

**EXPOSURE TO VIOLENT CRIME, FEAR OF CRIME, AND
TRAUMATIC STRESS SYMPTOMATOLOGY**

SARAH-KATE ENGELBRECHT

A dissertation submitted to the Faculty of Arts, University of the Witwatersrand, Johannesburg, in partial fulfillment of the requirements for the degree of Master of Arts (Clinical Psychology).

December 2009

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.

Sarah-Kate Engelbrecht

Date

ABSTRACT

The central aim of the study was to investigate the relationships between exposure to violent crime, traumatic stress symptomatology, and fear of crime. Secondary areas of interest included the effect of the frequency of exposure to violent crime on traumatic stress symptomatology and fear of crime, as well as sex differences in the three main variables of study. In order to explore these aims, a quantitative cross-sectional research design was used. Measures included a self-developed exposure measure, the Impact of Event Scale-Revised, and a fear of crime measure used in a previous South African study. The sample was comprised of 216 first-year university students at the University of the Witwatersrand in Johannesburg. Statistical analyses included descriptive statistics, Pearson's correlations, t-tests, and analysis of variance (one-way and two-way) and post-hoc t-tests.

The results of the research indicated high levels of exposure to violent crime (including direct and indirect exposure). Almost half the sample (47%) reported exposure to violent crime in the preceding 12 months. Furthermore, over half the sample (58%) reported direct exposure to non-crime trauma in the preceding 12 months, with only about one-quarter of the sample (20%) reporting no exposure to any kind of trauma in the preceding 12 months. It was thus unsurprising that levels of traumatic stress symptomatology were generally in the moderate range and at least 20% of the total sample reported traumatic stress symptomatology of clinical concern. Fear of crime was found to be rather pervasive in the sample. Findings showed support for the relationships between exposure to violent crime and traumatic stress symptomatology, exposure to violent crime and fear of crime, and fear of crime and traumatic stress symptomatology. Significant differences were found between groups based on level and type of exposure and significant correlations were found between the perceived severity of exposure to violent crime on the one hand, and traumatic stress symptomatology and fear of crime on the other hand. Frequency of exposure to violent crime was found to be significantly related to fear of crime but not to traumatic stress symptomatology. Female subjects reported significantly higher perceived severity of exposure to violent crime, hyperarousal related symptoms and fear of crime. The implications of the findings are explored.

ACKNOWLEDGEMENTS

My sincere thanks and appreciation go to:

Professor Gill Eagle, for supervising my thesis, and for her constant support, patience and guidance. Thank-you for your dedication to my process.

My family, in particular my parents, Barry and Kathleen Engelbrecht, whose love and support provided the foundation for me to pursue my postgraduate studies.

Mike Greyling for his assistance with the statistical analysis.

The students who participated in the study.

Lynlee Howard-Payne who kindly made time available for the data collection.

The University of the Witwatersrand for granting me a Postgraduate Merit Scholarship.

Wendy, Rich and Liv for being my pillars of support this year.

TABLE OF CONTENTS

	Page
TITLE PAGE	i
DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGMENTS	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	xi
CHAPTER 1 INTRODUCTION AND MOTIVATION FOR THE STUDY	1
1.1 Organisation of Dissertation	3
CHAPTER 2 LITERATURE REVIEW	5
2.1 Violent Crime in South Africa	5
2.1.1 Official statistics on violent crime	6
2.1.2 Data from victimisation surveys	8
2.1.3 Sex differences in exposure to violent crime	8
2.2 Traumatic Stress	10
2.2.1 Brief history of the construct of traumatic stress	10
2.2.2 Defining traumatic stress diagnostically	10
2.2.3 Symptomatic responses to trauma as defined in the DSM-IV-TR	11
2.2.4 Traumatic stress prevalence: Findings from international research	12
2.2.4.1 Multiple traumatic events and traumatic stress	13
2.2.4.2 Sex differences in traumatic stress	14
2.2.4.3 Relationship between exposure to violent crime and traumatic stress	16
2.2.5 Traumatic stress: Findings from South African research	17
2.3 Fear of Crime	20
2.3.1 Fear of crime: Findings from international research	20
2.3.1.1 Sex differences in fear of crime	21
2.3.1.2 Relationship between exposure to violent crime and fear of crime	24
2.3.2 Fear of crime: Findings from South African research	26
2.4 Closing Remarks	31

CHAPTER 3	METHOD	32
3.1	Aim of the Study	32
3.2	Research Objectives	32
3.3	Research Design	32
3.4	Sample	32
3.4.1	Demographic profile of the sample	33
3.5	Measures	34
3.5.1	Demographic questionnaire	34
3.5.2	Measuring Exposure to Violent Crime	35
3.5.3	Measuring Traumatic Stress Symptomatology: IES-R	36
3.5.3.1	Development of the IES-R	36
3.5.3.2	Psychometric properties	37
3.5.3.3	Use in the South African context	37
3.5.4	Measuring Fear of Crime	37
3.6	Procedure	38
3.7	Data Analysis	39
CHAPTER 4	RESULTS	41
4.1	Reliability of the Measures	41
4.2	Exposure to Violent Crime	42
4.3	Traumatic Stress Symptomatology	45
4.4	Fear of Crime	45
4.5	The Relationship between Exposure to Violent Crime and Traumatic Stress Symptomatology	47
4.5.1	Frequency of Exposure to Violent Crime and Traumatic Stress Symptomatology	51
4.6	The Relationship between Exposure to Violent Crime and Fear of Crime	53
4.6.1	Frequency of Exposure to Violent Crime and Fear of Crime	56
4.7	The Relationship between Fear of Crime and Traumatic Stress Symptomatology	57
4.8	Sex Differences	58
4.8.1	Sex differences in Exposure to Violent Crime	58
4.8.2	Sex differences in Traumatic Stress Symptomatology	60
4.8.3	Sex difference in Fear of Crime	61

CHAPTER 5 DISCUSSION	63
5.1 Exposure to Violent Crime	63
5.1.1 EVC group	65
5.1.2 Summary	67
5.2 Traumatic Stress Symptomatology	68
5.2.1 Summary	69
5.3 Fear of Crime	70
5.3.1 Summary	72
5.4 The Relationship between Exposure to Violent Crime and Traumatic Stress Symptomatology	73
5.4.1 Frequency of Exposure to Violent Crime and Traumatic Stress Symptomatology	76
5.4.2 Summary	77
5.5 The Relationship between Exposure to Violent Crime and Fear of Crime	78
5.5.1 Frequency of Exposure to Violent Crime and Fear of Crime	79
5.5.2 Summary	81
5.6 The Relationship between Fear of Crime and Traumatic Stress Symptomatology	81
5.6.1 Summary	83
5.7 Sex Differences	84
5.7.1 Sex differences in the level and perceived severity of Exposure to Violent Crime	84
5.7.2 Sex differences in Traumatic Stress Symptomatology	85
5.7.3 Sex difference in Fear of Crime	86
5.7.4 Summary	88
CHAPTER 6 CONCLUSION	89
6.1 A Summary of the Findings	89
6.2 Limitations of the Present Study and Recommendations for Future Research	91
6.3 Concluding Comments	96
REFERENCES	97
APPENDICES	
Appendix A: Demographic Questionnaire	
Appendix B: Coding Categories for Residential Areas	

Appendix C: Measure for Exposure to Violent Crime

Appendix D: Impact of Event Scale-Revised

Appendix E: Fear of Crime Measure

Appendix F: Subject Information Sheet

Appendix G: Results for the Interaction Effect of Subject Sex and Exposure to Violent Crime

Appendix H: Results for the Sex Difference in Levels of Exposure to Non-Crime Trauma

LIST OF TABLES

Table 1	How safe people felt walking alone in their areas of residence, 1998 and 2003, Statistics SA and NCVS (Louw, 2007)	27
Table 2	Residential Area by Frequency Count	34
Table 3	Cronbach Alpha Coefficients: Internal Consistency of the FC Measure and IES-R (Including Subscales)	41
Table 4	Descriptive Statistics for Exposure to Violent Crime in the Preceding 12 Months	42
Table 5	Descriptive Statistics for Exposure to Traumatic Events in the Preceding 12 Months	42
Table 6	Type and Frequency of Exposure to Violent Crime	43
Table 7	Perceived Severity of Exposure to Violent Crime	44
Table 8	Type of Exposure to Violent Crime by Perceived Severity	44
Table 9	Descriptive Statistics for the Total Sample: IES-R and Subscales	45
Table 10	Pearson's Correlations for the EVC Group: Perceived Severity of Exposure to Violent Crime and the IES-R (Including Subscales)	47
Table 11	Descriptive Statistics for the EVC Group and Non-EVC Group: IES-R and its Subscales	48
Table 12	T-Tests for the EVC Group and Non-EVC Group: IES-R and its Subscales	48
Table 13	Descriptive Statistics for Groups According to Combinations of Exposure Type: IES-R and its Subscales	49
Table 14	Two-way Analysis of Variance for Exposure to Violent Crime and Exposure to Non-crime Trauma on the IES-R	50
Table 15	Two-way Analysis of Variance for Exposure to Violent Crime and Exposure to Non-crime Trauma on the IES-R: Interaction Effect and Main Effects	50
Table 16	Post-hoc T-tests for Groups According to Combinations of Exposure Type: IES-R	51
Table 17	Mean Scores for Groups According to the Frequency of Exposure to Violent Crime: IES-R	52
Table 18	One-way Analysis of Variance for the Frequency of Exposure to Violent Crime and the IES-R	52
Table 19	Post-hoc T-tests for Groups According to the Frequency of Exposure to Violent Crime: IES-R	52
Table 20	Descriptive Statistics for the EVC Group and Non-EVC Group: FC Measure	53
Table 21	T-Test for EVC Group and Non-EVC Group: FC Measure	53

Table 22	Descriptive Statistics for Groups According to Combinations of Exposure Type: FC Measure	54
Table 23	Two-way Analysis of Variance for Exposure to Violent Crime and Exposure to Non-crime Trauma on the FC Measure	54
Table 24	Two-way Analysis of Variance for Exposure to Violent Crime and Exposure to Non-crime Trauma on the FC Measure: Interaction Effect and Main Effects	55
Table 25	Post-hoc T-tests for Groups According to Combinations of Exposure Type: FC Measure	55
Table 26	Mean Scores for Groups According to the Frequency of Exposure to Violent Crime: FC Measure	56
Table 27	One-way Analysis of Variance for the Frequency of Exposure to Violent Crime and the FC Measure	56
Table 28	Post-hoc T-tests for Groups According to Frequency of Exposure to Violent Crime: FC Measure	57
Table 29	Pearson's Correlations for the Fear of Crime Measure and the IES-R (Including Subscales): Total Sample, EVC Group, and Non-EVC Group	58
Table 30	Size of Groups According to Exposure to Violent Crime and Subject Sex	59
Table 31	Pearson's Chi-Square for Exposure to Violent Crime by Subject Sex	59
Table 32	Mean Scores of Females and Males for Perceived Severity of Exposure to Violent Crime	59
Table 33	One-way Analysis of Variance for Sex Difference in Perceived Severity of Exposure to Violent Crime	60
Table 34	Descriptive Statistics for Females and Males: IES-R and its Subscales	60
Table 35	T-Test for Sex Differences on the IES-R and its Subscales	61
Table 36	Descriptive Statistics for Females and Males: FC Measure	61
Table 37	T-Test for Sex Difference on the FC measure	62
Table 38	Pearson's Correlations for the Fear of Crime Measure and the IES-R (Including Subscales): Total Sample, EVC Group, and Non-EVC Group	82

LIST OF FIGURES

Figure 1	Feeling of safety walking and/or driving alone in one's neighbourhood during the day versus at night: Percentages for the total sample	71
Figure 2	Level of worry about being a victim of crime outside one's neighbourhood, in one's neighbourhood, and in one's own home: Percentages for the total sample	72
Figure 3	Mean total scores on the IES-R of groups according to combinations of exposure type	74
Figure 4	Mean total scores on the FC measure of groups according to combinations of exposure type	79
Figure 5	Mean total scores on the FC measure according to frequency of Exposure to Violent Crime	80

CHAPTER 1

INTRODUCTION AND MOTIVATION FOR THE STUDY

For the past few years there has been a great deal of discussion around the high levels of violent crime in South Africa. The country is regarded as having one of the highest levels of urban crime internationally, including high levels of violent crime such as hijacking, murder, assault, possession of illegal firearms, taxi conflict, domestic violence, and abuse against women (Gilbert, 1996). This permeates all facets of South African society and the violence-imbued climate appears to impact on the physical, psychological and emotional well-being of the entire population. Many South Africans view exposure to violent crime as the most serious problem they face (Louw, 2007).

Given the widespread crime and violence in South Africa, the country is viewed as one of the most stressful societies in the world in which to live (Masuku, 2002). As a result, the general public is thought to be at high risk for developing trauma-related mental health problems. Unsurprisingly, numerous research studies have demonstrated that posttraumatic stress-related conditions are a significant public health problem in South Africa, affecting all individuals in society, from children to adults (Edwards, 2005a). Epidemiological research indicates that the kinds of traumatising events associated with posttraumatic stress disorder (PTSD) are a common occurrence in South Africa and self-report survey studies reveal an alarmingly high degree of exposure in a number of settings and suggest that this exposure is a significant contributing factor to the high prevalence of trauma-related symptoms and other related conditions observed in the general population (Edwards, 2005a). These related conditions include depression, anxiety, substance abuse and somatic complaints (Breslau, 2009).

One reason for the research focus on posttraumatic stress conditions is that PTSD is particularly disabling (Edwards, 2005b). In addition to causing considerable distress, PTSD symptoms often result in impaired interpersonal relationships at home and at work (Edwards, 2005a, 2005b). For instance, PTSD has a particularly high cost on individuals' relationships with intimates and family members and trauma victims may struggle to relate to others due to shattered trust and feelings of loss and grief (Hamber & Lewis, 1997). Traumatic stress symptomatology also often interferes with effective work performance (Edwards, 2005a, 2005b) due to intrusive traumatic symptoms and concentration problems (Hamber & Lewis, 1997), and sufferers may not be able to maintain employment (Edwards, 2005a). The experience of trauma has also been associated with a decrease in self-reported general health, quality of life, and quality of family life (Peltzer & Renner, 2004). Over the last two decades, the Johannesburg Hospital Trauma Unit has seen

an unprecedented rise in the number of trauma patients and it has been established that such trauma-related injury is predominantly due to interpersonal violence (Bowley et al., 2002). Trauma in South Africa is also viewed as targeting the young and productive in society, placing a major burden on health infrastructure (Bowley et al., 2002).

The constant rhetoric about violent crime and the circulation of stories of victimisation in South Africa contributes, amongst other features, to a fear of crime (Dirsuweit, 2002; Gilbert, 1996), manifested in daily anxiety about one's sense of safety and risk of exposure to violent crime (Louw, 2007; Pretorius, 2008). Thus, in addition to the possible development of posttraumatic stress symptoms and responses, exposure to violent crime may also translate into elevated fear of crime and associated lifestyle inhibition. However, the origins of fear of crime are multifaceted and further research is required in order to understand the complex dynamic between levels of violent crime and fear of crime (Mistry, 2004). It is especially important to engage with the complexities of crime and fear in periods of social and political transition (Dirsuweit, 2002).

A further possibility is that fear of crime may translate into trauma-related symptoms if this fear becomes particularly elevated, manifesting as, for example, constant vigilance and avoidant behaviours. For instance, Elklit (2002) found that female subjects' fear of assault appeared to have more adverse impact in terms of traumatic stress symptomatology than actual assault. However, there is a dearth of research on the link between fear of crime and traumatic stress symptomatology. While research on crime-related trauma has addressed the construct of fear, it has usually done so in terms of PTSD, rather than the cultural, sociological, or other psychological aspects of fear (Dirsuweit, 2002).

Fear of crime has a negative effect on quality of life at the individual, community, and societal levels (Allen, 2002; Glanz, 1994; Roberts, 2008). It has been reported to have detrimental consequences for economic livelihoods and for emotional and physical well-being (Whizman, 2007). Fear of crime reduces the sense of cohesion and trust within communities, constraining people's mobility and hastening retreat from public spaces. L. Green (1994) described how fear destabilises social relations, divides communities, and creates insecurity, depicting fear as an invisible intimidation that brings about a continuous state of surveillance. South Africans across the demographic and socioeconomic spectrum share deep-seated fears about personal and community safety (Roberts, 2008). These issues imply that fear of crime is an important topic for research. It has been recognised as a priority, aside from crime itself, and has been pointed out as an important but often neglected phenomenon in South Africa (Roberts, 1998).

In light of the above concerns, the central aim of the study was to investigate the relationships between exposure to violent crime (EVC), traumatic stress symptomatology (TSS), and fear of crime (FC). There is a substantial amount of sociological and public health research on both violent crime and traumatic stress symptomatology, and the present study aimed to use the construct of fear of crime to further link these two bodies of research. The link between FC and TSS is the more novel aspect of the present study, since there appears to be limited research on this possible relationship. Research into fear of crime has been conducted predominantly by sociologists and has not been sufficiently incorporated into psychological understanding of traumatic event impact.

A criticism of current PTSD research is the excessive focus on the psychological impact of a *single* traumatic event, which fails to do justice to the many contexts in which individuals are exposed to ‘cumulative trauma’ (Robin, Chester, & Goldman, 1996, p.240) or ‘insidious trauma’ (Root, 1996, p.374) in communities where trauma is endemic (Edwards, 2005b; Green et al., 2000; Wolfe & Kimerling, 1997). National data from the South African Stress and Health (SASH) study conducted over 2003 and 2004 indicated that the majority of South Africans experience multiple traumatic events in their lifetimes (cited in Williams et al., 2007). Moreover, findings supported a cumulative effect of trauma exposure. Thus, research into cumulative trauma may be especially important in South Africa where exposure to violent crime is rife. As such, one of the secondary objectives of the present study was to examine differences in the TSS and FC of subjects exposed to a single versus multiple criminal events.

A further secondary research interest was to explore sex differences in EVC, TSS, and FC. Although this is a secondary research interest it is an important one given that potential sex differences in these variables have been identified in the literature. For instance, some studies have reported a higher lifetime prevalence of exposure to trauma in men than in women, although a higher prevalence of PTSD is usually found in women compared to men (Breslau, 2009). Regarding sex differences in fear of crime, there is a general observable pattern that females report higher levels of fear of crime than males (Farrall, Gray, & Jackson, 2006).

1.1. Organisation of Dissertation

In this chapter, an introduction to the study as well as the aims and motivation has been presented. Chapter 2 reviews findings from international and South African research on violent crime, traumatic stress symptomatology, and fear of crime. In Chapter 3, research objectives are presented, the method of study is outlined, and data analyses are described. The results of the present study are reported in Chapter 4,

according to the research objectives. Chapter 5 sees the exploration and discussion of these results and a comparison of the present results with the extant literature. Finally, Chapter 6 draws conclusions from the findings, highlights limitations of the present study, and provides recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

In this chapter, findings from international and South African research on violent crime, traumatic stress, and fear of crime are reviewed. Firstly, as an introduction to the section, violent crime in South Africa is contextualised and a definition of violent crime is put forward for the purposes of the present study. Next, levels and patterns of violent crime in South Africa are examined, using both official statistics and findings from national victimisation surveys. This section concludes with a look at South African literature on sex differences in exposure to violent crime. Second, a brief history of the construct of traumatic stress is offered and a diagnostic definition of traumatic stress is provided together with a consideration of the symptomatic responses to trauma as defined in the DSM-IV-TR. International findings on prevalence rates of traumatic stress symptomatology are reported next. This is followed by discussion of international research findings on multiple traumatic events and traumatic stress, as well as a review of sex differences in traumatic stress. The relationship between exposure to violent crime and traumatic stress is also reviewed. Findings from South African research on the same areas of interest are then examined. Finally, international literature on fear of crime is reviewed including a review of sex differences in fear of crime and a review of the relationship between exposure to violent crime and fear of crime. Findings from South African research on the same areas of interest are then examined and the theoretical perspective on fear of crime adopted by the present study is presented.

2.1 Violent Crime in South Africa

In explanations of high levels of violent crime in South Africa, the term ‘culture of violence’ is extensively used. This term is commonly used to refer to “a society which endorses and accepts violence as an acceptable and legitimate means to resolve problems and achieve goals” (Vogelman & Simpson, 1990). Problems of crime and violence seem to be deeply rooted in South African history. In the 1980s, at the height of Apartheid oppression, state and liberation movement violence peaked (Hamber, 1999), with violence becoming a pervasive mode of engagement (Dirsuweit, 2002). The period of political transition from 1990 to 1994 was characterised by unprecedented inter- and intra-community violence, resulting in a deeply traumatised community (Dirsuweit, 2002). Whereas violence in the 1980s and early 1990s was primarily of a political nature, “post-apartheid South Africa has seen the evolution of the culture of violence from political to criminal violence” (Dirsuweit, 2002, p.6). Thus, although political violence in South Africa has for the most part subsided, more general urban violence has increased considerably since the early 1990’s.

It is important to call attention to the conceptualisation of violence as a social construction (Gilbert, 1996) particularly in a context of historical repression and resistance. Acts of violence regarded as illegitimate or culturally unacceptable in one society might be deemed legitimate in another (Hoffman & McKendrick, 1990). “Therefore, attempts to define violence have been complicated by the need for a broad definition, but at the same time one that will facilitate the protection of persons in a particular society against violence, irrespective of race, culture or creed” (Gilbert, 1996, p.873). For the purposes of the present study, a working definition by Lauer (1989) is used: Violence implies the use of force to harm, injure or abuse others. In this study, violent crime includes murder, attempted murder, physical assault, rape or sexual assault, armed robbery, mugging, car hijacking, intimidation, burglary, and motor vehicle theft. Following this brief contextualisation, it is useful to examine levels and patterns of violent crime in South Africa, using both official statistics and findings from national victimisation surveys.

2.1.1 Official statistics on violent crime

The crime data of the South African Police Service (SAPS) indicate that, although overall crime rates rose progressively from 1997 to 2001, they decreased from 2002/03¹ to 2004/05 (cited in Louw, 2007). Murder had decreased steadily from 67 murders per 100 000 in 1994/95 to 40 per 100 000 in 2004/05 – a decline of 40%. Murder statistics provide the most accurate reflection of violence in society, given that many victims of offences such as robbery, rape, and assault do not report to the police (Louw, 2007). Nevertheless, robbery, rape, and assault represent important aspects of South Africa’s violent crime problem (and are addressed in more detail in the following paragraphs). Furthermore, recent SAPS data also show that almost all categories of violent crime decreased from 2003/04 to 2004/05 (cited in Louw, 2007).

Robbery is considered a crime of particularly high cost to society given that it occurs in and at a wide range of locations and times (and is thus difficult to prevent), tends to affect both rich and poor, involves the use of violence against individuals (mostly by strangers) and evokes high levels of fear in the public (Louw, 2007). In South Africa, armed robberies in the form of robberies of cash-in-transit vehicles, car hijackings, robberies on farms, bank robberies, and more recently robberies in busy shopping centres receive extensive media attention. Between 1996/97 and 2003/04, the aggravated robbery rate increased steadily from 164 per 100 000 to 288 per 100 000 – a rise of 76% – only dropping for the first time in 8 years in 2004/05. Rates of car hijacking, a type of aggravated robbery that is of particular concern in South Africa, have also declined. Rates peaked at a 15 846 in 2001/02, decreasing to 12 438 in 2004/05 –

¹ The SAPS publishes crime statistics for each financial year, i.e., April-March of each year.

a decline of 22%. However, in general, robbery statistics in South Africa are not particularly reliable. It was established that only 29% of robbery victims nationally reported the offense to the police in 2003 (Burton et al., 2004).

The trends for assault (which would include intimate partner violence [IPV]) as well as those for rape remain relatively unchanged since 1994 (Louw, 2007). Recent data indicate that rape increased by 4% in 2004/05, while assault decreased by a similar percentage (SAPS, 2005). However, these trends are difficult to interpret because of the problem of non-reporting (Louw, 2007). Nevertheless, the volumes of assaults and rapes that are documented in the official record are in any case cause for concern in terms of the impact of these offences on South African lives. In 2004/05, there were 535 reported cases of assault with intent to cause grievous bodily harm (referred to from this point forward as 'assault GBH'), 575 common assaults, and 118-recorded rapes per 100 000 (SAPS, 2005). The SAPS statistics also revealed how vulnerable women and children are to violent crime. In 2004/05, 45% of the victims of common assault, indecent assault, assault GBH, rape, attempted murder, and murder were women, and 14% were children (classified as those individuals under the age of 18 years). Of great concern was that, among these violent crime categories, children constituted 41% of all rape victims and 48% of all victims of indecent assault (SAPS, 2005).

Thus, despite stabilising crime rates, violent crime remains a serious problem in South Africa. South Africa's murder rate in 2004/05 was 40 per 100 000, representing the lowest annual rate since 1994. Compare this, however, to the average 1998 murder rate of 8 per 100 000 for the 111 countries referred to on Interpol's website. South Africa had the third highest murder rate of the countries that submitted data to Interpol in that year. (Murder rates are considered the most reliable indicator for country-level comparisons [Louw, 2007].) Approximately one third of all crimes documented by the police in South Africa are violent, translating into hundreds of thousands of offences. During the 12-month period of 2004/05, about 19 000 murders, 55 000 rapes, 127 000 aggravated robberies (generally involving the use of a weapon), and 249 000 serious assaults were recorded by the police (SAPS, 2005, p.56). There is thus objective evidence that South African citizens are vulnerable to violent crime, although incidences clearly vary across the country and the population. Furthermore, given concerns about underreporting in relation to most offenses, official crime statistics may under-represent levels of crime. Victimization surveys have been developed largely to supplement official statistics and may provide some indication of the extent of non-reporting. Surveys such as the National Victims Crime Survey (NVCS) in 2003 indicated that less than half of crime victims reported their experience to the police (cited in Louw, 2007). Thus, in order to

complement the discussion on official crime statistics, findings from victimisation surveys will be examined next.

2.1.2 Data from victimisation surveys

Similar to the crime data of the SAPS, the NVCS showed that crime levels indeed appear to have declined since 1998: the victimisation rate in 2003 was 1.6% lower than the rate in 1998 (Burton et al., 2004). Reports indicated that exposure to most types of crime had decreased, one exception being housebreaking, which increased, albeit fractionally. The most common crime reported in the NVCS was housebreaking (7.5%), followed by petty corruption/bribery (5.6%), theft of personal property (4.7%), theft out of a vehicle (2.5%), stock theft (2.5%), assault (2.2%), and robbery (2%). These figures are based on reported crime experienced within a time period of 12 months. The prevalence of different types of crime has changed little since 1998. The most prevalent crimes in 1998 were housebreaking, theft of stock, theft of personal property, assault, fraud, theft out of motor vehicle, and robbery (Mistry, 2004). In 2003, the same crimes were among the top seven most prevalent offences, with the exception of fraud. One of the most significant findings in the 2003 NVCS was the reported prevalence of corruption (cited in Louw, 2007). Given the likelihood that corruption is under-reported even in victimisation surveys, the finding that it was the second most common crime in South Africa is cause for concern. Nearly half of these experiences of corruption-related victimisation involved traffic officers or regular police. Although the NVCS showed that crime levels have declined since 1998, levels of crime are still high; just over one-fifth (22.9%) of South Africans reported that they were victims of some crime in the 12 months preceding August 2003 (cited in Louw, 2007).

Using national data from the SASH study conducted over 2003 and 2004, Williams et al. (2007) reported that 25.1% of the sample reported exposure to criminal victimisation in their lifetimes, with 11.4% having been beaten (i.e., physical assault; excluding IPV) and 17.7% having been mugged. In addition to high rates of direct exposure, 27.9% of the sample reported having witnessed traumatic events in their lifetimes. However, it would seem that exposure to violent crime is not uniform across sociodemographic groups, one such instance being the differential exposure to different types of violent crime among men and women.

