the relationship between exposure to trauma, AFR and FoC, correlations between the different dimensions of exposure and the outcome variables are reported in order of decreasing significance (see Table 15).

Table 15. *Pearson's Correlations: Exposure to Trauma, AFR and FoC*

		AFR	FoC
Frequency of Exposure	r	.221**	.157*
	p	.006	.047
	n	156	162
Non-crime Related Exposure	r	.242**	.180*
	p	.002	.022
	n	156	162
Crime-related Exposure	r	.141	.091
	p	.079	.252
	n	156	162
Perceived severity of Exposure	r	.011	.147
	p	.901	.085
	n	135	138
Recency of Exposure	r	-.073	-.119
	p	.440	.199
	n	115	119

*p<.05, **p<0.01

Frequency of exposure and non-crime related exposure are both significantly positively correlated with AFR and FoC ($p<0.05$ and $p<0.01$). Thus, the more traumatic events experienced, particularly those not associated with crime, the greater the AFR and FoC. However, crime-related exposure is not significantly correlated with AFR or FoC; this suggests that only traumatic exposure that is not of a criminal nature is related to one's on-going sense of safety in the world or to one's subjective appraisal of the likelihood of future victimization. This finding was somewhat unexpected and will be discussed later.

4.8 RELATIONSHIP BETWEEN EXPOSURE TO TRAUMA AND PTSS

In exploring the relationship between exposure to trauma and PTSS, correlations between the different aspects of exposure and PTSS are reported in order of decreasing significance. For the most part, the ordering of the exposure dimensions according to decreasing correlational significance is consistent with that in relation to AFR and FoC (Table 16). All the measured dimensions of exposure to trauma are significantly correlated with PTSS and the three subscales of symptoms.

Table 16. *Pearson's Correlations: Exposure to Trauma and PTSS (Including Subscales)*

		PTSS Total	PTSS – Intrusion subscale	PTSS – Avoidance subscale	PTSS – Hyperarousal subscale
Frequency of Exposure	R	.363**	.356**	.351**	.347**
	P	.000	.000	.000	.000
	N	145	155	152	154
Non-crime Related Exposure	R	.360**	.364**	.334**	.367**
	P	.000	.000	.000	.000
	N	145	155	152	154
Crime-related Exposure	R	.250**	.243**	.252**	.227**
	P	.002	.002	.002	.005
	N	145	155	152	154
Perceived severity of Exposure	R	.249**	.215*	.217*	.240**
	P	.005	.013	.013	.005
	N	124	133	131	133
Recency of Exposure	R	-.216*	-.186*	-.200*	-.231*
	P	.026	.049	.035	.014
	N	106	113	112	113

*p<.05, **p<0.01

Frequency, non-crime and crime-related exposure, and perceived severity of exposure are all significantly positively correlated with symptomatology. Thus, the more traumatic events

experienced, of either a criminal or non-criminal nature, the higher the reported PTSS including higher symptomatology on all three clusters of Intrusion, Avoidance, and Hyperarousal. Additionally, the more severe the traumatic event was perceived to be, the higher the reported symptomatology on all three subscales. Recency of exposure is significantly negatively correlated with symptomatology, such that the more recently the event was experienced, the significantly higher the reported PTSS including higher symptomatology on all three clusters of symptoms. Of the three PTSS subscales, Hyperarousal symptoms appear to be the most strongly related to dimensions of traumatic exposure (all $p<0.01$ other than recency of exposure).

4.9 RELATIONSHIP BETWEEN PTSS, AFR, AND FOC

The correlations between posttraumatic symptomatology (including the three subscales) and the outcome variables, AFR and FoC, are shown in Table 17. Total PTSS, and all three subscales of PTSS (Intrusion, Avoidance and Hyperarousal) are significantly positively correlated with both FoC and AFR (as indicated by $p<0.01$, $p<.05$). Thus, the more PTSS experienced, on all three clusters of symptoms, the higher the reported AFR and FoC. Additionally, the relationship is strongest for the Hyperarousal subscale of PTSS ($p<.01$ for both AFR and FoC). Although the presence of significant correlations between all three PTSS subscales and outcome variables (FoC and AFR) perhaps indicates that all relationships represent related impacts of traumatic exposure, the varying levels of correlation suggest that FoC and AFR are actually measuring distinct aspects of traumatization. Similarly, correlational analysis of the relationship between AFR and FoC ($r = 0.406$, $p<0.01$) indicates that both constructs are assessing effects of traumatic exposure but that there is a substantial amount of difference in the specific forms of impacts measured by the two variables.

Table 17. *Pearson's Correlations: PTSS (Including Subscales), AFR and FoC*

		AFR	FoC
PTSS – Total	r	.194*	.303**
	p	.021	.000
	n	141	144
PTSS – Intrusion subscale	r	.200*	.295**
	p	.014	.000
	n	151	154
PTSS – Avoidance subscale	r	.177*	.246**
	p	.033	.002
	n	146	151
PTSS – Hyperarousal subscale	r	.228**	.405**
	p	.005	.000
	n	149	156

*p<.05, **p<0.01

4.10 MULTIPLE REGRESSION MODELS WITH RESPECT TO FOC

Multiple regression analysis was used to test whether trauma exposure and PTSS significantly predict participants' FoC. Two multiple regression models were developed; both were found to meet the assumptions of regression models (see Appendix H for the data relevant to the checking of assumptions).

In Model 1, the dimensions of trauma exposure (non-crime related, crime-related, recency, perceived severity) and total PTSS (total IES-R score) were used as the predictor variables and FoC was used as the dependent variable. Note that frequency of exposure was not included as a separate variable in the regression model as total frequency of exposure is equivalent to the sum of non-crime related exposure and crime-related exposure; hence frequency of exposure is considered a linear combination of crime-related and non-crime related exposure and would be redundant if simultaneously included in the model (Field,

2006). As shown in Tables 18 and 19, the results of the regression indicate that the frequency (crime and non-crime related), recency and perceived severity of trauma exposure as well as PTSS collectively explain 16.9% of the variance in FoC in the sample ($R^2 = 0.169$, F (3.62, 5) =, $p < 0.01$).

Table 18. *FoC Multiple Linear Regression Analysis: Model 1 Summary*[b]

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.411[a]	.169	.122	4.220	1.912

a. Dependent Variable: FoC

b. Predictors: (Constant), Noncrime Related Exposure, Recency of Exposure, Perceived Severity of Exposure, Crime Related Exposure, PTSS

Table 19. *FoC Multiple Linear Regression Analysis: Model 1ANOVA*[a]

	Sum of Squares	df	Mean Square	F	Sig.
Regression	321.932	5	64.386	3.616	.005[b]
Residual	1584.868	89	17.808		
Total	1906.800	94			

a. Dependent Variable: FoC

b. Predictors: (Constant), Noncrime Related Exposure, Recency of Exposure, Perceived Severity of Exposure, Crime Related Exposure, PTSS

Table 20. *FoC Multiple Linear Regression Analysis: Model 1 Predictor Variables Correlation Coefficients*[a]

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	10.868	2.029		5.357	.000
Recency of Exposure	-.120	.330	-.036	-.363	.717
Perceived Severity of Exposure	.326	.359	.092	.907	.367
PTSS	.056	.020	.297	2.750	.007
Crime Related Exposure	.213	.414	.053	.514	.608
Noncrime Related Exposure	.765	.641	.124	1.192	.236

a. Dependent Variable: FoC

In Model 2, only the three subscales of PTSS (Intrusion, Avoidance, and Hyperarousal) were used as predictor variables with FoC as the dependent variable. As shown in Tables 21 and 22, the results of this second regression model indicate the three clusters of PTSS (Intrusion, Avoidance and Hyperarousal) collectively explain 10.9% of the variance in FoC in the sample ($R^2 = 0.109$, F (5.71, 3) =, $p < 0.01$).

Table 21. *FoC Multiple Linear Regression Analysis: Model 2 Summary*[b]

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.330[a]	.109	.090	4.516	1.878

a. Dependent Variable: FoC

b. Predictors: (Constant), PTSS-Hyperarousal, PTSS-Avoidance, PTSS-Intrusion

Table 22. *FoC Multiple Linear Regression Analysis: Model 2 ANOVA*[a]

	Sum of Squares	df	Mean Square	F	Sig.
Regression	349.644	3	116.548	5.714	.001[b]
Residual	2855.662	140	20.398		
Total	3205.306	143			

a. Dependent Variable: FoC

b. Predictors: (Constant), PTSS-Hyperarousal, PTSS-Avoidance, PTSS-Intrusion

Table 23. *FoC Multiple Linear Regression Analysis: Model 2 Predictor Variables Correlation Coefficients*[a]

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	13.091	.614		21.305	.000
PTSS-Intrusion	.011	.094	.022	.120	.904
PTSS-Avoidance	-.005	.077	-.010	-.070	.944
PTSS-Hyperarousal	.243	.120	.319	2.033	.044

a. Dependent Variable: FoC

As demonstrated in Table 20, PTSS is the only significant predictor variable in Model 1 (p = 0.07). However, the removal of the predictor variables that relate to dimensions of exposure to trauma (as done in Model 2) decreased the percentage of variance explained by the regression models from 16.9% (Model 1) to 10.9% (Model 2). This suggests that although the individual dimensions of trauma exposure do not significantly predict variance in FoC on their own, collectively they account for around 6% of FoC variance in this sample.

As indicated in Table 23, only the hyperarousal cluster of PTSS significantly acts as a predictor variable in Model 2 (p = 0.044). This finding suggests that the PTSS behaviours related to hyperarousal contribute more to FoC than intrusive and avoidant behavioural symptoms. However, the significantly higher contribution of hyperarousal symptoms than intrusion and avoidance symptoms, in determining FoC levels, is only true when the dimensions of trauma exposure are excluded from the regression model. When total PTSS was replaced by the three individual subscales in Model 1 (intrusion, avoidance, hyperarousal), none of the symptom clusters were found to act as a significant predictor

variable. Hence, it is only in the absence of trauma exposure variables that hyperarousal PTSS acts as a significant predictor of FoC levels.

Overall it was evident that the regression models computed indicated that there were moderate contributions to variance in FoC from exposure variables in combination, and from PTSS hyperarousal sub-scale scores, and that these sets of relationships appeared to be independent.

4.11 MULTIPLE REGRESSION MODELS WITH RESPECT TO AFR

Multiple regression analysis was also used to test whether trauma exposure and PTSS significantly predict participants' AFR. Two multiple regression models were developed; both were found to meet the assumptions of regression models (see Appendix H for the data relevant to the checking of assumptions).

In Model 1, the dimensions of trauma exposure (non-crime related, crime-related, recency, perceived severity) and total PTSS (total IES-R score) were used as the predictor variables and AFR was used as the dependent variable. As with the FoC model, note that frequency of exposure was not included as a separate variable in the regression model. As shown in Tables 24 and 24, the results of the Model 1 regression indicate that the frequency (crime and non-crime related), recency and perceived severity of trauma exposure as well as PTSS collectively do not explain a significant portion of the variance in AFR in the sample (R^2 = 0.096, F (1.87, 5) =, p = 0.109). Table 26 shows that none of the predictor variables acted as a significant predictor of AFR levels (all p > 0.05), but non crime-related exposure to trauma seemed to approach significance (p = 0.074).

Table 24. *AFR Multiple Linear Regression Analysis: Model 1 Summary*[b]

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.309[a]	.096	.044	7.216	1.893

a. Dependent Variable: AFR

b. Predictors: (Constant), Noncrime Related Exposure, Recency of Exposure, Perceived Severity of Exposure, Crime Related Exposure, PTSS

Table 25. *AFR Multiple Linear Regression Analysis: Model1 ANOVA*[a]

	Sum of Squares	df	Mean Square	F	Sig.
Regression	485.295	5	97.059	1.864	.109[b]
Residual	4581.684	88	52.065		
Total	5066.979	93			

a. Dependent Variable: AFR

b. Predictors: (Constant), Noncrime Related Exposure, Recency of Exposure, Perceived Severity of Exposure, Crime Related Exposure, PTSS

Table 26. *AFR Multiple Linear Regression Analysis: Model 1 Predictor Variables Correlation Coefficients*[a]

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	11.087	3.442		3.221	.002
Recency of Exposure	-.367	.568	-.067	-.647	.519
Perceived Severity of Exposure	-.025	.611	-.004	-.041	.968
PTSS	.037	.035	.118	1.058	.293
Crime Related Exposure	.577	.717	.087	.805	.423
Noncrime Related Exposure	2.019	1.117	.197	1.808	.074

a. Dependent Variable: AFR

In Model 2, only the three subscales of PTSS (Intrusion, Avoidance, and Hyperarousal) were used as predictor variables with AFR as the dependent variable. As shown in Tables 27 and 28, the results of this second regression model indicate the three clusters of PTSS (Intrusion, Avoidance and Hyperarousal) collectively explain 5.9% of the variance in AFR in the sample; this portion of variance is significant for the sample used in this model ($R^2 = 0.059$, F (2.86, 3), $p < 0.05$). Table 29 indicates that only Hyperarousal symptoms acted as a significant predictor variable in this model ($p = 0.041$).

Table 27. *AFR Multiple Linear Regression Analysis: Model 2 Summary*[b]

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.243[a]	.059	.038	7.067	1.892

a. Dependent Variable: AFR

b. Predictors: (Constant), PTSS-Hyperarousal, PTSS-Avoidance, PTSS-Intrusion

Table 28. *AFR Multiple Linear Regression Analysis: Model 2 ANOVA*[a]

	Sum of Squares	df	Mean Square	F	Sig.
Regression	428.130	3	142.710	2.857	.039[b]
Residual	6842.692	137	49.947		
Total	7270.823	140			

a. Dependent Variable: AFR

b. Predictors: (Constant), PTSS-Hyperarousal, PTSS-Avoidance, PTSS-Intrusion

Table 29. *AFR Multiple Linear Regression Analysis: Model 2 Predictor Variables Correlation Coefficients*[a]

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	11.987	.969		12.373	.000
PTSS-Intrusion	-.113	.147	-.147	-.769	.443
PTSS-Avoidance	.028	.122	.034	.227	.821
PTSS-Hyperarousal	.389	.188	.333	2.067	.041

a. Dependent Variable: AFR

The finding that Model 2 does explain a significant portion of AFR variance while Model 1 does not indicates that PTSS plays a more substantial role in determining AFR levels than does dimensions of exposure to trauma. However, the total PTSS was not a significant predictor variable in Model 1 ($p = 0.293$) and only the Hyperarousal sub-cluster of PTSS acted as a significant predictor variable in Model 2 ($p = 0.041$). This suggests that it is the hyperarousal symptomatology that may be most influential in determining AFR levels (out of

the variables measured in this study), but that the effect of hyperarousal symptoms is not strong enough to act as a significant predictor variable when considered in conjunction with dimensions of exposure to trauma. Hence, it is only in the absence of trauma exposure variables that hyperarousal symptoms account for a significant portion of the variance in AFR in this sample.

4.12 PTSS AS A MEDIATOR

Given the findings above with regards to the regression model analyses it appeared unlikely that PTSS would be observed to play a mediating role between exposure and the other two outcome variables as proposed as a secondary aim within the study. Nevertheless statistical analyses to establish whether such a relationship was indicated were carried out. Regression models (Baron & Kenny, 1986) and Sobel tests (1982) revealed no significant mediation by PTSS in the relationships between exposure to trauma (frequency, crime/non-crime, perceived severity, recency) and FoC or AFR. This suggests that exposure is directly related to FoC and AFR rather than being mediated through the experience of symptomatic responses to trauma.

4.13 AFR FINDINGS

The themes that emerged in responses to an open-ended question requesting participants to describe the factors that influenced their appraisal of risk of future traumatization (see Appendix F) were subjected to thematic analysis and are described below and subsequently presented in terms of frequencies of response type in Table 30.

Environment Related Risk

The vast majority of participants (93.92%) described thinking of risk factors in their environment in making an assessment of their likelihood of future exposure to traumatic events of various types. The largest portion of participants within this broad theme (23.65%) provided descriptions that illustrated general safety and security concerns in their environment – *'Knowing I could get attacked when I walk across Mandela Bridge during day*

or night makes me want to quit school'; 'I worry about my safety constantly - whether my car doors are locked… making sure at robots that I check who is around me'; 'Driving, being at home, going out in the evenings, walking alone.'