2.1.3 Sex differences in exposure to violent crime

In South Africa, it appears that men may experience more crime in general, whereas women may be more exposed to intimate abuse (Gilbert, 1996). Thus, there appears to be a difference between men and women

in type of crime exposure. For example, Peltzer (2000a) found that men were more frequently victimised through attempted murder and armed robbery, whereas women were more frequently victims of rape (and attempted rape) and physical assault. In the SASH study (cited in Williams et al., 2007), men were more likely to experience criminal victimisation (e.g., being mugged) and were more likely to witness traumatic events, whereas women were more likely to report partner violence victimisation and sexual assault.

A central explanation of gendered patterns in exposure to violent crime is that they reflect the societal status of women (Gilbert, 1996; Jewkes & Abrahams, 2002). Women in South Africa still generally have less power than their male counterparts and are, therefore, at greater risk of being victimised in the home. The fact that women are at far greater risk of physical or sexual violence and coercion by a partner than by a stranger tends to support the notion that women are more vulnerable to gendered forms of violence in the home (Garcia-Moreno, Jansen, Ellsberg, Heise & Watts, 2006; Jewkes & Abrahams, 2002). IPV and sexual violence seem to be the types of victimisation most frequently reported by women and women appear to be at greater risk for this kind of violence from their intimate partners. In light of this, women in South Africa occupy a particularly vulnerable position in society and this has adverse effects on their emotional, mental, physical, social and economic wellbeing. For example, Jewkes, Penn-Kekana, Levin, Ratsaka and Schrieber (1999) found the following: emotional, physical and financial abuse are common features of intimate heterosexual relationships; physical violence often continues during pregnancy and represents a significant cause of reproductive morbidity; and women are often injured by their partners at sizeable cost to the health and other sectors.

In South Africa, women's victimisation does not occur exclusively in the home, also occurring in other contexts such as the school, work and community contexts and is perpetrated by people other than intimate partners or family members, for example, school teachers, work colleagues, acquaintances and strangers (e.g., Christofides et al., 2003; Dunkle et al., 2003; Jewkes, Levin, Mbananga, & Bradshaw, 2002). (On the other hand, men spend more time in the public domain and are also more disposed to high alcohol and drug consumption which may be implicated in violence. Young men, in particular, may be involved in aggressive displays of dominance, for example, risk-taking.)

Having presented the profile of crime in South Africa as discussed in the literature reviewed thus far, it is uncontested that exposure rates are high amongst the population as a whole. This has led to concerns and questions about the mental health impact of direct and indirect exposure to crime and violence and the possibility of fairly wide scale traumatisation.

2.2 Traumatic Stress

2.2.1 Brief history of the construct of traumatic stress

Victimisation based on abuses of power, either in individual interactions or wide ranging social conflicts are typical of events associated with PTSD (Eagle, 2002). In World War I, “shell shock” was the term given to the syndrome thought to result from brain trauma caused by exploding shells (Sadock & Sadock, 2003). Survivors of Nazi concentration camps, World War II veterans, and survivors of the atomic bombings in Japan had similar symptoms, sometimes referred to as “operational fatigue” or “combat neurosis” (Sadock & Sadock, 2003). However, it was the mass-scale psychiatric morbidity amongst Vietnam War veterans that acted to formalise the current diagnosis of PTSD (B.L. Green, 1994). “Thus, the diagnosis of PTSD has its origins in observations of individual’s responses to transgressions of the social and natural order, transgressions which in most cases have political implications” (Eagle, 2002, p.37). “Post-traumatic stress disorder” (PTSD) was formally recognised as a psychiatric illness in 1980 with the publication of the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III: American Psychiatric Association [APA], 1980), and has been refined in subsequent editions.

2.2.2 Defining traumatic stress diagnostically

The DSM-IV-TR defines trauma as both a stimulus and a response (APA, 2000). Pertaining to trauma as a stimulus, the DSM-IV-TR specifies that “the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others” (APA, 2000, p.467). Pertaining to trauma as a response, the person is defined as having been exposed to a traumatic event in which “the person’s response involved intense fear, helplessness, or horror” (APA, 2000, p.467). Furthermore, the DSM-IV-TR criteria define a traumatic event in terms of an individual’s appraisal of that event as personally threatening and, thus, highlight the subjectivity of responses to material that may be considered traumatic. In other words, “one person’s trauma may be another person’s difficult experience” (McCann & Pearlman, 1990, p.12). However, there is specificity about the kind of emotions that are commonly implicated.

The possibility of becoming indirectly traumatised has been recognised in the DSM-IV-TR. The essential feature of PTSD is the development of characteristic symptoms following exposure to an extreme traumatic stressor, which may take the form of witnessing a traumatic event of the kind described in the previous paragraph or of “learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate” (APA, 2000, p.463). This highlights the notion that people can be traumatised, not only through direct exposure to trauma, but also through

indirect exposure. It has been observed that people may develop full blown PTSD symptoms as a consequence of witnessing or learning about a traumatic event in this way.

2.2.3 Symptomatic responses to trauma as defined in the DSM-IV-TR

The DSM-IV-TR specifies particular criteria for PTSD responses, the principal clinical features of which are persistent reexperiencing of the event, persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness, and persistent symptoms of increased arousal (APA, 2000). In order for an individual to qualify for a diagnosis of PTSD, the full symptom picture should be present for longer than one month and these symptoms should also cause “clinically significant distress or impairment in social, occupational, or other important areas of functioning” (APA, 2000, p.468). The symptoms falling under each of the three clusters are described more fully as follows:

Reexperiencing the traumatic event

The traumatic event is persistently reexperienced in one or more of the following ways (APA, 2000, p.468):

- (1) recurrent and intrusive distressing recollections of the event, including images, thoughts or perceptions...
- (2) recurrent distressing dreams of the event...
- (3) acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated)...
- (4) intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event
- (5) physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

Avoidance of stimuli associated with the trauma and numbing of general responsiveness

Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness which was not present prior to the trauma is indicated by three or more of the following (APA, 2000, p.468):

- (1) efforts to avoid thoughts, feelings, or conversations associated with the trauma
- (2) efforts to avoid activities, places, or people, that arouse recollections of the trauma
- (3) inability to recall an important aspect of the trauma
- (4) markedly diminished interest or participation in significant activities
- (5) feeling of detachment and estrangement from others
- (6) restricted range of affect (e.g., unable to have loving feelings)
- (7) sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)

Increased arousal

Persistent symptoms of increased arousal which were not present prior to the trauma are indicated by two or more of the following (APA, 2000, p.468): (1) difficulty falling or staying asleep (2) irritability or outbursts of anger (3) difficulty concentrating (4) hypervigilance (5) exaggerated startle response.

The present study thus defines traumatic stress according to the DSM-IV-TR criteria for PTSD. In this way, symptomatic responses to traumatic events are viewed within the three symptom clusters of reexperiencing the traumatic event, avoidance of stimuli associated with the trauma and numbing of general responsiveness, and increased arousal. Having defined traumatic stress, findings from international research on traumatic stress are reviewed.

2.2.4 Traumatic stress prevalence: Findings from international research

PTSD research since 1980 has focused largely on Vietnam War veterans and to a lesser extent on victims of specific types of traumas, for instance, natural disasters or rape. With the growth of psychiatric epidemiology, PTSD has been researched in samples of the general population. Epidemiological studies in the United States (U.S.) have found that the majority of community residents in the country have experienced PTSD-level traumatic events, as defined by the DSM-IV (Breslau, 2009). For instance, a community survey based study of U.S. citizens aged 15 to 54 years found that 61% of men and 51% of women had been exposed to at least one traumatic event in their lifetimes (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). However, studies show that only a small proportion of trauma victims develop PTSD (less than 10%; Breslau, 2009). Epidemiological estimates indicate that the incidence and lifetime prevalence rates for PTSD in the general population range from approximately 1% to 9% (Hamber & Lewis, 1997). On the basis of diagnostic interviews, Kessler and colleagues estimated the lifetime prevalence of PTSD to be 7.8%. In a random sample of young adults in the Detroit area, 39.13% reported that they had experienced typical PTSD stressors in their lifetime and 9.24% met DSM-III-R criteria for PTSD (Breslau, Davis, Andreski, & Peterson, 1991). With the exception of rape, differential rates in PTSD across categories of traumatic events have generally been found to be relatively small. Giaconia et al. (1995) examined a large number of stressful events in a sample of 384 eighteen year-old U.S. adolescents participating in a longitudinal study. They found that more than two-fifths of the adolescents had experienced at least one traumatic event (as defined by DSM-III-R) by the age of 18. Fifteen percent of the affected youths or 6% of the total sample developed PTSD. Thus, the majority of studies among the general population have found that while lifetime exposure to traumatic events is relatively high (between

about 40 to 60%), the prevalence of diagnosable PTSD is considerably lower (ranging from approximately 1% to 9%).

2.2.4.1 Multiple traumatic events and traumatic stress

Although the majority of studies have focused on the consequences of single traumatic stressors (Krupnick et al., 2004) recent epidemiological research on adults suggests that exposure to multiple traumatic stressors is more common than was previously thought (e.g., Breslau et al., 1991; Daroowalla, Kosch, Krupnick, & Rickel, 2000; Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993; Vrana & Lauterbach, 1994). For example, Kessler et al. (1995) asked respondents to distinguish between one, two, three, and four or more traumas, and found that 25% of women and 34% of men had exposure to two or more traumatic events.

In addition, several studies have shown that exposure to multiple traumatic events is associated with higher levels of traumatic stress (e.g., Brewin, Andrews, & Valentine, 2000; Follette, Polusny, Bechtle, & Naugle, 1996; Miranda, Green, & Krupnick, 1997; Ozer, Best, Lipsey, & Weiss, 2003). For instance, Green and colleagues compared traumatic stress symptomatology associated with multiple traumas, one trauma, and no trauma, in college women in the U.S. (Green et al., 2000). Results showed that multiple events were linked with more traumatic stress symptomatology, especially for interpersonal events (physical/sexual assault), compared to non-interpersonal events (e.g., life-threatening accident).

The notion that exposure to multiple traumatic events can have a cumulative effect with regard to psychological dysfunction is also becoming more prevalent in the developmental literature. For example, in their studies on children, Copeland, Keeler, Angold, and Costello (2007) and Finkelhor, Ormrod, and Turner (2007) found that multiple traumas predicted symptoms of posttraumatic stress. In line with this, using a Danish national representative sample of eighth-grade students, Elklit (2002) found that being exposed to multiple traumatic events was associated with an increase in vulnerability to developing PTSD. Similarly, Pelcovitz and colleagues found that an increase in exposure to stressful events was associated with an increase in PTSD (Pelcovitz, Kaplan, DeRosa, Mandel, & Salzinger, 2000).

Resnick et al. (1993) point out that individuals identified as having PTSD following a specific trauma may in fact have had preexisting vulnerability to PTSD from a prior experience or that prior events may exacerbate the response to more recent traumatic events. As such, rather than responding to a particular

traumatic event, individuals may frequently be responding to the cumulative effect of trauma exposure over their life time.

2.2.4.2 Sex differences in traumatic stress

In recent years, the experiences of women as a group have received growing attention in the trauma field because of their exposure to particular types of trauma (e.g., IPV, sexual assault) and their specific response to severe stress. A consistent finding across epidemiological studies is that there is a higher prevalence of PTSD in women as compared to men (Breslau, 2009). Although men are more likely to be exposed to traumatic events, the probability of developing PTSD following the experience of traumatic events is higher in women (Breslau, 2009). A number of studies have reported a higher prevalence of exposure to trauma in men than in women (e.g., Breslau et al., 1991; Breslau et al., 1998; Breslau, Wilcox, Storr, Lucia, & Anthony, 2004; Kessler et al., 1995; Kessler, Chiu, Demler, Merikangas, & Walters, 2005; Norris, 1992; Resnick et al., 1993; Stein, Walker, Hazen, & Forde, 1997). Although consistent across these studies, the sex differences in exposure to trauma are fairly small, with a prevalence ratio in men versus women of less than 1.2 to 1. Despite the trend for a higher prevalence of exposure to trauma in men, research frequently finds that women report higher levels of traumatic stress symptomatology than men (e.g., Breslau, 2009; Breslau, Chilcoat, Kessler, Peterson, & Lucia, 1999; Breslau, Davis, Andreski, Peterson, & Schultz, 1997; Breslau et al., 1991, 1998; Davidson, Hughes, & Blazer, 1991; Kessler et al., 1995; Norris, 1992; Stein, Walker, & Forde, 2000; Stein et al., 1997; Stuber, Resnick, & Galea, 2006).

In a quantitative review of 25 years of research, Tolin and Foa (2006) applied meta-analytic procedures to address four key questions relating to sex differences in PTSD (p. 960):

1. Are women and girls more likely than men and boys to meet diagnostic criteria for PTSD?
2. Are women and girls more likely than men and boys to experience a traumatic event?
3. Do male and female participants differ in terms of the type of traumatic experience?
4. Do sex differences in PTSD remain when controlling for type of potentially traumatic event?

First of all, Tolin and Foa (2006) found that regardless of the population, type of study, type of assessment, or other methodological variables, female participants (girls and women) were more likely than male participants (boys and men) to meet the criteria for PTSD. Specifically, an almost twofold higher prevalence of PTSD was found among female participants than among male participants. Secondly, female participants were more likely to meet criteria for PTSD despite a lower overall likelihood of experiencing potentially traumatic events. Across studies, male participants were more likely to report a

history of experiencing potentially traumatic events than were female participants. Thus, the higher prevalence of PTSD in female participants could not be attributed to a higher likelihood of experiencing a potentially traumatic event.

Thirdly, Tolin and Foa (2006) found that male participants were more likely than female participants to report experiencing nonsexual assault, accidents, combat or war, serious illness or unspecified injury, disaster or fire, and witnessing death or injury. In contrast, female participants were more likely than male participants to report experiencing child sexual abuse and sexual assault. Fourth, Tolin and Foa (2006) found that, overall, within the same potentially traumatic event types, female participants were more likely to meet criteria for PTSD and reported more severe PTSD compared to male participants. Pertaining to adult sexual assault, non-significant sex differences in PTSD were found. However, within each of the categories of potentially traumatic events reported more frequently by male participants, a significant sex difference was found, specifically, a higher frequency and severity of PTSD in female participants compared to male participants. These findings suggest that the higher prevalence of PTSD in girls and women than in boys and men cannot be attributed solely to females' higher risk of child sexual abuse or adult sexual assault. Female participants still showed a higher risk of developing PTSD even within the potentially traumatic event categories more frequently reported by male participants. Thus, females' higher risk for PTSD appears to cut across categories of traumatic events.

The explanation/s for females' higher risk for trauma responses and PTSD is unclear. However, the available literature suggests that some potential causes can be ruled out (Breslau, 2009): Firstly, as we saw from the meta-analysis by Tolin and Foa (2006), females' higher risk for PTSD cannot be attributed to sex differences in the type of traumatic events experienced, specifically, the higher incidence of rape and sexual assault among females than males. Secondly, sex differences in risk are not accounted for by earlier traumatic experiences, given that the sex differential remains when adjustments are made for previous traumas. Thirdly, they argue that preexisting depression or anxiety disorders, which predict an increased risk for PTSD for both males and females, is unlikely to be the cause of the excess incidence of PTSD in females. Fourthly, a recent meta-analysis of measurement invariance has shown that the sex differential in PTSD is probably not due to sex-related bias in reporting (Chung & Breslau, 2008). Breslau (2009) proposed that findings on sex differences in neuroticism, anxiety, and the depression-inducing consequences of stressful experiences may possibly provide a theoretical context for future investigation into the greater risk for developing PTSD among females. The suggestion thus appears to be that there is some sex related difference in thresholds for developing distress of a clinical nature. Having looked at the

general prevalence of traumatic events and of PTSD as well as at sex differences in traumatic stress, it is useful to look more closely at the relationship between exposure to violent crime and traumatic stress vulnerability.

2.2.4.3 Relationship between exposure to violent crime and traumatic stress

Findings from international research provide support for the relationship between exposure to violent crime and traumatic stress (e.g., Andrews, Brewin, & Rose, 2003; Boney-McCoy & Finkelhor, 1995; Boudreaux, Kilpatrick, Resnick, Best, & Saunders, 1998; Breslau et al., 1998, 2004; Brewin, Andrews, Rose, & Kirk, 1999; Kessler et al., 1995; Norris, 1992). Some studies have focused on the link between exposure to specific types of violent crime and traumatic stress, for example, rape or sexual assault (e.g., Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992), physical assault (e.g. Andrews et al., 2003), shootings (e.g., Creamer, Burgess, Buckingham, & Pattison, 1993), and bank robbery (e.g., Kamphuis & Emmelkamp, 1998), while other studies have compared traumatic stress across types of violent crime (e.g., Kessler et al., 1995).

Furthermore, research has investigated whether exposure to violent crime has a stronger link with PTSD than non-crime related traumatic events. For instance, in a representative national sample of women, Resnick et al. (1993) found a significantly higher rate of PTSD among crime victims than among those who had experienced noncrime Criterion A events (as defined by the DSM-III-R [APA, 1987]), specifically 25.8% versus 9.4%. Similarly, Breslau et al. (2004) found the highest probability of PTSD to be associated with assaultive violence (15.1%), finding lower PTSD probabilities for learning about the unexpected death of a close friend or relative (9%), other injury or shocking event (6.6%), and learning of traumas to close friend or relative (2.9%). Creamer et al. (1993) note that traumatic events resulting from human malevolence may be more difficult for victims to cognitively process than those in the form of natural disasters or accidents. However, there appears to be a degree of contradiction in the findings, with some studies providing support for the notion that exposure to violent crime is more strongly associated with traumatic stress than non-crime related traumatic events (e.g., Breslau et al., 1998, 2004; Resnick et al., 1993) and other studies showing that this is not necessarily the case (e.g., Elklit, 2002).

It is likely that the different types and characteristics of crimes that individuals are exposed to may produce differential rates of traumatic stress (Carlson & Dutton, 2003). For instance, research has shown that certain characteristics of crime exposure, such as injury, perceived life threat, and sexual penetration, are associated with the development of traumatic stress symptomatology in victims of crime (Carlson &

Dutton, 2003). There is also generally agreement on the positive relationship between stressor severity and posttraumatic stress reactions (e.g., Fairbank, Schlenger, Caddell, & Woods, 1994; March, 1993). However, these characteristics need to be considered together with individual buffer and vulnerability factors that can either protect against, or contribute to the development of posttraumatic morbidity (e.g., Breslau et al., 1991; Freedy, Shaw, Jarrell, & Masters, 1992; Resnick, Kilpatrick, Best, & Kramer, 1992).

Thus far the discussion has presented a selective overview of the international research on the prevalence of traumatic stress symptomatology, the potential cumulative impact of multiple traumatic events, sex differences in traumatic stress symptomatology (and possible explanations for this), and finally the complex relationship between exposure to violent crime and traumatic stress. The following section examines findings from South African studies on the same research areas as those addressed above.

2.2.5 Traumatic stress: Findings from South African research

Results of the SASH study (conducted over 2003 and 2004) indicate that most South African's (nearly 75%) report having experienced at least one traumatic event during their lifetimes, with the majority reporting exposure to multiple traumatic events (cited in Williams et al., 2007). Using national data, the SASH study estimated the lifetime prevalence of PTSD to be 2.3% (cited in Herman et al., 2009). By age category, lifetime prevalence estimates of PTSD were 1.8% for 18-34 year olds, 2.4% for 35-49 year olds, and 2.7% for 50-64 year olds, suggesting either perhaps greater resilience or less cumulative exposure for the more youthful cohorts. These figures are much lower than might be expected given the high level of exposure to traumatic events. One potential explanation for the low prevalence rate could be possible high levels of pre-clinical responses not severe enough to warrant a diagnosis of PTSD and as such not reflected in the findings. However, there is ongoing debate about the implications of the SASH findings and the relationship of findings from this study to other South African research findings.

Traumatic stress symptomatology has been researched in a number of different populations in South Africa, for example, amongst psychiatric populations not directly presenting with trauma-related concerns (e.g., Mkize, 2008; Van Zyl, Oosthuizen, & Seedat, 2008), primary health care patients (e.g., Carey, Stein, Zungu-Dirwayi, & Seedat, 2003; Peltzer et al., 2007), police officers (e.g., Peltzer, 2001), taxi drivers and passengers (Peltzer, 2003), private security officers (e.g., Pillay & Claase-Schutte, 2004), and university populations (Friedland, 1999; Jacobs, 2002; Peltzer, 1998). These studies suggest rates of PTSD ranging from 8% to 30%, although higher rates (for example, those between 20% and 30%) were found for personnel involved in certain professions such as police officers and journalists, reflecting possible

occupational risk for PTSD symptoms. A PTSD rate of about 20% is frequently found in studies of primary health care patients and psychiatric populations not presenting with trauma symptoms. Community based studies generally find prevalence rates of between 8% and 12% (e.g., Peltzer, 1999). For instance, Peltzer (2000b) found that 8% of an adult population in a rural community could be classified as having PTSD. Similarly 8.2% of a sample of taxi drivers and passengers were found to meet the criteria for PTSD (Peltzer, 2003). These figures are substantially higher than the estimates of PTSD found in the SASH study.

In addition, youth are frequently the focus of trauma research in South Africa, with studies indicating high levels of exposure to traumatic events and of subsequent PTSD. Rates of exposure to trauma ranging from 82% to 100% and rates of PTSD ranging from 5% to 22% have been found (Ensink, Robertson, Zissis, & Leger, 1997; Fincham, Korthals Altes, Stein, & Seedat, 2007; Peltzer, 1999; Seedat, van Nood, Vythilingum, Stein, & Kaminer, 2000; Seedat, Nyamai, Njenja, Vythilingum, & Stein, 2004; Suliman et al., 2009; Ward, Flisher, Zissis, Muller, & Lombard, 2001). The corresponding international figures usually range from 2% to 6% (Giaconia et al., 1995). The South African range of 5% to 22% (cited in Suliman et al. [2009] and Bach [2004]) is a relatively large one, indicating a great deal of variation in the findings for rates of PTSD among South African youth. This variation could possibly be accounted for by the employment of different measures and the focus on different populations and types of traumatic events across studies, as well as variation in vulnerability or protective factors, for example, different levels of social support.

Although South Africa is characterised by high rates of trauma exposure, researchers have only recently begun to study the possible impact of multiple traumas (Williams et al., 2007). Using national data from the SASH study, Williams et al. (2007) reported that the majority (55.6%) of South Africans over 18 years of age have experienced more than one traumatic event in their lifetimes. A breakdown of the data on the number of traumatic events showed that 19.2% reported experiencing only one trauma, 17.6% reported two, 12.9% reported three, 15.9% reported four or five, and 9.2% reported six or more traumatic events. Men were more likely than women to experience higher frequencies of multiple traumas, as indicated by their greater likelihood of reporting six or more traumas. Findings from the SASH study support the concept of a cumulative effect of trauma exposure. Individuals who had experienced the most traumas (6 and more) appeared to be at 5 times greater risk of high distress (although this reflected global psychological distress rather than traumatic stress specifically). The SASH study draws attention to the importance of considering traumatic events in the context of other traumas in South Africa. That

approximately a quarter of the SASH sample reported exposure to four or more traumatic events in their lifetimes points to high levels of multiple exposure to traumatic events in South Africa. These figures appear to be higher than those found internationally (e.g., Kessler et al., 1995; Resnick et al., 1993) and suggest that South Africans are more vulnerable to multiple exposure to traumatic events in their lifetimes.

With regard to traumatic stress specifically, a recent study (Suliman et al., 2009), using a sample of adolescents, found that they were more likely to experience multiple life-threatening traumas than a single trauma, and that those who experienced multiple traumas were more likely to experience more severe symptoms of PTSD than those who experienced a single event (in keeping with the international findings cited previously). Similarly, Peltzer (2003) found the number of traumatic events experienced to be associated with PTSD symptoms in an adult population. Although the number of traumas experienced may be irrelevant from a clinical perspective, since the nature of one particular traumatic event can be as devastating as multiple traumatic events, such findings do tend to confirm that individuals traumatised by multiple exposure appear to be more vulnerable to PTSD. However, South African research on multiple traumas is limited (Williams et al., 2007).

South African researchers have also investigated sex differences between in aspects of traumatic stress, producing inconsistent findings in this regard. In line with international research, Peltzer (2003) found that, although males experienced more lifetime traumatic events, females were at greater risk of developing symptoms of PTSD (e.g. Peltzer, 2003). Similarly, Suliman et al. (2009) found sex differences in keeping with international patterns with females exhibiting significantly more symptoms of PTSD. This is consistent with other South African studies showing support for significant sex differences in traumatic stress (e.g., Seedat et al., 2000). However, other South African studies have found non-significant sex differences in traumatic stress (e.g., Seedat et al., 2004). For instance, Carey et al. (2003) found that males and females were equally likely to develop PTSD. Likewise, a non-significant sex difference in the prevalence of PTSD was found in Bach's (2004) study of Venda and Northern Sotho adolescents. Thus, whereas international research tends to almost always find higher levels of traumatic stress symptomatology among women, this does not seem to be the case in South Africa where contradictory findings have emerged. Researchers do not appear to have been easily able to account for such inconsistencies, but again this may be due in part to methodological differences.

A more consistent finding is the significant relationship between exposure to violent crime and traumatic stress symptomatology (e.g., Dinan et al., 2004; Esterhuyse, Louw, & Bach, 2007; Kopel & Friedman,

1997; Peltzer, 1999, 2000b, 2000c, 2003; Seedat et al., 2000, 2004; Suliman, Kaminer, Seedat, & Stein, 2005). For instance, Suliman et al. (2009) found serious, discrete life-threatening trauma (e.g., being robbed or mugged, being physically hurt or attacked, being raped) to exert a significant influence on the frequency and intensity of PTSD symptoms. As such, these authors suggested that the high prevalence of PTSD found in their study could be because of the high rate of violent crime in South Africa. In a study of victims of violent crime, Peltzer (2000d) found a PTSD rate of 25.8%, again pointing to a relationship between exposure to violent crime and traumatic stress. Furthermore, Jacobs (2002) found a significant relationship between exposure to violent crime and traumatic stress symptomatology in a sample of first year university students. It would therefore appear that, consistent with the findings of international research (e.g., Breslau et al., 1998; Norris, 1992), South African research has supported the hypothesised relationship between exposure to violent crime and traumatic stress. Having reviewed research findings on violent crime and traumatic stress symptomatology, the following section reviews findings from research on fear of crime.

2.3 Fear of Crime

2.3.1 Fear of crime: Findings from international research

International researchers in Europe, North America and elsewhere have frequently reported widespread fear of crime across a range of populations (Beukenhorst, Huys, Oudhof, & Roduijn, 1993; European Commission, 2003; Skogan, 1990; Van Kesteren, Mayhew, & Nieuwbeerta, 2000; Widdop, 2007). For instance, findings from the European Social Survey, the British Crime Survey (BCS) and the International Crime Victim Survey (ICVS) support the view that across Europe fear of crime is: (a) common, and (b) a problem in its own right, separate from crime itself (Hale, 1996; Van Kesteren et al., 2000).

In Britain, the 2004 BCS found 16% of respondents to be 'very worried' about violent crime, 14% about car crime, and 12% about burglary (cited in Allen, Dodd, & Salisbury, 2005). The Aberystwyth Crime Survey (Koffman, 1996) found that a quarter of respondents reported feeling 'a bit /very unsafe'. Several studies undertaken in mainland Europe have demonstrated the fear of crime to be a common experience amongst those surveyed (e.g., Killias & Clerici, 2000; Mesko & Farrall, 2000). In the U.S., numerous studies have indicated that a significant proportion of the population experiences fear of crime on a frequent basis (Hale, 1996; Ditton & Farrall, 2000). For instance, the U.S. Bureau of Justice Statistics surveyed 12 cities across the U.S. and found fear of crime levels ranging from 20% to 48% amongst those surveyed (Smith, Steadman, Minton, & Townsend, 1999). Similarly, in a statewide survey of Florida,

between 20.3% and 40.4% of those surveyed reported fear of crime (figures varied according to the demographic characteristics of respondents) (Chiricos, 1997).