Approximately 20% of participants relayed thinking about threat that exists within Johannesburg or South Africa more generally – *'High crime risk in South Africa. Poor driving abilities or lack of caring among drivers in South Africa'; 'Because we live in South Africa I am very worried that I will experience a violent crime'; 'The fact that we live in South Africa, which has a high crime rate'; 'Johannesburg is not safe'.*

Slightly less than 18% of the sample specifically expressed concern about the high crime rate in their environment – *'Crime in South Africa, especially violent crime'; 'I think mostly about crime as it happens around me all the time'; 'The crime rate influences my thinking especially when going out during the night.'*

Approximately 13% of participants thought about how safe or secure their home or neighbourhood environment is – *'My neighbourhood is not the safest but necessary measures have been taken for my safety (walking around with weapons)'; 'Many criminals in my neighbourhood'; 'I worry a lot about people breaking into our house, hurting us and raping us'; 'Criminals enter your own house which makes us not be safe even in our own homes'; 'Going for a walk or run when the neighbourhood is quiet'.*

Thinking of their chance of being involved in a car accident was specifically mentioned by about 8% of participants – *'[I think about] being in a car accident where the other driver is drunk'; 'I constantly fear car accidents'; 'I mostly worried about being in a car accident'; 'I am so scared of being involved in a car accident because I use public transport every day.'*

An increased need for vigilance in daily life was expressed by 7.43% of participants – *'One has to be more paranoid, always staying aware of what's happening around'; 'Need to lock up, park my cars away and stay alert constantly'; I constantly worry about whether my car doors are locked... I always make sure at robots that I check who is around me'; 'I am always wary when not at home because I know the world is quite unsafe'; 'I always make sure that I know what is going on around me. I don't take out my phone or wallet where it might not be safe. I try not to be alone if I am in a dodgy place.'*

A few participants (2.70%) specifically thought about how their chance of future victimization is enhanced by their occupational environment – *'Working in a government hospital and walking through that hospital alone could put you at risk'; 'Leaving home early in the morning for work and returning home in the dark'; 'I work in a security control room so I am exposed to crime often.'*

A small minority of the sample (1.35%) connected dissatisfaction with law enforcement and the legal system with thinking of the possibility of future traumatization – *'Justice is needed. Crime needs to be handled and managed properly by government officials'; 'I get irritated because I know reporting it to the police won't be as effective as it should be.'*

Imagined Impacts: Anticipation of Trauma Responses, Potential Death, Emotional Impact and Cognitive Avoidance

Over 14% of participants reported thinking about or worrying about their ability to recover from a traumatic experience. They spoke about their anxiety about their anticipation of their response to trauma rather than what might cause the trauma in the first instance. It was interesting how palpable the anxiety in these instances was in the answers they supplied. *'I'm nervous of how I'll recover and the process of it'; 'I won't be able to live my life fully and achieve all that I want to achieve'; 'Fear and constant worrying about how I would react to the event and how I would cope'; 'Whether or not I would be able to move on from that event and be myself again'; 'Will I commit suicide because of failing to face that traumatic event?'; 'I mostly worry about how it might affect my future relationships.'* A handful of participants (2.70%) described experiencing a variety of emotions while thinking about possible future victimization – *'I get irritated because I know reporting it to the police won't be as effective as it should be'; '[I experience] stress, nightmares, no confidence, think negatively about the world, and feel insecure around strangers'; '[I feel] paranoia'*. Two participants spoke of avoiding thinking about future victimization because of the levels of anxiety evoked in considering how becoming traumatized might affect them - *'I do not want to think about trauma anymore because I do not think that my heart will take it anymore. Trauma is a bad experience – the worst'*. In addition to these responses about the feared impact of trauma on their lives some participants went so far as to venture fears of death and dying in responding to the question. Approximately 8% thought about the possibility that they might die as a result of a traumatic event they may experience in the future – *'I think about…being killed'; 'Losing my life'; 'Death'; 'Would I survive it?'; 'If I die from it, God forbid of course, where*

will I go?'; 'There is a chance I can get killed'; 'It might lead to my death'; 'Knowing that most people don't make it when they are involved in an accident'. It was concerning quite how distressed and anxious some of the participants appeared to be in answering the question about what had informed their answers concerning the possibility of future trauma exposure. The responses suggested that there might be some aspects of continuous traumatic stress in this population and also pointed to the importance of having offered contact details for counselling services on the informed consent sheets. However, a proper elaboration of what the answers to the final open-ended question might suggest about traumatic stress is offered in the next chapter.

Concern Regarding Loved Ones

Approximately 21% of participants reported worrying about how a traumatic event would affect loves ones in their life. Many of these participants expressed concern about the safety of those close to them – '*I need to buy a gun and protect myself and my loved ones'; 'I fear for my children'; 'I have a lot of fear for someone in my life… I stress about her safety and wellbeing all the time.'* Others described worrying about losing their loved ones due to trauma – *'This morning when I drove to campus I thought about losing my parents or people close to me'; 'I fear losing someone I love dearly because of a car accident.'* Other participants reported worrying about how their loved ones would be affected if the participant was to experience a traumatic event – *'I think about how my friends and family might be affected if something bad had to happen to me'; '[I think about] who it affects in my life and consequences to those I love'; 'I worry about what will happen to my family.'* In these instances it seemed that it was through a vicarious identification with others and an awareness of their relational connection to them that produced a sense of anxiety about potential threats.

Links Between Past and Future Traumatizations

Over 18% of the sample reported thinking of past traumatic exposure that they have experienced either directly or indirectly. Some participants reported thinking generally about their past exposure ('*A few weeks ago, I saw somebody being shot, just a few meters from me.'*), whereas others specifically reported judging their future likelihood of traumatic exposure based on their past exposure – '*Being exposed to crime is expected given the number of friends and family would have been affected by it.'; 'Every time I leave my house, coming back alone frightens me because of my brother being hijacked in our drive way.'* Several participants thought about how they have dealt with past exposure, with a few

reporting that it has increased their concern of future victimization *('I think that knowing that you have not dealt with a past serious situation makes you vulnerable to thinking about others'; 'I'm worried that I will go through the pain I went through before'; 'It scares me a lot because I am afraid of experiencing something traumatic again'*), and others reporting that it has made them feel more confident about their ability to handle it ('*The personal events and car-jacking I went through this past year showed me that I am able to respond well for my own physical and mental safety and … my friends made me feel good and safe'*).

Demographic or Personality Characteristics of Self or Others

Slightly fewer than 7% of participants described thinking about personal risk factors, specifically being a woman or being white in race – '*I feel very unsafe...being a woman, who are seen as a weaker target in South Africa is very worrying'; 'Being a female can be more fear-provoking when out alone, especially at night'; 'I am a woman and I am white. These are important factors'; 'I am a young, white, female and I feel this make me an easy target for sexual crimes'; 'Crime is the first thing that comes to mind. It is a constant fear, especially being a woman. I always feel vulnerable when I am alone.'*

A few participants (5.41%) spoke negatively of people they are exposed to – '*[I think of] dishonesty of people'; 'That you cannot trust just anyone'; I thought about people who walk around at night and look suspicious'; 'The lack of respect people in our country have for others.'* Yet were more vague about what kinds of people they feared and indicated that isolation versus group support might be significant in their appraisals of risk occurring – *'Who I'm with, what time it is, what sort of people are around, where I am and how many people are around.'*

Existential or Religious Dimensions

A minority of participants (9.46%) described that their appraisal was influenced by thinking of factors that highlight the role of external locus of control. A few participants spoke of it being impossible to predict or control future victimization – *Anything could happen'; 'It can come anytime, cannot predict it'; 'I think it is inevitable that traumatic events happen throughout everybody's lives'; 'Trauma comes without inviting it'; 'I think that there is no way of measuring how likely or unlikely [you are] to be exposed to such events. It's all up to chance in our current society.' It is likely that I will be hijacked, pickpocketed or have my*

house broken into. I am lucky that this hasn't happened yet. I am always wary…because I know the world is unsafe.'

A small minority of participants (2.70%) spoke of religion as a protective factor – '*God will protect me'; 'I am a devoted Christian and know and believe that I am never alone. My God is continuously watching over me and wants only good for me'; 'I think and believe that my God will keep me from such situations.'* Two participants explained traumatic experiences using religion – *'You will never know. It will be God's plan for your life'; 'I figure I live with God and if I am to ever experience my traumatic experience then it will mean it was time.'*

Unaffected

Slightly less than 5% of participants stated that they will not experience or be affected by a traumatic event at all. Some participants referred to safety measures that exist in their environment – *'Don't think is likely. I live on campus and feel very safe in res. Security is good in residence and around campus'; 'I live in a very safe environment so there won't be any physical harm to me or the people around me'*. Others spoke of exerting personal qualities or control to ensure they will not be affected by trauma – *'I'm not a person who fears much so violence isn't something affects me at all'; 'I rarely think about possible traumatic events because I see what anxiety has done to my mother. I try take precautions like avoidance/prevention so I won't have an event like this'; 'I have only experience of trauma in the form of rape but that will not happen. I would die before I allow that to happen to me again.'*

Table 30. *Factors Influencing AFR Evaluations*

Factors Influencing AFR Judgement*	***n*^**	**Percentage of Sample (%)**
Environment Related Risk	**139**	**93.92**
Safety & security concerns (general)	35	23.65
Johannesburg/South African environment	30	20.27
Crime rate	26	17.57
Safety & security of home or neighbourhood	19	12.84
Car accidents	12	8.11
Increased need for vigilance	11	7.43
Risk associated with occupation	4	2.70
Poor law enforcement and legal system	2	1.35
Imagined Impacts	**39**	**26.35**
Ability to recover	21	14.19
Potential death	12	8.11
Emotional Impact	4	2.70
Cognitive Avoidance	2	1.35
Concern regarding loved ones	**32**	**21.62**
Harm to/death of loved ones	20	13.51
Concern about how loved ones will be affected	11	7.43
Stated preference to personally experience trauma rather than the trauma happen to loved ones	1	0.68
Links Between Past and Future Traumatization (direct/indirect)	**27**	**18.24**
Demographic or Personality Characteristics of Self or Others	**18**	**12.16**
Distrust of other people	8	5.41
Being a woman	7	4.73
Being white	3	2.03
Existential or Religious Dimensions	**13**	**8.78**
Life is unpredictable	5	3.38
Trauma is part of life/inevitable	3	2.03
Religion ('God's choice for you')	6	4.05
Will be unaffected	**7**	**4.73**

^Total $n = 148$

*Note that some descriptions provided multiple factors, therefore prevalence of reported factors > total *n*

CHAPTER FIVE: DISCUSSION

The findings of the study are discussed according to the research objectives. First, the pattern of exposure to traumatic events will be discussed, including the frequency, nature, recency and perceived severity of trauma exposure. Following that, the profile of scores on PTSS, AFR and FoC are discussed. The discussion then examines the relationships between all variables. Finally, the more qualitative findings related to AFR are discussed.

5.1 PATTERNS OF EXPOSURE TO TRAUMA

5.1.1 Frequency of Exposure to Trauma

Approximately 90% of the sample reported exposure to a traumatic event, with over two thirds reporting multiple exposures (more than one event). Exposure to two traumatic events was the most commonly reported frequency (31.52%), and the maximum number of traumatic experiences reported was seven events (one participant). This suggests a very high level of exposure to trauma amongst this sample of young adult South African students, and these levels of reported exposure are substantially higher than the 40-75% lifetime exposure reported internationally (e.g. Finkelhor et al., 2007b; Jacobs, 2002; Nurius et al., 2009) and on a par with the more recent 90% lifetime prevalence findings of Ogle et al. (2013). Additionally, these incidence rates are largely in excess of previous South African findings – 80% of university students (Engelbrecht, 2009) and 75% of general population (Williams et al., 2007) documented as having experienced at least one traumatic event in their lifetime. However it is difficult to make accurate comparisons across these studies as they varied in both the timing and proximity of exposure and in means of assessing exposure.

Engelbrecht's research assessed both indirect and direct exposure but limited the duration to within the preceding 12 months, whereas several of the participants (N=38) in the present study reported exposure beyond that which had taken place in the previous 12 months despite being instructed to focus on trauma exposure in the previous year. The SASH study (Williams et al., 2007) assessed lifetime exposure specifically of a direct nature whereas the present study assessed both direct and indirect exposure. Hence it is possible that the higher incidence of reported trauma exposure found in the present study could to some extent be explained by these kinds of differences in assessment. However, the prevalence is objectively high irrespective of these kinds of comparisons, which suggests that regardless of the differences in timing and proximity of exposure, the present sample experienced levels of

traumatic stress exposure that are of considerable concern. It is possible that the discrepancy between the findings of this study and others on more general populations may suggest that university students as a young adult population that operates in a range of different social environments have a higher rate of traumatic exposure than other social or community groups. The present study assessed a younger sample than that used in the SASH research indicating that age may play some role in levels of exposure but it is also possible that trauma levels in South Africa have risen over the past five to seven year period since the SASH study was conducted. This would be somewhat out of keeping with crime statistics that suggest that levels of exposure to crime may have decreased over the past several years, even if marginally. It is also perhaps noteworthy that the students are based in the geographical area of Johannesburg. However, given the variance in the dimensions of exposure assessed in both national and international exposure prevalence studies, any comparisons must be interpreted with caution. What is evident is that as a group of young adults their exposure to traumatic events (as measured by the TSS), with an emphasis on the past 12 months, was very high with the overwhelming majority of the sample reporting some such exposure.

The finding that the majority of participants (approximately 60%) have experienced multiple traumas is consistent with some previous South Africa research (Williams et al., 2007), but is considerably higher than Peltzer's (2000) study in which approximately 33% of the sample reported exposure to more than one event. The high incidence of multiple exposures is noteworthy as research indicates that risk of psychological distress increases dramatically with each subsequent trauma experienced (Finkelhor et al., 2007b; Nurius et al., 2009; Williams et al., 2007). The high levels of PTSS, discussed in more detail below, are consistent with the high levels of multiple exposures found in the sample (Green et al., 2000).

5.1.2 Frequency of Exposure to Trauma by Type of Event

Four of the top five most commonly experienced events were all associated with violent crime (in decreasing frequency): hijacking, forceful robbery, being attacked or assaulted, and close friend or family member murdered, the exception to these four and the second most frequently reported type of trauma exposure being death of close friend or family member via suicide or accident (see Table 4 in previous chapter). To elaborate further on these prevalence patterns, over half of the sample (51%) had either experienced a hijacking personally or had a close friend or family member who had experienced one, which is very different from

Engelbrecht's (2009) finding that hijackings were the least frequently reported criminal event in very similar university student sample. The hijacking exposure reported in this sample is, however, consistent with research that indicates that the risk of hijacking is significantly greater in Johannesburg than in the other major South African cities, including Pretoria, Cape Town and Durban (Schonteich & Louw, 2001). Approximately 44% of the sample had either directly or indirectly been exposed to an event in which someone had attempted to, or succeeded in, forcefully taking something from them (e.g. robbery, mugging, smash and grab, holdup), a high incidence that is largely consistent with past findings. The SASH study found that 17.7% of the sample had been mugged (directly), but did not specifically report findings for other types of forceful robberies (e.g. smash and grabs, armed robbery), which could explain why the SASH figure reported is slightly lower than that found in the current study (in addition to the difference in direct and indirect exposure assessment). This fact that exposure to this type of traumatic event was very frequently reported is consistent with Engelbrecht's (2009) finding that mugging, physical assault, burglary and armed robbery constituted the bulk of violent crime experienced, however the incidence in this study is lower than the 75% previously found in her research. In addition to forceful robberies, approximately 20% of the sample had been physically assaulted (attacked or beaten up), which is 5-10% greater than previously reported findings (Engelbrecht, 2009; Williams et al., 2007). Despite some differences, the findings suggest broad comparability in relation to previous research indicating that exposure to instrumental forms of criminal violence (hijackings, muggings) is generally rather frequent amongst the South African population, including student populations, and that exposure to assault is also fairly common.

Unwanted sexual activity (13.17%) was the least reported traumatic event of those associated with crime and violence. Previous research has similarly found that sexual assault has a relatively low incidence (in comparison to the other trauma reported by sample), however the figure found in the present study is approximately 10% greater than that reported in the existing South African literature on general patterns of trauma exposure (Engelbrecht, 2009; Williams et al., 2007). The reported incidence of unwanted sexual activity tends to support research asserting that the actual prevalence of rape is far higher than that reported to the police (Hirschowitz, Worku, & Orkin, 2000; Jewkes & Abrahams, 2002). Studies have found that sexual assaults are even less likely to be reported when the perpetrator is known to the victim (Jewkes & Abrahams, 2002). Although the relationship of the perpetrator to the victim was not specifically questioned in the survey, 7 of the 14 participants who reported rape or

attempted rape to be their most severely experienced event noted that the offender was known to them. Though this indicates a high incidence of familiarity with the sexual assault perpetrator amongst these university students, the figure is actually lower that that reported by the 2011 NVCS, which found that 84.6% of sexual assault victims were attacked by someone known to them (*Victims of Crime Survey*, 2012). It is also possible that despite the anonymous nature of the assessment, students may have under-reported levels of exposure to unwanted sexual assaults due to shame and avoidance, as has been suggested in literature observing that rape, incest and sexual violence generally tends to be more under-reported that most other forms of crime and violence (Jewkes & Abrahams, 2002).

Regarding traumatic events unrelated to criminal violence, a substantial incidence of car accidents that involved injury was reported (17.37% of the sample reported directly or indirectly experienced). This figure is broadly in keeping with findings that motor vehicle accidents (MVA's) accounted for 25% of deaths in 2000 (Matzopoulos, van Niekerk, Marais & Donson, 2002). The fact that almost one fifth of the sample reported some form of exposure to MVA's is also indicative of fairly high risk of traumatization in this regard in South Africa. The low incidence of traumatic experience related to the environment (e.g. severe weather or fire) is also consistent with past research (Williams et al., 2007).

Approximately 45% of the sample had experienced the death of a close friend or family member due to an accident or suicide, and 23% via murder, an alarmingly high figure. Collectively, these figures (68.26% total) are substantially higher than the 42.9% of participants who reported the unexpected death of a loved one in the SASH study (Williams et al., 2007). The murder figure is substantially higher than the under 3% reported in Engelbrecht's (2009) research. The high 'exposure to murder' figure found in this sample is consistent with research suggesting that the violent death rate in South Africa is nearly five times the average worldwide (Mohamed, van Niekerk, Jewkes, Suffla & Ratele, 2009), however, it is still startling that more than one in five in the sample reported the murder of someone who was intimately related to them. The incidence of exposure to suicide reported by the sample may also be in line with research indicating that between 5,514 - 7,582 suicide-related deaths occur per year in South Africa (Mohamed et al., 2009), although it is impossible to disaggregate the reports of death by suicide from accidental deaths and to make proportional comparisons between overall population rates and the prevalence figures in this study. What is apparent is that within the sample there is a very high level of exposure to traumatic losses, with about two thirds of the sample reporting exposure to the unnatural

death of someone close to them. This would also imply considerable risk for traumatic or complicated bereavement within the sample.

5.1.3 Crime-Related and Non-Crime Related Exposure to Trauma

A higher incidence of exposure to crime-related trauma was reported in this sample than in previous research conducted on university students in South Africa (Engelbrecht, 2009; Jacobs, 2002). Only 19% of the present sample reported no direct or indirect exposure to crime-related trauma, which is far less than the approximately 50% reported in this earlier research (Engelbrecht, 2009; Jacobs, 2002). Both the present study and Jacob's and Engelbrecht's research assessed indirect and direct exposure to crime-related trauma that was of a violent nature. However, it is difficult to precisely compare the figures, as Engelbrecht specifically assessed trauma experienced in the preceding 12 months and Jacobs studied exposure in a two-year period, whereas in the present research some 38 participants referred to events that had taken place more than 12 months previously (as noted earlier). Regardless of the variance in time frames, the increase in reported exposure is too high to be attributed solely to the temporal difference, particularly as the average reported event occurred within the last 6 months in the present study.

The prevalence of criminal victimization in this study (approximately 81%) more closely resembles that reported in other populations that have been researched in South Africa. The SASH study, which reported lifetime crime exposure incidence rates close to 65%, assessed trauma in a wide range of participants, representing the general South Africa population as closely as was feasible (Williams et al., 2007). As noted above with regards to general frequency comparisons, the SASH study only assessed direct exposure, and the findings must be interpreted accordingly. Past South African research conducted on various sample populations (e.g. Friedland, 1999; Mendelsohn, 2002) has consistently found higher indirect exposure than direct exposure, with indirect exposure rates ranging from 62% in first year students in Johannesburg (Jacobs, 2002) to 90% in adolescents (Esterhuyse, Louw, & Bach, 2007). Thus the proximity of the exposure likely accounts for the 15% difference in the SASH (Williams et al., 2007) and present study findings. Additionally, the findings of this study suggest that university students in South Africa may more closely match the trauma exposure profile of the wider population than some earlier research suggested, and supports the generalizability of the present research results. The figures found suggest that exposure to

violent crime remains pervasive in South Africa and is in keeping with other research findings (Altbeker, 2007; Kaminer et al., 2008; Shaw, 2002).

Exposure to crime-related traumatic events was reported almost twice as often as exposure to non-crime related trauma. A total of 249 crime-related events and 128 non-crime related events were reported, which differs from previous research that found a higher proportion of reported exposure to non-crime trauma relative to crime-related events (Engelbrecht, 2009). Despite the higher reported exposure to criminal events (81.21%) in this sample, the lifetime incidence of exposure to non-crime trauma was still high (60%), which is consistent with Engelbrecht (2009) research in which she established that 41.67% of the sample had been exposed to non-crime trauma within the preceding 12 months. Both studies found that over half of the student population they assessed had been exposed to non-crime trauma, indicating that although preoccupation with crime is widespread in South African society, it is also crucial to keep in mind that exposure to other forms of traumatization is also high. Exposure to trauma outside of the realm of crime might place a substantial portion of the population at risk for PTSD or related conditions. The non-crime traumas reported included, amongst other events, the death of a close friend or family member that resulted from an accident or suicide, motor vehicle accidents, and property damage due to environmental disasters or fire.

Multiple exposures were reported more commonly in relation to criminal events (47% of sample) than in relation to those unrelated to crime (13%), as might be expected. Additionally, up to 5 crime-related traumatic events were reported by one participant in comparison to a maximum of 3 non-crime traumatic events in any specific case. These findings further illustrate that South Africans have a high risk of experiencing multiple crime-related traumas that involve violence. The high incidence of multiple exposures, particularly of a criminal and violent nature, further contributes to explaining the high levels of PTSS found in the sample (discussed below).

5.1.4 Recency of Exposure to Trauma

Approximately one third of the sample reported that their most recent traumatic event had occurred within the preceding six months, and over two thirds within the preceding twelve months. Only approximately 21% of the participants reported that their most recent exposure to trauma had occurred over twelve months ago, which is consistent with past South African

research (Engelbrecht, 2009; *Victims of Crime Survey*, 2012). These findings indicate that traumatic events continue to occur with some frequency in contemporary South Africa and also appear to highlight the continuous nature of the traumatic exposure in South Africa, which has implications for the development of PTSS and long-term mental health and behavioural functioning (Ganzel et al., 2007). As presented in the literature review, PTSS decreases with time elapsed since the trauma (Ehlers & Clark, 2000; Ganzel et al., 2007). The study findings regarding recency of exposure, combined with findings regarding high levels of multiple exposure, suggest that the majority of these students, and perhaps of South African citizens more generally, may not have sufficient time to adequately recover from one traumatic exposure before experiencing another trauma, exacerbating the likelihood of detrimental cognitive and behavioural reactions (Cohen et al., 2011). These findings may help to explain the high level of PTSS found in many South African populations and in the student population reported on in this study.

5.1.5 Perceived Severity of Exposure to Trauma

Guided by research demonstrating that the level of threat an individual associates with a traumatic event impacts their behaviours and psychological responses, the present study assessed the perceived severity of traumatic exposure by asking for a subjective assessment of threat and impact (see Appendix B) rather than differentiating severity along other lines such as whether a weapon was used or exposure was direct or indirect. When asked to rate the level of threat associated with the traumatic event the individual has been most affected by, the majority of participants rated the event as having 'a lot' of life threat (34.04%). Almost a quarter of participants (23.40%) said that their event was 'extremely' life threatening, while 14.89% thought the event was 'moderately' or 'a little' life threatening. Only 12.77% of the sample reported that they found their traumatic exposure 'not at all' life threatening. These findings are consistent with Engelbrecht's (2009) research findings and indicate that the majority of participants found their exposure to be very threatening and experienced high levels of associated distress.

Regarding the type of events that participants experienced as the most distressing, the majority (69.34%) of individuals reported events associated with criminal violence. This is consistent with past findings that traumatic events involving interpersonal violence are often perceived as highly threatening (Singer et al., 1995). Of the violent crime events described,

muggings (13.87%), and hijackings (13.14%) were the events most frequently selected as having most affected the participant. Murder was the next most commonly described severe event (10.22%), followed by house robbery (8.76%), and rape (8.03%). Abuse, smash and grabs, attacks without specified purpose, and attempted rape were less frequently reported as the most severe event experienced. Of events unrelated to crime, approximately 30% were most affected by the death of a close friend or family member (by non-criminal means) and 17.5% by car accidents. Murder and accidental death were reported with equal frequency as the worst event experienced (10.22% each), with 6.47% describing loss of a friend or family member through suicide as most severe. A minority of participants described 'fearing death' in connection to their reported traumatic event (6.57%), indicating that fantasy or imagined damage can have a severe impact on trauma survivors in addition to the actual events that took place. A handful of subjects described events related to health problems or environmental damage as affecting them most severely. This pattern of perceived severity of specific events differs to some extent from that found in Engelbrecht's (2009) research in which murder, sexual assault, intimidation and physical assault were rated as the most distressing events although there are clearly broad overlaps. As might be anticipated, murder was perceived as extremely severe on the Likert scale in both studies, as were forms of interpersonal violence. However, in the current study it was interesting that muggings and hijackings were fairly frequently reported to be the most severe events experienced suggesting that threat levels in such attacks may be high and perhaps that direct contact with perpetrators who violate physical space is highly distressing.

When interpreting the above findings it must be noted, however, that the frequency of events described as most distressing or threatening is likely to be determined by the exposure rate of the participant pool to the various traumas. For example, hijacking was the most frequently experienced traumatic event reported (50.90% of sample), hence the high incidence of hijacking may have contributed to this kind of exposure being ranked more frequently as most severe than some of the events to which less individuals had been exposed, such as sexual violence. Perhaps a portion of participants have experienced multiple hijackings or alternatively, have only experienced hijackings; both of these scenarios could lead to the finding regarding the sample percentage who found hijackings to be the most threatening event experienced. The perceived severity findings need to be interpreted with such possibilities in mind. The table below maps the relationships between overall reported exposure to specific events and the severity evaluations of these events.

Table 31. *Prevalence of Reported Exposure to Events Selected as Most Severely Experienced*

Event	Percentage of Exposure Described as Most Severe Event (%)	Most Severe Event Experienced^		Number of Participants Who Experienced Event^^	
		Number Participants	Order Ranking	Number Participants	Order Ranking
Motor Vehicle Accident	82.76	24	1st	29	6th
Unwanted Sexual Activity (Rape/Attempted Rape)	63.64	14	5th	22	8th
Death of close friend/family member – Homicide	35.90	14	5th	39	4th
Death of close friend/family member – Accident or Suicide	30.67	23	2nd	75	2nd
Mugging/Personal Robbery	25.68	19	3rd	74	3rd
Hijacking	21.18	18	4th	85	1st
Environmental Damage/Injury (Weather, Fire etc.)	20.83	5	7th	24	7th
Physical Assault	15.63	5	7th	32	5th

^ Total n = 137
^^ Total n = 167

Table 31 outlines the prevalence of the events most frequently selected as the most severe event experienced by the sample, which allows for comparisons to be made between exposure rate and perceived severity. For example, what the table illustrates is that 24 of the 29 students who reported exposure to motor vehicle accidents described this event as the most severe event they had experienced and that 14 of the 22 who reported exposure to unwanted sexual activity selected this as the most severe event. The format of data collected for frequency and perceived severity differed in the categorization of events, therefore the

grouping of events differs slightly from that presented in the perceived severity results alone; however this does not prevent informative comparisons to be made. For example, when the events are ranked according to the percentage of exposure described as most severe out of overall event exposure reports, hijacking drops down to 6th (in comparison to being the 4th most commonly described event in severity rankings), with 21.18% of participants who experienced a hijacking reporting it to be the most severe type of event experienced. MVAs, however, remain at the top of the list, with 82.76% of individuals who experienced a car accident reporting it to be the most severe event experienced. The table patterns provide further evidence that experiencing a MVA seems to commonly be highly trauma significant and suggests that the South African population may be at particular risk for traumatization and related conditions due to MVAs. It is also unsurprising that events involving loss of life are also rated high in terms of severity.

The number of participants who selected unwanted sexual activity as the worst event experienced is interesting, and further highlights the need to consider the above point regarding the impact of incidence of the perceived severity results. In the sample, 22 individuals reported having experienced unwanted sexual activity and 14 reported that what one largely assumes to be rape or attempted rape was the worst trauma they experienced. This means that 63.64% of those who experienced unwanted sexual activity perceived themselves to have been most severely affected by this particular trauma, out of all their exposures. The high perceived severity of rape or sexual assault is in keeping with an abundance of research stating that sexual assault is particularly traumatic and threatening (Kaminer et al., 2008; Kilpatrick & Resnick, 1993) and also contributes to high risk for PTSD and associated disorders.

In addition to providing a Likert scale rating of the threat associated with the most severe event experienced, participants were asked to provide a brief description of the event. The descriptions were notably detailed, often providing information beyond that asked for in the question, such as explanations around how the event affected them. For example, one participant wrote that her family being hijacked was *'difficult to accept as it was scary to know [she] could have lost them that day'*. Another participant wrote: *'I was home alone for two of the break-ins, and with my sister and nephew for one. He was three at the time. We were held at gunpoint and they were never caught. As a result I am afraid to be alone in the house after 5pm. I'm a light sleeper. I wake 3 or 4 times in the night and ask my brother to check if anyone is outside.'* Another participant implied that the written description was one

of the few times that they had relayed the story of their trauma: *'Being sexually abused affected me a lot because in our community a girl is degraded if something like that happens. So I never really spoke up about it. It changes the person you are as a whole.'*

Other descriptions indicated that the event was still a vivid memory through the details and elaborate descriptions provided. For instance, one participant provided specific details of a childhood friend's suicide over ten year ago, including the date and sequence of events surrounding how she had found out about the event. Similarly, another participant provided details of injuries incurred by another: *'My brother died in a car accident. He was severely injured - neck cut and every upper body bone broken. In my culture we are given a chance to face the dead person on the day of the funeral as part of grieving, but that made things worse for me. I can even see his injured body today. It hurts so much.'*

Other participants provided descriptions in which they questioned their actions or behaviour during the traumatic experience. For example, one participant wrote: *'I found a lump in one of my breasts about a year ago and didn't think there was any use in getting it checked. I went for tests this week and while waiting to have the tests done and receive the results I got very emotional. The lump turned out not to be cancerous. I broke down after finding out the results, not sure why. I found it difficult to comprehend why I didn't care enough to get it tested as soon as I found the lump.'*

These vivid and informative descriptions indicate that the participants gave a substantial amount of thought to the perceived severity question and were able to identify and convey what made the events most threatening to them. It also demonstrates that the participants appeared to be motivated to share their thoughts and details of the event, which is in keeping with the impetus towards a need to share a narrative expression of traumatic events (Ehlers & Clark, 2000). In reading these responses the researcher was mindful of the fact that while details of trauma counselling services had been provided on the informed consent sheet it would be important to emphasize the consideration of accessing services in the summary feedback sheet, and also perhaps to alert lecturers who might come into contact with these classes in the future to remind students about counselling services available on campus.

5.1.6. SUMMARY OF EXPOSURE TO TRAUMA

A very high level of exposure to trauma was reported, with over 90% of the sample reporting exposure to at least one traumatic event and over two-thirds reporting multiple exposure. The most commonly experienced events were related to violent crime (hijacking, forceful robbery, murder), with only 19% reporting no direct or indirect exposure to crime-related trauma. Furthermore, multiple exposure was more frequently reported in relation to criminal events. However the significance of exposure to trauma outside of the realm of crime should not be overlooked, as 60% of the sample reported exposure to non-crime trauma. The reported exposure included a substantial portion of recent events, with only one-fifth of participants reporting that their most recent exposure occurred more than 12 months ago. Findings related to perceived severity of past trauma indicated that the majority of the participants had found their most severe exposure life threatening on some level, particularly those events associated with criminal violence and motor vehicle accidents. In sum, the findings indicate that South Africans have a very high risk of experiencing multiple traumatic events, both crime-related and non-crime related, on a relatively on-going basis.

5.2 POSTTRAUMATIC STRESS SYMPTOMATOLOGY

Scores on the IES-R were used to assess the extent of PTSS in the sample, which were then used for inferential analyses investigating the relationship between exposure to trauma and PTSS, FoC and AFR. The profile of PTSS, as determined by the IES-R scores, is discussed here and the discussion of the inferential analyses follows in sections 5.5, 5.6, 5.7, and 5.8.

The IES-R is widely accepted as a useful tool in the assessment of posttraumatic stress responses (Asukai et al., 2002; Beck et al., 2008; Creamer et al., 2003; Olde et al. 2006). Though still debated in the literature, there has been some research indicating that the IES-R can be cautiously used to make broad clinical assessments of PTSD (Asukai et al., 2002; Creamer et al., 2003; Renk et al., 2002). Proposed full scale cut-offs for clinically significant reactions indicative of PTSD have ranged from 30 to 33 with item means from 1.4 to 1.5 (Asukai et al., 2002; Creamer et al., 2003). A large portion of the sample (42.5%) scored 33 or above on the total IES-R, with 17% scoring above 55. This pattern of total IES-R scores indicates that traumatic stress symptomatology levels were very high in the population sample and are consistent with past research conducted by Engelbrecht (2009). Although the SASH study found surprisingly low levels of diagnosable PTSD in a broad South African

sample (Williams et al., 2007), it has been argued that levels of sub-clinical traumatic stress may be high in the population as a whole. The findings of this research would tend to support the observation that large numbers of the population may experience worrying levels of posttraumatic stress symptomatology even if they do not meet the full diagnostic picture for PTSD. Such levels of distress are likely to affect every day functioning in significant ways and may place sufferers at added risk for mental and physical health problems, and in the case of students, for study problems.

The IES-R is divided into three subscales in accordance with the DSM criteria – intrusion, avoidance and hyperarousal symptoms. The mean item scores for the intrusion and avoidance subscales were similar (1.41 and 1.45 respectively), with a slightly lower mean item score of 1.36 on the hyperarousal scale. The mean item scores on all three clusters of symptoms fall within, or very close to, the proposed cut-offs suggestive of PTSD (Asukai et al., 2002; Creamer et al., 2003). However, any inferences of pathology based on the symptom related scores on the IES-R and PTSD must be interpreted cautiously, particularly as the suggested cut-off scores have not been normed for the South African population.