The ICVS found the following figures with regards to feeling either ‘very safe’ or ‘fairly safe’ at night: Africa (60%), Latin America (56%), and Asia (55%) (Alvassi del Frate & van Kesteren, 2003). These figures were well above the 23% of South Africans who reported feeling either ‘very safe’ or ‘fairly safe’ at night in the NVCS (cited in Louw, 2007). Results similarly show that South Africans feel much less safe than citizens of the European Union (EU) member countries. In Italy, Greece and Britain (the countries with the lowest safety ratings in the EU) 57% of respondents reported feeling safe walking alone at night. Denmark was at the top end of the ‘safety scale’ with 85% of respondents reporting feeling safe at night. While all these studies employed slightly different assessment measures they all investigated how safe or unsafe people feel in their local environments. Although a broad generalisation, it appears that confidence in personal safety is less high in Africa than in many other parts of the world and is low in post-Apartheid South Africa. One would need more specific information on populations and measures to be able to make clear comparisons, however, and this issue will be returned to in the subsection looking specifically at fear of crime findings in South Africa.

2.3.1.1 Sex differences in fear of crime

Findings from international research show a general pattern with females reporting higher fear of crime than males (Farrall, Gray, & Jackson, 2006; Schafer, Huebner, & Bynum, 2006; Sutton & Farrall, 2005). Studies that have found significantly higher levels of fear of crime among women than men include those of Covington and Taylor (1991), McGarrell, Giacomazzi, and Thurman (1997), Parker, Onyekwuluje, and Komanduri (1995), and Rountree (1998), to name a few. However, variation in this trend has been noted (Hale, 1996; Haynie, 1998). Women tend to report higher levels of fear of crime despite research suggesting that men are substantially more likely to become victims of crime (Sutton & Farrall, 2005). Why, despite facing less reported victimisation, women are more fearful than men is a central paradox in the fear of crime literature.

One explanation concerns the possible hidden victimisation of women. The assumption is, for example, that women face domestic and incestuous violence in the home that often goes unreported. One could argue that, if the true extent of victimisation among women were known, it would be equal to or higher than that of men, and thus might explain the correspondingly high/er levels of fear of crime among women (Pain, 1995; Painter, 1992). A second possible explanation is that the cognitive processing of women and

men is different in style. Women have been hypothesised to 'generalise' fear of crime more than men across context, in terms of time, space, and type of victimisation experience (Pain, 1995). By temporal generalisation, authors suggest that for women, victimisation occurring a relatively long time ago remains more salient in current fear of crime. As for generalisation in terms of space, victimisation in private places is argued to affect fear of violent crime in public spaces (Pain, 1993). Another proposed tendency is that women generalise across types of victimisation experience (Warr, 1984). For instance, if a woman experiences burglary in her home, she will be more fearful of assault in her home. Although hypothesising that women's greater fearfulness pertains to a cognitive style involving more generalisation, the authors do not appear to address what might cause this difference in cognitive processing.

A third possible explanation that has been proposed for the higher levels of fear of crime among women is that women are more vulnerable to victimisation (Pain, 1995; Painter, 1992). One could argue that women are not only more physically vulnerable than men, and perhaps less capable of defending themselves (Killias, 1990), but that they are also more sensitive to risk in their environments (Bannister, 1993), and are socialised to be highly sensitive to their social and physical vulnerabilities (Goodey, 1997; Madriz, 1997; Scott, 2003; Stanko, 1995). It has been suggested that women feel more vulnerable particularly because they are susceptible to sexual assault, including rape, and because of frequent experiences of various forms of harassment, which serve to remind women of their susceptibility to attack. From this point of view, higher levels of fear of crime reported by women are hypothesised to reflect a broader concern about levels of threat exemplified in sexual assault and harassment (Ferraro, 1995; Pain, 2001) which some authors view as an extension of a form of social control and gender oppression (Goodey, 1997; Madriz, 1997; Pain, 2001; Stanko, 1990). The fact that women are at so much higher risk of becoming victims of sex crimes is hypothesised to generate an ever-present fear of sexual victimisation (Stanko, 1990). Fear of sexual assault may serve as a 'master offense' for women, influencing their fear of crime and their risk assessment of other forms of victimisation (Ferraro, 1996). For instance, whereas men may fear having property stolen in a burglary, women may fear not only being robbed but also being sexually assaulted by a burglar (Warr, 1984). Recent research has provided empirical support for the 'shadow hypothesis' (Ferraro, 1995, 1996; Fisher & Sloan, 2003; May, 2001). In addition, gendered child-care roles may compel women to feel that they must defend their children (Gilchrist, Bannister, Ditton, & Farrall, 1998). Smith (1989) proposed that women's responsibility for and concern for their children further fuels their fear of crime. However, given that men are also socialised to protect women and children from harm, this latter explanation needs to be treated with some caution. Nevertheless, it is generally the case that women are entrusted more pervasively with the care of children and therefore may

feel this responsibility more acutely, in turn affecting their vigilance around threats of harm. Thus, one form of the vulnerability argument is that women perceive risk more strongly and frequently than men, and another form of the argument is that women react to the same levels of risk with more fear than men do (they are more sensitive to risk) (Smith & Torstensson, 1997). Furthermore, there might be a 'double interaction effect' (Smith & Torstensson, 1997): gender and environment could interact to enhance risk perception, and gender and risk perception could interact to enhance fear of crime.

A fourth possible explanation for sex differences in fear of crime is the argument that men tend to 'discount' (Agnew, 1985) their risk of victimisation (Goodey, 1994; Stanko & Hobdell, 1993). For instance, findings from a study by Smith and Torstensson (1997) suggested that men are less accurate in their own risk assessments and accordingly experience lower levels of fear. Therefore, differential levels of fear of crime among men and women may in part be due to a greater tendency of men to neutralise fear. Men are socialised to place relatively high value on their physical abilities, including fighting, taking punches, and the ability to flee, and are also socialised into a protector role relative to women and children (as referred to previously). Therefore, it may be more difficult for men to admit to themselves that they are fearful (Arch, 1993; Chatterbaugh, 1990; Messerschmidt, 1993). In brief, men are taught to deny their own fear or even to think that they are invulnerable or immune from harm (male machismo). Thus, they report feeling less fearful in the world on assessment measures such as those tapping into fear of crime or sense of personal safety.

These various explanations reflect the assumption that differential levels of fear of crime among men and women are veridical; that is the differences are genuine, rather than a *systematic* tendency for men to suppress fear of crime and/or for women to exaggerate fear of crime. In contrast to these explanations, some authors have proposed that men do not sincerely report their levels of fear of crime (Crawford, Jones, Woodhouse, & Young, 1990; Goodey, 1997). For instance, Sutton and Farrall (2005) found that men showed a pattern of responses in which fear of crime was inversely related to socially desirable responding. Statistical analyses suggested that this tendency to provide socially desirable responses rather than totally candid responses was possibly responsible for the observed tendency of men to report lower levels of fear of crime. Thus, differences in reporting may represent differences in self-representation rather than in the experience of fearfulness. These findings suggest that men and women are differentially affected by social pressures to downplay fears about crime. Social pressures associated with masculine gender roles may serve to prohibit men from reporting fear of crime (Sutton & Farrall, 2005). Therefore,

men may be less willing than women to report their fear of crime, which could, in part, explain the difference between men and women on fear of crime measures.

Overall, however, it appears that a range of factors may contribute to gendered patterns in reporting of fear of crime, many of these related to aspects of gender socialisation. It should also be noted that gender-related findings need to be conceptualised in terms of cultural and historical features. It was of interest in this study to examine whether such gendered trends in fear of crime would hold true for a contemporary South African population. A further feature that deserves exploration in terms of fear of crime is the role played by actual event exposure.

2.3.1.2 Relationship between exposure to violent crime and fear of crime

A number of different theoretical perspectives have been proposed to account for fear of crime, including (Farrall, Gray, & Jackson, 2007): (i) The victimisation thesis; (ii) Imagined victimisation and the psychology of risk; (iii) Disorder, cohesion and collective efficacy – environmental perception; and (iv) Structural change and macro-level influences on fear. The victimisation thesis approach to explaining fear of crime proposes that direct personal experience of victimisation is key to understanding why some people report fear of crime, while others do not (e.g., Lewis & Salem, 1980). From this perspective, fear of crime is viewed as partly the product of victimisation. The more actual direct victimisation experienced the more fear of crime the individual will experience. However, in reviewing the fear of crime literature, there is a great deal of contestation regarding the presence of a crime-fear relationship. On the one hand, there is some evidence to suggest that direct victimisation experience is related to fear of certain types of crime (e.g., Covington & Taylor, 1991; Hale, 1996; Hough, 1995; Kury & Ferdinand, 1998; McCoy, Woolredge, Cullen, Dubeck, & Browning, 1996; Rountree, 1998). In this connection, McConnell (1989) proposed the concept ‘anticipated victimisation’ in relation to fear of crime. Perhaps a similar concept to this is ‘traumatic expectation’ (Pynoos, Steinberg, & Goenjian, 1996), the proposal that previous exposure to trauma leads to a fear of the recurrence of the traumatic event.

In a meta-analysis of 25 empirical studies, Hagan (1989) reported that 11 studies found a positive relationship between victimisation and fear of crime, but 14 studies found no significant relationship. This suggests contradictory findings for the relationship between exposure to violent crime and fear of crime. However, a number of studies have found this relationship to be significant. For instance, Skogan (1987) conducted a longitudinal study using a sample of 1,738 residents in Newark and Houston (areas with relatively high levels of criminality) and found that, overall, direct victims of interpersonal crimes

reported greater fear of crime. Skogan found that persons who were victims "...a) think there is more crime around, b) are more worried about being a victim, and c) do things to protect themselves" (p.152). Newhart (1991) found the correlation between the victim's experience of violent crime and the fear of crime to be small but highly significant. Smith and Hill (1991), controlling for social background characteristics, found that an overall measure of victimisation experiences was related to fear of crime. Furthermore, both direct and indirect exposure to violent crime has been found to be associated with a fear of crime (Joseph, 1997; Rountree, 1996).

It would seem that fear of crime is particularly associated with exposure to interpersonal and violent crime as opposed to exposure to other types of crime. For instance, a study by Rountree (1998) disentangled the effects of violent crime versus property crime on the fear of crime, separated into fear of violence and fear of property crime. This researcher found that violent victimisation increased both fear of violence and fear of property crime, but that property crime victimisation increased fear of property crime only. Findings from this study suggested that exposure to violent crime, given its confrontational nature, is more traumatic creating a greater 'spillover effect' in that victims of violent crime may begin to fear many types of criminal victimisation.

It appears that the original concept of a direct linear relationship between exposure to violent crime and fear of crime is too simple. There is an array of micro- and macro- factors that influence this relationship (Rountree, 1998). For instance, on the micro-level (i.e., the individual level), the victim's fear of crime depends mainly but not entirely, on the intensity (frequency and severity) of the victimisation (Kury & Ferdinand, 1998). Also, Warr (1987) indicated that fear of crime is dependent on the relationship between the perceived seriousness of the crime and the perceived risk of being exposed to the crime. In turn, specific individuals can be more sensitive to risk according to demographic characteristics (Warr, 1987), for example, sex and age. In addition, fear of crime is also significantly dependent on the victim's personality (Kury & Ferdinand, 1998). On the macro-level, increased fear of crime has been associated with residing in a city, increased city size, and unfamiliarity with others in the neighbourhood (Joseph, 1997). Residing in a city and increased city size are associated with higher crime rates, implying that residing in areas where crime rates are higher leads to greater fear of crime. In interpreting the BCS of 1984 in connection to the relationship between victimisation and fear of crime, Box, Hale, and Andrews (1988) pointed to the importance of environmental variables for understanding the victim's experience and, consequently, their fear of crime. If environmental variables were supportive (e.g., a sense of

responsibility in the neighbourhood), the victim's experience was resolved more easily with less ensuing fear of crime.

A study by Kury and Ferdinand (1998) investigated whether victims of crime had more fear of crime than non-victims, hypothesising moderate differences. The authors tested this hypothesis using four data sets: Data from 21 countries that participated in at least one International Crime Survey (ICS), ICS 1992 results for the major cities of 13 different countries, and findings from two major German studies. Further, they took into account a variety of contextual variables (both micro- and macro-level) such as age, gender, income, and community. The results of the study provided support for the victimisation perspective: fear of crime was greater among victims of crime than non-victims.

In sum, although it is often assumed that exposure to violent crime and fear of crime are related, consensus has yet to be reached on the specific nature and strength of the relationship. Micro, macro, and multilevel research findings provide varying degrees of support for a significant positive relationship between exposure to violent crime and fear of crime. However, there are inconsistencies across studies regarding the significance and even the direction of the relationship (Kury & Ferdinand, 1998). These inconsistencies may in part be due to a lack of specificity in testing the effects of exposure to violent crime on fear of crime and to cross-study differences in the conceptualisation and operationalisation of fear of crime (Rountree, 1998). Again, it will be interesting to investigate whether a link between victimisation or exposure to violent crime and fear of crime holds for a contemporary South African sample.

2.3.2 Fear of crime: Findings from South African research

Given widespread crime and violence in South Africa, the high prevalence of fear of crime is unsurprising. For instance, the South African Social Attitudes Survey (SASAS) of 2006 (cited in Davids & wa Kivilu, 2008), found that, nationally, more than one third (34%) of respondents felt 'unsafe' or 'very unsafe' on most days. In total, 33.2% of respondents felt 'a bit unsafe' to 'very unsafe' walking alone in their area during the day. Of great concern is the extent to which South Africans fear for their safety in their own homes. In 2004, more than half (57%) of the South Africans who were surveyed reported fearing crime in their own homes in the preceding year (Afrobarometer Briefing 1, 2005). This figure was higher than that found for most other African countries surveyed: 34% of those interviewed by Afrobarometer in 15 countries between June 2002 and November 2003 reported fear of being a victim of crime in their own homes. On a general level, statistically, South Africans are significantly more fearful

than people in most other parts of the world, including the developed countries of Western Europe, and countries in Latin America and other parts of Africa (Roberts, 2008).

What is interesting is the finding that although crime levels have declined in recent years, fear of crime has increased (Burton et al., 2004). According to the NVCS, while the majority of respondents felt “very safe” walking alone in their areas of residence during the day in 1998, by 2003 most respondents felt only ‘fairly safe’ (cited in Louw, 2007; Table 1). Furthermore, more than double the percentage of respondents in 2003 than in 1998 felt ‘very unsafe’ walking in their areas after dark (Burton et al., 2004). At first glance, this trend appears to be counterintuitive, however, when unpacked it is unsurprising. Crime levels began to rise in 1997 which would account for why, only one year later, South Africans were still feeling relatively safe. Following this was a period of almost six years of consistent increases in overall rates of crime. As such, although crime started to stabilise by 2003, many more people had experience of crime by 2003 than in 1998. Furthermore, in light of South Africa’s violent crime problem, it is also likely that the fear of violence contributes to feelings of unsafety, regardless of whether or not the volume of crime is changing. Thus, a number of factors such as increasing public awareness of other people’s victimisation and the degree of violence that characterises some criminality may explain this trend.

Table 1

How safe people felt walking alone in their areas of residence, 1998 and 2003, Statistics SA and NCVS (Louw, 2007)

	During the day (%)		After dark (%)	
	1998	2003	1998	2003
Very safe	60	25	32	10
Fairly safe	25	60	24	19
A bit unsafe	9	10	19	19
Very unsafe	6	5	25	58

Five of the top six crimes that people reported being most afraid of all involved the likely exercise of violence, with murder topping the list (25%), followed by house breaking (23%), sexual assault or rape (19%), robbery (13%), and assault (5%) (Burton et al., 2004). (Similar results were found in a 2004 national perception survey conducted for the National Prosecuting Authority [Louw, 2005].) This fear of

violent crime in particular was evident despite the finding that the risk of becoming a victim of property crime was greater than that of becoming a victim of violent crime. People were also more inclined to think that property crime had increased more than violent crime (Burton et al., 2004) but this did not appear to alleviate their overall fear of crime. It may be that more sensational crimes such as rape and murder have greater bearing on perceptions, and are more intensively covered in the media (Mistry, 2004). Extensive and often gruesome media reports concerning the country's violent crime problem enforce the general public's fear of crime on a daily basis (Pretorius, 2008). It is also understandable that the most 'frightening' forms of crime are those that involve potential injury, degradation and/or threat of loss of life – even if crimes of this nature are much less pervasive than property crimes. Fear of crime is further enhanced by crime that appears to be random and unpredictable (as seems to be the case to some extent in South Africa) which creates feelings of helplessness and fatalism (Prinsloo, 2006).

The extent to which particular crimes are discussed in a social context constitutes an indicator of public concern about violent crime. Although the NVCS found burglary to be the crime people most likely talked about in the two weeks preceding the survey (24% of respondents), this was followed by robbery (16%), murder (15%), and sexual assault/rape (12%) (Burton et al., 2004). That three of the four crimes that South Africans feared most and frequently discussed were violent, points to the significance of violence in understanding South Africans' fear of crime. Furthermore, burglary, although not necessarily considered a 'violent crime', may hold a unique meaning for South Africans in that many types of violent crimes such as rape, murder, assault, and torture, may originate from initial burglaries (Prinsloo, 2006). In addition, there is a perception among some people that the majority of South Africans either know someone personally or have heard of someone in their working or living environments who has been the victim of violent crime (Pretorius, 2008). A number of researchers contend that these social networks are responsible for the diffusion of fear of crime (Hope & Sparks, 2000; Romer, Jamieson, & Aday, 2003).

Furthermore, there is little doubt that fear of crime is related to public perceptions of the efficacy of the police and courts (Louw, 2007). Generally, there appears to be a public lack of confidence in the SAPS (Newham, 2002), which may contribute to fear of crime and exacerbate anxiety levels. Fear of crime might also be further influenced by perceptions of government performance in terms of fighting crime. Despite the fact that official crime statistics are going down, in a recent study it was observed that two-thirds of all South Africans believe that government's ability to fight crime is at its lowest since 2003 (Harris & Radaelli, 2007). Furthermore, in the same study, three in every five South Africans (59%)

perceived the crime rate to be on the increase, which again may contribute to fear of crime (Harris & Radaelli, 2007). Pretorius (2008) argues that:

The negative attitude towards and commentary on the lack of protection against crime that the state and the police are supposed to give the citizens of the country reflect the perceptions of people that they are defenceless against crime and that the risk to become a victim is ever-present. (p.82)

In sum, it would seem that a number of factors might serve to heighten fear of crime in South Africa, factors such as an increasing awareness of other people's victimisation, the high levels of violence that characterise some criminality, extensive and often gruesome media reports concerning the country's violent crime problem, the discussion of crime in social contexts, and the public's lack of confidence in the SAPS, courts, and government's ability to fight crime. In this kind of context, South Africans may experience high fear of crime without necessarily being directly exposed to violent crime. Accordingly, the present study adopts the imagined victimisation and psychology of risk model of fear of crime (as mentioned previously in section 2.3.1.2; Farrall et al., 2007) as the main theoretical perspective on fear of crime framing the study.

The imagined victimisation and psychology of risk model states that people worry when they can imagine themselves becoming a victim (Farrall et al., 2007). Knowing others who have been victimised and hearing about events related to violent crime are thought to heighten perceptions of the risk of victimisation and therefore increase levels of fear of crime (Covington & Taylor, 1991; Ferraro, 1995; Hough, 1995; LaGrange, Ferraro, & Supancic, 1992). While there has been some evidence that *direct* victimisation is linked to fear of crime (e.g., Kury & Ferdinand, 1998; Rountree, 1998), other theorists and researchers propose that *indirect* exposure to accounts of crime may play a more influential role in anxieties about victimisation (e.g., Box et al., 1988; Hale, 1996). Thus, the fantasy of becoming a victim (like others one has heard of) may become as anxiety provoking as having been a direct victim. The apprehension of potential victimisation leads to elevated anxiety and fear of crime levels. This suggests the importance of a model of fear of crime that is based on imagined victimisation and the psychology of risk, which may be particularly relevant for the South African context in that there are high levels of indirect exposure to violent crime in addition to direct exposure.

This theoretical context may also help to account for the higher fear of crime reported by women, despite lower levels of exposure to violent crime as compared to men. Consistent with international findings,

women in South Africa have been found to report significantly higher levels of fear of crime than men (van Velzen, 1998). The SASAS of 2006 found that more women (39.1%) than men (28%) reported feeling 'unsafe' or 'very unsafe' on most days (cited in Davids & wa Kivilu, 2008). The survey also found that more women (38%) than men (28%) reported feeling 'a bit unsafe' to 'very unsafe' walking alone in their area during the day. Similarly, the ICVS, in which South Africa participated in 2004, found significant sex differences in the fear of crime levels of South Africans (cited in Prinsloo, 2006). With regard to feelings of safety when walking alone in their areas at night, 58% of female respondents expressed fear of crime compared to 42% of male respondents. With regard to feelings of safety when at home after dark, 63% of female respondents expressed fear of crime compared to 37% of the male respondents. It is interesting to note that more women reported fear of crime when at home at night compared to being outside in the dark. Intimate partner violence could possibly explain this finding in part. However, it is interesting to note the high percentage of women who feel fearful in their homes and the high sex difference in this regard.

In a thorough investigation of sex differences in fear of crime in a sample of 271 adolescents in Johannesburg, Mendelsohn (2002) found that females reported a significantly higher level of fear of crime than males. The researcher also investigated sex differences in fear of specific crimes. Females' and males' fear differed the most for rape, with females far more fearful of rape than males, as would be anticipated. The second largest sex difference in fear of specific crimes was for receiving an obscene phone call. The author offered a possible explanation of this via Ferraro's conceptualisation of "*the shadow of sexual assault*" (1995, p.86). Ferraro argued that rape creates a shadow over other crimes, so that part of the fear of other crimes is attributable to a fear that these crimes will lead to rape or sexual violation. The third and fourth largest sex differences were for assault by a stranger and for assault by a known perpetrator, respectively. Fear was not found to significantly differ by sex for the following specific crimes: hijacking, car theft, fraud, and being sold food that has been poisoned. In attempting to explain the lack of a sex difference in the fear of being hijacked, the author suggested that a possible fear of murder may overshadow being hijacked in both female and male subjects. Thus, in this particular South African study it appeared that sex differences in the fear of specific crimes were restricted to particular kinds of criminal threats, both those associated with sexual violation and with the exercise of physical strength, as might be anticipated.

Finally, in South Africa, the link between exposure to violent crime and fear of crime has been proposed and acknowledged by a number of authors (e.g., Gilbert, 1996; Hamber & Lewis, 1997; Hoffman &

McKendrick, 1990; Louw, 2007). Exposure to violent crime has been found to contribute substantially towards fear of crime. Prinsloo (2006), using South African data from the ICVS in which South Africa participated in 2004, reported that exposure to interpersonal crime heightened fear of crime. The highest levels of fear of crime ('very unsafe') were found for those respondents who had most recently experienced victimisation in the form of burglary and sexual offences. Van Velzen (1998) found persons who had been exposed to violent crime to be more fearful of crime than those who had not been exposed to violent crime. Harris and Radaelli (2007) found that persons exposed to crime perceived crime to be more prevalent and out of control, making them more sensitive to crime and heightening their sense of vulnerability. In a qualitative research project of 39 participants, fear of crime was observed to be heightened following direct exposure to armed robbery or violent assault (Pretorius, 2008).

2.4 Closing Remarks

The high levels of violent crime that characterise South Africa have important implications for levels of traumatisation and fear of crime. Although the SASH study found a relatively low prevalence of PTSD, other community based and epidemiological studies have found significantly higher levels of traumatic stress symptomatology in South Africa. Furthermore, despite decreasing crime rates in recent years (as indicated by both police statistics and national victimisation surveys), fear of crime has increased. South Africans have been found to be significantly more fearful than people in most other parts of the world, including the developed countries of Western Europe, as well as countries in Latin America and some in Africa (i.e., both developed and developing countries). With this in mind, the present study aims to investigate the relationships between exposure to violent crime (including direct and indirect exposure), traumatic stress symptomatology, and fear of crime. Given that South Africans have been found to frequently experience multiple rather than single traumatic events, the role of multiple exposures to violent crime in levels of traumatic stress symptomatology and fear of crime is of particular interest. Also of special interest are sex differences, given the international trends identified and the differing findings for South African men and women in terms of exposure to violent crime, traumatic stress symptomatology and fear of crime. The present study was thus designed to look at a combination of features related to the possible impact of exposure to violent crime amongst a group of young South Africans in 2009.

CHAPTER 3

METHOD

3.1 Aim of the Study

The central aim of the study was to investigate the relationships between Exposure to Violent Crime (EVC), Traumatic Stress Symptomatology (TSS), and Fear of Crime (FC). A secondary aim was to investigate whether the frequency of EVC had an effect on levels of TSS and FC, respectively. An additional secondary aim was the investigation of potential sex differences in EVC, TSS, and FC.

3.2 Research Objectives

The research objectives were framed as follows:

- i. To investigate the levels and patterns of EVC, TSS, and FC. For EVC, this included a particular focus on the perceived severity of EVC and on the frequency of EVC;
- ii. To explore the relationship between EVC and TSS;
- iii. To explore the relationship between EVC and FC;
- iv. To explore the relationship between FC and TSS;
- v. To investigate whether the frequency of EVC has a significant effect on levels of TSS and FC, respectively; and
- vi. To investigate whether there were significant sex differences in EVC, TSS, and FC.

3.3 Research Design

The present study adopted a quantitative, survey-type approach. The research was non-experimental in nature, meaning the researcher had direct no control over the variables (McBurney, 1994). The research design was cross-sectional, as data collection occurred at a single point in time.

3.4 Sample

First-year health science students enrolled in a psychology course at the University of the Witwatersrand (WITS) formed the sample for the study. Thus, a non-probability sample was used. A non-probability sampling procedure is “any sampling procedure in which some participants have a higher probability of being selected than other participants” (Graziano & Raulin, 2004, p.421). These particular students were selected because they comprised a large class (over 500 students) and the class appeared to have fairly even numbers of male and female students (adequate numbers of both were required in order to run analyses for sex differences). (Furthermore, for a WITS master’s thesis, Friedland [1999] also collected

data from health science students in respect of exposure to violent crime and traumatic stress, making it possible to directly compare the results of the present study to those results found 10 years ago [i.e., a longitudinal comparison]. This comparative dimension was viewed as peripheral to the study reported on in this report, but provided some incentive for the class selection.)

The present researcher aimed to collect data from at least 150 subjects so as to ensure adequate statistical power in order to detect significant differences between groups in the sample, for example, between male and female subjects. Statistical power is dependent on the size of groups (whether there is enough data in order to detect a significant effect assuming that this effect exists) and on the size of the effect (Field, 2005). Permission to access subjects was obtained from the course coordinator. Of the 216 usable questionnaires collected, 182 questionnaires had no missing data while 34 questionnaires had missing data. However, the latter were still usable in respect of answers for some of the variables. Therefore, the total sample size in the present study was 216 subjects. Where there was data missing for any one variable this will be indicated ($n = x$) in the Results chapter. The sample size was considered adequate to run the statistical procedures intended.

3.4.1 Demographic profile of the sample (see Appendix A)

The mean age of the sample was 18.51 years. Of the sample, 76.85% were female ($n = 166$) and 23.15% were male ($n = 50$). Approximately one-quarter of the sample lived in university residence (26.51%; $n = 57$), whereas three-quarters of the sample did not (73.49%; $n = 158$). Subjects who did not live in university residence reported their residential area. Approximately half reported their residence as being in inner-city Johannesburg (52.14% of subjects not living in university residence; $n = 73$). (Please see Appendix B for coding categories for residential areas.) However, the university residences are also essentially located in inner-city Johannesburg, thus, one could consider approximately two-thirds of the total sample as living in inner-city Johannesburg. The other half of subjects not living in university residence lived in the greater area of Johannesburg (areas of Johannesburg surrounding inner-city Johannesburg). Table 2 depicts the various residential areas reported by subjects not living in university residence (ordered here according to decreasing frequency). Thus, in terms of exposure to violent crime and fear of crime (and behaviours associated with this) the geographical location of the majority of subjects was central Johannesburg.

Table 2

Residential Area by Frequency Count

Residential area	Frequency count	Subjects not in university residence who indicated their residential area (%)
Johannesburg, inner-city	73	52.14
Randburg	11	7.86
Benoni / Boksburg	8	5.71
Germiston / Bedfordview	7	5.00
Roodepoort	6	4.29
Northcliff	6	4.29
Sandton	6	4.29
Fourways / Bryanston / Douglasdale	6	4.29
Johannesburg South	4	2.86
Alberton	3	2.14
Soweto	3	2.14
Lenasia	3	2.14
Midrand	2	1.43
Centurion	1	0.71
Vosloorus	1	0.71
Total	140	100 (%)

Regarding duration of residence in residential area, 54.36% of the sample had lived in their current residential area or university residence for 1 year or less (which is not surprising given that the sample was comprised of first-year students). Of the total sample: 15.2% had lived in their current residential area for more than 1 year but less than 5 years; 8.19% had lived in their current residential area for between 6 and 10 years; and 20.47% had lived in their current residential area for between 11 and 19 years. It is thus notable that just over half the sample was living in an environment that was not deeply familiar to them.

3.5 Measures

3.5.1 Demographic questionnaire

A brief demographic questionnaire (Appendix A) was used to provide biographical information on subjects, including their age, sex, university residence (yes/no), residential area, and duration of residence

in current residential area. This provided useful descriptive data. It was important for subjects to indicate their sex, given the study's secondary aim of exploring sex differences.

3.5.2 Measuring Exposure to Violent Crime

EVC was assessed using a self-generated exposure measure (see Appendix C). This exposure measure tapped both the frequency and perceived severity of subject's EVC. Both the frequency and perceived severity of EVC were considered as important in potentially influencing the relationship between EVC and TSS, and the relationship between EVC and FC. For the purposes of this study, subjects were asked to report on their EVC for the preceding 12 months only.

The initial statement of the measure to which subjects were asked to respond, "In the past 12 months, have you been exposed to violent crime in which you experienced, witnessed, *or* were confronted with an event or events that involved actual or threatened death or serious injury, or a threat of harm towards yourself or others?", corresponded with the DSM-IV-TR (APA, 2000) definition of a stressful event, applied in this case specifically to EVC. Subjects were asked to answer "yes" or "no" to this item, and if "yes" to provide a brief description of all such events in the past 12 months. Examples of violent crime were also given to assist subjects: "This may include, but is not limited to, attempted murder, physical assault, rape or sexual assault, armed robbery, burglary, mugging, car hijacking, and motor vehicle theft" (in keeping with Friedland, 1999). The perceived severity of the criminal events as reported by subjects was then measured using a Likert scale.

An additional item was added at the end of the measure, asking each subject whether he or she had been directly exposed to non-crime trauma in the preceding 12 months. This category could include, but was not limited to, bereavement ('natural' death of a loved one), HIV or serious illness, motor vehicle accidents, and other accidents. This item was included with the intention of controlling for such exposure as a possible confounding variable in exploring the impact of EVC in the sample. Given that the present study focused specifically on EVC as a traumatic stressor, exposure to non-crime trauma was taken into account when conducting statistical analyses, for instance, the possible interaction effect between EVC and non-crime trauma on TSS and on FC was investigated. Initially, subjects exposed to non-crime trauma in the preceding 12 months were to be excluded from statistical analyses. However, a large portion of the sample reported exposure to non-crime trauma (58.33% as reported in the Results chapter) and so rather than excluding these subjects, statistical analyses were used to investigate this variable and how it might interact with the other variables in the study.

3.5.3 Measuring Traumatic Stress Symptomatology: IES-R

3.5.3.1 Development of the IES-R

The original Impact of Event Scale was developed by Horowitz, Wilner, and Alvarez (1979) as a measure of subjective stress related to a specific event. Specifically, it was intended to measure the level of symptomatic response to specific traumatic stressors as this had manifested in the previous 7 days (at the time of answering the questions on the scale). Based on his views of the response to traumatic stressors, Horowitz (1976) identified responses in the areas of intrusion and avoidance as the primary domains of measurement.

The Impact of Event Scale was of value in that the measure could be anchored to any specific life event, and in that it tapped two of the most commonly reported specific categories of experiences in response to traumatic life events: intrusive symptoms (including intrusive thoughts, images or feelings and nightmares) and avoidance symptoms (including attempts to avoid or dampen experiences associated with the traumatic event and the associated numbing of responsiveness). It is important to note that the Impact of Event Scale predated the publication of the DSM-III and the official classification of “post traumatic stress disorder”, suggesting that the Impact of Event Scale and the data collected on it provided some of the evidence that supported the case for the inclusion of PTSD as a diagnostic entity (Weiss & Marmar, 1997). The Impact of Event Scale tapped the B and C criteria of the diagnosis of PTSD: the signs and symptoms of intrusive cognitions and affects together with or alternating with avoidance, blocking of images and thoughts, or denial (Weiss & Marmar, 1997).

However, the complete assessment of the response to traumatic events necessitated inclusion of the domain of hyperarousal symptoms, including irritability and anger, difficulty concentrating, hypervigilance, jumpiness and exaggerated startle response, and psychophysiological arousal upon exposure to reminders (Weiss & Marmar, 1997). For the purposes of a longitudinal study on the responses of emergency services personnel to traumatic events (Marmar, Weiss, Metzler, Ronfeldt, & Foreman, 1996; Weiss, Marmar, Metzler, & Ronfeldt, 1995), Weiss and Marmar (1997) developed a set of seven additional items, six of which tap the category of hyperarousal, and one that parallels the DSM-IV diagnostic criterion of intrusion manifested in the dissociative-like reexperiencing of flashback-like experiences. These additional items were randomly interspersed with the existing seven intrusion and eight avoidance items of the original Impact of Event Scale. The end product was the Impact of Event Scale-Revised (IES-R), comprising the total 22 items.

The IES-R thus measures the three primary symptoms of PTSD, namely intrusion, avoidance, and hyperarousal. A one week time frame to which instructions refer in measuring symptomatic response is utilised. In other words, symptoms assessed are those reportedly experienced in the preceding seven days. Unlike the original Impact of Event Scale which measured the frequency of symptoms, the response format of the IES-R measures the degree of distress in relation to the symptom. This is done using a Likert scale (see Appendix D).

3.5.3.2 Psychometric properties

The IES-R was initially tested on two groups of subjects (Marmar et al., 1996; Weiss et al., 1995) in two longitudinal studies on the responses of emergency services personnel to traumatic events. The results of these studies indicate good reliability and validity for the IES-R. For example, pertaining to internal consistency, Weiss et al. (1995) reported alpha coefficients at Wave 1 (6 weeks after the traumatic event) of .91 for the Intrusion subscale, .84 for the Avoidance subscale, and .90 for the Hyperarousal subscale. The Wave 2 data (approximately 6 months after Wave1 data collection) from the same study indicated alpha coefficients of .92 for the Intrusion subscale, .85 for the Avoidance subscale, and .89 for the Hyperarousal subscale. In none of the 6 sets of data was a single item not positively correlated with its assigned subscale (the same was found in the Marmar et al. [1995] study). Weiss et al. (1995) also reported good test-retest correlation coefficients of .94 for the Intrusion subscale, .89 for the Avoidance subscale, and .92 for the Hyperarousal subscale.

3.5.3.3 Use in the South African context

The IES-R has been used with a variety of different populations in South Africa, for example, urban communities (Peltzer, 2000c), children (Gwandure, 2007), police officers (Kassen, 2002), firefighters (Viedge, 2001), emergency care practitioners (Davidson, 2001), correctional officers (Mostert, 2001), and journalists (Marais & Stuart, 2005). Findings from these studies suggest that the IES-R is appropriate for use in the South African context.

3.5.4 Measuring Fear of Crime

The FC measure was comprised of 6 items rated on a 4–point Likert scale (see Appendix E). The present researcher added one additional item to the 5-item measure generated by von Klemperer (2009) for a study on fear of crime based on scale measures described in the literature and on other survey based studies. Von Klemperer (2009) found the 5-item measure to have adequate validity in a South African study. The additional item, namely “How safe do you feel walking and/or driving alone in your

neighbourhood during the day?”, was incorporated from the measure used in the 2003 NVCS conducted in South Africa (ISS, 2004). Their measure used a range of items on perceived personal safety to assess fear of crime, and this is the practice adopted in this study.

The majority of research measuring ‘fear of crime’ utilises survey instruments very similar to those used to assess ‘perceived personal safety’ and the two constructs appear to use different terminology to describe the same phenomenon (von Klemperer, 2009). Although these measures are employed to assess ‘fear of crime’, they are generally referred to as measures of ‘personal safety’. The construction of von Klemperer’s (2009) 5-item measure was based on an analysis and critique of the literature on the measurement of both fear of crime and of perceptions of personal safety. Thus, the present study examined perceptions of personal safety as they specifically pertain to fear of crime. It will be apparent that the measure is a largely descriptive one with clear face and construct validity (see Appendix E).

3.6 Procedure

Data collection was conducted in formal group sessions in a lecture hall context and was supervised by the researcher. In light of the large size of the class (over 500 students), the students had been separated into two groups for the purposes of lectures. Data collection was conducted with each group in a single session – therefore, data collection occurred on two consecutive afternoons. The researcher introduced the study by briefly explaining the research interest in the effects of crime-related trauma in South Africa. Each subject was provided with the Subject Information Sheet (see Appendix F) and the self-report demographic questionnaire, the measure for EVC, the IES-R, and the FC measure. It was pointed out that participation was voluntary and that subjects could choose to discontinue completion of the questionnaires at any time if they wished to do so. Names of subjects were not required, thereby assuring confidentiality. The telephone numbers of both the Counselling and Careers Development Unit (CCDU) at WITS and Lifeline were pointed out to subjects, in the event that they became more sensitive to their own levels of traumatisation during the completion of the questionnaires and felt the need for some psychological support. The researcher’s telephone number was also made available in case any of the subjects felt the need for follow up. Subjects took approximately 15 to 20 minutes to complete the questionnaires. Completed questionnaires were passed down the benches to the aisles where they were packed into boxes. Completion of the questionnaires was deemed as consent. Subjects were thanked for their participation and were informed that the results of the study would be made available to them in summary form.

3.7 Data Analysis

Descriptive statistics were initially used in computing the following: demographic information; EVC; type, frequency, and perceived severity of criminal events exposed to; exposure to non-crime trauma; scores on the IES-R (including subscale scores); and scores on the FC measure, including an item-analysis. Tabulations and graphs were used for clarity via visual representation. Cronbach alpha coefficients were computed for the FC measure and the IES-R, as well as the subscales of the IES-R, in order to assess the internal reliability of these measures.

Pearson's correlations were used to measure the relationships between the scores for perceived severity of EVC, the IES-R (including each subscale), and the FC measure. The correlation coefficient indicates the strength of the relationship between two variables and the direction (positive or negative) of this relationship (Field, 2005). Standard assessments of magnitude of effect size were used (i.e., $r = 0.1$, small effect; $r = 0.3$, medium effect; $r = 0.5$, large effect) (Field, 2005).

T-tests were employed in order to assess whether scores on the IES-R and the FC measure were significantly different for subjects who reported EVC compared to subjects who reported no EVC. T-tests were also used to assess whether sex differences in the scores on the IES-R and the FC measure were significant. Pearson's Chi-Square was used to assess whether EVC (yes/no) varied significantly by subject sex and whether reporting of non-crime trauma (yes/no) varied significantly by subject sex.

One-way ANOVA was used to investigate the effect of the frequency of EVC on the scores on the IES-R and on the FC measure. Post-hoc t-tests were also used to further examine differences between subjects who reported no EVC, those who reported single EVC, and those who reported multiple EVC (2 or more criminal events) in terms of their scores on the IES-R and on the FC measure. Two-way ANOVA was used to investigate the potential interaction effect of EVC (yes/no) and exposure to non-crime trauma (yes/no) on the scores on the IES-R and on the FC measure. Post-hoc t-tests were also used to further examine differences between subjects who reported both EVC and exposure to non-crime trauma (Both Exposures Group), EVC only (EVC Only group), exposure to non-crime trauma only (Non-crime Trauma Only group), and no exposure to any kind of trauma (No Exposure group) in terms of their scores on the IES-R and on the FC measure.

Based on the initial sets of statistical analyses some additional analyses were conducted to explore possible further relationships between variables. These analyses included two-way ANOVA which was

used to test the potential interaction effect of subject sex and EVC (yes/no) on the scores on the IES-R and on the FC measure. Since these interactions were not statistically significant they are reported in Appendix G for informational purposes but have not been included in the main body of the research report.

Having outlined the method of the study the results are presented in the following chapter.

CHAPTER 4

RESULTS

Prior to examining findings in respect of the research objectives, the assessment of the reliability of the measures is reported. Following this, results are reported according to the research objectives of the study. First, basic descriptive statistics are reported for EVC, TSS, and FC. Next, the relationship between EVC and TSS is reported on, including results concerning the frequency of EVC (single versus multiple) and TSS. Following this are results for the relationship between EVC and FC, including results concerning the frequency of EVC (single versus multiple) and FC. The relationship between FC and TSS is then reported on. The chapter concludes with the results for sex differences in EVC (including perceived severity of EVC), TSS, and FC.

4.1 Reliability of the Measures

The Cronbach alpha coefficients for the FC measure and the IES-R were within the acceptable range (Table 3).

Table 3

Cronbach Alpha Coefficients: Internal Consistency of the FC Measure and IES-R (Including Subscales)

Measure/Scale	Cronbach alpha
FC measure	.82
IES-R	.93
Intrusion subscale	.88
Avoidance subscale	.83
Hyperarousal subscale	.81

With regard to the IES-R subscales, the Cronbach alpha coefficients for the Intrusion subscale (Items 1, 2, 3, 6, 9, 14, 16, and 20), the Avoidance subscale, (Items 5, 7, 8, 11, 12, 13, 17, and 22) and the Hyperarousal scale (Items 4, 10, 15, 18, 19, and 21) were also acceptable (Table 4.1). The alpha coefficients for all the scales/measures ranged between .81 and .93. Thus, reliability analyses found both the FC measure and the IES-R to be reliable for this sample. Given the nature of the variable 'exposure to violent crime' and the way that this was assessed it did not make sense to subject this measure to reliability analyses of this kind.

4.2 Exposure to Violent Crime

Of the total sample, 47.22% reported EVC ($n = 102$) and 52.78% reported no EVC ($n = 114$) in the preceding 12 months (Table 4 and Table 5). Please note that this includes reports of both direct and indirect EVC. Subjects who reported EVC shall from this point onwards be referred to as the ‘EVC group’, and subjects who reported no EVC shall be referred to as the ‘Non-EVC group’.

Table 4

Descriptive Statistics for Exposure to Violent Crime in the Preceding 12 Months

EVC	<i>n</i>	Total sample (%)
EVC (Total)	102	47.22
Single EVC	58	26.85
Multiple EVC	44	20.37

Table 5

Descriptive Statistics for Exposure to Traumatic Events in the Preceding 12 Months

Type of exposure	Yes		No	
	<i>n</i>	Total sample (%)	<i>n</i>	Total sample (%)
EVC	102	47.22	114	52.78
Non-crime trauma	126	58.33	90	41.67
Either EVC or Non-crime trauma or both	171	79.91	43	20.09

Of the EVC group ($n = 102$), 58 subjects reported a single EVC (1 criminal event; 26.85% of the total sample) and 44 subjects reported multiple EVC (2 or more criminal events; 20.37% of the total sample). Therefore, of those reporting EVC, almost as many subjects reported multiple EVC ($n = 44$) as single EVC ($n = 58$). This suggests a rather high level of multiple EVC, also keeping in mind that this multiple EVC occurred within a period of 12 months.

Of the total sample, 58.33% reported exposure to non-crime trauma ($n = 126$), while 41.67% reported no exposure to non-crime trauma ($n = 90$) in the preceding 12 months (Table 5). As indicated in the previous chapter, because a large portion of the sample was exposed to non-crime trauma (58.33%), rather than excluding these subjects, statistical analyses were used to investigate this variable and how it might interact with the other variables in the study. It is interesting to note that within this sample a higher percentage of subjects reported exposure to non-crime trauma (58.33%) than crime-related trauma (or EVC) (47.22%) in the preceding 12 months. Moreover, non-crime trauma included direct exposure only,

while EVC included both direct and indirect exposure. Therefore, it is notable that 58.33% of the sample was directly exposed to non-crime related trauma of some kind in the preceding 12 months.

The break-down of EVC in terms of type and frequency is provided in Table 6. Mugging, Physical assault, Burglary, and Armed robbery, constituted the bulk of EVC, with approximately three-quarters of criminal events falling into these categories. Other types of EVC reported include Attempted murder, Rape or Sexual assault, Murder (clearly only indirect exposure), Intimidation (including acts related to xenophobia), Motor vehicle theft, and Hijacking.

Table 6

Type and Frequency of Exposure to Violent Crime

Type of EVC	Frequency	Total EVC (%)	EVC group (%)
Mugging	36	22	35
Physical assault	34	21	33
Burglary	32	20	31
Armed robbery	22	14	22
Attempted murder	10	6	10
Rape or Sexual assault	9	6	9
Murder	6	4	6
Intimidation	5	3	5
Motor vehicle theft	4	2	4
Hijacking	3	2	3
Total	161	100 (%)	158 (%) ²

After specifying the type of EVC, subjects were asked to rate the severity of each instance of EVC. There was a possible range of 1 to 5, namely “not at all” to “extremely”. The mean score of the EVC group ($n = 102$) was found to be 4.06 ($SD = 0.88$), in other words, “a lot”. Scores for the perceived severity of EVC as a whole are reported in Table 7 and the mean perceived severity of each type of EVC is provided in Table 8 (ordered from highest to lowest perceived severity).

² This total is 158% as some subjects reported more than one EVC.

Table 7

Perceived Severity of Exposure to Violent Crime

Perceived severity	Frequency	EVC (%)
1: Not at all	3	1.87
2: A little	11	6.92
3: Moderately	39	24.53
4: A lot	56	35.22
5: Extremely	50	31.45
Total	159	100 (%)

Table 8

Type of Exposure to Violent Crime by Perceived Severity

Type of EVC	Mean	Perceived severity	(SD)	Range
Attempted murder	4.67	“a lot” – “extremely”	0.50	4 – 5
Murder	4.50	“a lot” – “extremely”	0.55	4 – 5
Rape or Sexual assault	4.44	“a lot” – “extremely”	0.73	3 – 5
Intimidation	4.00	“a lot”	0.71	3 – 5
Physical assault	3.91	closest to “a lot”	0.90	2 – 5
Armed robbery	3.90	closest to “a lot”	0.89	2 – 5
Mugging	3.78	closest to “a lot”	1.02	1 – 5
Motor vehicle theft	3.75	closest to “a lot”	1.26	2 – 5
Burglary	3.47	“moderately” – “a lot”	1.16	1 – 5
Hijacking	3.33	“moderately” – “a lot”	1.53	2 – 5

The scores in Table 8 indicate that EVC types such as Attempted murder, Murder, and Rape or Sexual assault were rated as the most severe, while EVC types such as Burglary and Hijacking were rated as the least severe (although these averages still fell between “moderately” and “a lot”). This generally makes sense given the degree of personal and life threat involved in these various types of EVC (with Hijacking being somewhat of an exception). The standard deviations and ranges give an indication of the degree of variation in the mean perceived severity of each EVC type. There appears to be more variation in the scores for more ‘minor’ offenses, such as Burglary and Motor vehicle theft, than for more serious offenses, such as Attempted murder and Murder. (In Table 8 standard deviations generally increase as the average perceived severity decreases across EVC types.)

4.3 Traumatic Stress Symptomatology

TSS was measured using the IES-R. The IES-R (22-item) has a possible total score range of 0 to 88, with a range of 0 to 4 for each item. Descriptive statistics for the total sample on the IES-R are presented in Table 9³. Separate mean scores for females and males on the IES-R are reported in the Sex Differences section of this chapter (section 4.8), in which the results for the significance of these differences are also reported.

Table 9

Descriptive Statistics for the Total Sample: IES-R and Subscales

Subscale/Measure	<i>n</i>	Mean	(<i>SD</i>)	Mean Total Score
Intrusion subscale	211	1.83180	0.97265	14.6544
Avoidance subscale	211	1.88777	0.93996	15.10216
Hyperarousal subscale	211	1.59352	0.98704	9.56112
IES-R (Total)	211	1.78828	0.87242	39.34216

It appeared that the mean item scores across the scales generally fell close to ‘2’, the score related to reporting that symptoms were experienced as ‘moderately’ distressing in the previous week.

4.4 Fear of Crime

The FC measure (6-item) 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 ($n = 214$) on the FC measure was 16.00, with a mean item score of 2.67 ($SD = 0.67$). An item analysis revealed the following descriptive data for the total sample:

Item 1: How safe do you feel walking and/or driving alone in your neighbourhood during the *day*?

- 19.72% felt “very safe” ($n = 42$);
- 44.13% felt “somewhat safe” ($n = 94$);
- 25.35% felt “somewhat unsafe” ($n = 54$); and
- 10.80% felt “very unsafe” ($n = 23$).

³ In general, mean item scores are reported throughout the chapter and used in the statistical calculations. Because the IES-R subscales differ in their number of items (Hyperarousal has less items) comparisons may be more easily made using mean item scores. In addition, the use of means for calculations also tends to hold for other studies allowing for some basis for comparison.

Item 2: How safe do you feel walking and/or driving alone in your neighbourhood at *night*?

- 3.76% felt “very safe” ($n = 8$);
- 20.19% felt “somewhat safe” ($n = 43$);
- 35.21% felt “somewhat unsafe” ($n = 75$); and
- 40.85% felt “very unsafe” ($n = 87$).

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

- 10.53% answered “never” ($n = 22$);
- 29.67% answered “rarely” ($n = 62$);
- 43.54% answered “sometimes” ($n = 91$); and
- 16.27% answered “often” ($n = 34$).

Item 4: How worried are you that you would experience being a victim of crime *outside* of your neighbourhood?

- 4.76% answered “not worried” ($n = 10$);
- 25.24% answered “somewhat worried” ($n = 53$);
- 40.48% answered “moderately worried” ($n = 85$); and
- 29.52% answered “very worried” ($n = 62$).

Item 5: How worried are you that you would experience being a victim of crime *in* your neighbourhood?

- 11.43% answered “not worried” ($n = 24$);
- 35.71% answered “somewhat worried” ($n = 75$);
- 28.10% answered “moderately worried” ($n = 59$); and
- 24.76% answered “very worried” ($n = 52$).

Item 6: How worried are you that you would experience being a victim of crime in your own home?

- 31.75% answered “not worried” ($n = 67$);
- 25.59% answered “somewhat worried” ($n = 54$);
- 26.07% answered “moderately worried” ($n = 55$); and
- 16.59% answered “very worried” ($n = 35$).

It was apparent that there were fairly high fear of crime levels in the sample and that, as might be anticipated, fear increased markedly at nighttime.

4.5 The Relationship between Exposure to Violent Crime and Traumatic Stress Symptomatology

In exploring the relationship between EVC and TSS, correlations will be reported first, followed by the results of t-tests, and lastly results of one-way and two-way ANOVA and post-hoc t-tests. For the EVC group, correlations were used to investigate the relationship between the perceived severity of EVC and TSS (as measured by the IES-R), and are displayed in Table 10.

Table 10

Pearson's Correlations for the EVC Group: Perceived Severity of Exposure to Violent Crime and the IES-R (Including Subscales)

	Intrusion subscale	Avoidance subscale	Hyperarousal subscale	IES-R
Perceived severity of EVC	.32094** p=.0011 100	.29305** p=.0031 100	.23744* p=.0174 100	.31904** p=.0012 100

* $p < .05$. ** $p < .01$.

For the EVC group, significant positive correlations of a medium size were found between the perceived severity of EVC and the IES-R including all three subscales (as indicated by $p < .05$ and $p < .01$). Thus, the more severe the EVC was perceived to be, the higher the reported TSS including higher symptomatology on all three clusters of Intrusion, Avoidance, and Hyperarousal. Next, the EVC group and Non-EVC group were compared on the basis of their TSS. In prefacing this comparison, descriptive statistics for the EVC group and Non-EVC group on the IES-R and its subscales are reported in Table 11.

Table 11

Descriptive Statistics for the EVC Group and Non-EVC Group: IES-R and its Subscales

Subscale/Measure	Group	n	Mean	(SD)	Mean Total Score
Intrusion subscale	EVC group	100	2.00318	0.98521	16.02544
	Non-EVC group	111	1.67741	0.93902	13.41928
Avoidance subscale	EVC group	100	2.06886	0.89283	16.55088
	Non-EVC group	111	1.72464	0.95533	13.79712
Hyperarousal subscale	EVC group	100	1.86067	0.98624	11.16402
	Non-EVC group	111	1.35285	0.92801	8.1171
IES-R	EVC group	100	1.98865	0.85774	43.7503
	Non-EVC group	111	1.60776	0.84942	35.37072

Table 12

T-Tests for the EVC Group and Non-EVC Group: IES-R and its Subscales

Subscale/Measure	df	t	p
Intrusion subscale	209	2.46*	.0148
Avoidance subscale	209	2.70*	.0076
Hyperarousal subscale	209	3.85***	.0002
IES-R	209	3.24**	.0014

* $p < .05$. ** $p < .01$. *** $p < .001$.

In examining Table 11, it is evident that the EVC group obtained higher mean scores on the IES-R as well as on all three IES-R subscales than the Non-EVC group. T-tests were used to test whether these differences were significant (Table 4.12). Results showed that the EVC group obtained significantly higher mean scores on the IES-R and on all three IES-R subscales than the Non-EVC group (as indicated by $p < .05$, $p < .01$ and $p < .001$). In other words, subjects who reported EVC reported significantly higher TSS, including higher symptomatology on all three clusters of Intrusion, Avoidance, and Hyperarousal, than subjects who reported no EVC. The difference between the EVC group and Non-EVC group on the Hyperarousal subscale were particularly noteworthy, as can be seen in the descriptive statistics in Table 11 and by the t -value of 3.85 in Table 12 (significant at the $p < .001$ level). Overall, results suggest a significant positive relationship between EVC and TSS.

Additional analyses comparing the effects of EVC and exposure to non-crime trauma on TSS were conducted. Although these analyses were not included in the research objectives, they were conducted in

light of a large proportion of the sample reporting exposure to non-crime trauma (58.33%) and the overlap of this exposure with EVC in some cases. As described in the Method chapter (section 3.7), the total sample was divided into four groups according to combinations of exposure type, namely the Both Exposures group, EVC Only group, Non-crime Trauma Only group, and No Exposure group. In prefacing the results, descriptive statistics for the Both Exposures group, EVC Only group, Non-crime Trauma Only group, and No Exposure group on the IES-R and its subscales are reported in Table 13.

Table 13

Descriptive Statistics for Groups According to Combinations of Exposure Type: IES-R and its Subscales

Subscale/Measure	Exposure type	<i>n</i>	Mean	(<i>SD</i>)	Mean Total Score
Intrusion subscale	Both Exposures	54	2.11045	0.93738	16.8836
	EVC Only	45	1.85865	1.03854	14.8692
	Non-crime Trauma Only	70	1.83546	0.91667	14.68368
	No Exposure	41	1.40758	0.92574	11.26064
Avoidance subscale	Both Exposures	54	2.20271	0.86596	17.62168
	EVC Only	45	1.89643	0.91186	15.17144
	Non-crime Trauma Only	70	1.88520	0.87152	15.0816
	No Exposure	41	1.45049	1.03798	11.60392
Hyperarousal subscale	Both Exposures	54	1.91605	0.98142	11.4963
	EVC Only	45	1.78370	1.00669	10.7022
	Non-crime Trauma Only	70	1.44714	0.96772	8.68284
	No Exposure	41	1.19187	0.84307	7.15122
IES-R	Both Exposures	54	2.09111	0.82621	46.00442
	EVC Only	45	1.85212	0.89032	40.74664
	Non-crime Trauma Only	70	1.74746	0.82350	38.44412
	No Exposure	41	1.36923	0.84964	30.12306

Table 14

Two-way Analysis of Variance for Exposure to Violent Crime and Exposure to Non-crime Trauma on the IES-R

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Model	3	12.4486981	4.1495660	5.83*	.0008
Error	206	146.7239625	0.7122522		
Corrected Total	209	159.1726606			

* $p < .001$.