5.3 FEAR OF CRIME

Responses to the FoC measure indicate that participants feel substantially safer walking or driving alone in their neighbourhood during the day than at night. Approximately 35% of the sample indicated that they feel "very safe" *during the day* while only 8.59% feel "very safe" *at night*. This difference is similarly reflected in the portion of participants who feel "very unsafe" *during the day* (only 5.49%) in comparison to *at night* (29.45%). When "somewhat unsafe" responses are accounted for, the difference between daytime and night time feelings of safety are further emphasized – 62.81% feeling unsafe ("somewhat" or "very") *at night* in comparison to 31.71% feeling unsafe *during the day*. These results suggest that almost twice as many participants feel unsafe walking or driving around their neighbourhoods at night than they do during the day. This pattern of responses is consistent with past research where approximately 15-36% of those sampled reported feeling "unsafe" (at some level) walking and/or driving alone in their areas of residence *during the day*, and 71-77% of those sampled reported feeling "unsafe" walking and/or driving alone in their neighbourhood *at night* (Engelbrecht, 2009; Louw, 2007, Roberts, 2008). The drop in sense of safety at night in comparison to during the daytime is perhaps intuitively unsurprising and further supports past

research indicating that darkness is subjectively associated with danger and contributes to links between higher levels of FoC and operating in one's environment after dark (Lorenc, Petticrew, Whitehead, Neary, Clayton, Wright et al., 2013; Pain, 1997; Warr, 1990). Furthermore, the increased fear of danger at night is supported by statistical data. Recent South African statistics, from the 2010-2011 period, indicate that crimes are most likely to be committed during dark hours. The national survey found that 47.2% of theft from car, 41.5% of housebreaking or burglary, and 36.7% of car theft, occurred during darkness ('at night' or 'between midnight and dawn') (*Victims of Crime Survey,* 2012). It is possible that darkness induces fear through an association with the idea that fewer people are present in the environment to act as deterrents against criminal activity due to their potential role as witnesses or protectors. Dimmer lighting may also be associated with increased vulnerability as it decreases visibility which could enable potential attackers to hide better, and decreases the victim's ability to anticipate an assault.

The high levels of feeling a lack of safety in one's neighbourhood at night are not obviously mirrored in responses concerning how much this anxiety prevents or influences participation in activities. While 62.81% reported feeling unsafe at night, only 44.51% indicated that this "sometimes" or "often" affects their engagement in activities. The majority of participants indicated that their FoC "never" (27.44%) or only "rarely" (28.05%) influences their activities. The lack of clear association between these two aspects of the FoC measure indicates that not everyone who feels unsafe is affected by this feeling at the level of curtailing activities that are significant to them. This again suggests that a fairly high percentage of the population have accommodated to a relatively high level of FoC and choose to operate within their social environment in spite of this. Though not directly analysed, one might logically expect that individuals whose participation in activities is affected by how safe or unsafe they feel are those who feel "very unsafe" and that those who feel only "somewhat unsafe" are able to manage this anxiety sufficiently to continue with everyday activities. Regardless of the consistency with degrees of feelings of safety, it is noteworthy that over 40% of the sample, a substantial number of subjects, inhibit their activity due to fearing crime which could have unfavourable effects on quality of life and mental wellbeing (Jenkins et al., 2008). Thus findings with regard to engagement in activities and FoC are somewhat equivocal, some participants managing to operate despite anxiety in this regard and others being apparently quite inhibited by these kinds of fears.

The levels of decreased activity (associated with FoC) are slightly lower than those found several years ago by Engelbrecht (2009), where close to 60% reported that their activity participation was inhibited or influenced by feeling a lack of safety. This decrease does not indicate an increased sense of safety in the world, as feeling "unsafe" was reported at similarly high levels in both studies; rather, this decline may indicate that South Africans are choosing to not be as behaviourally affected by their lack of sense of safety in their surroundings and to make some adaptation to living in this kind of environment as suggested earlier. This could be beneficial, as engagement in activities that are enjoyed is favourable for mental wellbeing, but it may also be potentially detrimental as it may represent some repression of awareness of risk increasing chances of victimisation, or perhaps even increasingly fatalistic attitudes to threat. Future research may wish to investigate how South African citizens balance these attitudes towards possible future victimisation in order to maintain an adaptive and healthy lifestyle in the face of high levels of crime – e.g. 'I will experience trauma regardless of what I do, therefore I will not take logical safety precautions' (potentially more harmful than helpful) versus 'I will not excessively withdraw from life due to fearing crime' (potentially more beneficially adaptive). This is the kind of dilemma that is suggested to characterize the life experience of people living with CTS, although the risk of danger is more self-evident and demonstrable in these kinds of contexts.

Regarding how worried participants have been (in the preceding 7 days) about becoming a victim of crime, the responses indicated higher levels of concern when outside one's area of residence than within it. Approximately 65% of the sample reported being "moderately" or "very worried" that they would experience being a victim of crime *outside* their neighbourhood in the preceding 7 days, in comparison to 50% being "moderately" or "very worried" *inside* their neighbourhood. This trend continued to fall with increased proximity to personal space. With regards to concern about being a victim of crime in one's *own home*, 49.79% reported feeling "moderately" or "very worried" and the remaining 50.21% feeling "not" or "somewhat worried". The trend is most obvious within the "not worried" category of responses, with 14.02% "not worried" about becoming a victim of crime *outside* of their neighbourhood, 21.34% "not worried" *inside* their neighbourhood, and 30.06% "not worried" in their *own home*. This trend is consistent with past findings and provides further support for the notion that unfamiliarity with one's environment may heighten fear of crime (Engelbrecht, 2009; Lorenc et al., 2013; Warr, 1990). Familiarity with the environment may increase one's sense of comfort and confidence through feeling that events are known and

can be anticipated. Familiarity might also provide a greater feeling or protection due to having strong social networks within one's own environment that could act as protectors against victimisation and provide immediate support if victimised.

Despite the trend towards increased feelings of safety with greater proximity to personal residence, approximately 70% of the sample was still worried about being a victim of crime in their own homes. The high levels of lack of sense of safety even in one's own neighbourhood is somewhat unusual as international research has found that individuals perceive their own residential areas as safe and other areas that they are less familiar with as unsafe (Lorenc et al., 2013). This suggests that South Africans may experience a particular lack of safety even in their home environments, which is likely to have detrimental effects on mental health and wellbeing. As discussed in the Literature Review chapter, previous South African research has reported very high levels of sexual and physical assault or abuse perpetrated by individuals within the victim's community (*Victims of Crime Survey*, 2012). Given the extent of victimisation South Africans experience in their own communities, it is unsurprising that low feelings of safety at home are pervasive. Additionally, rates of household burglaries in South Africa are high (approximately 10% of households experienced a household related crime in 2011), which adds to the fear of crime at home (*Victims of Crime Survey*, 2012). Furthermore, perhaps the presence of physical security measures, such as electric fencing, guards or burglar alarms, which are common in South African homes, actually enhances the fear of crime. Research conducted in the UK found that similar security measures present in public spaces were perceived to increase fear and create an unpleasant and hostile environment (Lorenc et al., 2013). It seems plausible that the commonality of and focus on these kinds of security measures in South African homes may have contributed to a constant sense of fear and vulnerability, even within personal residences which are usually seen as places of safety and refuge. This type of finding could indicate that many South Africans feel unable to create a reliable place of safety, a characteristic hall mark of CTS (Kaminer & Eagle, 2013).

In sum, the FoC findings, which are in line with past South African research (Afrobarometer Briefing 1, 2005; Engelbrecht, 2009; Lorenc et al., 2013) but not general international research trends, indicate that the vast majority of the sample fear crime in their own homes or environments, perhaps quite realistically, and do not feel easily able to create an adequate place of safety for themselves.

5.4 APPRAISAL OF FUTURE RISK

The majority of participants rated that they have a "moderate chance" (mean AFR score of 2.06) of experiencing a traumatic event in the future, with all traumatic events listed on the TSS judged to have at least a "slight chance" of occurring. This subjective judgement of the likelihood of future victimization indicates that most South African university students believe that they have a relatively high risk of undergoing future trauma. Studies have consistently found that subjectively appraised fear of future injury or threat plays a significant role in psychological distress following a trauma (Davidson & Foa, 1991; Diamond et al., 2010; Ehlers & Clark, 2000; Janoff-Bulman, 1982; Straus et al., 2009). Hence, the relatively high expectation of future victimization found in this sample could be indicative of an impaired ability to implement coping strategies or of more functional difficulties (Cohen et al., 2011). It would be useful to conduct comparative research on AFR across populations both nationally and internationally to establish whether this pattern of response is peculiar to the South African context and perhaps peculiar to a Johannesburg based or young adult population or relatively common. However, it is noteworthy that this student population appear to be mindful of a fairly high risk of potential exposure to traumatic events and must find some means of managing this awareness as part of their daily lives.

The traumatic events that were judged overall as most likely to be experienced are (in decreasing likelihood): mugging (or other personal forced robbery), hijacking (direct or indirect), motor vehicle accident involving injury, accidental or suicidal death of a close friend or family member, murder of close friend or family member, physical assault (attacked/beaten up), unwanted sexual activity, injury or property damage related to environment (weather, fire etc.), and serving in combat. Table 32 provides a comparison of these categories of traumatic events listed in decreasing order in terms of AFR judgements, and reported past exposure, and frequency of selection as the most severe event experienced.

Table 32. *Ranking of Events According to AFR, Prevalence and Perceived Severity*

Event (Decreasing overall AFR)	Prevalence		Most Severe Event Experienced	
	Sample %	Order Ranking	Sample %	Order Ranking
Mugging/Personal Robbery	44.31	3rd	13.87	3rd
Hijacking	50.90	1st	13.14	4th
Motor Vehicle Accident	17.37	6th	17.52	1st
Death of close friend/family member – Accident or Suicide	44.91	2nd	16.79	2nd
Death of close friend/family member – Homicide	23.35	4th	10.22	5th
Physical Assault (Attacked/Beaten)	19.16	5th	3.65	7th
Unwanted Sexual Activity (Rape/Attempted Rape)	13.17	8th	10.22	5th
Environmental Damage (Weather, Fire etc.)	14.37	7th	3.65	7th
Serving in Combat	0.60	9th	0.00	9th

Overall, the top four events according to AFR predictions incorporate the three most prevalent events reported in terms of prior exposure (hijacking, death of loved one via accident or suicide, mugging) and the three events perceived as the worst experienced (motor vehicle accident, death of loved one via accident or suicide, mugging). These findings suggest that there is a relationship between ideas about future experience of trauma and both prior exposure and perceived severity of past exposure. A similar type of pattern seems to apply to the events indicated to be least likely to occur in terms of AFR, suggesting that prior exposure and increased severity are perhaps key factors in appraisal of risk of a specific future event occurring or not, and providing a kind of inverse validation of this relationship. This suggests that perceptions of one's risk of future exposure seem to be reality based to some extent. The indication of a relationship between AFR and perceived severity of past exposure also suggests that there seems to be a fear of being required to manage something similarly heavy again. It also may indicate that the more severe one's experience of a traumatic event, the more likely it is that the ordeal shattered previous assumptions about safety, and the more difficult it is to re-establish a sense of safety in the world.

While there clearly is some relationship between existing exposure and fear of future exposure to an event, and between how severely affected an individual was by an event and how likely it is that they think they may be confronted by this event again (as will be discussed further under the discussion section on correlational findings), there is not, however, a direct match between the ranking of AFR events and those ranked according to past exposure or perceived severity. For example, the event category that participants subjectively appraised that they were most likely to experience in the future, i.e., mugging or other form of personal robbery, was the third most prevalent event experienced by the sample and also the event that the third largest percentage of the sample reported as the most severe trauma they had experienced. So, although mugging and/or personal robbery was judged to be the most likely form of future traumatisation, it was not the most frequently experienced event, nor the event most participants felt most affected by. Similarly, the death of a loved one due to an accident or suicide was the second most frequently experienced event and also the event judged to be the most severe by the second largest group of participants, but it was appraised to be only the fourth most likely event to be experienced in the future. This indicates that other factors are at play in AFR. For example, whether exposure was direct or indirect may influence thinking around AFR. Alternatively, as argued by Cohen and colleagues (2011), living in a continuously threatening environment can impair an individual's ability to accurately reason through historical, present, and future danger, which may interfere with realistic and logical thinking around future risk of traumatisation. Clearly there is more investigation to do around these kinds of relationships.

The relationships between AFR, exposure and perceived severity evidenced in the sample suggest that for some kinds of events perceived severity plays a larger role in anticipating future traumatization than past exposure does. For example, MVAs were judged as the third most likely traumatic event to be experienced in the future but were the sixth most prevalent event reported (experienced by 17.37% of sample). However, MVAs were rated the most severe event experienced by the largest portion of the sample (17.52%). It may be then, that AFR is influenced as much (if not more) by subjective or 'internal' aspects of experience than it is by objective exposure to external events that have occurred in the individual's life to date.

Although these comparisons provide interesting patterns, a few potential measurement issues must be noted. Each traumatic event was not necessarily experienced by every subject; hence directly comparing prevalence rates with subjective perceived severity of events may be

misleading. Additionally, there are only small differences in the sample percentages associated with different ordered ranking levels. Therefore, the sample percentages must be noted together with ranking orders when comparing events across the three categories.

Furthermore, the judgements concerning the likelihood of exposure to particular events are interesting to consider against the backdrop of the broader socio-political context of South Africa. Serving in combat was the only event judged to have "no chance of occurring" by the majority of participants (75.45%), though 13.77% responded that they believe they have a "slight chance", 5.39% a "moderate chance", and 2.99% a very strong chance. Thus despite South Africa having a low level of military action and no compulsory participation, one quarter of the sample indicated that they have a "slight" to "very strong" chance of serving in combat. This somewhat surprising finding suggests that perceptions around risk of future traumatization are not always rooted in realistic thinking. The finding is further intriguing as the vast majority of the sample was female (85.6%), and despite women being eligible to serve in the military, one might expect men to think about serving in combat more than women. Although further research would be necessary in order to offer a comprehensive explanation of the findings related to AFR judgements about combat, this finding again indicates that the thought processes around AFR are quite complex and not entirely objective.

Findings around unwanted sexual activity are similarly thought provoking. Unwanted sexual activity was also seen as largely unlikely to occur, with 43% of participants responding they have "no chance" of experiencing this event in the future. The large portion of participants who believe they will not be exposed to any form of sexual assault is interesting given that South Africa has been termed the "rape capital of the world" (Human Rights Watch, 1995) and violence against women is frequently discussed in various media (Jewkes, 2000), and given that a significant percentage of the sample were female. These types of responses, where subjective appraisal of future threat seems to differ from what might be expected statistically or from social narratives, also seems to support Cohen and colleagues' notion that youth living in an on-going threatening environment may not be able to differentiate between historical danger and realistic present danger (Cohen et al., 2011). It may be that with regard to rape and sexual violence in particular it is more difficult to entertain the idea of becoming a victim and there is therefore some kind of avoidance in thinking about this real possibility. It is also possible that shame, secrecy and social stigma surrounding sexual assault means that there is less disclosure and social entertainment of such eventualities, as well as a need to distance oneself (even mentally) from being the kind of person who might become subject to

this kind of victimization. To put it more starkly and more speculatively, perhaps in acknowledging the possibility of future sexual victimization one has a concern that one has indicated a propensity to become such a victim, which is especially problematic against the backdrop of continued victim blaming in relation to rape and sexual assault. Again, what the findings suggest is that AFR is predicated on more complex parameters than statistical patterns of violence and trauma risk in the society.

5.5 RELATIONSHIP BETWEEN EXPOSURE TO TRAUMA AND PTSS

The relationships between the dimension of trauma exposure and PTSS (including the three symptom subscales) were assessed. All aspects of trauma exposure were found to be significantly related to all three PTSS subscales as well as the total scale scores, as might be expected. Frequency, non-crime and crime-related, as well as perceived severity, were each independently positively correlated with PTSS and recency was negatively correlated (as more recent events were given higher scores that more distant events). Therefore, the more traumatic events experienced, and both the more crime-related and the more non crime-related events the individual had experienced, the significantly higher their symptom levels. In addition, the greater the perceived severity of past exposure, and the more recently an event occurred, the more PTSS experienced. These findings are consistent with past research that has found a positive relationship between the perceived severity of stressors and posttraumatic stress reactions (Brewin et al., 2000; Byrne et al., 2006; Shalev, 1996), and that has found other positive relationships between frequency of exposure, (particularly to criminally violent trauma), and PTSS (Engelbrecht, 2009; Esterhuyse et al., 2007; O'Brien, 2010; Peltzer, 2003; Williams et al., 2007). It is also in keeping with the kinds of diagnostic observations about recency of exposure and the likelihood of symptomatic presentations that led to the addition of the ASD diagnosis category into the DSM-IV-TR. Thus symptomatic responses were significantly positively correlated with all the aspects of exposure assessed in the directions anticipated. As will be discussed further, it seemed that the broader kinds of anxiety related responses tapped into by the Foc and AFR measures in this study were less consistently affected by exposure dimensions, than were the trauma symptom associated dimensions.