Table 15

Two-way Analysis of Variance for Exposure to Violent Crime and Exposure to Non-crime Trauma on the IES-R: Interaction Effect and Main Effects

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
EVC	1	8.60216319	8.60216319	12.08**	.0006
Exposure to non-crime trauma	1	4.79711063	4.79711063	6.74*	.0101
EVCExposure to no-crime trauma	1	0.24413430	0.24413430	0.34	.5589

* $p < .05$. ** $p < .001$.

In examining Table 13, it is evident that, in general, the Both Exposures group obtained the highest mean scores on the IES-R, followed by the EVC Only group and the Non-Crime Trauma Only group, and finally, with the lowest mean scores on the IES-R, the No Exposure group. Results of the two-way ANOVA indicated a significant effect for EVC and exposure to non-crime trauma on the IES-R scores (as indicated by $p < .001$; Table 14). A non-significant interaction effect was found for EVC and exposure to non-crime trauma on the IES-R scores (as indicated by $p > .05$; Table 15). There was a significant main effect for EVC on the IES-R scores (as indicated by $p < .001$; Table 15), suggesting a significant relationship between EVC and TSS. There was also a significant main effect for exposure to non-crime trauma on the IES-R scores (as indicated by $p < .05$; Table 15), suggesting a significant relationship between exposure to non-crime trauma and TSS. These results suggest that both EVC and exposure to non-crime trauma have an effect on TSS but that these effects occur independently of each other.

Table 16

Post-hoc T-tests for Groups According to Combinations of Exposure Type: IES-R

	Non-crime Trauma			
	Both Exposures	Only	EVC Only	No Exposure
Both Exposures		.0256*	.1621	<.0001***
Non-crime Trauma Only	.0256*		.5171	.0237*
EVC Only	.1621	.5171		.0087**
No Exposure	<.0001***	.0237*	.0087**	

* $p < .05$. ** $p < .01$. *** $p < .0001$.

Post-hoc t-tests found that the Both Exposures group, EVC Only group, and Non-crime Trauma Only group all obtained significantly higher mean scores on the IES-R than the No Exposure group (as indicated by $p < .05$, $p < .01$ and $p < .0001$; Table 16). In other words, subjects who reported either type of exposure, whether EVC or non-crime trauma, reported significantly higher TSS than subjects who reported neither type of exposure. In addition, the other significant difference found was that between the Both Exposures group and the Non-crime Trauma Only group (as indicated by $p < .05$), with the Both Exposures group obtaining a significantly higher mean score on the IES-R than the Non-crime Trauma Only group. Thus, although there was a significant main effect for exposure to non-crime trauma on the IES-scores, this occurred at a significantly lower level than the effect of the combination of both types of exposure on the IES-R scores. It is also interesting to note that although the EVC group obtained a lower mean score on the IES-R than the Both Exposures group, it was not significantly lower, whereas the mean score on the IES-R of the Non-crime Trauma Only group was significantly lower than that of the Both Exposures group. In sum, both EVC and exposure to non-crime trauma appear to have an effect on TSS but the combination of both types of exposure appears to have an effect on TSS at a higher level (i.e., in an additive way).

4.5.1 Frequency of Exposure to Violent Crime and Traumatic Stress Symptomatology

In order to investigate the relationship between frequency of EVC and TSS, the total sample was divided into three groups depending on subjects' frequency of EVC:

- i. Subjects who reported no EVC (i.e., the Non-EVC group as reported on above; $n = 114$);

- ii. Subjects who reported a single EVC (a single criminal event; $n = 58$); and
- iii. Subjects who reported multiple EVC (2 or more criminal events; $n = 44$).

The mean scores of these groups on the IES-R are presented in Table 17.

Table 17

Mean Scores for Groups According to the Frequency of Exposure to Violent Crime: IES-R

Frequency of EVC	Mean	Mean Total Score
No EVC	1.60775597	35.370629
Single EVC	2.00631438	44.138914
Multiple EVC	1.96425995	43.213717

Table 18

One-way Analysis of Variance for the Frequency of Exposure to Violent Crime and the IES-R

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Model	2	7.6753276	3.8376638	5.25*	.0060
Error	208	152.1593678	0.7315354		
Corrected total	210	159.8346954			

* $p < .01$.

Table 19

Post-hoc T-tests for Groups According to the Frequency of Exposure to Violent Crime: IES-R

	No EVC	Single EVC	Multiple EVC
No EVC		.0044**	.0224*
Single EVC	.0044**		.8085
Multiple EVC	.0224*	.8085	

* $p < .05$. ** $p < .01$.

Results of the one-way ANOVA indicated a significant effect for the frequency of EVC on the scores of the IES-R (as indicated by $p < .01$; Table 18). However, post-hoc t-tests (Table 19) found that, although subjects who reported a single EVC ($p < .01$) or multiple EVC ($p < .05$) obtained significantly higher mean

scores on the IES-R than did the Non-EVC group, there was a non-significant difference between subjects who reported a single EVC and subjects who reported multiple EVC in terms of their mean scores on the IES-R ($p>.05$). We saw earlier with the EVC group versus Non-EVC group comparisons that subjects who reported EVC obtained significantly higher mean scores on the IES-R. The results in the present section add to this by indicating that EVC is associated with higher mean scores on the IES-R, irrespective of whether the EVC was single or multiple. In sum, these results do not show support for the notion of a cumulative effect of EVC on TSS, given that multiple EVC was not found to be associated with higher TSS than single EVC.

4.6 The Relationship between Exposure to Violent Crime and Fear of Crime

In exploring the relationship between EVC and FC, as in the previous section, correlations will be reported first, followed by the results of the t-tests, and lastly results of one-way and two-way ANOVA and post-hoc t-tests. For the EVC group ($n = 100$), a significant near-moderate correlation of .26 ($p<.01$) was found between the perceived severity of EVC and the FC measure. In other words, the more severe the EVC was perceived to be, the higher the FC. Next, the EVC group and Non-EVC group were compared in terms of their FC. In prefacing the comparison between the EVC group and Non-EVC group, their descriptive statistics for the FC measure are reported in Table 20.

Table 20

Descriptive Statistics for the EVC Group and Non-EVC Group: FC Measure

Group	<i>n</i>	Mean	(SD)	Mean Total Score
EVC group	100	2.85333	0.63753	17.11998
Non-EVC group	113	2.49808	0.66508	14.98848

Table 21

T-Test for EVC Group and Non-EVC Group: FC Measure

<i>df</i>	<i>t</i>	<i>p</i>
211	3.97*	<.0001

* $p<.0001$.

In examining Table 20, it is evident that the EVC group obtained a higher mean score on the FC measure than the Non-EVC group. T-tests were used to test whether this difference was significant (Table 21). Results showed that the EVC group obtained a significantly higher mean score on the FC measure than

the Non-EVC group (as indicated by $p < .0001$). In other words, subjects who reported EVC reported significantly higher FC than subjects who reported no EVC. Thus, results suggest a strong (significant at the $p < .0001$ level) positive relationship between EVC and FC, with subjects who reported EVC reporting higher FC.

The effects of EVC and non-crime trauma on FC were investigated using two-way ANOVA, and the mean scores on the FC measure obtained by the four groups according to combinations of exposure type (as described in section 4.5) were compared using post-hoc t-tests. In prefacing these results, the descriptive statistics for the Both Exposures group, EVC Only group, Non-crime Trauma Only group, and No Exposure group on the FC measure are reported in Table 22.

Table 22

Descriptive Statistics for Groups According to Combinations of Exposure Type: FC Measure

Group by exposure type	<i>n</i>	Mean	(<i>SD</i>)	Mean Total Score
Both Exposures	54	2.80556	0.64326	16.83318
EVC Only	46	2.90942	0.63314	17.45652
Non-crime Trauma Only	70	2.47500	0.65745	14.85000
No Exposure	43	2.53566	0.68346	15.21396

Table 23

Two-way Analysis of Variance for Exposure to Violent Crime and Exposure to Non-crime Trauma on the FC Measure

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Model	3	7.06126369	2.35375456	5.50*	.0012
Error	209	89.41276865	0.42781229		
Corrected Total	212	96.47403234			

* $p < .01$.

Table 24

Two-way Analysis of Variance for Exposure to Violent Crime and Exposure to Non-crime Trauma on the FC Measure: Interaction Effect and Main Effects

Source	df	SS	MS	F	p
EVC	1	6.37619004	6.37619004	14.90*	.0002
Exposure to non-crime trauma	1	0.34792182	0.34792182	0.81	.3682
EVCExposure to no-crime trauma	1	0.02399438	0.02399438	0.06	.8130

* $p < .001$.

In examining Table 22, it is evident that the EVC Only group and Both Exposures group obtained higher mean scores on the FC measure than the Non-crime Trauma Only group and No Exposure group. Results of the two-way ANOVA indicated a significant effect for EVC and exposure to non-crime trauma on the FC scores (as indicated by $p < .01$; Table 23). However, varying results emerged in comparing the effect of EVC and the effect of exposure to non-crime trauma on the FC scores (Table 24). Firstly, there was a non-significant interaction effect for EVC and exposure to non-crime trauma on the FC scores (as indicated by $p > .05$). There was a significant main effect for EVC on the FC scores (as indicated by $p < .001$), suggesting a highly significant relationship between EVC and FC, whereas the main effect for exposure to non-crime trauma on the FC scores was found to be non-significant (as indicated by $p > .05$). These results suggest that EVC, but not exposure to non-crime trauma, has an effect on FC.

Table 25

Post-hoc T-tests for Groups According to Combinations of Exposure Type: FC Measure

	Non-crime Trauma		
	Both Exposures	Only	EVC Only
Both Exposures		.0058**	.4296
Non-crime Trauma Only	.0058**		.0006***
EVC Only	.4296	.0006***	
No Exposure	.0448*	.6327	.0076**

* $p < .05$. ** $p < .01$. *** $p < .001$.

Furthermore, post-hoc t-tests found that the Both Exposures group and EVC Only group obtained significantly higher mean scores on the FC measure than the Non-crime Trauma Only group and No Exposure group (as indicated by $p < .05$, $p < .01$ and $p < .001$; Table 25). On the one end (with higher mean scores on the FC measure), there were a non-significant difference between the Both Exposures group and the EVC Only group in terms of their mean scores on the FC measure (as indicated by $p > .05$), and, on the other end (with lower mean scores on the FC measure), there was a non-significant difference between the Non-crime Trauma Only group and the No Exposure group in terms of their mean scores on the FC measure (as indicated by $p > .05$). Thus, it would seem that the EVC reported by the Both Exposures group and the EVC Only group has an effect on the mean scores of both these groups on the FC measure. The results suggest a significant positive relationship between EVC and FC.

4.6.1 Frequency of Exposure to Violent Crime and Fear of Crime

The mean scores of the No EVC, Single EVC and Multiple EVC groups on the FC measure are reported in Table 26.

Table 26

Mean Scores for Groups According to the Frequency of Exposure to Violent Crime: FC Measure

Frequency of EVC	Mean	Mean Total Score
No EVC	2.49808260	14.988495
Single EVC	2.73976608	16.438596
Multiple EVC	3.00387597	18.023255

Table 27

One-way Analysis of Variance for the Frequency of Exposure to Violent Crime and the FC Measure

Source	df	SS	MS	F	p
Model	2	8.40495245	4.20247622	10.02*	<.0001
Error	210	88.06907989	0.41937657		
Corrected total	212	96.47403234			

* $p < .0001$.

Table 28

Post-hoc T-tests for Groups According to Frequency of Exposure to Violent Crime: FC Measure

	No EVC	Single EVC	Multiple EVC
No EVC		.0226*	<.0001**
Single EVC	.0226*		.0447*
Multiple EVC	<.0001**	.0447*	

* $p < .05$. ** $p < .0001$.

Results of the one-way ANOVA indicated a significant effect for the frequency of EVC on the scores of the FC measure (as indicated by $p < .0001$; Table 27). Furthermore, post-hoc t-tests found significant differences between all three groups (Table 28): subjects who reported single EVC scored significantly higher on the FC measure than subjects who reported no EVC (as indicated by $p < .05$), and subjects who reported multiple EVC scored significantly higher on the FC measure than subjects who reported single EVC (as indicated by $p < .05$). It was thus evident that the difference between subjects who reported no EVC and subjects who reported multiple EVC was particularly large and highly significant (as indicated by $p < .0001$). These results suggest that the frequency of EVC may have a cumulative effect on FC, with increasing mean scores on the FC measures across no EVC, single EVC, and multiple EVC. In sum, this indicates a strong positive relationship between EVC and FC.

4.7 The Relationship between Fear of Crime and Traumatic Stress Symptomatology

Correlations between the FC measure and the IES-R were computed in order to investigate the relationship between FC and TSS. Separate correlations were computed for the total sample, the EVC group, and the Non-EVC group, and are reported in Table 29.

Table 29

Pearson's Correlations for the Fear of Crime Measure and the IES-R (Including Subscales): Total Sample, EVC Group, and Non-EVC Group

		Intrusion subscale	Avoidance subscale	Hyperarousal subscale	IES-R
Total sample	FC measure	.33899*** p<.0001 209	.34271*** p<.0001 209	.36578*** p<.0001 209	.38444*** p<.0001 209
EVC group	FC measure	.35365** p=.0003 99	.31283* p=.0016 99	.31568* p=.0015 99	.36615** p=.0002 99
Non-EVC group	FC measure	.26745* p=.0047 110	.31046* p=.0010 110	.32019** p=.0006 110	.32019** p=.0005 110

* $p < .01$. ** $p < .001$. *** $p < .0001$.

Significant positive correlations of generally medium size were found between the FC measure and the IES-R (including all three IES-R subscales) for the total sample and for both the EVC group and Non-EVC group (as indicated by $p < .01$, $p < .001$ and $p < .0001$). In other words, the higher the mean scores on the FC measure, the higher the mean scores on the IES-R including higher mean scores on the Intrusion, Avoidance, and Hyperarousal subscales. In examining Table 29, results appear fairly similar for the EVC group and the Non-EVC group, with one possible exception being the correlations between the FC measure and the Intrusion subscale of the IES-R. The size of this correlation is somewhat larger (and thus the strength of the relationship is perhaps slightly stronger) for the EVC group compared to the Non-EVC group. This suggests that FC might be more strongly associated with Intrusion in subjects who reported EVC compared to subjects who reported no EVC. In sum, these results suggest a significant positive relationship between FC and TSS, irrespective of whether subjects reported EVC or not.

4.8 Sex Differences

4.8.1 Sex differences in Exposure to Violent Crime

The number of females and of males who reported EVC and who reported no EVC are displayed in Table 30.

Table 30

Size of Groups According to Exposure to Violent Crime and Subject Sex

	EVC		Total
	Yes	No	
Females	81	84	165
Males	20	30	50
Total	101	114	215

Table 31

Pearson’s Chi-Square for Exposure to Violent Crime by Subject Sex

	<i>x</i> ²	<i>df</i>	<i>p</i>
EVC by Subject sex	1.2732	1	.2592

Pearson’s Chi-Square was used to test whether EVC (yes/no) varied significantly by subject sex, the result of which were non-significant (as indicated by $p > .05$; Table 31). In other words, the proportion of men compared to the proportion of women in the sample who reported EVC was not significantly different.

Although not included as a research objective, in light of the high proportion of subjects who reported exposure to non-crime trauma (58.33%), analyses were also conducted for sex differences in exposure to non-crime trauma. The result was non-significant (see Appendix H).

In addition, the potential sex difference in the perceived severity of EVC was investigated. The mean scores of females and males for perceived severity of EVC are reported in Table 32.

Table 32

Mean Scores of Females and Males for Perceived Severity of Exposure to Violent Crime

Subject sex	Mean
Females	4.16049383
Males	3.60000000

Table 33

One-way Analysis of Variance for Sex Difference in Perceived Severity of Exposure to Violent Crime

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Model	1	5.03889500	5.03889500	6.96*	.0097
Error	99	71.71358025	0.72437960		
Corrected total	100	76.75247525			

**p*<.01.

In examining Table 32, it is evident that females obtained a higher mean score than males for the perceived severity of EVC. One-way ANOVA was used to test whether this difference was significant (Table 33). Results indicated that females obtained a significantly higher mean score than males for the perceived severity of EVC (as indicated by *p*<.01).

4.8.2 Sex differences in Traumatic Stress Symptomatology

In prefacing the comparison between females and males on TSS, descriptive statistics for the IES-R and its subscales by subject sex are reported in Table 34.

Table 34

Descriptive Statistics for Females and Males: IES-R and its Subscales

Subscale/Measure	Subject sex	<i>n</i>	Mean	(<i>SD</i>)	Mean Total Score
Intrusion subscale	Females	161	1.8923	0.9548	15.1384
	Males	49	1.6220	1.0183	12.976
Avoidance subscale	Females	161	1.9383	0.9333	15.5064
	Males	49	1.6963	0.9397	13.5704
Hyperarousal subscale	Females	161	1.6963	0.9971	10.1778
	Males	49	1.2374	0.8755	7.4244
IES-R	Females	161	1.8555	0.8713	40.821
	Males	49	1.5493	0.8425	34.0846

Table 35

T-Test for Sex Differences on the IES-R and its Subscales

Subscale/Measure	df	t	P
Intrusion subscale	208	1.71	.0891
Avoidance subscale	208	1.59	.1142
Hyperarousal subscale	208	2.90**	.0042
IES-R	208	2.17*	.0311

* $p < .05$. ** $p < .01$.

In examining Table 34, it is evident that females obtained higher mean scores than males on the IES-R and its subscales. T-tests were used to test whether these differences were significant (Table 35). Results indicated that females obtained significantly higher mean scores on the IES-R than males (as indicated by $p < .05$). However, this significant result is elucidated in examining the sex differences across the IES-R subscale scores, as it seems to be largely influenced by the Hyperarousal subscale. Whereas females obtained a significantly higher mean score than males on the Hyperarousal subscale (as indicated by $p < .01$), non-significant differences was found between females and males on both the Intrusion subscale and the Avoidance subscale (as indicated by $p > .05$). These results indicate that, although overall there was a significant sex difference in TSS, this was primarily due to the sex difference in Hyperarousal symptomatology.

4.8.3 Sex difference in Fear of Crime

In prefacing the comparison between females and males on FC, descriptive statistics for the FC measure by subject sex are reported in Table 36.

Table 36

Descriptive Statistics for Females and Males: FC Measure

Subject sex	n	Mean	(SD)	Mean Total Score
Females	164	2.7284	0.6357	16.3704
Males	49	2.4524	0.7600	14.7144

Table 37

T-Test for Sex Difference on the FC measure

<i>df</i>	<i>t</i>	<i>p</i>
211	2.55*	.0116

* $p < .05$.

In examining Table 36, it is evident that females obtained higher mean scores than males on the FC measure. T-tests were used to test whether this difference was significant (Table 37). Results indicated that females obtained a significantly higher mean score than males on the FC measure (as indicated by $p < .05$). In words, female subjects reported significantly higher FC than male subjects.

Having presented the fairly extensive findings of the study, the next chapter discusses the implications of these findings and contextualises the results in relation to existing literature in the field.

CHAPTER 5

DISCUSSION

Findings are discussed according to the research objectives of the study. First the findings pertaining to basic descriptive statistics are discussed, including the profile of responses to Exposure to Violent Crime, Traumatic Stress Symptomatology, and Fear of Crime measures. Following this the discussion looks at the interrelationships between the three variables (and specific aspects of these variables). The last section of the discussion focuses on sex differences in the three variables.

5.1 Exposure to Violent Crime

Approximately half the sample reported EVC (directly or indirectly) occurring in the preceding 12 months, largely coinciding with the year 2008 (47.22% compared to 52.78% who did not). This suggests a very high level of exposure to violent crime amongst this sample of young South African adults and is in excess of estimates that suggest that about a quarter to a third of the population have been exposed to violent crime as discussed in the Literature Review chapter. Moreover, this finding cannot be attributed to increases in cumulative exposure over time since, in this study, given the primary focus on possible correlates or impacts of exposure, subjects were asked to report on their exposure in the preceding 12 month period only. The figures tend to support public discourse that suggests that exposure to violent crime is pervasive in contemporary South African society. It is difficult to compare this finding with previous studies that have only assessed for direct exposure, as the present study assessed both direct and indirect exposure. This is perhaps the most likely explanation for the higher incidence of exposure to violent crime found in the present study as compared to other research. For instance, the 2003 NVCS found that just over one-fifth (22.9%) of South Africans reported that they were direct victims of crime in the 12 months preceding August 2003 (cited in Louw, 2007). Similarly, a study by Lucas, Damianova, Burney, and Ponto (2006) found that 24% of a South African student sample reported exposure to at least one incident of crime and violence in the preceding 12 months. These figures reflect direct exposure within a 12-month period, while the figure of 47.22% found in the present study included both direct and indirect EVC in a 12-month period. A few South African studies have investigated indirect exposure to violent crime (e.g., Friedland, 1999) and, like this study, found a high incidence of exposure to violent crime when indirect exposure was also included. Esterhuysen et al. (2007) found that over 90% of adolescents assessed in the study had been indirectly exposed to criminal violence and, similarly, Mendelsohn (2002) found that 71.6% of the adolescent sample she assessed had been indirectly exposed to violent crime. Although the figures from both these studies refer to lifetime exposure, one should take

into account that these subjects were still fairly young (adolescents), and that these rates are still very high. Jacobs (2002) studied exposure to violent crime in first year students in Johannesburg and found that 35% of the students reported direct exposure to violent crime and 62% reported indirect exposure to violent crime in a two-year period. Overall then, there is some suggestion that the effects of exposure may be widespread in society, especially when indirect exposure is taken into consideration. Based on the responses in this study, it seemed that almost every second student had experienced exposure to violent crime (either directly or indirectly) in the preceding 12 months.

Of the total sample, 58.33% reported exposure to non-crime trauma in the preceding 12 months. This category could include, but was not limited to, bereavement ('natural' death of a loved one), HIV or serious illness, motor vehicle accidents, and other accidents. It is interesting to note that within this sample a higher percentage of subjects reported exposure to non-crime trauma (58.33%) than exposure to violent crime (47.22%). Moreover, non-crime trauma included direct exposure only, while exposure to violent crime included both direct and indirect exposure. Therefore, it is notable that 58.33% of the sample was directly exposed to non-crime trauma in the preceding 12 months. Furthermore, in some cases, students reported both EVC and exposure to non-crime trauma. The following figures are reported in order to clarify types and combinations of exposure. Of the total sample:

- i. 25.70% reported EVC *and* exposure to non-crime trauma (Both Exposures group);
- ii. 21.50% reported EVC only (EVC Only group);
- iii. 32.71% reported exposure to non-crime trauma only (Non-crime Trauma Only group); and
- iv. 20.09% reported neither EVC nor exposure to non-crime trauma (No exposure group).

Overall, only 20.9% of the sample reported no exposure to some type of trauma, with close to 80% of the sample reporting exposure to either violent crime or non-crime trauma (or both) in the preceding 12 months. These levels of exposure to trauma are substantially higher than those reported internationally, with the majority of international studies conducted among the general population finding a lifetime exposure to traumatic events of between about 40 to 60%. For instance, a community survey based study of U.S. citizens aged 15 to 54 years found that 61% of men and 51% of women had been exposed to at least one traumatic event in their lifetimes (Kessler et al., 1995). The level of exposure to trauma in South Africa has been found to be considerably higher. Peltzer (2003) found that only 4.7% of an adult sample had not experienced any traumatic events in their lifetimes, and the current study seems to bear out similarly high exposure rates. Compare this to the corresponding figure of approximately 40% of citizens in the U.S. who have not been exposed to trauma in their lifetimes (e.g., the Kessler et al. [1995] study).

In a study of victims of violent crime, Peltzer (2000c) found that more than one third of the sample had experienced another trauma in addition to the violent crime trauma. The findings of the present study suggest quite similar patterns with about half of the EVC group also reporting exposure to non-crime related traumatic events. In sum, the finding in the present study that only one-fifth of the sample reported that they had not been exposed to any traumatic events in the preceding 12-month period speaks of the high volumes of trauma exposure in this South African population and confirms concerns about high exposure rates.

5.1.1 EVC group

Of the EVC group, 58 subjects reported a single event of EVC (26.85% of the total sample) and 44 subjects reported multiple events of EVC (2 or more events; 20.37% of the total sample). It is interesting to note that of those reporting EVC almost as many subjects reported multiple EVC ($n = 44$) as single EVC ($n = 58$). This is consistent with research findings suggesting that South African's are frequently exposed to multiple traumas (e.g., Dinan et al., 2004; Friedland, 1999; Jacobs, 2002; Peltzer, 2000c). For instance, a recent South African study (Suliman et al., 2009) found a higher likelihood of multiple life-threatening traumas than a single trauma. Furthermore, national data from the SASH study indicated that the majority (55.6%) of South Africans reported having experienced more than one traumatic event in their lifetimes (cited in Williams et al., 2007). (Please note that the SASH study reported the lifetime prevalence of multiple traumatic events while the figure in the present study is for the preceding 12 months.)

With regard to the break-down of EVC in terms of type and frequency, EVC from highest to lowest frequency was: Mugging ($n = 36$), Physical assault ($n = 34$), Burglary ($n = 32$), Armed robbery ($n = 22$), Attempted murder ($n = 10$), Rape or Sexual assault ($n = 9$), Murder (clearly indirect exposure) ($n = 6$), Intimidation (including acts related to xenophobia) ($n = 5$), Motor vehicle theft ($n = 4$), and Hijacking ($n = 3$). Thus, Mugging, Physical assault, Burglary, and Armed robbery, constituted the bulk of EVC, with approximately three-quarters of criminal events falling into these categories. The high frequencies of Mugging and Physical assault appear to parallel findings from the SASH study (cited in Williams et al., 2007), although the SASH findings reflect lifetime prevalence and direct exposure. The SASH study found that 17.7% of South Africans reported having been mugged and 11.4% reported having been physically assaulted (excluding IPV) in their lifetimes. In this study, 16.53% of the total sample reported exposure to mugging and 15.58% of the total sample reported exposure to physical assault (noting again that these figures are for a 12-month period and are inclusive of indirect exposure).

Rather than differentiating between direct versus indirect EVC, the present study focused on the perceived severity of the EVC, regardless of whether it was direct or indirect. This was because some types of indirect EVC could potentially be more threatening or traumatic than some types of direct EVC, for example, having one's car stolen (direct exposure to motor vehicle theft) versus the sexual assault of a close friend (indirect exposure to sexual assault). Subjects were asked to rate the severity of each EVC from 1 to 5, ranging from "not at all" to extremely. The average perceived severity of EVC was 4.06, in other words, "a lot". Only a small proportion of the EVC group rated the perceived severity of EVC as "not at all" or "a little", with approximately two-thirds of the EVC group rating the perceived severity of EVC as "a lot" or "extremely". These findings indicate that, for the majority of subjects who reported exposure to violent crime, this exposure was rated as very threatening and carried high levels of subjectively experienced associated distress.

With regard to the perceived severity of specific types of EVC, EVC from highest to lowest perceived severity was: Attempted murder; Murder (indirect exposure); Rape or Sexual assault; Intimidation; Physical assault; Armed robbery; Mugging; Motor vehicle theft; Burglary; and Hijacking. There were a number of interesting points pertaining to this finding. Firstly, Rape or Sexual Assault was rated as the most severe after Attempted Murder and Murder (indirect exposure), with average severity ratings of between "a lot" and "extremely" for all three EVC types. The high perceived severity of Rape or Sexual Assault by those directly or indirectly exposed to it in the present study echoes the large volume of research indicating that exposure to rape and sexual assault is experienced as particularly threatening or traumatic (e.g., Kaminer, Grimsrud, Myer, Stein, & Williams, 2008; Kilpatrick & Resnick, 1993; Norris, 1992).

Interestingly, Intimidation was rated as the next most severe ("a lot"), above the perceived severity rating for Physical assault. This high severity rating could be linked to both acts of xenophobia (included in this EVC category) and the threat of gender violence which in turn is in all probability linked to fear of attack and violation. Given that intimidation involves interpersonal dominance, the rating possibly reflects not only the severity of the actual event of intimidation but also the individual's imagined victimisation and/or unconscious phantasies about potential future victimisation. In other words, intimidation may have an element of 'anticipated vicimisation' (McConnell, 1989).

With one exception (Hijacking), interpersonal EVC was rated as more severe than noninterpersonal EVC. This finding is in keeping with evidence from a number of studies that suggest that interpersonal trauma is

more distressing, or is associated with higher rates of disorder, than noninterpersonal trauma (e.g., Green et al., 2000; Kessler et al., 1995; Norris & Kaniasty, 1994) and this is also recognised in the DSM-IV-TR (APA, 2000). For example, Resnick et al. (1993) found lifetime prevalence rates of PTSD ranging from 31% to 39% for interpersonal trauma, compared to 9% for non-crime trauma (such as accidents and disasters). The one exception to this trend in the present study was Hijacking. Only 3 cases of Hijacking were reported and these questionnaires were examined qualitatively in order to explore the observed exception: One female subject witnessed a hijacking and rated the severity as “a little” (a rating of 2); one female subject did not specify whether the exposure to hijacking was direct or indirect and rated the severity as “extremely” (a rating of 5); and one male subject did not specify whether the exposure to hijacking was direct or indirect and rated the severity as “moderately” (a rating of 3). Thus, it is impossible to say whether the average perceived severity for Hijacking was distorted by indirect exposure (as this was unspecified in two of the three cases). Moreover, perceived severity for Hijacking ranged from “a little” to “extremely”, indicating much variability especially when considering that the average score was based on only three cases. This should be kept in mind with a number of the EVC categories, specifically those on which the average perceived severity was based on only a few cases. However, in general, the perceived severity of scores were in keeping with what one might expect of these kind of traumas and could be viewed as suggesting some construct validity for the perceived severity measure.

Another interesting observation was the degree of variation in the mean perceived severity of EVC types (as indicated by the standard deviations and ranges). There appeared to be more variation in the scores for more ‘minor’ offenses, such as Burglary and Motor vehicle theft, than for more serious offenses, such as Attempted murder and Murder (indirect exposure). This suggests that for more ‘minor’ offenses, perceived severity could vary more from person to person (i.e., is more subjective), whereas for more serious offenses, perceived severity may vary less from person to person (i.e., is less subjective and more universally perceived as severe). Again, this seems to make implicit sense in that threat to life is by definition implicated in Attempted murder and Murder (indirect exposure) while this is not the case with offenses such as Burglary and Motor vehicle theft. Such observations highlight how perceived severity, which has been associated with levels of traumatic stress symptomatology, could vary across and within exposure to different types of violent crime.

5.1.2 Summary

Of the total sample, 47.22% reported EVC occurring in the preceding 12 months. The majority of the EVC group rated the perceived severity of the EVC as either very (“a lot”) or extremely severe,

suggesting that even if the EVC had been indirect, the perceived severity of the EVC may still have been severe. Almost half the EVC group reported multiple EVC in the preceding 12 months, constituting a fifth of the total sample. Although the figure for multiple EVC is inclusive of both direct and indirect EVC, the figure is still high. Given that, in addition to direct exposure, indirect EVC has been associated with posttraumatic stress-related conditions (Figley, 1995; Hamber & Lewis, 1997) and other mental health problems (Breslau, 2009), the potential implications of these EVC levels are serious. In addition, only 20.9% of the sample had not been exposed to any trauma in the preceding 12 months, with close to 80% of the sample exposed to either violent crime or non-crime trauma or both. Again, this speaks of the high volumes of trauma in South Africa, resonating with the observation that trauma in South Africa can be referred to as a malignant epidemic (Bowley et al., 2000; Muckart, 1991).

5.2 Traumatic Stress Symptomatology

Scores on the IES-R were used primarily for inferential analyses investigating the relationship between TSS and EVC, and between TSS and FC. It was not a research objective of the present study to determine levels of traumatisation using cut-off scores for the IES-R. One of the main reasons for this was because cut-off scores for the IES-R have not been normed for the South African population, limiting interpretations one could make about levels of traumatisation. Having said this, however, a brief summary discussion of the possible levels of traumatisation in the present sample indicated by their symptom related scores on the IES-R is provided, determined according to international cut-off scores for the IES-R (cited in Renck, Weisæth, & Skarbö, 2002). Usually, a subscale score of 0-8 is viewed as delineating minor reactions, 9-19 moderate reactions, and a score of 20 or more, reactions of clinical importance (Renck et al., 2002). (However, the Intrusion and Avoidance subscales are comprised of 8 items each whereas the Hyperarousal subscale is comprised of 6 items – thus, the score on Hyperarousal should be adjusted slightly in interpreting possible traumatisation levels). Again, it is emphasised that it be kept in mind that these cut-off scores have not been normed for the South African context and interpretations about traumatisation levels should be viewed tentatively.

The scores of the total sample on the IES-R were indicative of traumatic stress of moderate severity. Using the cut-off score of 20, broadly speaking between 20% and 30% of the total sample fell into the category that would be considered of clinical concern: 31.27% on the Intrusion subscale, 29.86% on the Avoidance subscale, and 20.38% on the Hyperarousal subscale. Although these figures seem quite high, it should be kept in mind that about three-quarters of the sample were female, and women and girls have been noted to generally report higher levels of traumatic stress symptomatology than men and boys

(Breslau, 2009; Kessler et al., 1995; Norris, 1992; Stein et al., 2000; Stuber et al., 2006). Thus, the predominance of females in the sample might be implicated in the fairly high levels of TSS. Although the EVC group obtained higher scores on the IES-R than the Non-EVC group (significance is discussed in section 5.4), the IES-R scores of the Non-EVC group still suggested traumatic stress that was moderate in severity. This was perhaps unsurprising given that some of the Non-EVC group reported exposure to non-crime trauma occurring in the preceding 12 months. Thus, scores of the Non-EVC group on the IES-R may to some extent reflect traumatic responses due to exposure to non-crime trauma.

However, similar IES-R results were found for all the exposure combination groups. Scores of the Both Exposures group, EVC Only group, Non-crime Trauma Only group, and No Exposure group on the IES-R all produced mean scores that fell into the range suggesting experience of traumatic stress related symptoms that were moderate in severity (whether differences were significant or not is addressed in section 5.4). However, the Both Exposures group was at the higher end of the moderate range, followed by the EVC Only group, then the Non-crime Trauma Only group, and finally by the No Exposure group at the lower end of the moderate range. This pattern is thus in the direction that might be anticipated, in other words, the more trauma experienced the higher the score on the IES-R. A surprising finding was the moderate TSS of the No Exposure group given that these subjects reported no EVC or exposure to non-crime trauma occurring in the preceding 12 months. These levels of TSS could possibly be due to prior exposure to trauma (i.e., occurring more than 12 months ago). Blank (1993) argues that the longitudinal course of traumatic stress symptomatology may be quite complicated and points to evidence that the intensity of traumatic stress symptomatology may vary at different times. The finding is nevertheless surprising and may reflect a more pervasive level of anxiety and stress in this South African sample. It could possibly reflect a level of traumatic stress symptomatology that accompanies living in a country with high levels of violent crime and other trauma. For example, extensive and often gruesome media reports, as well as the constant rhetoric about violent crime and the circulation of victimisation stories could potentially be implicated in fairly pervasive traumatic stress symptomatology.

5.2.1 Summary

TSS levels were examined according to international cut-off scores for the IES-R (Renck et al., 2002). For all groups, scores on the IES-R were indicative of traumatic stress that was moderate in severity, although there was reasonable variation within the moderate range. Findings suggest that at least 20% of the total sample reported traumatic stress symptomatology of clinical concern. It was evident that greater exposure

to traumatic events was associated with higher levels of traumatic stress symptomatology, although somewhat unexpectedly even the No Exposure group reported quite high levels of symptomatology.

5.3 Fear of Crime

An item analysis was conducted in order to qualitatively examine responses to specific items of the FC measure, so that possible trends could be identified and also so that some of these responses could be compared to some of the findings of previous research.

The first two items of the FC measure assessed how safe subjects felt walking and/or driving alone in their neighbourhoods (a) during the day, and (b) at night. Approximately one-third of the total sample (36.15%) reported feeling either “somewhat unsafe” or “very unsafe” walking and/or driving alone in their neighbourhoods *during the day*. This is consistent with findings from the SASAS study of 2006 (cited in Davids & wa Kivilu, 2008) in which 33.2% of respondents reported feeling ‘a bit unsafe’ to ‘very unsafe’ walking alone in their area during the day. These figures were higher than the 15% of respondents that the NVCS in 2003 (cited in Louw, 2007) found to report feeling either ‘a bit unsafe’ or ‘very unsafe’ walking alone in their areas of residence during the day. With regards to walking and/or driving alone in their neighbourhoods *at night*, approximately three-quarters of the total sample (76.06%) reported feeling either “somewhat unsafe” or “very unsafe”. This is consistent with findings from the NVCS in 2003 (cited in Louw, 2007) and the SASAS in 2006 (cited in Roberts, 2008); the NVCS found that 77% of respondents reported feeling either ‘a bit unsafe’ or ‘very unsafe’ walking alone in their areas of residence after dark, while the SASAS figure was slightly lower at 71%.

There appears to be a clear trend in the data, with subjects generally reporting feeling a great deal more unsafe walking and/or driving alone in their neighbourhoods at night than during the day (Figure 1). Whereas only 10.80% of the sample reported feeling “very unsafe” walking and/or driving alone in their neighbourhood during the day, the figure for night time almost quadrupled, with two-fifths of the sample (40.85%) reporting feeling “very unsafe” walking and/or driving alone in their neighbourhood at night. These findings reflect the temporal nature of fear of crime which commonly manifests in the significance of darkness as a cue of danger and in changes in feelings of safety between day and night (Pain, 1997). Research has linked nighttime to higher levels of fear of crime and there is evidence that many individuals avoid leaving home after dark (Valentine, 1989; Warr, 1990).

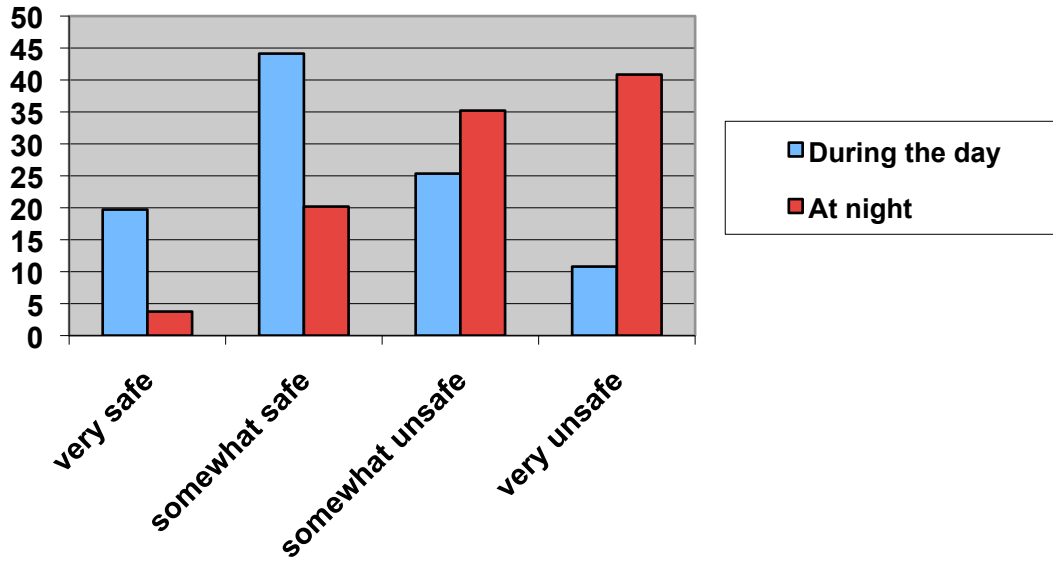


Figure 1. Feeling of safety walking and/or driving alone in one's neighbourhood during the day versus at night: Percentages for the total sample.

In response to the item, "How often does this [feelings of safety] influence your plans or prevent you from doing things you like to in and around your neighbourhood?", nearly two-thirds of the sample reported that their feelings of un/safety either "sometimes" (43.54%) or "often" (16.27%) influence their plans or prevent them from doing things they like to do in and around their neighbourhoods. This finding suggests that, for some subjects, activity may be inhibited or mobility limited because of fear of crime. This could have detrimental implications for quality of life (Roberts, 2008).

The final three items of the FC measure assessed how worried subjects were that they would experience being a victim of crime (a) *outside* their neighbourhoods, (b) *in* their neighbourhoods, and (c) in their own homes. A trend emerged in that subjects reported the most worry about being a victim of crime *outside* of their neighbourhoods, less worry about being a victim of crime *in* their neighbourhoods, and the least worry about being a victim of crime in their own homes (Figure 2). That the sample was most worried about being a victim of crime outside of their neighbourhoods perhaps points to unfamiliarity with the environment as a factor in heightening fear of crime. Novel and unfamiliar environments has been noted to provoke fear of crime (Warr, 1990). Consistent with the novelty thesis, criminologists have noted the tendency of individuals to view their own home and neighbourhood as safer than other neighbourhoods or

city areas, even when this is demonstrably not true. It could be that individuals feel the least exposed and most able to defend or protect themselves in their homes.

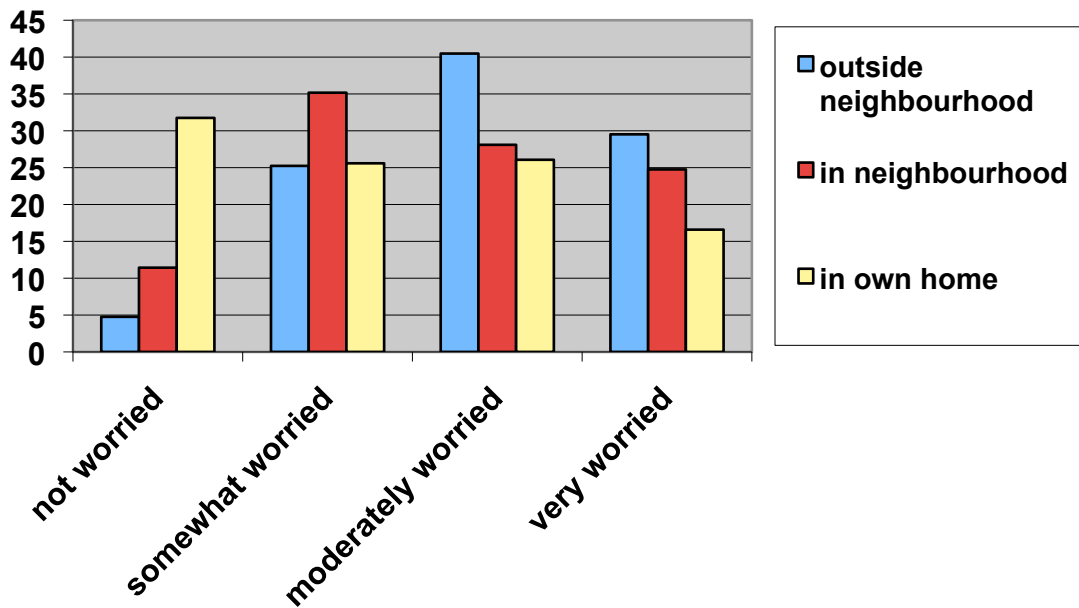


Figure 2. Level of worry about being a victim of crime outside one's neighbourhood, in one's neighbourhood, and in one's own home: Percentages for the total sample.

Although, subjects reported being less worried about being a victim of crime in their own homes compared to when they were outside of and in their neighbourhoods, approximately two-thirds of the sample was still worried about being a victim of crime in their own homes, ranging from "somewhat worried" to "very worried". This was despite the fact that about a quarter of the students lived in university residence. These findings are consistent with research findings that South Africans fear crime in their own homes. For instance, in 2004, more than half of South Africans (57%) reported fearing crime in their own homes in the preceding year (Afrobarometer Briefing 1, 2005). The implications of these fear of crime levels are significant when considering the crucial role the home and neighbourhood play in nurturing and supporting family, school, and community relations.

5.3.1 Summary

Findings for questions making up the FC measure were discussed. Approximately one-third of the total sample reported feeling either "somewhat unsafe" or "very unsafe" walking and/or driving alone in their neighbourhoods *during the day*, whereas just over three-quarters of the sample reported feeling similarly

unsafe *at night*. Nearly two-thirds of the sample reported that their feelings of un/safety either “sometimes” or “often” influence their plans or prevent them from doing things they like to do in and around their neighbourhoods, hinting at the potential impact fear of crime has for quality of life. A trend emerged whereby subjects reported the most worry about being a victim of crime *outside* their neighbourhoods, less worry about being a victim of crime *in* their neighbourhoods, and the least worry about being a victim of crime in their own homes. However, worry about being a victim of crime in their own homes was still high, with approximately two-thirds of the sample reporting being worried. It is thus apparent that fear of crime was rather pervasive in the sample and there was an implication that fear of crime inhibited movement within the environment, especially at night.

5.4 The Relationship between Exposure to Violent Crime and Traumatic Stress Symptomatology

The relationship between EVC and TSS was explored using correlations as well as t-tests and ANOVA to examine the differences between groups. The EVC group obtained significantly higher scores on the IES-R than the Non-EVC group, including significant differences for all three IES-R subscales. There appeared to be a particularly large difference between the two groups on the Hyperarousal subscale of the IES-R, indicating a much higher reported level of symptoms such as irritability, difficulties with sleep and concentration, and hypervigilance, among subjects who reported EVC as compared to subjects who reported no EVC. On the basis of this, one might speculate that hyperarousal symptoms are particularly associated with the specific nature of exposure to violent crime as a traumatic stressor. For instance, it may be unsurprising that an individual exposed to violent crime reported more frequent startle responses than, for example, an individual exposed to the sudden ‘natural’ death of a loved one. Furthermore, pronounced symptoms of hyperarousal have been associated with the cumulative response to multiple exposure (Eagle, 1994; Eagle & Watts, 2001). That almost half of the EVC group reported exposure to multiple EVC could thus perhaps be implicated in the particularly high level of hyperarousal symptoms among the EVC group. In addition, for the EVC group, a significant moderate correlation was found between the perceived severity of EVC and the IES-R (and all three IES-R subscales). The more severe the EVC was perceived to be, the higher the level of TSS. This is consistent with the general consensus on the positive relationship between perceived stressor severity and posttraumatic stress reactions (Brewin et al., 2000; Fairbank et al., 1993; March, 1993; Shalev, 1996). The findings point to a significant positive relationship between exposure to violent crime and traumatic stress symptomatology, which is consistent with findings from other South African research (Esterhuysen et al., 2007; Peltzer, 2000c, 2003; Suliman et al., 2009). While the findings are perhaps unsurprising in this respect, they do provide further evidence

that exposure to violent crime is associated with higher levels of traumatic stress symptomatology in all three key areas of intrusion, avoidance, and hyperarousal.

In light of the high incidence of exposure to non-crime trauma (58.33% of the sample) and the overlap of some of these cases with EVC, additional analyses were conducted in order to investigate whether exposure to non-crime trauma interacted with EVC in effecting levels of TSS. In order to conduct these analyses, the total sample was divided into the four groups described previously according to combinations of exposure type. (Please refer to Figure 3 for a visual representation of the mean total scores of these groups on the IES-R). From the figure, it is evident that the Both Exposures group reported the highest level of TSS, followed by the EVC Only group and the Non-crime Trauma Only group (showing very similar levels of TSS), and finally the No exposure group, reporting the lowest level of TSS.

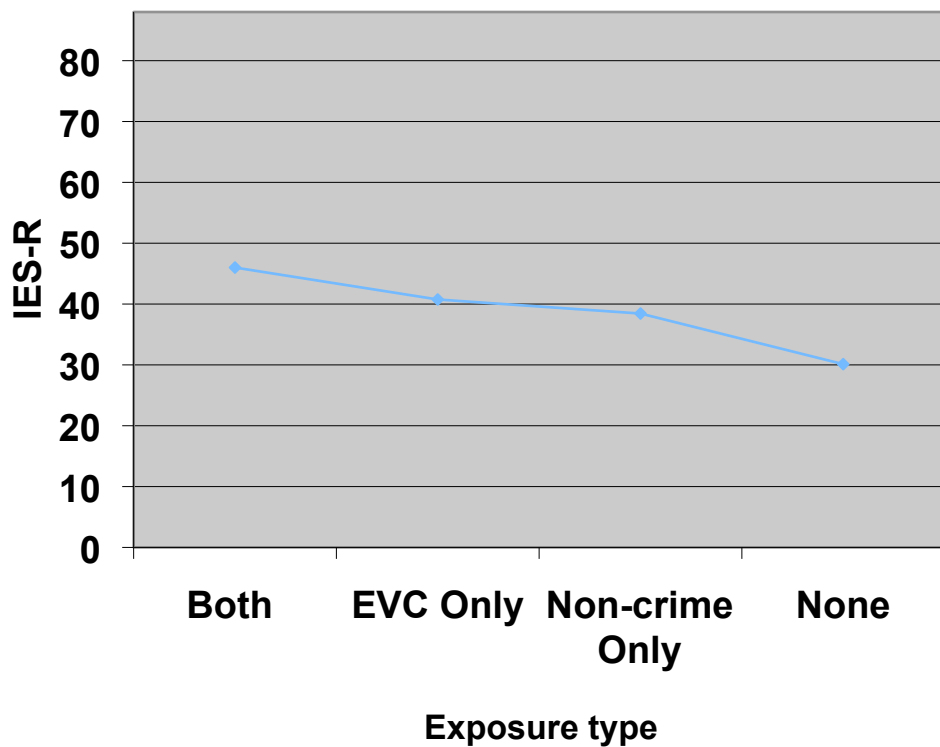


Figure 3. Mean total scores on the IES-R of groups according to combinations of exposure type.

Findings indicated a non-significant interaction effect for EVC and exposure to non-crime trauma on the IES-R scores. In other words, EVC and exposure to non-crime trauma did not interact in effecting levels of TSS. Significant main effects were found for EVC on the IES-R scores and for exposure to non-crime trauma on the IES-R scores. These findings suggest that both exposure to violent crime and exposure to

non-crime trauma have significant effects on the levels of TSS but that these effects occur independently of each other. These effects were further illustrated by the significantly higher levels of traumatic stress symptomatology among subjects reporting exposure, whether it was EVC or exposure to non-crime trauma or both, as compared to the level of traumatic stress symptomatology among subjects reporting no exposure to either type of trauma. These findings offer further support for the link between exposure to traumatic events and traumatic stress symptomatology.

In addition, the Both Exposures group reported significantly higher levels of TSS than the Non-crime Trauma Only group, whereas there was a non-significant difference between the EVC Only group and the Both Exposures group in terms of TSS. The findings generally suggest that, although EVC and exposure to non-crime trauma have significant independent effects on TSS, subjects reporting both types of exposure report higher levels of TSS compared to subjects who reported one type of exposure only. In other words, although there is a non-significant interactive effect for exposure to violent crime and exposure to non-crime trauma, there could possibly be an additive one. However, this finding could also possibly reflect the influence of the frequency of exposure to traumatic events. Subjects in the Both Exposures group were by definition exposed at least twice to traumatic events (at least one EVC plus exposure to non-crime trauma). The frequency of non-crime trauma in the preceding 12 months was unfortunately not assessed, given that the item concerning exposure to non-crime trauma was included with the primary intention of excluding a possible confounding feature and only assessed for the presence or absence of exposure to non-crime trauma. Therefore, it was impossible to determine whether subjects who reported exposure to non-crime trauma experienced a single exposure or multiple exposures. However, the likely difference in frequency of exposure between the Both Exposures group and the Non-crime Trauma Only group is proposed as a possible explanation for the significantly higher level of TSS reported by Both Exposures group as compared to the Non-crime Trauma Only group.

The non-significant difference in levels of TSS among the EVC Only group and Non-crime Trauma Only group is in contrast to research findings indicating that crime related stressors may be associated with higher levels of traumatic stress symptomatology than non-crime related stressors (e.g., Resnick et al., 1993; Breslau et al., 2004). Again, because the non-crime trauma item was included as an intended exclusion criterion, it is impossible to determine the specific types of non-crime related stressors that subjects had been exposed to. The examples given in this category included bereavement, life threatening illness and motor vehicle accidents, but exposure may also have included other types of events. However, an important point to be considered is that non-crime trauma included direct exposure only, whereas EVC

included indirect exposure in addition to direct exposure. Thus, the EVC group displayed slightly higher levels of TSS (although not significantly higher) than the Non-Crime Trauma Only group even though EVC included indirect exposure. It is therefore difficult to draw conclusions about the relative impact of crime-related stressors versus non-crime related stressors on the levels of traumatic stress symptomatology. The fact that it was the possible additive effect of crime related trauma that contributed to the significant difference between the Both Exposures versus Non-crime Trauma Only groups (rather than vice-versa) does point to the central role of criminal events in provoking symptomatology. However, this was not a research objective of the study and the above comments are offered merely as points of discussion.

5.4.1 Frequency of Exposure to Violent Crime and Traumatic Stress Symptomatology

A secondary interest in the present study was to investigate the role frequency of EVC may play in the levels of traumatic stress symptomatology. The sample was divided into three groups according to their frequency of EVC: (i) Non-EVC group, (ii) subjects who reported a single EVC, and (iii) and subjects who reported multiple EVC. The frequency of EVC was found to have a non-significant effect on levels of TSS. Subjects who reported either a single EVC or multiple EVC (i.e., the EVC group) scored significantly higher on the IES-R than the Non-EVC group, but subjects who reported a single EVC did not differ from subjects who reported multiple EVC in terms of their scores on the IES-R. In other words, TSS did not vary significantly according to single versus multiple exposures to violent crime. This is in contrast to the great deal of international (e.g., Brewin et al., 2000; Copeland et al., 2007; Elklit, 2002; Finkelhor et al., 2007; Follette et al., 1996; Miranda et al., 1997; Ozer et al., 2003; Pelcovitz et al., 2000) and South African research (e.g., Suliman et al., 2009) that has found support for the cumulative effect of trauma.

The present findings indicate that one should be cautious in inferring a simplistic linear relationship between multiple exposures to violent crime and higher levels of traumatic stress symptomatology. Factors such as the perceived severity, duration, and recency of the criminal event may play a more influential role in traumatic stress symptomatology than multiple exposure per se (Benatar, 1996; Friedland, 1999). The importance of the perceived severity of the event was demonstrated in the present study in that there was a significant correlation between the perceived severity of EVC and the level of TSS. Furthermore, the individual's coping resources and the social context should also be taken into account (Herman, 1992). The notion of multiple exposures to violent crime is further complicated by the issue that South Africans are living in a continuously stressful context due to the chronically high levels of

crime in the country (Louw, 2007). Friedman (1995) argued that ongoing exposure to traumatic stress, which may include threatened trauma, necessitates a particular kind of coping response. Sorenson and Golding (1990) contend that living in a chronically stressful context may either lead to more adaptive coping skills in the face of victimisation or to a breakdown of coping resources. Thus, ongoing exposure to stressful situations may or may not lead to higher levels of traumatic stress symptomatology, depending on the coping abilities of the individual (Sorenson & Golding, 1990) as well as context-related features. Coping style was not investigated in the present study and thus the degree to which such a factor may have played a part in the non-significant difference found for single versus multiple EVC and TSS could not be determined.