Overall, hyperarousal symptoms seem to be more strongly related to the dimensions of trauma exposure (frequency, severity and recency) than avoidance and intrusion

symptomatology. This suggests that these dimensions of exposure to trauma increase hypervigilant behaviour, difficulties with sleep and concentration, and similar symptoms, more than they affect behaviour and psychological symptoms such as avoiding trauma associated stimuli. The correlational results linking frequency of exposure and hyperarousal particularly strongly are in line with past findings that there is a cumulative response to multiple exposures that is particularly related to hyperarousal (Eagle, 1994; Eagle & Watts, 2001). This finding supports the notion that the continuous nature of traumatic exposure in South Africa may lead to a general sense of heightened anxious awareness of one's surroundings (Eagle & Kaminer, 2013).

5.6 RELATIONSHIP BETWEEN EXPOSURE TO TRAUMA AND FoC

Pearson correlations revealed that the frequency of exposure as well as non-crime related exposure is significantly positively correlated with FoC ($p<.05$). This suggests that the more traumatic events experienced the less safe a participant felt in the world (FoC). When traumatic events are categorised into those related to crime and those unrelated to crime, only events that did not involve crime were significantly correlated with FoC. Therefore exposure to traumatic events, such as the unexpected loss of a loved one, appear to be associated with more fear of crime.

It is surprising that past exposure to crime would not be related to FoC, a finding which differs from past research (Engelbrecht, 2009) and it is difficult to make sense of this finding. It can only be concluded that something about exposure to other forms of trauma increases participants' sense of lack of safety in their environment. It is possible that having experienced other traumatic events and feeling more vulnerable in the world leads individuals to feel that they are altogether less safe in the world and may have to prepare themselves for the criminal victimization that is so commonly reported by acquaintances and the South African media.

Neither how recently the last traumatic event had occurred nor how severe the individual found their most extreme past exposure to be were found to be significantly related to FoC levels. Again these results were somewhat surprising as it was anticipated that recency of trauma exposure and perceived severity in terms of impact might contribute to intensified anxiety in the world. The finding regarding recency might suggest that if an individual has experienced an event in the fairly immediate past, they may be more prone to believing that

they have ‘had their share’ of trauma. Alternatively, perhaps not enough time has passed to allow the person to sufficiently process the traumatic experience and hence their judgement of the likelihood of future traumatization is clouded or defended against, resulting in lower and inconsistent FoC levels. These possible hypotheses are in line with research asserting that an individual’s ability to reflect on and process past traumas in an adaptive and helpful manner is affected by how they view their future chances of traumatisation (Cohen et al., 2011; Diamond et al., 2011; Janoff-Bulman, 1982; Hoffman et al., 2011).

The result pertaining to severity differs from past findings demonstrating that the perceived severity of traumatic stressor plays an important role in determining FoC levels (Engelbrecht, 2009; Kury & Ferdinand, 1998; Warr, 1987). This unexpected finding may be related to the inconsistencies noted in the comparisons in Table 32, where the traumatic events perceived as the most severe differ to a considerable extent from those perceived as most likely to occur in the future, and by association, perhaps do not then correspond with subjective assessments of current and future safety. It is also possible that the data measurement and collection methods used in the present study may have differed from past studies in a manner that significantly affected the results. For example, unlike past research, the present study asked participants to describe the event they believe has affected them the most and rate the associated severity of life threat. Perhaps the act of describing the event influenced the subjective severity ratings and/or the individual’s sense of safety in the world. Whereas assessment of frequency of exposure, significantly related to both PTSS levels and FoC, did not require in-depth thinking about the event, recency and perceived severity required a deeper analysis of one’s memory and experience of the trauma, perhaps resulting in more complex emotional reactions and thus less consistent associations with FoC ratings.

Although recency and perceived severity of past exposure alone do not seem to significantly influence feelings of safety in the world, these dimensions of exposure do affect PTSS levels as indicated in the previous sub-section, suggesting that mental health and functioning is affected by these aspects of traumatic exposure. Furthermore, regression analyses revealed that frequency, recency, perceived severity and PTSS collectively explain the highest amount of variance (16.9%) in FoC in the sample. Another regression model using only the three subscales of PTSS (intrusion, avoidance and hyperarousal) as predictor variables only explained 10% of the variance in FoC. These results indicate that although recency and perceived severity do not have a direct relationship with FoC, they still contribute to FoC outcomes when considered in combination with frequency and PTSS, suggesting that feelings

of safety are to some extent influenced by these dimensions of exposure, if only indirectly. However, it is noteworthy that out of the various exposure dimensions, frequency of exposure appears to have the most obvious impact on one's sense of safety in one's environment (as might be anticipated).

5.7 RELATIONSHIP BETWEEN EXPOSURE TO TRAUMA AND AFR

Pearson correlations revealed that the frequency of exposure as well as non-crime related exposure is significantly positively correlated with AFR ($p<.01$). This suggests that the more traumatic events experienced, the more the respondent believes they are likely to experience trauma again in the future (AFR). As with FoC, when traumatic events are categorised into those related to crime and those unrelated to crime, only events that did not involve crime were significantly correlated with AFR. Therefore exposure to traumatic events, such as the contraction of a serious illness, appears to be associated with increasingly high appraisals of future risk of victimization. These relationships were stronger for AFR than FoC (though both significant), perhaps suggesting that frequency of exposure and non-crime exposure play a larger role in determining AFR levels than in influencing FoC levels.

AFR was not significantly related to recency of traumatic exposure or perceived severity. Again this was surprising as it indicates that the recency and perceived severity of past trauma exposure did not significantly influence conceptualisations regarding feelings of vulnerability in the world as assessed by anticipation of future victimization. As with FoC findings, perhaps a more recently experienced event, or one judged to be more severe in its impact, interferes with the cognitive reasoning around risk of future traumatization, or results in a belief that experiencing an event means that 'bad luck' is over. As discussed earlier, it is plausible that perceived severity and recency might affect PTSS levels (as discussed in Section 5.4) but not perceptions of future risk (and FoC), whereas frequency of past exposure (particularly crime-related exposure as per regression analysis, this dimension approached significance as a predictor of AFR levels) is more likely to affect AFR (and FoC). Again it is noteworthy that frequency of prior exposure is associated with an increased sense that one may become a future victim of trauma.

5.8 RELATIONSHIPS BETWEEN PTSS, FoC, AND AFR

Total symptomatology experienced, as well as the three clusters of symptoms (intrusion, avoidance and hyperarousal), were all significantly positively correlated with FoC and AFR. This suggests that the more symptomology experienced in relation to trauma, the more one fears crime and the more likely one thinks one is to experience trauma in the future, a finding that is in line with previous research (Engelbrecht, 2009). The relationship is strongest between hyperarousal symptoms and both FoC and AFR (as indicated by both correlational analyses and regression analyses), suggesting that feelings of tension and anxiety are most highly associated with increases in FoC and AFR. It is plausible that the increased anxiety associated with high hyperarousal symptoms could be contributing to the elevated levels of FoC (discussed below), as Ehlers & Clarke (2000) argue that behavioural responses to a trauma can influence an individual's sense of current threat. Additionally, PTSS has a generally stronger relationship with FoC than AFR, which suggests that symptom levels are more strongly associated with fear of crime than with appraisals of future traumatization, such that feelings of fear in one's environment regarding criminal victimization increase more rapidly with higher PTSS levels than thoughts about future risk of experiencing traumatic events in general.

A strong sense of lack of safety in one's home and neighbourhood, as expressed in this sample, has significant implications for general wellbeing, both personally and for families and communities. Higher FoC levels have been linked with poorer mental health and wellbeing, which is supported by the present study's findings of a relationship between FoC and PTSS (Lorenc et al., 2012). The significant correlation between levels of FoC and levels of PTSS could support notions that FoC may be an influential variable in the relationships between neighbourhood characteristics, psychosocial outcomes and other functioning (Burke et al., 2009; Jenkins et al., 2008; Lorenc et al., 2012). For example, a review of fear of crime literature revealed that fear of crime is seen to contribute to the process of a neighbourhood gaining a reputation as dangerous, and that this contributes to the social stigmatization of the residents of that area which can negatively impact wellbeing, both economically and mentally, and ultimately lead to a further decrease in the quality of the neighbourhood (Lorenc et al., 2013). So, higher levels of PTSS could lead to more FoC which could in turn negatively impact a residential area through, for example, enhanced avoidance of the area, thereby decreasing economic activity and increasing social isolation. The resulting decrease in socio-economic status could then further increase fear of crime, as signs of neglect in the

environment (e.g. graffiti, decay, litter) are associated with a lack of commitment to social norms and thereby drive fear (Lorenc et al., 2013). Although this kind of link is speculative it would be interesting to explore these kinds of potential links between PTSS and FoC.

It is also important to note that while the three outcomes variables are correlated they are not so highly correlated as to suggest that they are measuring identical phenomena. The significant but varying correlations between all three PTSS subscales and the outcome variables of FoC and AFR indicate that related impacts of traumatic exposure are being assessed by FoC and AFR, but that the specific aspects of traumatization being measured are distinct. Similarly, the correlational relationship between FoC and AFR ($r = 0.406$, $p<0.01$) indicates that the two variables are both assessing the same broad theme of impacts but that there is a substantial difference in the specific type or form of impact that each construct measures.

5.9 PTSS AS MEDIATING VARIABLE?

Inferential analyses established that PTSS did not appear to significantly mediate the relationships between exposure to trauma (in any specific aspect) and FoC or AFR. This is perhaps surprising given that the correlational relationships between exposure dimensions and PTSS, and FoC/AFR and PTSS are stronger than the relationships between exposure dimensions and FoC/AFR, and that regression models using only PTSS as predictor variables explained a greater portion of variance in FoC and AFR than exposure dimensions alone as predictor variables. However it suggests that relationships between the exposure dimensions and the three outcome measures were generally independent of each other. FoC and AFR appear to be directly impacted by those aspects of exposure (frequency and degree of exposure to non-crime related trauma) that were found to be significantly related to these outcome measures, rather than producing these relationships via the mechanism of level of symptoms as was hypothesized might potentially be the case based on some previous research. Future studies may wish to use larger samples that allow for more powerful statistical analyses to re-test for this kind of potential relationship.

5.10 FACTORS CONTRIBUTING TO CONSIDERATIONS OF AFR

When asked to describe what factors influence their appraisal of the likelihood that they will experience trauma in the future, less than 5% of the entire sample expressed a belief that they will not experience trauma or that if they do, that they will not be affected by it. Furthermore, the descriptions provided in relation to AFR factors, (some of which are provided below in illustration of key points) were strikingly vivid and detailed which seemed to be indicative of fairly extensive cognitive resources having been applied to scenarios of trauma. These findings emphasize the extent to which South Africans anticipate and appear to imagine experiencing trauma in the future, almost as if pre-living rather than re-living events. The vivid quality of the responses support the notion that South Africa could be considered a continuous traumatic stress context, where many individuals focus on their current and future safety (Eagle & Kaminer, 2013) rather than purely on past traumas experienced. Broad categories of themes that emerged from the descriptions of factors reported to influence AFR judgements are discussed below.

Environment Related Risk

Close to 94% of the sample wrote about elements in their daily environment that they find dangerous and indicated that this is what contributed to their anticipation of possible exposure in the future. Some descriptions isolated specific aspects of the daily environment of the respondent that they found threatening (e.g. walking through a particular neighbourhood) while others conveyed a more general sense of danger in numerous daily settings (e.g. stopping at robots, walking alone). Whether specific or general, a very real sense of danger and deep fear of victimisation was pervasive in the descriptions. For example, one participant wrote: *'I know I could get attacked when I walk across Mandela Bridge during day or night. It makes me want to quit school. I feel very unsafe as many people get hurt.'* Another participant described her daily fear about her safety: *'I worry about my safety constantly. I constantly worry about whether my car doors are locked. I worry the same will happen to me. I always make sure at robots that I check who is around me.'* The findings indicated that more than 9 out of 10 South African university students feel unsafe when going about their daily activities as illustrated in some of the quotations just cited. A more detailed discussion of the categories of risk factors within the environment is elaborated on below.

One-fifth of participants provided descriptions that indicated a concern about safety in Johannesburg or South Africa more generally. For example, the poor driving skills and uncaring attitude of drivers was mentioned by several subjects (*'Poor driving abilities or lack of caring among drivers in South Africa'*). Others noted characteristics of the South African environment that were perceived as associated with danger, such as *'South Africa is messed up. Anything could happen.' Or 'Racism is a factor influencing crime in South Africa*.' Additionally, 18% of participants specifically stated thinking about the high crime rate in South Africa, especially violent crime. For example, one participant wrote: '*High crime risk in South Africa*'; '*Because we live in South Africa I am very worried that I will experience a violent crime at home (most scared at night and when I am alone), such as a robbery or break in, or held up at gun point, or raped.'* These descriptions conveyed a sense that simply living in South Africa or Johannesburg puts one at risk for experiencing a traumatic event, regardless of the daily activities one engaged in.

Approximately 13% of the sample volunteered factors related to the safety and security of their home or area of residence as significant to their AFR. Some subjects mentioned the security measures they have put in place to enhance their safety (e.g. '*walking around with weapons'*, installing fencing), while others spoke more generally about the danger that exists (e.g. *'I worry a lot about people breaking into our house, hurting us and raping us*'). Throughout the descriptions, there was a pervasive sense of danger, even within one's home. While this kind of perceived risk is in keeping with the reasonably high FoC levels, it appears that sense of safety in all settings, including the home, is compromised.

Approximately 8% of participants thought specifically about the possibility of being in a car accident (e.g. *'Being in a car accident where the other driver is drunk'; 'I really fear losing loved ones in a car accident'*), which may be reflective of the high levels of motor vehicle accidents in South Africa and thus may also be partly viewed as an environmental concern (Matzopoulos et al., 2002).

Additionally, 7.43% of participants specifically expressed that hypervigilant behaviours are critical to establishing a sense of safety. For example, *'One has to be more paranoid, always staying aware of what's happening around'; 'Need to…stay alert constantly'*. A few subjects thought about how their occupation increases their chances of victimization (e.g. *'Working in a government hospital and walking through that hospital alone could put you at risk*.) or

stated that law enforcement and legal systems need to be improved (e.g. *'I know reporting it to the police won't be as effective as it should be'*).

What seemed to be evident, however, is that the more clearly visualized an event could be the more likely it was perceived that it might occur. In this respect imagination appeared to play an active part in perception of risk.

Imagined Impacts: Anticipation of Trauma Responses, Potential Death, Emotional Impact and Cognitive Avoidance

Over 14% of the sample thought about their own coping methods and ability to recover from a traumatic experience (*'I'm nervous of how I'll recover and the process of that'; '[I think about] how best to find a way forward afterwards'*), with 8% finding themselves thinking specifically about the prospect that they might die as a result of trauma *('Would I survive it?'; 'If I happen to die from it, God forbid of course, where will I go? I seriously, in a weird way, fear death'; 'I sometimes think it might lead to my death'*). It is interesting that in many instances respondents did not directly answer the question, but rather, as with the case of imagined scenarios, the question appeared to prompt them to evaluate how they would cope with events rather than what might contribute to concerns that these events would happen at all. In this respect they appeared almost to be attempting to do some preparatory psychic work or spontaneous stress inoculation training.

Additionally, a few subjects reported that they experienced strong emotions while thinking about chances of future traumatization, such as paranoia, irritation, nightmares and feelings of insecurity. Two participants' descriptions revealed cognitive resistance or avoidance of thinking about the possibility of experiencing trauma (e.g. '*I do not want to think about trauma anymore because I do not think that my heart will take it anymore. Trauma is a bad experience – the worst.')*, which further indicates the extent of emotions brought out by consciously evaluating one's chances of future traumatization.

Concern Regarding Loved Ones

Over 21% of participants expressed concern about the safety of loved ones ('*This morning when I drove to campus I thought about losing my parents or people close to me'; 'I need to buy a gun and protect my loved ones'; 'I am worried about my family and close friends. This scares me as I fear losing those close to me'*) and also about how loved ones would be affected by a traumatic event experienced directly or indirectly *('I think about consequences*

to those I love'; 'I think about how people are going to take it. I get worried that people may hate on me and think that I wanted it to happen'). Thus potential risk to others was also prominent in thinking about the possibility of future exposure to traumatic events. This would be consistent with observations that in South Africa family members and friends will often become overly anxious about the safety of loved ones if they are late in arriving or not contactable for some reason.

Links Between Past and Future Traumatization

In response to the question about what might contribute to their AFR evaluations over 18% relayed that thinking of past traumatic experiences influenced AFR. Some participants reported feeling that experiencing future trauma was inevitable given the extent of past exposure (direct or indirect) (e.g. '*If they were able to get into my house once, they would be able to get in again'; 'I think I am likely to be exposed to traumatic events because my friends and family members experienced these events'*) while others focused on thinking about how they have reacted to past traumatization, some feeling more confident in their ability to recover ('*The personal events and car-jacking I went through this past year showed me that I am able to respond well for my own physical and mental safety and the presence of my friends and their help and advice make me feel good and safe'),* and some feeling more concerned about this capacity ('*I'm concerned about going through pain that I went through before'*). Again, what this entertainment of past trauma and possibly future scenarios and responses suggests is that it is imagined entertainment of traumatic events that contributed to sense of risk. From their responses it is clear that the participants had thought quite extensively about traumatic events, and the possibility of experiencing trauma was not an unfamiliar fantasy for a large proportion of the sample.