Furthermore, the present findings may have been distorted by indirect exposure as well as the overlap of EVC and exposure to non-crime trauma. For instance, the multiple exposures group may have included more indirect exposure cases which potentially could have lowered the levels of TSS reported by this group. In addition, some subjects reporting single EVC may have also been exposed to non-crime trauma, which would have in all likelihood contributed to higher levels of TSS (in light of the significant effect non-crime trauma was found to have on TSS levels, as just discussed). These factors should be kept in mind when considering the non-significant effect found for the frequency of exposure to violent crime on levels of traumatic stress symptomatology.

5.4.2 Summary

Findings provide further evidence that exposure to violent crime is associated with higher levels of traumatic stress symptomatology in all three symptom clusters. There appeared to be a particularly large difference in the levels of hyperarousal between subjects who reported exposure to violent crime and subjects who did not. Furthermore, the more severe the exposure to violent crime was perceived to be, the higher the reported level of traumatic stress symptomatology. Together with the findings from the Exposure to Violent Crime section (section 5.1) discussed earlier, one could speculate that subjects who reported Attempted Murder, Murder (clearly indirect exposure), or Rape or Sexual Assault would most likely report the highest levels of traumatic stress symptomatology, given that these EVC types were rated as the most severe. This makes implicit sense in light of the life threat and violation entailed in offenses such as attempted/murder and rape or sexual assault. In addition, both exposure to violent crime and exposure to non-crime trauma were found to have significant independent effects on the levels of traumatic stress symptomatology, offering further support for the link between exposure to traumatic events and traumatic stress symptomatology. A somewhat surprising finding was the non-significant

effect of the frequency of exposure to violent crime on the levels of traumatic stress symptomatology, with subjects reporting single EVC and those reporting multiple EVC reporting similar levels of traumatic stress symptomatology.

5.5 The Relationship between Exposure to Violent Crime and Fear of Crime

The relationship between EVC and FC was explored using correlations as well as t-tests and ANOVA to examine the differences between groups. The EVC group obtained significantly higher scores on the FC measure than the Non-EVC group. Thus, subjects who reported EVC reported significantly higher levels of fear of crime than subjects who reported no EVC. Furthermore, for the EVC group, a significant correlation of .26 was found between the perceived severity of EVC and the FC measure. This is consistent with literature implicating the perceived severity or seriousness of victimisation as an important factor in determining the level of fear of crime (e.g., Kury & Ferdinand, 1998; Warr, 1987). Literature on the link between exposure to violent crime and fear of crime is divided, and the present findings provide support for the side of the debate contending that exposure to violent crime is positively related to fear of crime (Hale, 1996; Hough, 1995; Kury & Ferdinand, 1998; McCoy et al., 1996; Newhart, 1991; Smith & Hill, 1991; Rountree, 1998). In this connection, McConnell (1989) proposed the concept ‘anticipated victimisation’ in relation to fear of crime. The findings are in the direction that might be anticipated and indicate that exposure to traumatic events, in this instance violent crime, may be associated with increased anxiety about safety in one’s general day-to-day life.

In light of the high incidence of exposure to non-crime trauma and the overlap of some of these cases with EVC, additional analyses were again conducted in order to investigate whether exposure to non-crime trauma interacted with EVC in affecting levels of FC. In order to conduct these analyses, the total sample was divided into the same four groups according to combinations of exposure type. (Please refer to Figure 4 for a visual representation of the mean total scores of these groups on the FC measure). From the figure, it is evident that the EVC Only group and Both Exposures group reported similar levels of FC, obtaining higher mean scores on the FC measure, while the Non-crime Trauma Only group and the No Exposure group reported similar levels of FC, obtaining lower mean scores on the FC measure. These differences between groups were found to be significant. In other words, subjects who reported exposure to violent crime or exposure to both violent crime and non-crime trauma reported significantly higher levels of fear of crime as compared to subjects who reported exposure to non-crime trauma or reported no exposure.

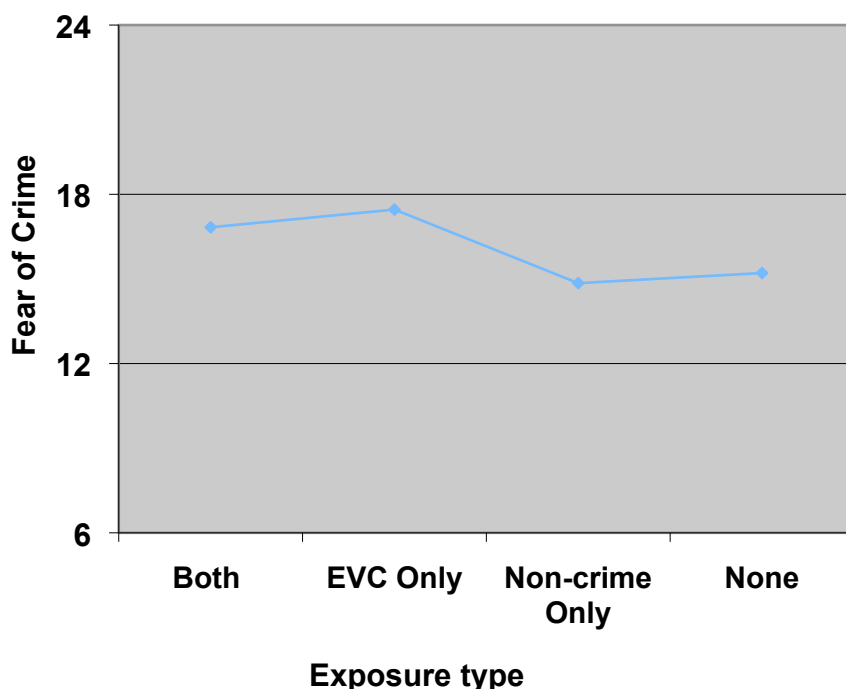


Figure 4. Mean total scores on the FC measure of groups according to combinations of exposure type.

Furthermore, findings indicated a non-significant interaction effect for EVC and exposure to non-crime trauma on the scores of the FC measure. In other words, EVC and exposure to non-crime trauma did not interact in effecting levels of FC. A significant main effect was found for EVC on the scores of the FC measure and this was in contrast to the non-significant main effect found for exposure to non-crime trauma on the scores of the FC measure. These findings suggest that exposure to violent crime, but not exposure to non-crime trauma, significantly affects fear of crime levels. It could be that exposure to violent crime, in light of its confrontational and malevolent nature, serves to heighten fear of crime, while exposure to non-crime trauma, although it may shatter certain assumptions relating to feelings of safety in the world, might not necessarily heighten fear of crime specifically. These findings are interesting in that EVC included both indirect and direct exposure whereas exposure to non-crime trauma included only direct exposure. The suggestion is that, even when exposure to violent crime is indirect, it may serve to heighten fear of crime.

5.5.1 Frequency of Exposure to Violent Crime and Fear of Crime

A secondary interest in the present study was to investigate the role frequency of EVC may play in FC. As described previously, the sample was divided into three groups according to their frequency of EVC.

(Please refer to Figure 5 for a visual representation of the mean total scores of these groups on the FC measure).

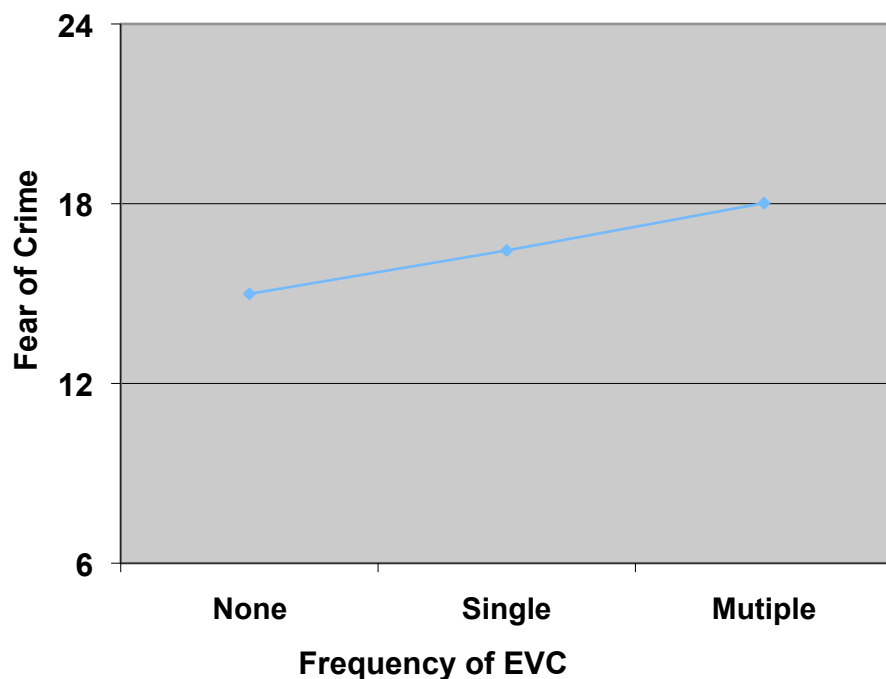


Figure 5. Mean total scores on the FC measure according to frequency of Exposure to Violent Crime.

The frequency of EVC was found to have a significant effect on levels of FC. Subjects who reported a single EVC were found to score significantly higher on the FC measure than the Non-EVC group, and subjects who reported multiple EVC were found to score significantly higher on the FC measure than subjects who reported a single EVC. In other words, FC varied significantly according to no versus single versus multiple EVC. These findings are consistent with those of international studies demonstrating a positive relationship between the frequency of victimisation and fear of crime (e.g., Kury & Ferdinand, 1998). At first glance, these findings seem to offer support for the victimisation thesis, in other words, theories proposing that the more actual victimisation experiences an individual has had, the more fearful an individual is. However, these theories tend to view fear of crime as a product of *direct* victimisation, whereas exposure to violent crime as assessed in this study included *indirect* exposure. Thus, the findings are also in line with the imagined victimisation and psychology of risk model of fear of crime put forward in Chapter 2 (section 2.3.2). This model contends that knowing others who have been victimised and hearing about events related to violent crime are thought to heighten perceptions of the risk of victimisation and therefore increase levels of fear of crime (Covington & Taylor, 1991; Ferraro, 1995; Hough, 1995; LaGrange et al., 1992). The findings could thus be understood as supporting both theories

that foreground direct victimisation as implicated in fear of crime and theories that suggest that indirect exposure and anticipated victimisation may play an equally powerful role. The greater the exposure of either type the higher the level of fear of crime which makes implicit sense.

5.5.2 Summary

Findings point to a significant relationship between exposure to violent crime and fear of crime. Subjects who reported exposure to violent crime reported significantly higher levels of fear of crime than subjects who reported no exposure to violent crime. Furthermore, the more severe the exposure to violent crime was perceived to be, the higher the level of fear of crime. In addition, exposure to violent crime, but not exposure to non-crime trauma, was found to significantly affect fear of crime levels. Given that exposure to violent crime included indirect exposure, these findings might suggest that, even when exposure to violent crime is indirect, it may serve to heighten fear of crime. This may help to account for high levels of fear of crime in the absence of direct exposure to violent crime as discussed in other sections of the discussion. Moreover, the frequency of exposure to violent crime was found to have a significant effect on levels of fear of crime, with subjects who reported multiple exposure to violent crime reporting significantly higher levels of FC than subjects who reported a single exposure. The present findings provide support for the theories contending that exposure to violent crime (direct and indirect) is a key element in producing fear of crime.

5.6 The Relationship between Fear of Crime and Traumatic Stress Symptomatology

The relationship between FC and TSS was explored using correlations. Separate correlations were computed for the total sample, the EVC group, and the Non-EVC group. With regard to the total sample, a significant moderate to large correlation was found between the FC measure and the IES-R. Significant correlations were also found between the FC measure and all three of the IES-R subscales. These correlations were all of medium size and thus findings appear to be uniform across the IES-R subscales. Therefore, findings indicated that the higher the level of fear of crime, the higher the level of traumatic stress symptomatology including higher levels of intrusion, avoidance, and hyperarousal symptoms. This is a not unexpected finding but does perhaps extend understanding of both traumatic stress symptomatology and fear of crime. It seems that those who experience trauma-related symptoms are also more anxious, fearful and inhibited in their lifestyle. Fear of crime tends to reflect a fantasised concern about potential risk and could possibly be viewed as a non-clinical impact of trauma exposure that perhaps operates in parallel with symptomatic responses.

In order to investigate whether exposure to violent crime might influence this relationship between FC and TSS, separate correlations were computed for the EVC group and Non-EVC group. Significant moderate correlations between the FC measure and the IES-R were found for both the EVC group and the non-EVC group, although the size of the correlation for the EVC group was slightly larger than that for the Non-EVC group (.37 significant at $p = .0002$ compared to .32 significant at $p = .0005$) (The table displaying these correlations in the Results chapter is repeated here for convenience in making comparisons – Table 38). Thus, regardless of whether subjects reported exposure to violent crime or not, a significant positive relationship was found between fear of crime and traumatic stress symptomatology (the higher the level of FC, the higher the level of TSS). This suggests that the two measures might be assessing related constructs, as just proposed.

Table 38

Pearson's Correlations for the Fear of Crime Measure and the IES-R (Including Subscales): Total Sample, EVC Group, and Non-EVC Group

		Intrusion subscale	Avoidance subscale	Hyperarousal subscale	IES-R
Total sample	FC measure	.33899***	.34271***	.36578***	.38444***
		p<.0001	p<.0001	p<.0001	p<.0001
		209	209	209	209
EVC group	FC measure	.35365**	.31283*	.31568*	.36615**
		p=.0003	p=.0016	p=.0015	p=.0002
		99	99	99	99
Non-EVC group	FC measure	.26745*	.31046*	.32019**	.32019**
		p=.0047	p=.0010	p=.0006	p=.0005
		110	110	110	110

* $p < .01$. ** $p < .001$. *** $p < .0001$.

With regard to correlations across IES-R subscales, significant correlations were found between the FC measure and all three subscales of the IES-R for both the EVC group and the Non-EVC group. However,

while the correlations for the FC measure and the Avoidance subscale and Hyperarousal subscale, respectively, were similar for the EVC group and the Non-EVC group, the correlation for the FC measure and the Intrusion subscale appeared to be considerably larger for the EVC group as compared to the Non-EVC group (.35 significant at $p=.0003$ compared to .27 significant at $p=.0047$). This suggests that intrusion symptoms are more strongly associated with fear of crime among subjects who reported exposure to violent crime as compared to subjects who reported no exposure to violent crime. For those who have experienced violent crime it is possible that their recollections of what took place may be specifically implicated in their fear of crime, reinforcing the idea that fear of crime may reflect imagined victimisation or more vivid fantasies of falling prey to criminal attack.

Overall, findings suggest that fear of crime may be positively related to traumatic stress symptomatology, regardless of actual exposure to violent crime. Such findings have important implications for the South African context in which high levels of fear of crime have been found (e.g., NVCS of 2003, cited in Louw, 2007; SASAS of 2006, cited in Davids & wa Kivilu, 2008) in that it is possible that high levels of fear of crime in South Africa could translate into high levels of traumatic stress symptomatology (and vice versa). For instance, fear of crime could possibly manifest in intrusive thoughts, avoidance behaviours, and/or hyperarousal. This, in turn, has detrimental consequences for the mental health (Breslau, 2009) as well as for relational and occupational functioning (Edwards, 2005a, 2005b). On the other hand, experiencing traumatic stress symptoms may leave individuals anxious and concerned about altered ways of being that in turn might translate into a greater sense of vulnerability in the world which is reflected in a reduced sense of personal safety and in fear of crime. However, the correlational nature of these findings mean that a causal relationship cannot be established and these hypotheses would need to be investigated in future research.

5.6.1 Summary

Significant correlations of generally a medium size were found between the FC measure and the IES-R, including for all three subscales, for the total sample, EVC group, and Non-EVC group. Thus, findings suggest that fear of crime is positively related to traumatic stress symptomatology, regardless of exposure to violent crime (direct or indirect) or not. There did appear to be one slight difference between the EVC group and Non-EVC group (although this was not tested statistically); results indicated that intrusion symptoms may be more strongly associated with fear of crime among subjects who reported exposure to violent crime as compared to subjects who reported no exposure to violent crime. Although it is not possible to determine the direction of the relationship between fear of crime and traumatic stress

symptomatology, these findings could have important implications when considering the high levels of fear of crime in South Africa. It is also possible to argue that traumatic stress symptoms and fear of crime are in a sense co-morbid conditions which reflect related but different responses to (potentially) threatening situations.

5.7 Sex Differences

5.7.1 Sex differences in the level and perceived severity of Exposure to Violent Crime

Levels of EVC were found not to vary significantly by subject sex. In other words, the proportion of men compared to the proportion of women in the sample who reported EVC was not significantly different. This is in contrast to previous South African findings suggesting that men experience more crime than women (Gilbert, 1996; Williams et al., 2007). One possible explanation for the finding in the present study is that levels of EVC could have been distorted by the inclusion of indirect exposure. In other words, the level of EVC among female subjects could possibly in part reflect indirect exposure via contact with male intimate partners, friends, family members, or other close associates. While the converse of this is also possible, female subjects' indirect exposure to violent crime via men is proposed as a likely reason for the non-significant sex difference in the level of EVC found in the present study. The finding is somewhat intriguing nevertheless, given that this was a young adult sample and men at this life stage tend to be involved in risk related behaviour. The finding of non-significant sex differences in EVC is consistent with a few South African studies, however. For example, Bach (2004) found non-significant sex differences in overall exposure to violence in a sample of Venda and Northern Sotho adolescents.

Although a non-significant sex difference was found in the level of exposure to violent crime, a significant sex difference was found in the perceived severity of exposure to violent crime. Females obtained a mean perceived severity score of 4.16, while males obtained a mean perceived severity score of 3.60 (the possible range of this measure was 1 to 5), and this difference was found to be significant. Thus, on average, females perceived exposure to violent crime as more severe than males. International research on sex differences in perceived severity or threat related to trauma exposure generally indicates that women have stronger perceptions of severity or threat (Olf, Langeland, Draijer, & Gersons, 2007) and this has been highlighted as one of the many factors thought to account for sex differences in traumatic stress. It is on this note that the discussion turns to sex differences in traumatic stress symptomatology.

5.7.2 Sex differences in Traumatic Stress Symptomatology

A significant sex difference was found in the overall levels of traumatic stress symptomatology, with female subjects obtaining significantly higher scores than male subjects on the IES-R. This finding parallels the frequent international finding that women and girls report higher levels of traumatic stress symptomatology than men and boys (e.g., Breslau, 2009; Breslau et al., 1991, 1997, 1998, 1999; Davidson et al., 1991; Kessler et al., 1995; Norris, 1992; Stein et al., 2000; Stein et al., 1997; Stuber et al., 2006). However, a somewhat unexpected finding was that although females reported significantly higher levels of overall TSS, non-significant differences were found between female and male subjects on the Intrusion and Avoidance subscales. These results demonstrate trends in the expected direction (i.e., suggesting higher levels of intrusion and avoidance symptoms among female subjects), but failed to reach significant levels. Therefore, it appears that the significant sex difference in overall levels of TSS found in the present study is indicative primarily of a significant sex difference in hyperarousal symptoms ($t(208) = 2.90, p = .0042$), with female subjects reporting a significantly higher level of hyperarousal symptoms as compared to male subjects. One might speculate that females' higher level of hyperarousal symptoms could be linked to higher levels of trait anxiety and/or neuroticism among women. If one looks at the kind of symptoms included in the hyperarousal cluster – symptoms such as difficulties with sleep and concentration, hypervigilance, and exaggerated startle response – it is evident that these symptoms might also be linked with factors like trait anxiety and/or neuroticism. Possible explanations for sex differences in overall traumatic stress symptomatology have highlighted factors such as these and they may be particularly relevant in the case of hyperarousal symptoms. Indeed, Breslau (2009) proposed that findings on sex differences in neuroticism, anxiety, and the depression-inducing consequences of stressful experiences may possibly provide a theoretical context for future investigation into the greater risk for developing PTSD among females.

Furthermore, as just discussed, female subjects in this study reported the perceived exposure to violent crime as more severe than males. The perceived severity or threat of exposure to trauma has been positively associated with the level of traumatic stress, as was found in this study (section 5.4) and in previous research (e.g., Brewin et al., 2000; Fairbank et al., 1993; March, 1993; Shalev, 1996), and may be a further indicator of a kind of gendered sensitivity to threat.

Another frequently proposed reason for women's higher level of traumatic stress is women's higher exposure to rape or sexual assault, an offense noted to be experienced as particularly threatening or traumatic. Although Rape or sexual assault was rated as very severe ("a lot") in the present study and

although all counts of Rape or Sexual assault (direct or indirect) were reported by female subjects, the reported incidence was not particularly high, with 9 counts of reported rape and thus a rate of 4.17% (including direct and indirect exposure) for the total sample. This could reflect underreporting but it still may suggest that a high incidence of rape or sexual assault was unlikely to be the cause of the higher level of TSS reported by female subjects in this study. Attempted murder and Murder were rated as more severe than Rape or Sexual assault and together these three EVC types were rated as the most severe. A qualitative examination of the subject sex of those who reported Attempted murder and Murder (indirect exposure) revealed a slight predominance of female subjects which could thus potentially be implicated in the higher level of TSS reported by female subjects in this study. With regard to Attempted murder, 7 females, 1 male, and 1 subject of unspecified sex reported this EVC type, and with regard to Murder, 5 females and 1 male reported this EVC type. Taking into account that females comprised about 75% of the total sample, looking at proportions of subject sex reporting these offenses, there is a slight predominance of females, particularly for Murder. Again, however, the reported frequency of these offenses was relatively low and most likely would not account for the significantly higher TSS level among females in the study. However, it is worth noting that Attempted murder, Murder, and Rape or Sexual Assault were perceived as the most severe types of events and substantially more females than males reported these offenses. This should perhaps be kept in mind when considering the significantly higher level of TSS reported by female subjects in this study. However, there are most likely a number of factors involved in the higher level of traumatic stress symptomatology among women and it is unlikely that a single factor would account for sex differences (see for instance, Breslau, 2009) either in this study or others.

5.7.3 Sex difference in Fear of Crime

A significant sex difference was found in the levels of fear of crime, with female subjects reporting significantly higher levels of fear of crime as compared to male subjects. This finding is consistent with international (e.g., McGarrell et al., 1997; Parker et al., 1995; Rountree, 1998) and South African research findings (e.g., Prinsloo, 2006; Mendelsohn, 2002) that have demonstrated significant sex differences in fear of crime. In relation to other findings from this study, the higher fear of crime reported by female subjects might be linked to the significantly higher level of hyperarousal symptoms reported by female subjects. Symptoms such as hypervigilance and exaggerated startle response, in particular, may overlap with fear of crime. As such, hyperarousal and fear of crime might to some extent tap a shared vulnerability that is more common among women. In other words, these findings could suggest that the higher level of arousal and anxiety in women is linked with a more pervasive overall sense of threat, fear and inhibition in behaviour. This hypothesis would need to be further explored by more specifically focused research,

however. In addition, it is unlikely that higher fear of crime among female subjects was linked to level of exposure to violent crime, given that there was no significant sex difference in reports of exposure to violent crime.

There is little consensus in the literature on the reasons for women's higher fear of crime. A number of arguments have been put forward in international literature and are likely to hold for this sample. One explanation concerns the hidden victimisation of women. The assumption is, for example, that women face domestic and incestuous violence in the home that often goes unreported. A number of South African researchers have noted that women in South Africa still generally have less power than their male counterparts and are therefore at greater risk of being victimised in the home (e.g., Jewkes & Abrahams, 2002; Garcia-Moreno et al., 2006). Applied to the female subjects in this study, it is possible that their higher fear of crime may be linked to intimate partner violence or other victimisation in the home that perhaps was not reported in completing the questionnaires, especially since the study did not explicitly assess for these types of victimisation.

Linked to gendered patterns of exposure to violent crime in South Africa is the theoretical argument that women are more vulnerable to victimisation (Pain, 1995; Painter, 1992). One could argue that women are not only more physically vulnerable than men, and perhaps less capable of defending themselves (Killias, 1990), but that they are also more sensitive to risk in their environments (Bannister, 1993), and are socialised to be highly sensitive to their social and physical vulnerabilities (Goodey, 1997; Madriz, 1997; Scott, 2003; Stanko, 1995). Given that South African women's victimisation does not occur exclusively in the home, but also occurs in other contexts such as the school, work and community contexts and is perpetrated by people other than intimate partners or family members, for example, school teachers, work colleagues, acquaintances and strangers (e.g., Christofides et al., 2003; Dunkle et al., 2003; Jewkes et al., 2002), one could speculate that female subjects in this study are possibly more vulnerable to victimisation as compared to male subjects. Furthermore, Ferraro's conceptualisation of "*the shadow of sexual assault*" (1995, p.86) may be particularly relevant in South Africa, a country that has been referred to as the 'rape capital of the world' (Human Rights Watch, 1995).

There are two further possible explanations for female subjects' higher fear of crime in this study. Both these explanations could be linked to the specific developmental stage of male subjects (the mean age of the sample was 18.51 years) in which risk-taking and demonstration of masculinity might be particularly important. The first proposed explanation argues that men tend to 'discount' (Agnew, 1985) their risk of

victimisation (Goodey, 1994; Stanko & Hobdell, 1993) and accordingly experience lower levels of fear. Thus, it is possible that male subjects have been socialised to deny their own fear or even to think they are invulnerable or immune from harm, consequently lowering their fear of crime. The second possible explanation is that men do not sincerely report their levels of fear of crime (Crawford et al., 1990; Goodey, 1997). It is quite possible that male subjects in this study did not sincerely report their levels of fear of crime as a result of social pressures associated with masculine gender roles to downplay fears about crime (Sutton & Farrall, 2005). As mentioned above, the specific developmental stage of the male subjects in the study might have contributed to underreporting of fear of crime given the particular importance of demonstrating masculinity at this life stage. In sum, a number of the international theories concerning women's higher fear of crime could possibly fit as explanations for the higher fear of crime reported by female subjects in this study.

5.7.4 Summary

The findings were generally consistent with the existing literature on gender and trauma. Female subjects were found to report significantly higher levels of both traumatic stress symptomatology and fear of crime. However, a somewhat unexpected finding was the non-significant difference between females and males in the levels of intrusion and avoidance symptoms (clusters of TSS). Indeed, although female subjects reported significantly higher traumatic stress symptomatology than men overall, this appeared to be due primarily to significantly higher levels of hyperarousal symptoms. This is interesting as it suggests more vigilance, arousal, and sensitisation among females which is likely to be correlated with the higher fear of crime found among females. Another rather surprising finding was the non-significant difference in level of exposure to violent crime between female and male subjects. This is in contrast to the usual findings from both international and South African research that men report higher levels of exposure to trauma, including violent crime, as compared to women. The inclusion of indirect exposure in the present study was proposed as a possible explanation for this finding. However, as might be anticipated, females' perceived severity of exposure to violent crime was found to be significantly higher than that of the male students, which is in accordance with the literature.

Having discussed the various sets of findings in the study and their implications, including correspondence 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 violent crime, traumatic stress symptomatology, and fear of crime. Given the high levels of violent crime, trauma, and fear of crime in South Africa, and the potential impact this has on psychological, physical and relational well-being, the aforementioned aims of the study were considered to be relevant. Before turning to the findings concerning these relationships, findings pertaining to levels and patterns of exposure to violent crime, traumatic stress symptomatology, and fear of crime are briefly reviewed.

Findings indicated a high level of exposure to traumatic events amongst this sample of young South African adults. Almost half the sample (47.22%) reported exposure to violent crime and, although this included direct and indirect exposure, it reflects exposure within a 12-month period only. Moreover, almost as many subjects reported multiple EVC as single EVC in the preceding 12 months (20.37% compared to 26.85% of the total sample), suggesting high levels of multiple exposure to violent crime (direct and indirect exposure). In addition, over half the sample (58.33%) reported direct exposure to non-crime trauma in the preceding 12 months. Approximately one-quarter of the total sample reported exposure to both violent crime and non-crime trauma (25.70%), with only about one-fifth of the total sample (20.09%) reporting no exposure to any kind of trauma in the preceding 12 months. It was thus unsurprising that levels of traumatic stress symptomatology were generally in the moderate range and at least 20% of the total sample reported traumatic stress symptomatology of clinical concern. Fear of crime was found to be rather pervasive in the sample and there was an implication that fear of crime inhibited movement within the environment.