Demographic or Personality Characteristics of Self or Others

Close to 7% of subjects thought of personal risk factors related to their gender and race, stating that being female in some instances and white in others increased the potential risk of victimization. Examples of these types of responses are:, '*I am a young, white, female and I feel this make me an easy target for sexual crimes*'; '*Being a female can be more fear-provoking when out alone, especially at night.'; 'Crime is a constant fear, especially being a woman'; 'Being a woman, who are seen as a weaker target in South Africa, is very worrying.'* Approximately 5% of participants described negative qualities of others that could increase their chances of traumatization (e.g. dishonesty, suspicious behaviours).

Existential or Religious Dimensions

In contrast to highlighting personal and internal qualities over 9% of participants provided descriptions that conveyed a belief that risk of traumatization is determined by more 'supernatural' external factors, for example, God ('*It will be God's plan for your life'*), fate ('*It is inevitable that traumatic events happen throughout everybody's lives'*), or uncontrollable chance factors ('*Traumatic events are all up to chance in our current society'; 'Car accidents can come anytime, you cannot predict it'*).

Unaffected

In contrast, about 5% of participants stated that they do not believe they will be affected by traumatic events *('I live in a very safe environment so there won't be any physical harm to me or the people around me'; 'I'm not a person who fears much so violence isn't something affects me at all'; 'When events come to me I am very calm and think hard on the best solutions. I know that I am well surrounded if I need help and I usually find good solutions so I do not stress about the future. I always keep important phone numbers close by in case something happens'*).

5.10.1 SUMMARY OF AFR RELATED FINDINGS

When evaluating their chances of future traumatization, the vast majority of participants thought of factors related to risk in their environment. The risk factors included aspects of their daily environments (e.g. which roads they drive), characteristics of the city or neighbourhood they live in (e.g. bad drivers in Johannesburg) or South Africa more generally (e.g. high crime rate), and the possibility of being attacked in their own homes despite security measures being in place. Additionally, a small percentage of subjects thought of personal qualities that might increase (e.g. being female) or decrease (e.g. being a devout Christian) their risk of victimization or trauma and of negative characteristics of others that might enhance their chances of traumatisation (e.g. presence of suspiciously behaving people). The need for constant hypervigilance was emphasized throughout these descriptions. Conversely, a small minority of participants stated that more existential factors determine the likelihood of future traumatization (e.g. God or fate) and thereby indicated that they feel they have little control or influence over their personal risk.

In addition to risk factors (personal and environmental), a quarter of participants reported thinking either about past traumatization (direct or indirect) and/or imagining the specific

traumas they might be exposed to in the future, as well as what their own reactions and coping methods to these kinds of events might be. Finally, concern about how traumas might affect loved ones was expressed by a substantial portion of the sample indicating that when thinking about future traumatization, individuals think of widespread risks and effects. In this respect it appeared that both imagined and real aspects of life circumstances contributed to sense of risk.

It was also evident that thinking about the question produced rather strong psychological effects in respondents, the majority devoting considerable attention to this question and providing quite elaborated answers. Some students overtly expressed their discomfort with having to entertain these kinds of thoughts in their everyday lives (and perhaps in answering the questionnaires) and a few appeared to wish to repress or avoid all thought about possible risk of traumatization. Although this was anticipated to some degree the responses to this question were more powerful than anticipated and suggest interesting directions for future research.

Having discussed the various sets of findings in the study and their implications, including contextualisation and comparison with prior international and South African findings, the final chapter provides concluding commentary and an evaluation of the study.

CHAPTER 6
CONCLUSION

6.1 A SUMMARY OF THE FINDINGS

The central aim of the study was to investigate the relationships between exposure to trauma, traumatic stress symptomatology (PTSS), fear of crime (FoC) and appraisal of future risk of traumatization (AFR). The dimensions of exposure to trauma that were explored were frequency, recency, perceived severity and type (crime-related versus non-crime related). The high levels of trauma, crime, and fear of crime in South Africa, and the potential impact this has on psychological and other well-being were considered meaningful justifications for the study to be conducted. The findings pertaining to levels and patterns of exposure to trauma, PTSS, FoC, and AFR are reviewed first, followed by a brief summary of the findings concerning the relationships between these variables. Finally, a brief review of the qualitative factors contributing to considerations of AFR is provided.

Findings indicated a very high level of exposure to traumatic events amongst this sample of young South African adults. Approximately 90% of participants reported lifetime exposure to at least one traumatic event, with over two-thirds reporting multiple exposure. Although this included both direct and indirect exposure and in some instances reflected exposure prior to the previous 12 months, the levels of recent exposure were very high. The vast majority of participants (69%) indicated that their most recent exposure had occurred within the preceding twelve months, with one third reporting exposure within the last six months. Crime-related exposure to trauma was reported by 81% of the sample and four of the top five most commonly experienced events were associated with violent crime, reflecting a high incidence of exposure to crime. Exposure to non-crime related trauma was also high, with 60% of the sample reported at least one traumatic event unrelated to crime. Multiple exposure was reported more frequently in relation to criminal events than non-crime related events. The most prevalent events experienced by the sample were hijacking (51%), death of close friend or family member due to suicide or accident (45%), forceful robbery (44%), and murder of a close friend or family member (23%). Participants associated high levels of life threat with their past traumatic exposure experienced, with the majority rating that their most severe event experienced had ‘a lot’ of life threat (34%) and a quarter rating it was ‘extremely’ life threatening (23%). Less than 13% of the sample reported that they had found

their exposure to traumatic events to be ‘not at all’ life threatening. The most distressing events were generally related to criminal violence. These findings reflect very high levels of recent and multiple exposure to traumatic events of both a criminal and non-criminal nature that are generally associated with some degree of life threat and high levels of distress by the victims.

Levels of PTSS in the sample were very high, with 42.5% reporting levels of clinical concern. Fear of crime levels were also high, with participants indicating that they feel substantially safer during the day than at night. Levels of fear even within participants’ own neighbourhoods were high (70%), indicating that the young South African adults in this sample struggle to create a sense of safety in their personal environments. Close to half the sample (44%) reported that their fear “sometimes” or “often” interferes with their participation in activities, a high figure although smaller than the portion who feel unsafe, suggesting that there may be some accommodation to the high levels of FoC in carrying out daily activities. With regards to AFR, the majority of the sample reported believing that they have a “moderate chance” of experiencing a traumatic event in the future, with muggings, hijackings, and MVAs the top three events judged as most likely to be experienced. There was some evidence of a relationship between ideas about future experience of trauma and both prior exposure and perceived severity of past exposure.

With regard to relationships between variables, the findings provided further support for the relationship between exposure to trauma and PTSS, with all dimensions of trauma significantly related to symptomatology. Participants who reported exposure to trauma (both crime and non-crime related) reported significantly higher levels of PTSS in all three clusters (intrusion, avoidance, and hyperarousal) than those who reported no exposure to trauma. Perceived severity of past exposure was positively correlated with PTSS such that the more severe the exposure was judged to be by the participant, the more symptoms were reported. The more recently a participant had experienced an event, the higher their reported levels of PTSS, providing further support that PTSS decreases with time elapsed since the traumatic event. The relationships between the dimensions of trauma exposure and hyperarousal symptoms were stronger than the other two subcategories of PTSS (avoidance and intrusion), indicating that the trauma experienced by the sample tended to increased hypervigilant behaviour, sleep and concentration difficulties, and similar symptoms, more than intrusive and avoidant behaviours.

Frequency of exposure and non-crime related exposure were found to be significantly related to FoC and AFR, such that the more traumas experienced, particularly those unrelated to crime, the higher the levels of FoC and expectations of future traumatization expressed by the sample. Given that exposure included indirectly experienced events, these findings suggest that even when exposure is not direct it can serve to heighten fear of crime and judgements of risk of future traumatization. Somewhat surprisingly, crime-related exposure, recency of exposure and perceived severity of exposure were not found to be significantly related to FoC AFR levels. This may suggest that these dimensions of trauma exposure do not have the same pervasive effects on feelings of safety in the world as does frequency of exposure, although they affect PTSS levels and associated wellbeing.

Findings showed support for the relationship between PTSS and FoC, and PTSS and AFR. The more symptomology reported, on all three key clusters of symptoms (intrusion, avoidance, and hyperarousal), the more fear of crime expressed and the more likely one thinks traumatic exposure will occur in the future. Of the PTSS subclusters, hyperarousal were the most highly associated with both FoC and AFR, suggesting that feelings of anxiety, hypervigilance and tension perhaps tend to increase more with FoC and AFR than with the other clusters of symptoms. The relationship between FoC and AFR indicates that different aspects of the impacts of traumatic exposure were measured by the two constructs. Additionally, PTSS was not found to significantly mediate the relationships between exposure to trauma and FoC or AFR, which suggests that relationships between exposure dimensions and the three outcome measures were generally independent of each other.

Several broad themes emerged from participants' descriptions around what factors influenced their thinking about risk of traumatization in the future. The vast majority of participants (94%) spoke about environment related risk (e.g. crime, poor driving), particularly in relation to living in Johannesburg or South Africa, indicating that more than 9 out of 10 South African university students feel unsafe in their daily activities. Over a quarter of participants (26.35%) described thinking about how they imagined the future trauma might impact them either in terms of their behavioural, emotional, and psychological responses, or in terms of how likely they would be to die as a result of the potential trauma. Over one-fifth of participants (21.62%) wrote about their concern for loved ones, indicating that thinking of possible future trauma triggered a protective angst towards family and friends. These themes indicate that South Africans tend to be anxious about the safety of loved ones and that

perhaps, on some level, the study prompted respondents to reflect on their attempts to psychologically prepare themselves for future trauma. Close to one-fifth of the sample (18.24%%) made links between their past exposure to trauma and the potential for future traumatization, suggesting that the more clearly visualized the event could be, the more likely it was perceived that it might occur in the future. A smaller portion of participants described factors related to demographic or personality characteristics of self of others (12.16%) and to existential or religious dimensions (9.46%). In general, the findings suggest that both imagined and real aspects of life circumstances contributed to sense of risk.

6.2 LIMITATIONS AND RECOMMENDATIONS

A number of limitations of the present study are discussed, and related suggestions for future research are offered. Firstly, the cross-sectional nature of the data prevented any longitudinal inferences to be drawn from the results, which would offer a deeper understanding of how PTSS may change over time and how those fluctuations may impact fear of crime or thinking of future traumatization risk. Although regression analyses allowed for slightly more directional conclusions to be drawn, regarding the nature of the relationships between exposure to trauma, PTSS, FoC and AFR, the causal inferences were still limited. This was particularly restrictive with regard to the relationships between FoC and PTSS, and AFR and PTSS. The limited time frame available in which to complete the study precluded a longitudinal study (the research was conducted in fulfilment of the requirements of a degree that required completion within one year). It may also be useful for future studies to sample a larger participant pool in order to allow for stronger statistical analyses to be conducted that may reveal mediatory relationships between the variables, and to increase the generalizability of the findings.

A further limitation regarding potential mediatory variables is that the study did not include a number of variables noted in the literature as important factors to consider in the relationship between exposure to traumatic events and traumatic stress symptomatology. For instance, social support (Cluver et al., 2009), pre-existing personality characteristics (Dutton & Greene, 2010), and coping style (Scott, 2012) have been shown to be related to outcomes of traumatic exposure. Again, the time constraints for data collection and the circumscribed nature of the study restricted the number of variables that could be included. Furthermore, the researcher was mindful to not overburden participants with extensive questionnaires that

would be time consuming and cumbersome to complete, as participation was voluntary and time periods in which data collection could be done were limited and somewhat brief. Therefore only measures related to the main variables of interest in the study and basic demographic information were included.

The study relied on retrospective self-report measures to assess the dimensions of exposure to trauma. This is a noteworthy limitation of the study as responses provided may have been influenced and altered by reconstructions of participant's experienced (Heir, Piatigorsky, & Weisaeth, 2009). Additionally, the perceived focus of the study could have led to subjects embellishing their exposure rates in order to meet demands of the study. There is no empirical evidence to suggest that this type of response bias were present in the sample, but it may be a worthy theoretical notion to keep in mind. There may also be some concern that PTSS levels could influence reports of past exposure to trauma or similarly highlight stressful events; however, recent research found that stressor exposure did not change significantly as a function of PTSS (King et al., 2010). Hence, while there may be problems with the accuracy of the data due to response biases related to reconstructions and conscious embellishment that may be prompted by retrospective self-report measures, PTSS levels were likely not a confounding concern. It has been asserted that clinical interviews should be used in addition to self-report quantitative measures in order to supplement self-report data (Yehuda & McFarlane, 1999). Although this would have been useful, conducting interviews was not possible given the limited time frame in which to complete the study and the volume of participants required for the statistical analyses. However, the inclusion of two short qualitative questions acted as supplementary data to some extent, in place of interviews.

There are several possible limitations related to the measures used in the study. Firstly, the fear of crime measure is not a standardised measured. However, the fear of crime measure has been used in at least two previous South African studies and has been found to be reliable in both of them (Engelbrecht, 2009; von Klemperer, 2009). Further, reliability measures conducted in this study found the fear of crime measure to be reliable, suggesting that participants appeared to find the measure comprehensible and responded consistently. Additionally, it was evident from the fear of crime literature that researchers use different versions of similar collections of questions that tend to rely on face validity. Given the exploratory nature of the AFR construct, measures used to assess AFR were novel and untested. However, the one measure used an adapted version of the TSS, which has extensive

reliability and validity across numerous studies. The changes made to the measure were very minor, consisting mainly of grammatical edits to phrase items in the future tense, and are unlikely to have significantly changed the psychometric properties of the measure. The other AFR measure consisted of one brief qualitative question that was analysed using Thematic Analysis, and hence the potential concerns associated with psychometric properties of measures do not apply. Nevertheless, the AFR construct was entirely new and hence, these potential assessment concerns need to be considered.

The sample constitutes another potential limitation as it was not representative of the broader population and thus the findings of the study cannot be over generalised. Firstly, there was a sampling bias in that the participants were generally young with access to tertiary education, which only represents a relatively small portion of the South African population. However, the findings still have value within this population group and can perhaps apply to other young university students in Johannesburg, and possibly other urban areas in South Africa with similar characteristics. Secondly, the sample was predominately female, which could have implications for interpreting the results. For instance, women tend to express higher levels of anxiety and fear than men (Lorenc et al., 2013), which could mean that the fear of crime and appraisal of future risk findings may be elevated in comparison to the broader population. However, the levels of fear of crime and appraisal of future risk expressed by the sample were sufficiently high to reasonably assert that if more males had been included in the sample, the significant findings would still hold. For both of these criticisms of the sample used in this study, there is no compelling reason to believe that the findings of the study were particular to this group and would not be likely to apply to a broader population. Despite this, it is recommended that future researchers attempt to use samples that are more representative of the broader population.

Another possible limitation of the study was that no distinction was made between direct and indirect exposure to trauma. This prevented certain findings from being clarified further, however this was acknowledged where relevant in the discussion. Additionally, the inclusion of indirect exposure highlights that experiencing a traumatic event indirectly can still have significant implications for psychological health and wellbeing through possibly heightening personal fear of crime, evaluation of future risk of traumatization or PTSS. Further, the effects of indirect exposure have been somewhat neglected in South African research (Jacobs, 2002; Mendelsohn, 2002) therefore justifying the inclusion of such exposure in this study.

Moreover, the inclusion of the measure for perceived severity of exposure to trauma was believed to offer a more relevant and interesting means of differentiating between the personal significance of exposures than distinguishing between direct versus indirect exposure, as perceived severity would better access how the event was subjectively experienced by the individual. However, the non-specification between direct and indirect exposure was limiting in certain respects and therefore it is recommended that future research distinguish between these forms of exposure in addition to measuring the perceived severity of both types of exposure.

The format of the assessment of recency of exposure proved to be a limiting factor in some respects. The measure did not specify the timeline of events experienced more than 12 months ago, which prevented a more specific analysis of the course of PTSS, fear of crime and appraisal of future risk. However, one of the areas of focus of the study was to assess how trauma experienced recently (within the preceding 12 months) affects functioning, and therefore the specification of the timing of events longer than 12 months ago was not considered relevant enough to warrant the extra items in the measure. Additionally, the analysis of recency of exposure conducted in this study could also be considered a potential limitation. The statistical analyses operationalized recency of exposure as the timing of the most recent event experienced, rather than, for example, calculating the average recency per participant or analysing the recency responses for each type of event. However, the limited timeframe in which this study had to be completed prevented such extensive and exhaustive analyses from being conducted, and it was reasoned that the timing of the most recent exposure was perhaps more influential than the overall recency of all exposure. Nevertheless, investigating how these other possible operationalizations of recency of trauma exposure may be related to outcome measures could provide interesting and useful information.

A further possible limitation of the study relates to the assessment of the frequency of exposure to trauma. The measure assessing frequency of exposure did not assess how many times the same event had been experienced. Rather, frequency of exposure consisted of the number of types of exposure. Not distinguishing between multiple exposures across types of trauma and within one category of trauma prevented a higher order of investigation from being conducted. For instance, the prevalence of multiple exposures of different types of traumas could not be determined, nor could a comparison be made between the effects of singular versus multiple exposure to a specific kind of trauma. However, these types of

relationships were not the focus of the study; rather, the broader prevalence and effects of any form of multiple exposure were of interest. Yet the more specific nature of relationships between frequency and category of traumatic exposure and various outcomes would be interesting to investigate and future researchers are encouraged to distinguish between these forms of multiple exposure to trauma.

A final potential limitation of the study is that asking participants to think about and describe their past exposure to trauma may have triggered a temporary increase in their anxieties and symptomatology. Recollecting and describing traumatic events has been shown to provoke emotional and anxious responses from victims (McIsaac & Erich, 2004). This possible unintentional effect could introduce error into the findings by inflating the levels of the outcome variables. It is possible that this occurred on some level; however it is unlikely that the levels would have been inflated to such an extent that the findings would be irrelevant for functioning outside of the data collection setting. Additionally, the nature of the questions in the surveys were not intrusive or cumbersome, therefore if these relatively benign questions triggered such strong affective and behavioural responses this serves to further highlight the severity of the ongoing effects of the exposure to trauma. It is recommended that future researchers be cognisant of this potential confounding effect of asking participants to think about their past traumatic experienced, and if possible, incorporate a measure to control for and investigate it. Furthermore, from an ethical point of view it is also important to consider how best to encouraging help-seeking when populations appear to express high levels of anxiety as was the case in this study. With regards to the present study, when providing feedback to participants effort will be made to address the high levels of distress and symptomatology by emphasizing the need to consider seeking help if the individual feels their daily functioning is compromised. The contact details for affordable counselling services will again be provided at the same time.

Having outlined potential limitations of the study, final recommendations based on the findings of the present study are offered. Firstly, given the very high levels of multiple exposure to trauma, both crime and non-crime related, in South Africa and the substantial portion of participants that were found to have PTSS levels of clinical concern, it is recommended that the impact of traumatic exposure on functioning be further investigated. It is advisable that the findings related to FoC and AFR found in this sample be further explored

as this could contribute to developing understandings of how ongoing safety in the world is established in the context of traumatic exposure.

6.3 CONCLUDING COMMENTS

Despite the discussed limitations, it is argued that this study has made a contribution to understanding the nature and effects of traumatic exposure, particularly with regard to how dimensions of exposure may be related to posttraumatic symptoms and distress levels,. Both direct and indirect exposure was taken into account, the latter of which is frequently neglected in trauma research. Furthermore the prevalence and nature of multiple exposure to trauma and its relationship with both symptomatic and other behavioural and psychological outcomes (PTSS, FoC, and AFR) was assessed. Additionally other potentially influential variables in the relationship between exposure to trauma and behavioural or psychological outcomes were explored, namely perceived severity and recency of exposure. Both of these variables have not been adequately included in prior trauma research, and the findings appear to be particularly relevant to the South African context and perhaps the emerging notion of Continuous Traumatic Stress (CTS) as well. Findings related to fear of crime built on previous understandings of the relationships between exposure to trauma and PTSS. The exploration of how one conceptualizes or evaluates future risk of traumatization (AFR) is one of the more novel aspects of the study, offering relatively new information to the trauma field, particularly with respect to perhaps guiding ideas around what contributes to poor psychological and behavioural functioning in the on-going context of trauma exposure. It is hoped that the study has made a useful contribution to the existing body of trauma related research, both in South Africa and internationally, and will stimulate and assist further research in this area.

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APPENDIX A: DEMOGRAPHIC QUESTIONNAIRE

Please complete the following questions by circling the appropriate answer, or writing the answer in the space provided.

1. Sex: MALE FEMALE
2. Age (years): _____
3. Marital Status: MARRIED SINGLE DIVORCED WIDOWED
4. Race Group (for descriptive purposes only):

   ASIAN BLACK COLOURED INDIAN WHITE

   OTHER: _____
5. Religion: _____
6. Home language/ Mother tongue:

   ENGLISH AFRIKAANS XHOSA ZULU SOTHO TSWANA

   OTHER: _____

APPENDIX B: THE TRAUMATIC STRESS SCHEDULE (TSS) – VERSION 1

Section A

Please read the statements below and answer the questions by choosing the answer of your choice. Please place a cross (x) over the chosen answer. Write in your answer for question 11.

1	Did anyone ever take or attempt to take something from you by force or threat of force, such as in a robbery, mugging, smash and grab or holdup?	No	Yes	0-1 months ago	2-3 months ago	3-6 months ago	6-12 months ago
2	Did anyone ever beat you up or attack you?	No	Yes	0-1 months ago	2-3 months ago	3-6 months ago	6-12 months ago
3	Did anyone ever make you have sex by using force or threatening to harm you? This includes any type of unwanted sexual activity.	No	Yes	0-1 months ago	2-3 months ago	3-6 months ago	6-12 months ago
4	Did a very close friend or a close family member ever die because of an accident or suicide?	No	Yes	0-1 months ago	2-3 months ago	3-6 months ago	6-12 months ago
5	Did a very close friend or a close family member ever die because of homicide or murder?	No	Yes	0-1 months ago	2-3 months ago	3-6 months ago	6-12 months ago
6	Have you ever been hijacked or someone very close to you been hijacked?	No	Yes	0-1 months ago	2-3 months ago	3-6 months ago	6-12 months ago
7	Were you ever in a motor vehicle accident serious enough to cause injury to one or more passangers?	No	Yes	0-1 months ago	2-3 months ago	3-6 months ago	6-12 months ago
8	Did you ever serve in combat?	No	Yes	0-1 months ago	2-3 months ago	3-6 months ago	6-12 months ago
9	Did you ever suffer injury or extensive property damage because of fire?	No	Yes	0-1 months ago	2-3 months ago	3-6 months ago	6-12 months ago

10	Did you ever suffer injury or property damage because of severe weather or either a natural or manmade disaster?	No	Yes	0-1 months ago	2-3 months ago	3-6 months ago	6-12 months ago
11	Did you experience any other event not mentioned above? If so, please specify below.	No	Yes	0-1 months ago	2-3 months ago	3-6 months ago	6-12 months ago

Specify other

_____

Section B

12. Please look at the events listed above and select the one event that has affected you the most strongly. Please provide a brief description of this event.

_____
_____
_____
_____
_____

Please indicate how life threatening you found this event, using the scale provided.

1 Not at all	2 A little	3 Moderately	4 A lot	5 Extremely

APPENDIX C: THE TRAUMATIC STRESS SCHEDULE (TSS) – VERSION 2

Please read the statements below and rate how likely you think you are to experience the following events in the future. Write in your answer for question 11.

1	Anyone will take or attempt to take something from you by force or threat of force, such as in a robbery, mugging, smash and grab or holdup.	0 No chance	1 Slight chance	2 Moderate chance	3 Strong chance	4 Very strong chance
2	Anyone will beat you up or attack you.	0 No chance	1 Slight chance	2 Moderate chance	3 Strong chance	4 Very strong chance
3	Anyone will make you have sex by using force or threatening to harm you. This includes any type of unwanted sexual activity.	0 No chance	1 Slight chance	2 Moderate chance	3 Strong chance	4 Very strong chance
4	A very close friend or a close family member will die because of an accident or suicide.	0 No chance	1 Slight chance	2 Moderate chance	3 Strong chance	4 Very strong chance
5	A very close friend or a close family member will die because of homicide or murder.	0 No chance	1 Slight chance	2 Moderate chance	3 Strong chance	4 Very strong chance
6	You will be hijacked or someone very close to you will be hijacked.	0 No chance	1 Slight chance	2 Moderate chance	3 Strong chance	4 Very strong chance
7	You will be in a motor vehicle accident serious enough to cause injury to one or more passengers.	0 No chance	1 Slight chance	2 Moderate chance	3 Strong chance	4 Very strong chance
8	You will serve in combat.	0 No chance	1 Slight chance	2 Moderate chance	3 Strong chance	4 Very strong chance
9	You will suffer injury or extensive property damage because of fire.	0 No chance	1 Slight chance	2 Moderate chance	3 Strong chance	4 Very strong chance

10	You will suffer injury or property damage because of severe weather or either a natural or manmade disaster.	0 No chance	1 Slight chance	2 Moderate chance	3 Strong chance	4 Very strong chance
11	You will experience any other event not mentioned above. If so, please specify below.	0 No chance	1 Slight chance	2 Moderate chance	3 Strong chance	4 Very strong chance

Specify other

APPENDIX D: IMPACT OF EVENT SCALE – REVISED (IES-R)

The following is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you **during the past 7 days** with respect to any recent stressful experience. How much were you distressed or bothered by these difficulties?

	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Any reminder brought back feelings about it	0	1	2	3	4
2. I had trouble staying asleep	0	1	2	3	4
3. Other things kept making me think about it	0	1	2	3	4
4. I felt irritable and angry	0	1	2	3	4
5. I avoided letting myself get upset when I thought about it or was reminded of it	0	1	2	3	4
6. I thought about it when I didn't mean to	0	1	2	3	4
7. I felt as if it hadn't happened or wasn't real	0	1	2	3	4
8. I stayed away from reminders about it	0	1	2	3	4
9. Pictures about it popped into my mind	0	1	2	3	4
10. I was jumpy and easily startled	0	1	2	3	4
11. I tried not to think about it	0	1	2	3	4
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them	0	1	2	3	4
13. My feelings about it were kind of numb	0	1	2	3	4
14. I found myself acting or feeling like I was back at that time	0	1	2	3	4
15. I had trouble falling asleep	0	1	2	3	4
16. I had waves of strong feelings about it	0	1	2	3	4
17. I tried to remove it from my memory	0	1	2	3	4
18. I had trouble concentrating	0	1	2	3	4
19. Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart	0	1	2	3	4
20. I had dreams about it	0	1	2	3	4
21. I felt watchful and on guard	0	1	2	3	4
22. I tried not to talk about it	0	1	2	3	4

APPENDIX E: FEAR OF CRIME MEASURE

Please answer the following questions with respect to your experiences over the last week.

1. How safe did you feel walking and/or driving alone in your neighbourhood during the day?

1 Very safe	2 Somewhat safe	3 Somewhat unsafe	4 Very unsafe

2. How safe did you feel walking and/or driving alone in your neighbourhood at night?

1 Very safe	2 Somewhat safe	3 Somewhat unsafe	4 Very unsafe

3. How often did this influence your plans or prevent you from doing the things you like to do in and around your neighbourhood?

1 Never	2 Rarely	3 Sometimes	4 Often

4. How worried were you that you would experience being a victim of crime outside of your neighbourhood?

1 Not worried	2 Somewhat worried	3 Moderately worried	4 Very worried

5. How worried were you that you would experience being a victim of crime in your neighbourhood?

1 Not worried	2 Somewhat worried	3 Moderately worried	4 Very worried

6. How worried were you that you would experience being a victim of crime in your own home?

1 Not worried	2 Somewhat worried	3 Moderately worried	4 Very worried

APPENDIX F: APPRAISAL OF FUTURE RISK

When you think about how likely, or unlikely, you are to be exposed to a traumatic event in the near future, what factors come to mind? Please write about two lines outlining what factors influenced your thinking.

APPENDIX G: PARTICIPAT INFORMATION LETTER

School of Human and Community Development
University of the Witwatersrand
Private Bag 3, Wits 2050, Johannesburg, South Africa
Tel: (011) 717-4500 Fax: (011) 717-4559

Dear Student

My name is Lauren McClurg, and I am conducting research for the purposes of obtaining a Master's degree at the University of the Witwatersrand. My area of focus is that of exposure to trauma, related symptoms, fear of crime, and traumatic stress, and how these issues might be related. I would like to invite you to participate in this study.

Your participation in this research will entail completing the attached questionnaires. This includes a very brief demographic questionnaire, a brief measure of past exposure to traumatic events, a measure of possible future exposure to traumatic events (questionnaire and one open-ended question), a questionnaire on responses to stress, and a brief measure of fear of crime. The questionnaires will take about 25 minutes in total to complete. Your participation is voluntary, and you will not be advantaged or disadvantaged in any way for choosing to complete or not complete the questionnaires. If you choose to participate, you may decline to answer certain questions if you so wish, and you may withdraw from the study at any time. No identifying information, such as your name, student number, or I.D. number, is asked for. Consequently, the information you provide will be kept confidential. No one other than my supervisor (Professor Gillian Eagle) and I will have access to the completed questionnaires. Your responses will only be looked at in relation to all other responses. The raw research data will be destroyed following the completion of the Master's degree. Until that time, all physical data will be kept in a secure place (locked away in my office) and all electronic data will be password protected. The end results will be reported in my research report for my Master's degree. Results may potentially also be reported in a journal article or similar publication. In addition, upon request, you can received a summary of collective findings via email.

Although the questionnaires ask you to briefly think about past and potential future exposure to trauma, it does not require in-depth reflection or detail and is it ***not*** expected that you will experience negative psychological consequences. However, if for any reason you should require psychological support following completion of the questionnaires (e.g. if this brings up distressing memories), please contact either Lifeline on 0861 322 322 (24-hour service) or the Counselling and Careers Development Unit (CCDU) at the University of the Witwatersrand on (011) 717 9140/32. Both these services are free of charge.

If you choose to participate in the study please complete the attached questionnaires as carefully and honestly as possible. Once you have answered the questions, place the questionnaire in the envelope provided, deposit it in the sealed box and hand me the attached coded card. This will ensure that no one will have access to the completed questionnaires except me, and will maintain confidentiality. If you do return your questionnaire, this will be considered consent to participate in the study.

Your participation in this study would be greatly appreciated. This research will contribute to a larger body of knowledge on the impact of traumatic exposure on South African society.

Kind Regards,

Lauren McClurg (0849166346)
Supervised by Professor Gillian Eagl

APPENDIX H

RESULTS FOR CHECKING THE ASSUMPTIONS OF THE FoC AND AFR MULTIPLE REGRESSION MODELS

In addition to the descriptive statistics reported in Chapter 4, further analyses were conducted on the each of the regression models in order to ensure that the assumptions of multiple linear regression analysis were met (see Section 3.7.1).

1. To assess the assumption of normality, a histogram (Figures 2, 5, 8, and 11) and normal probability plot (Figures 3, 6, 9, and 12) were examined. Each of the histograms has a bell-shaped curve and the P-P plots resemble a straight diagonal line, thus indicating a normal distribution. Furthermore, as outlined in section 4.1 Basic Descriptive Statistics of Variables, the data has acceptable skewness and kurtosis values that indicate that the data is normally distributed.
2. There is no multicollinearity of variables, as demonstrated by the correlation matrix in Table 1.
3. Each of the models has a Durbin-Watson value within conventional limits to conclude that there is no auto-correlation. The FoC Model 1 has a value of 1.912 (see Table 17), FoC Model has a value of 1.878 (see Table 20), AFR Model 1 has a value of 1.893 (see Table 23), and AFR Model 2 has a value of 1.892 (see Table 26).
4. The points on the scatterplots in Figures 4, 7, 10, and 13 are randomly and evenly dispersed around the plot, thereby indicating that the few outliers do not facilitate deviation from normality and that the assumptions of linearity and homoscedascity have been met (Field, 2006).

Hence the assumptions of a regression analysis model have been met by all four of the models developed in this study, and it is reasonable to assert that this model could generalize to other populations in South Africa.