With regard to relationships between variables, the findings provided further support for the relationship between exposure to violent crime and traumatic stress symptomatology. Subjects who reported exposure to violent crime reported significantly higher levels of traumatic stress symptomatology in all three key areas (intrusion, avoidance, and hyperarousal) as compared to subjects who reported no exposure to violent crime. As might be anticipated, for subjects who reported exposure to violent crime, the perceived severity of the exposure was significantly positively correlated with the level of traumatic stress symptomatology. In addition, exposure to violent crime as well as exposure to non-crime trauma were found to have significant independent effects on the levels of traumatic stress symptomatology, offering

further support for the link between exposure to traumatic events and traumatic stress symptomatology. These exposure types were found to have an additive rather than an interactive effect on traumatic stress symptomatology, with subjects who reported both types of exposure reporting the highest level of traumatic stress symptomatology in the study. A secondary aim of the study was to investigate the relationship between frequency of exposure to violent crime and traumatic stress symptomatology and findings were surprising in that they indicated a non-significant difference between subjects reporting a single exposure and those reporting multiple exposures.

Findings also show support for the relationship between exposure to violent crime and fear of crime. Subjects who reported exposure to violent crime reported significantly higher levels of fear of crime than subjects who reported no exposure to violent crime. It was interesting that, for subjects who reported exposure to violent crime, the perceived severity of the exposure was significantly positively correlated with fear of crime. In addition, exposure to violent crime, but not exposure to non-crime trauma, was found to have a significant independent effect on the levels of fear of crime. This suggests that the specific nature of exposure to violent crime as a traumatic stressor (as opposed to non-crime trauma) affects fear of crime. Furthermore, given that exposure to violent crime included indirect exposure, these findings suggest that, even when such exposure is not direct, it may serve to heighten fear of crime. A secondary aim of the study was to investigate the relationship between frequency of exposure to violent crime and fear of crime and findings indicated a significant effect for the frequency of exposure to violent crime on levels of fear of crime. It is interesting that this was found despite the inclusion of indirect exposure and one could speculate that even if multiple exposure is indirect it might serve to heighten fear of crime – in other words, the cumulative impact of exposure to violent crime on fear of crime might hold for both direct and indirect exposure.

Findings showed support for the relationship between fear of crime and traumatic stress symptomatology. Significant positive relationships were found between fear of crime and traumatic stress symptomatology (including all three key areas, namely intrusion, avoidance, and hyperarousal related symptoms) for the total sample, for subjects reporting exposure to violent crime, and for subjects reporting no exposure to violent crime (correlations were generally of medium size in all cases). Thus, findings suggest that fear of crime is positively related to traumatic stress symptomatology, regardless of whether there has been exposure to violent crime. It is likely then that the two measures tap related aspects of traumatic anxiety related responses to the environment. It is proposed that 'fear of crime' might be a useful additional gauge

of levels of traumatisation amongst a population and should perhaps be used more widely in studies of event impact.

A secondary aim of the study was the investigation of potential sex differences in exposure to violent crime, traumatic stress symptomatology, and fear of crime. Female subjects were found to report significantly higher levels of both traumatic stress symptomatology and fear of crime. However, a somewhat unexpected finding was the non-significant difference between females and males in the levels of intrusion and avoidance symptoms. Although female subjects reported significantly higher traumatic stress symptomatology than men overall, this finding appeared to be due primarily to the significantly higher level of hyperarousal symptoms reported by female subjects. Another rather surprising finding was the non-significant difference in level of exposure to violent crime as reported by female and male subjects. However, as might be anticipated, females' perceived severity of exposure to violent crime was found to be significantly higher than that for males. Thus, it is apparent that, compared to male subjects, female subjects reported significantly higher perceived severity of exposure to violent crime, hyperarousal related symptoms, and fear of crime. It is possible that these results may reflect a common underlying vulnerability whereby the higher level of arousal and anxiety in women is linked with a more pervasive overall sense of threat, fear and inhibition in operating in the (external) environment. It could be that women are more sensitive to perceiving threat in addition to being more sensitive in responding to threat. Elevated anxiety might be a common factor that links these results. It would be interesting to study these possible patterns through more focused research.

6.2 Limitations of the Present Study and Recommendations for Future Research

A number of limitations of the present study are addressed and, stemming from these, some suggestions for future research are offered. First, a limitation of the study was the correlational and cross-sectional nature of the data. Consequently, neither direction nor causality could be inferred from the results. This was particularly limiting with regard to the relationship between fear of crime and traumatic stress symptomatology. Longitudinal studies of responses to trauma are recommended in that they offer a deeper understanding of the course of traumatic stress symptomatology and how symptoms could fluctuate or change over time (Benatar, 1996; Green, 1993). Due to the limited time frame available in which to complete this study, a longitudinal study was not possible (the study was conducted in fulfillment of the requirements of a degree that required completion within one year). Thus, the cross-sectional design of the study was based to some extent upon practical considerations. However, in hindsight it would have been useful to include a measure for recency of exposure in order to investigate how this might mediate the

relationship between exposure to violent crime and traumatic stress symptomatology, as well as possibly exposure to violent crime and fear of crime. As such it is recommended that future studies include a measure for recency to exposure in addition to a measure for perceived severity or threat of exposure.

On this note, the study highlights a further limitation in that it did not measure a number of variables noted to mediate the relationship between exposure to traumatic events and traumatic stress symptomatology. Important factors could include, amongst others, social support (Green 1993), environment or context (Herman, 1992), and individual factors such as pre-existing personality variables (Kleber & Brom, 1992) and coping style (Herman, 1992). However, given the time constraints for data collection and the focused nature of the study, only measures assessing the three main variables of interest and basic demographic information were included. Furthermore, the study did take into account potential mediating variables such as the perceived severity of exposure to violent crime, the frequency of exposure to violent crime, and exposure to non-crime trauma – which have all been highlighted as potentially affecting the relationship between exposure to violent crime and traumatic stress symptomatology (Jacobs, 2002; Weiss & Marmar, 1997). The study was of limited scope and it was not practically possible to take into account other potential mediating factors.

A further limitation was that the measures used in this study were not controlled in terms of possible response biases such as social desirability. Although there is limited research on the potential differences in reporting between men and women in their willingness to describe traumatic event impact, such potential differences may have possibly influenced the results (Wolfe & Kimerling, 1997). Given that the individual's impression of the acceptability of reporting exposure to violent crime or consequent psychological distress may be influenced by gender role socialisation (Wolfe & Kimerling, 1997), controlling for socially desirable responding would have been particularly useful in assessing fear of crime given that there is some evidence that men might underreport fear of crime as a result of social pressures associated with masculine gender roles (Sutton & Farrall, 2005). Since female subjects were found to report significantly higher fear of crime than male subjects in this study, it would have been interesting to explore whether socially desirable responding was operative in this sample. As such it is recommended that future studies in these research fields control for social desirability and other response biases. However, it should be noted that since it was evident that responses could not be linked to particular individuals, if such bias was operating, it would have played a largely unconscious role.

The reliance on retrospective self-report measures constituted a noteworthy limitation of the study. Problematic issues include the fact that responses provided by subjects represented reconstructions of their experiences and may have been influenced by the perceived demands of the study (Ericsson & Simon, 1993, cited in van Someren, Barnard, & Sandberg, 1994). Thus, there are possible problems with the accuracy of data. It has been argued that clinical interviews 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 would not have been a viable option given the limited time frame in which to complete the study and the volume of subjects, and data collection would then have required extensive resources (e.g., trained clinical interviewers). Interviewing might have also brought its own limitations. For instance, in light of the aforementioned potential differences in reporting between men and women due to gender role socialisation, face-to-face interviews may have produced even more pressure to provide socially desirable or gender appropriate responses (Rosnow & Rosenthal, 1996). In this way, self-report actually offered an advantage in this study. Furthermore, the self-report measures were chosen on the basis of the large sample size required in order to conduct statistical analyses consistent with the aims of the study and these measures were suited to a quantitative methodology. The questionnaire based data collection allowed for the rapid collection of data from a relatively large sample ($n = 216$).

A possible limitation also related to the measures used in the study was that the fear of crime measure was not a standardised measure. It was used in a previous South African study and found to be reliable (von Klemperer, 2009) and the present researcher added one further item to this measure. Although not standardised, analyses found the fear of crime measure to be reliable in this study, suggesting that subjects responded to the measure with some consistency and appeared to find the measure comprehensible. It was also evident that different researchers use slightly different versions of a similar battery of questions that tend to rely on their evident face and construct validity.

The sample was not representative of the broader population and thus the findings of this study cannot be over generalised. There was a population bias in that subjects were generally young with access to tertiary education. There was also a predominance of women in the study (approximately three-quarters of the sample were female). However, the results have value within this circumscribed grouping. Results could perhaps apply to other young university students in Johannesburg (and perhaps other large urban centres in South Africa), in view of the fact that the age, educational level and broad geographical location of such populations would be similar. This notwithstanding, there is no compelling reason to believe that the

findings of this study were particular to this group. Despite this, it is recommended that future researchers attempt to conduct related research on samples more representative of the broader population.

A further possible limitation of the study was the non-distinction between direct and indirect exposure to violent crime in assessing and recording responses. This may have distorted findings and certain findings could have perhaps been clarified further if details of indirect exposure were known. However, this was acknowledged where relevant in the discussion. Based on discussion with some other researchers in the field, the researcher chose rather to include a measure for perceived severity of exposure to violent crime as a means of disaggregating responses to some extent. In addition, by including indirect exposure to violent crime, the importance of indirect exposure in terms of impact was highlighted. For instance, the significant effect found for the frequency of exposure to violent crime on fear of crime might suggest that, even if exposure to violent crime is indirect, it may serve to heighten personal fear of crime. The effects of indirect exposure to violence have been neglected to some extent in South African research (Jacobs, 2002; Mendelsohn, 2002) and this was addressed by including such exposure in the present study. However, the non-specification of direct versus indirect exposure was limiting in certain respects and thus it is recommended that future research distinguish between direct exposure and indirect exposure in addition to measuring the perceived severity of both types of exposure.

The measure for perceived severity of exposure to violent crime may have also helped to counteract the possible limitation arising from the variety of violent crime exposed to as reported by the sample. There is frequent criticism within the trauma literature of comparing groups exposed to different types of traumatic events (Fontana & Rosenheck, 1993), given that different types of traumatic events may have different kinds of effects (Green, 1993). This was acknowledged in the present study firstly by reporting on the mean scores for perceived severity of different types of exposure to violent crime and, secondly, by computing correlations between the perceived severity of exposure to violent crime and traumatic stress symptomatology and fear of crime, respectively (as opposed to only comparing groups on the basis of levels of exposure). Furthermore, the reason for using a sample that had been exposed to a variety of violent crimes was to explore the broad effects of direct and indirect exposure to violent crime on traumatic stress symptomatology and fear of crime.

The lack of information on exposure to non-crime trauma in the sample, other than the presence or absence of direct exposure to non-crime trauma in the preceding 12 months, proved to be a limiting factor. Given that the study focused specifically on the exposure to violent crime as a traumatic stressor the item

assessing the presence of exposure to non-crime trauma in the preceding 12 months was introduced with the primary intention of excluding a possible confounding variable. It would have been difficult to anticipate that such a large proportion of the sample (58.33%) would have reported direct exposure to non-crime trauma in the preceding 12 months. Rather than excluding these subjects, statistical analyses were used to investigate this variable and how it might interact with the other variables in the study. However, the lack of information on reported exposure to non-crime trauma proved to be limiting and it would have been useful to assess the types and perceived severity of this exposure. Despite this, by including this item, a number of advantages presented themselves. Firstly, there was the aforementioned investigation of interaction effects, for example, the interaction effect for exposure to violent crime and exposure to non-crime trauma on traumatic stress symptomatology and fear of crime, respectively. Secondly, by including this variable the researcher was able to demarcate a kind of control group which consisted of subjects who reported no exposure to either violent crime or non-crime trauma, and exposure groups (consisting of subjects who reported either exposure to violent crime or non-crime trauma or both) could be compared with the No Exposure group in terms of traumatic stress symptomatology and fear of crime, respectively.

In drawing the chapter to a close, final recommendations based on the findings of the present study are offered. Firstly, given the high level of multiple exposure to violent crime in South Africa and the relatively limited research into this area, it is recommended that the impact of multiple traumatic event exposure on traumatic stress symptomatology and fear of crime continue to be investigated. In light of the significant effect found for the frequency of exposure on fear of crime, it would be interesting to test whether this finding could be replicated with another sample. Furthermore, there is a dearth of research on the relationship between fear of crime and traumatic stress symptomatology and it is suggested that further research expand on the present findings by investigating a possible causal relationship between fear of crime and traumatic stress symptomatology. In general, while there appears to be a great deal of international information pertaining to crime and an abundance of literature on certain aspects of trauma, the South African research field of fear of crime would benefit from increased attention, particularly from a psychological point of reference. Of particular interest was the finding of a possible link between females' significantly higher perceived severity of exposure to violent crime, hyperarousal related symptoms, and fear of crime, perhaps suggesting elevated anxiety or a common vulnerability more frequently occurring in women. This area in particular may prove to be a rich avenue of future research.

6.3 Concluding Comments

Despite the above limitations, it is argued that this study has made a contribution to the understanding the effects of violent crime in South Africa, taking into account the effects of both direct and indirect exposure, the latter of which is frequently neglected in trauma research. Furthermore, the study took into account potential mediating variables in the relationship between exposure to violent crime on the one hand, and traumatic stress symptomatology and fear of crime on the other hand, including the perceived severity of exposure to violent crime, frequency of exposure to violent crime, and exposure to non-crime trauma. In addressing the criticism that the trauma field tends to have focused primarily on the psychological impact of a single traumatic event, the study explored the incidence of multiple exposure to violent crime and investigated how the frequency of exposure to violent crime was related to both traumatic stress symptomatology and fear of crime. These findings appear to be particularly relevant to the South African context. As mentioned above, by taking into account the presence or absence of exposure to non-crime trauma, the researcher was also able to demarcate a kind of control group (No Exposure group) to which the responses of the exposure groups could be compared. The exploration of the relationship between fear of crime and traumatic stress symptomatology is one of the more novel aspects of the study offering relatively new information to the trauma field in South Africa, and the particular focus on sex differences highlighted the importance of taking into account gendered patterns of response in studying trauma related responsiveness. It is hoped that the study has made a contribution to the existing body of trauma related research in South African and will serve to stimulate further research in this area.

REFERENCES

- Afrobarometer. (2005). *Public attitudes to crime and security in South Africa*. Afrobarometer Briefing 1. Afrobarometer: Cape Town.
- Agnew, R. (1985). Neutralizing the impact of crime. *Criminal Justice and Behavior*, 12, 221-239.
- Allen, D.B. (2002). Race, crime and social exclusion: A qualitative study of white women's fear of crime in Johannesburg. *Urban Forum*, 13(3), 53-79.
- Allen, J., Dodd, T., & Salisbury, H. (2005). *Crime in England and Wales: Quarterly update to September 2004*. London: Home Office.
- Alvassi del Frate, A., & van Kesteren, J.N. (2003). The ICVS in the developing world. *International Journal of Comparative Criminology*, 2(1), 57-76.
- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders: DSM-III*. Washington, DC: Author.
- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders: DSM-III-R*. Washington, DC: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR*. Washington, DC: Author.
- Andrews, B., Brewin, C.R., & Rose, S. (2003). Gender, social support, and PTSD in victims of violent crime. *Journal of Traumatic Stress*, 16(4), 421-427.
- Arch, E.C. (1993). Risk-taking: A motivational basis for sex differences. *Psychological Reports*, 73, 3-11.
- Bach, J.M. (2004). *Depression, posttraumatic stress disorder and exposure to violence among Venda and Northern Sotho adolescents*. Unpublished master's thesis, University of the Free State, Bloemfontein.
- Bannister, J. (1993). Locating fear: Environment and ontological security. In H. Jones (Ed.), *Crime and the urban environment*. Aldershot: Avebury.
- Benatar, S. (1996). *Reactions to multiple trauma*. Unpublished master's thesis, University of the Witwatersrand, Johannesburg.
- Beukenhorst, D.J., Huys, H.J.W.M., Oudhof, J., & Roduijn, J. (1993). *De overgang van enquête slachtoffers misdrijven naar enquête rechtsbescherming en veiligheid*. Recht en Statistiek, No. 16. Voorburg: Centraal Bureau voor de Statistiek.
- Blank, A. (1993). The longitudinal course of posttraumatic stress disorder. In J.R.T. Davidson & E.B. Foa (Eds.), *Post-traumatic stress disorder: DSM-IV and beyond* (pp.3-22). Washington, DC: American Psychiatric Press.

- Boney-McCoy, S., & Finkelhor, D. (1995). Psychosocial sequelae of violent victimization in a national youth sample. *Journal of Consulting and Clinical Psychology, 63*, 726-736.
- Boudreaux, E., Kilpatrick, D.G., Resnick, H.S., Best, C.L., & Saunders, B.E. (1998). Criminal victimization, posttraumatic stress disorder, and comorbid psychopathology among a community sample of women. *Journal of Traumatic Stress, 11*(4), 665-678.
- Bowley, D.M., Khavandi, A., Boffard, K.D., Macnab, C., Eales, J., Vellema, J., et al. (2002). The malignant epidemic: Changing patterns of trauma. *South African Medical Journal, 92*(10), 93-95.
- Box, S., Hale, C., & Andrews, G. (1988). Explaining fear of crime. *British Journal of Criminology, 28*, 340-356.
- Breslau, N. (2009). The epidemiology of trauma, PTSD, and other posttrauma disorders. *Trauma, Violence, & Abuse, 10*(3), 198-210.
- Breslau, N., Chilcoat, H.D., Kessler, R.C., Peterson, E.L., & Lucia, V.C. (1999). Vulnerability to assaultive violence: Further specification of the sex difference in post-traumatic stress disorder. *Psychological Medicine, 29*(4), 813-821.
- Breslau, N., Davis, G.C., Andreski, P., & Peterson, E.L. (1991). Traumatic events and posttraumatic stress disorder in an urban population of young adults. *Archives of General Psychiatry, 48*, 216-222.
- Breslau, N., Davis, G.C., Andreski, P., Peterson, E.L., & Schultz, L.R. (1997). Sex differences in posttraumatic stress disorder. *Archives of General Psychiatry, 54*(11), 1044-1048.
- Breslau, N., Kessler, R.D., Chilcoat, H.D., Schultz, L.R., Davis, G.C., & Andreski, P. (1998). Trauma and posttraumatic stress disorder in the community: The 1996 Detroit Area Survey of Trauma. *Archives of General Psychiatry, 55*, 626-632.
- Breslau, N., Wilcox, H.C., Storr, C.L., Lucia, V.C., & Anthony, J.C. (2004). Trauma exposure and posttraumatic stress disorder: A study of youths in urban America. *Journal of Urban Health, 81*, 530-544.
- Brewin, C. R., Andrews, B., Rose, S., & Kirk, M. (1999). Acute stress disorder and posttraumatic stress disorder in victims of violent crime. *American Journal of Psychiatry, 156*(3), 360-366.
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology, 68*, 748-766.
- Burton, P., du Plessis, A., Leggett, T., Louw, A., Mistry, D., & van Vuuren, H. (2004). *National Victims of Crime Survey: South Africa 2003*. Institute for Security Studies Monograph 101 July 2004. Retrieved April 5, 2009, from <http://www.iss.co.za/pubs/Monographs/No101/Contents.html>

- Carey, P.D., Stein, D.J., Zungu-Dirwayi, N., & Seedat, S. (2003). Trauma and posttraumatic stress disorder in an urban Xhosa primary care population: Prevalence, comorbidity, and service use patterns. *Journal of Nervous and Mental Disease, 191*(4), 230-236.
- Carlson, E.B., & Dutton, M.A. (2003). Assessing experiences and responses of crime victims. *Journal of Traumatic Stress, 16*(2), 133-148.
- Chatterbaugh, K. (1990). *Contemporary perspectives on masculinity*. Boulder, CO: Westview Press.
- Chiricos, T. (1997). *Fear of crime and related perceptions: A statewide survey of Florida 1996*. School of Criminology and Criminal Justice, Florida State University. Retrieved November 15, 2009, from <http://www.criminology.fsu.edu/TA/fear/index.htm>
- Christofides, N., Webster, N., Jewkes, R., Penn-Kekana, L., Martin, L., Abrahams, N., et al. (2003). *The state of sexual assault services: Findings from a situation analysis of services in South Africa*. South African Gender-based Violence and Health Initiative Report. Retrieved February 14, 2007, from <http://web.wits.ac.za/NR/rdonlyres/47D3C832-3888-4055-8D32-C7D2B9BD1A44/0/M77.pdf>
- Chung, H., & Breslau, N. (2008). The latent structure of post-traumatic stress disorder: Tests of invariance by gender and trauma type. *Psychological Medicine, 38*, 563-573.
- Copeland, W.E., Keeler, G., Angold, A., & Costello, E.J. (2007). Traumatic events and posttraumatic stress in childhood. *Archives of General Psychiatry, 64*, 577-584.
- Covington, J., & Taylor, R.B. (1991). Fear of crime in urban residential neighborhoods: Implications of between- and within- neighborhood sources for current models. *The Sociological Quarterly, 32*(2), 231-249.
- Crawford, A., Jones, T., Woodhouse, T., & Young, J. (1990). *Second Islington Crime Survey*. London: Middlesex Polytechnic.
- Creamer, M., Burgess, P., Buckingham, W., & Pattison, P. (1993). Posttrauma reactions following a multiple shooting: A retrospective study and methodological inquiry. In J.P. Wilson & B. Raphael (Eds.), *International handbook of traumatic stress syndromes* (pp.201-212). New York: Plenum Press.
- Daroowalla, A., Kosch, D., Krupnick, J., & Rickel, A. (2000). *Difficulties in recruiting low-income women with PTSD into a psychotherapy treatment study*. Poster presented at Department of Medicine Research Day, Georgetown University Medical Centre, Washington, DC.
- Davids, A., & wa Kivilu, M. (October, 2008). Measuring variations in fear, crime and violence: The role of the household and sector specific surveys. Paper presented at the 17th International Safe Communities Conference, Christchurch, New Zealand.
- Davidson, J.R.T., Hughes, D., & Blazer, D.G. (1991). Post-traumatic stress disorder in the community: An epidemiological study. *Psychological Medicine, 21*, 713-721.

- Davidson, M.L. (2001). *Relations between post-traumatic stress symptomology, disruptions in cognitive schemas and coping in emergency care practitioners*. Unpublished master's thesis, University of the Witwatersrand, Johannesburg.
- Dinan, B.A., McCall, G.J., & Gibson, D. (2004). Community violence and PTSD in selected South African townships. *Journal of Interpersonal Violence, 19*(6), 727-741.
- Dirsuweit, T. (2002). Johannesburg: Fearful city? *Urban Forum, 13*(3), 3-19.
- Ditton, J., & Farrall, S. (2000). *The fear of crime*. Aldershot: Ashgate.
- Dunkle, K., Jewkes, R., Brown, H., McIntyre, J., Gray, G., & Harlow, S. (2003). *Gender-based violence and HIV infection among pregnant women in Soweto*. A Technical Report to the Australian Agency for International Development. Retrieved February 14, 2007, from <http://www.mrc.ac.za/gender/women.pdf>
- Eagle, G. (1994). *Post-traumatic stress as a diagnostic category: Challenges posed through working in the South African context*. Paper presented at the First Annual Congress of the Psychological Society of South Africa (PsySSA), Cape Town.
- Eagle, G., & Watts, J. (2001). *When objects attack in reality: An object relations formulation of the impact and treatment of traumatic stress incidences*. Paper presented at Widening Horizons conference, Ububele: The African Psychotherapy and Resource Centre, Johannesburg.
- Eagle, G.T. (2002). Posttraumatic stress disorder (PTSD): The malleable diagnosis? *South African Journal of Psychology, 32*(2), 37-42.
- Edwards, D. (2005a). Post-traumatic stress disorder as a public health concern in South Africa. *Journal of Psychology in Africa, 15*(2), 125-134.
- Edwards, D. (2005b). Critical perspectives on research on post-traumatic stress disorder and implications for the South African context. *Journal of Psychology in Africa, 15*(2), 117-224.
- Elklit, A. (2002). Victimization and PTSD in a Danish national youth probability sample. *Journal of the American Academy of Child and Adolescent Psychiatry, 41*(2), 174-181.
- Ensink, K., Robertson, B.A., Zissis, C., & Leger, P. (1997). Posttraumatic stress disorder in children exposed to violence. *South African Medical Journal, 87*, 1526-1530.
- Esterhuyse, K.G.F., Louw, D.A., & Bach, J.M. (2007). Post-traumatic stress disorder and exposure to violence among Venda and Northern Sotho adolescents. *Health SA Gesondheid, 12*(2), 63-72.
- European Commission, Directorate-General Press and Communication. (2003). *Results of Eurobarometer 58.0 (Autumn 2002): Analysis of public attitudes to insecurity, fear of crime and crime prevention*. DG Press B/1/UTMD(2003), Brussels, 25 April. Retrieved March 10, 2009 from http://ec.europa.eu/public_opinion/archives/ebs/ebs_181_sum_en.pdf

- Fairbank, J.A., Schlenger, W.E., Caddell, J.M., & Woods, M.G. (1993). Post-traumatic stress disorder. In P.B. Sutker & H.E. Adams (Eds.), *Comprehensive handbook of psychopathology* (2nd ed., pp.145-166). New York: Plenum Press.
- Farrall, S., Gray, E., & Jackson, J. (2006). *Combining the new and old measures of the fear of crime: Exploring the 'worried-well'*. Working Paper No.4. Retrieved March 12, 2009 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1012386
- Farrall, S., Gray, E., & Jackson, J. (2007). *Theorising the fear of crime: The cultural and sociological significance of insecurities about crime*. Experience and Expression in the Fear of Crime, Working Paper No. 4. Retrieved March 12, 2009, from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1012393
- Ferraro, K.F. (1995). *Fear of crime: Interpreting victimization risk*. New York: SUNY Press.
- Ferraro, K.F. (1996). Women's fear of victimization: Shadow of sexual assault? *Social Forces*, 75, 667-690.
- Field, A. (2005). *Discovering statistics using SPSS*. London: Sage Publications Ltd.
- Figley, C.R. (1995). Compassion fatigue as secondary traumatic stress disorder: An overview. In C.R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp.1-20). New York: Brunner/Mazel.
- Fincham, D., Korthals Altes, L., Stein, D.J., & Seedat, S. (2007). Posttraumatic stress disorder symptoms in adolescents: Risk factors versus resilience moderation. *Comprehensive Psychiatry*, 50, 193-199.
- Finkelhor, D., & Dziuba-Leatherman, J. (1994). Victimization of children. *American Psychologist*, 49, 173-183.
- Finkelhor, D., Ormrod, R.K., & Turner, H.K. (2007). Poly-victimization: A neglected component in child victimization. *Child Abuse and Neglect*, 31, 7-26.
- Fisher, B.S., & Sloan, J.J., III. (2003). Unraveling the fear of victimization among college women: Is the "shadow of sexual assault hypothesis" supported? *Justice Quarterly*, 20, 663-659.
- Follette, V., Polusny, M., Bechtle, A., & Naugle, A. (1996). Cumulative trauma: The impact of child sexual abuse, adult sexual assault, and spouse abuse. *Journal of Traumatic Stress*, 9(1), 25-35.
- Fontana, A., & Rosenheck, R. (1993). A causal model of the aetiology of war related PTSD. *Journal of Traumatic Stress*, 6(4), 475-499.
- Freedly, J.R., Shaw, D.L., Jarrell, M.R., & Masters, C.R. (1992). Towards an understanding of the psychological impact of natural disasters: An application of the Conservation Resources