Figure 2. *FoC Model 1: Histogram*

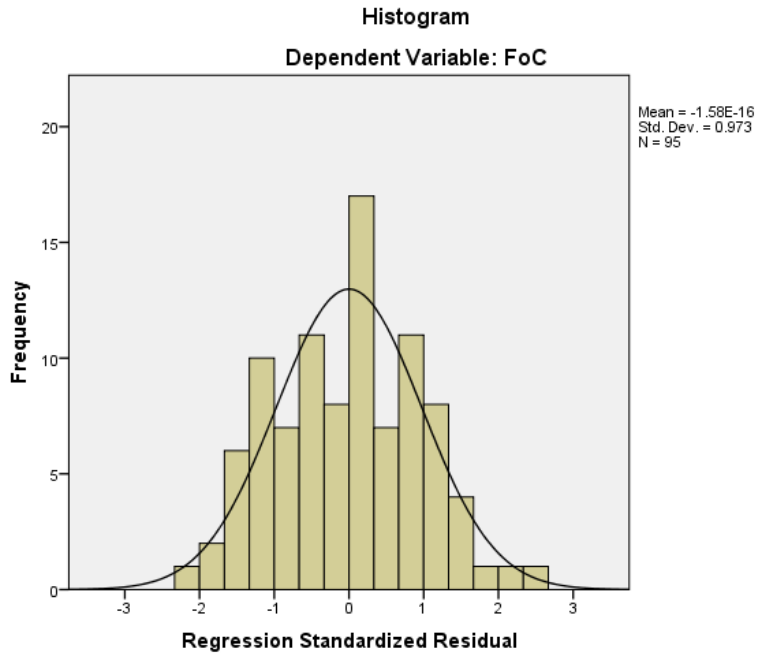

Figure 3. *FoC Model 1: Normal P-Plot of Regression*

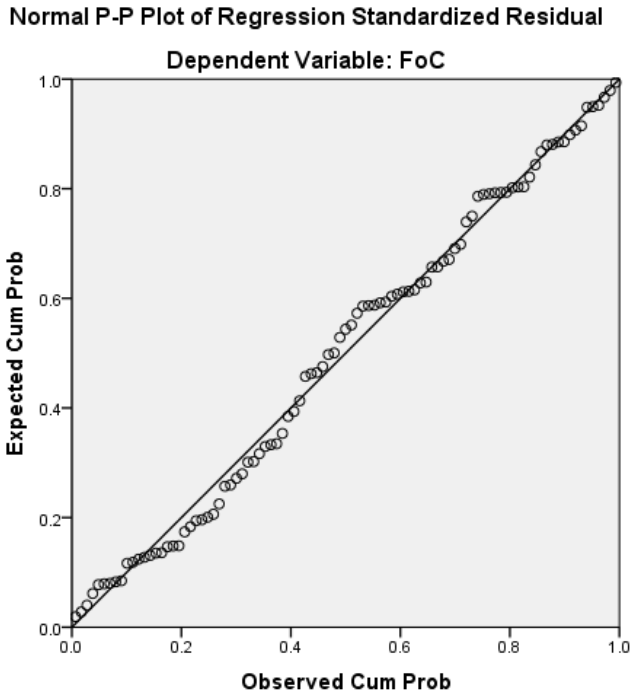

Figure 4. *FoC Model 1: Scatterplot of the Standardized Residuals and Standardized Predicated Values*

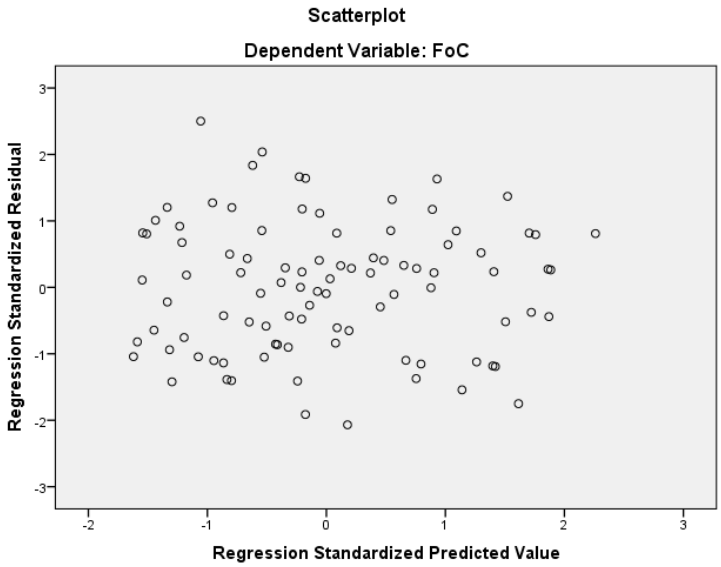

Figure 5. *FoC Model 2: Histogram*

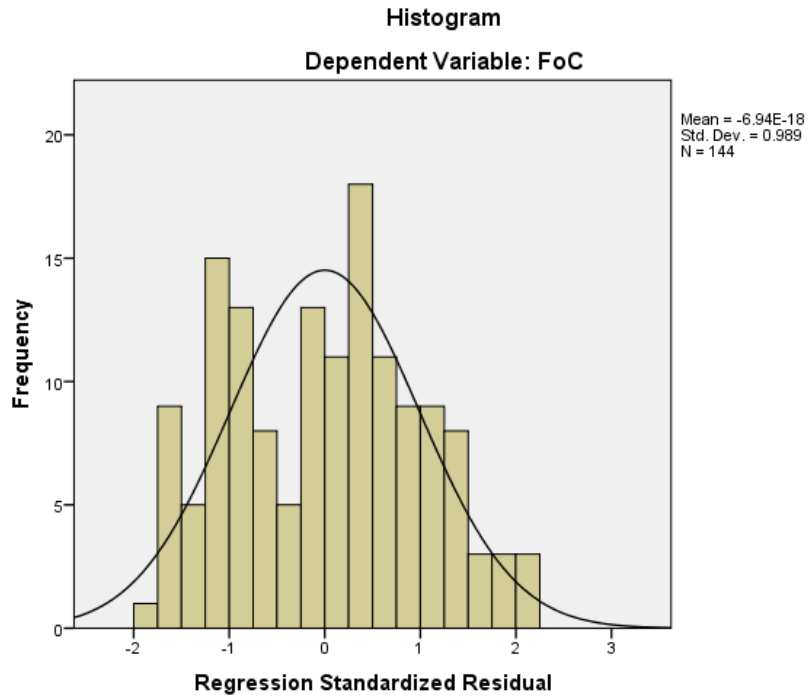

Figure 6. *FoC Model 1: Normal P-Plot of Regression*

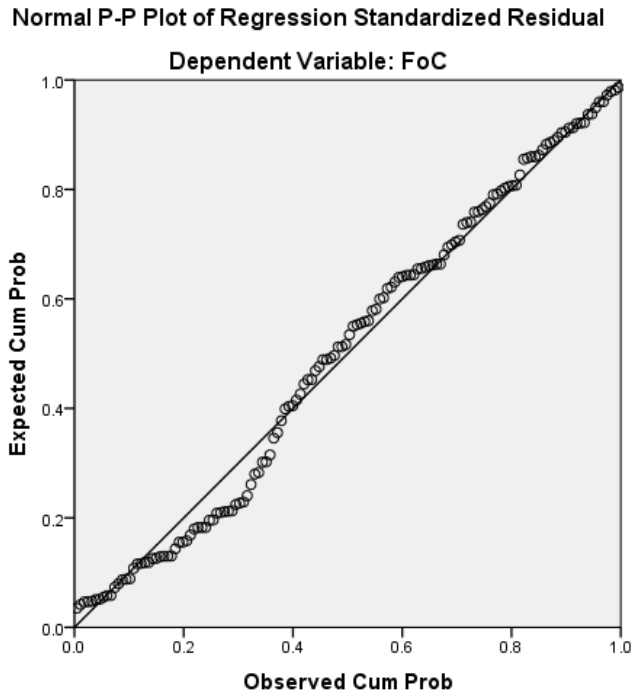

Figure 7. *FoC Model 1: Scatterplot of the Standardized Residuals and Standardized Predicated Values*

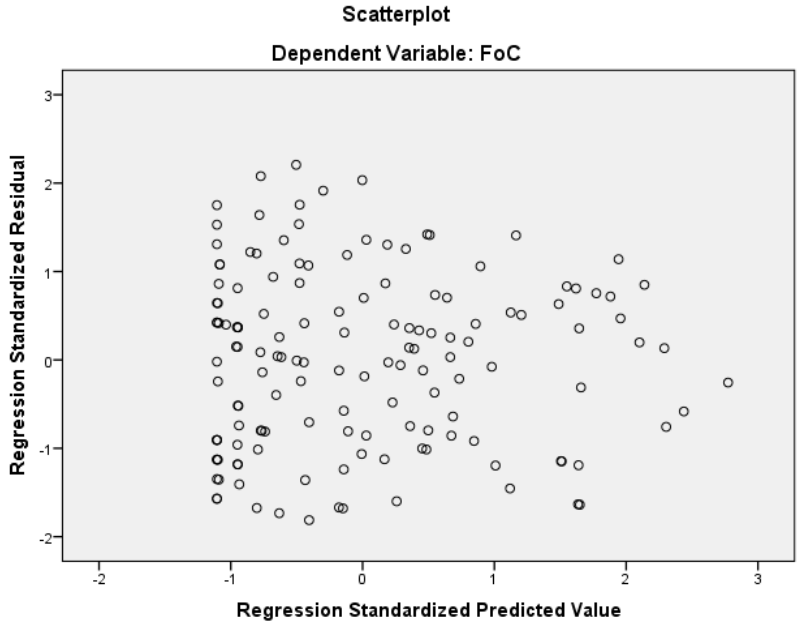

Figure 8. *AFR Model 1: Histogram*

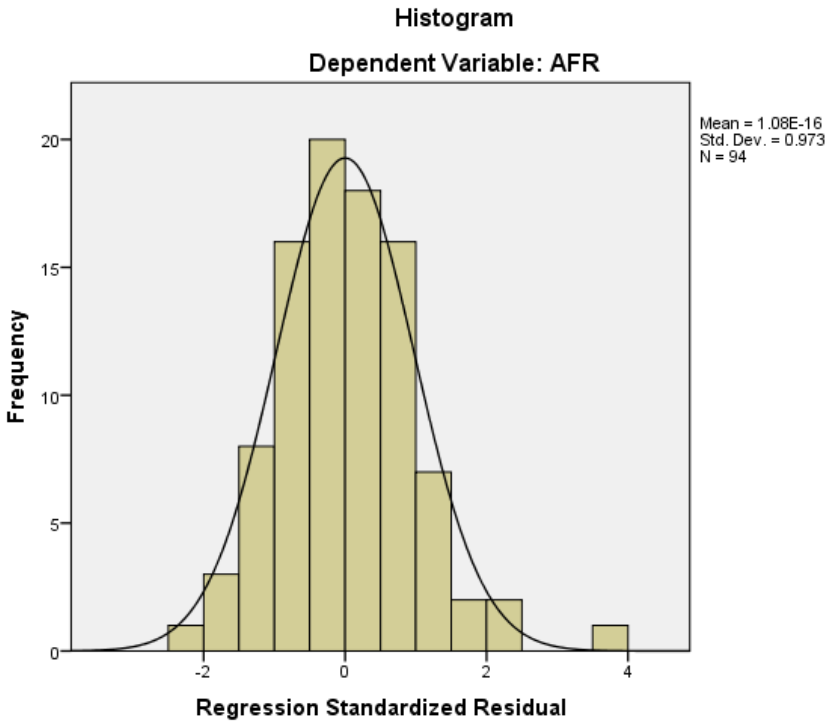

Figure 9. *AFR Model 1: Normal P-Plot of Regression*

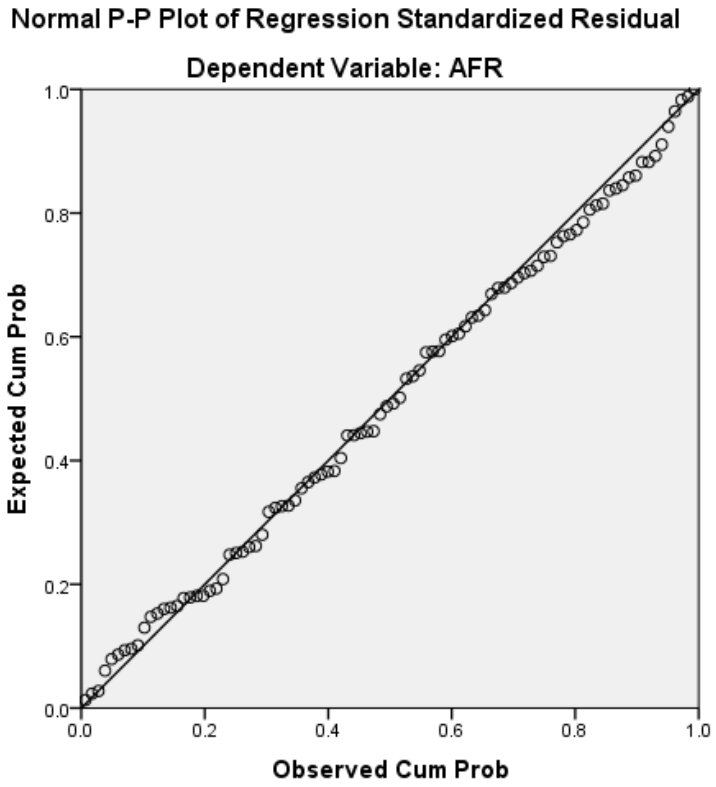

Figure 10. *AFR Model 1: Scatterplot of the Standardized Residuals and Standardized Predicated Values*

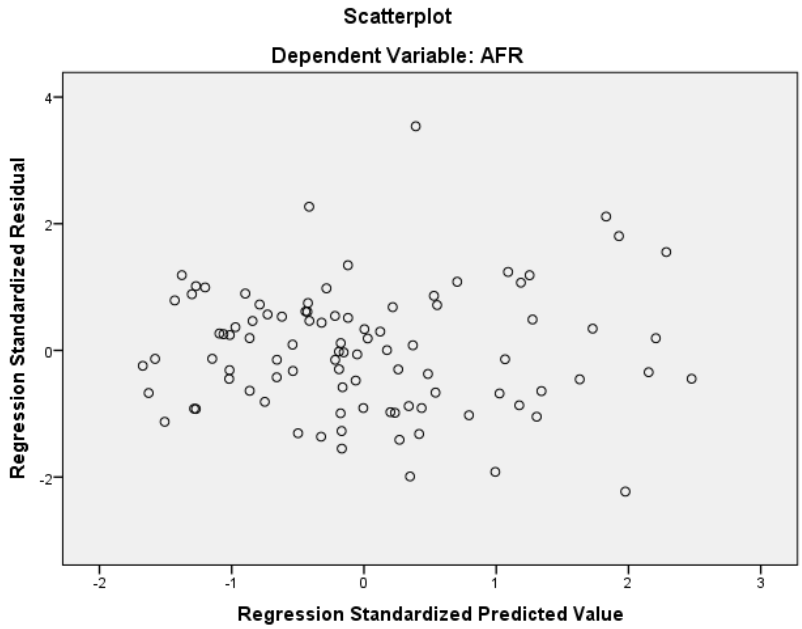

Figure 11. *AFR Model 2: Histogram*

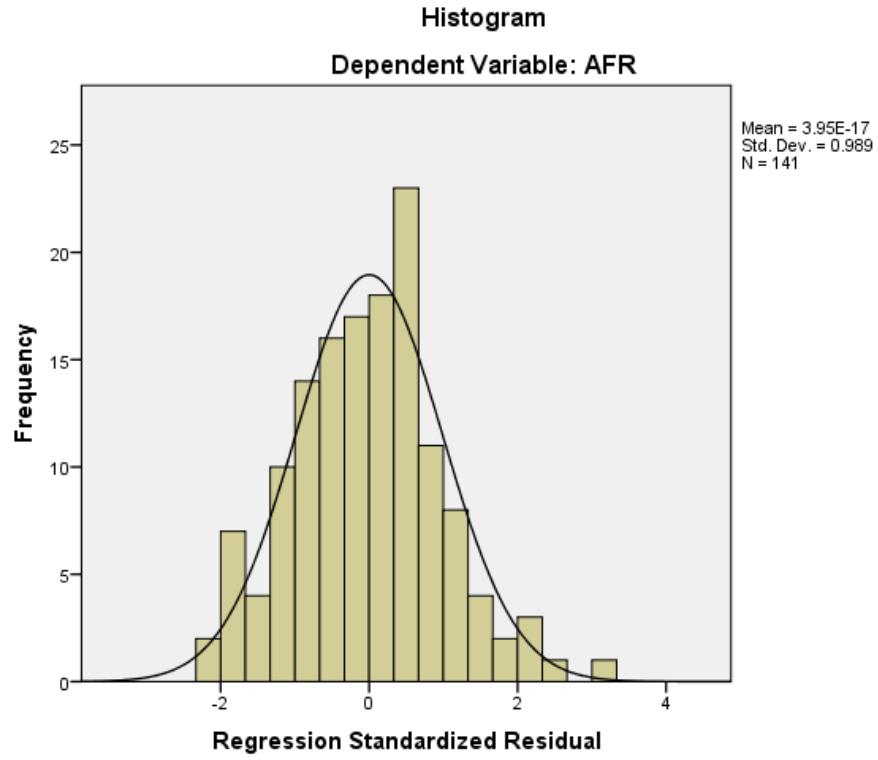

Figure 12. *AFR Model 2: Normal P-Plot of Regression*

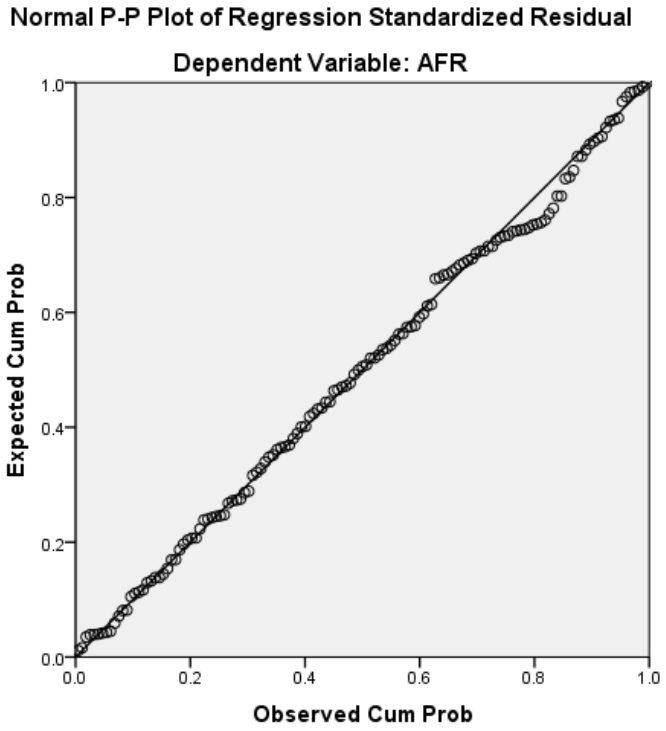

Figure 13. *AFR Model 2: Scatterplot of the Standardized Residuals and Standardized Predicated Values*

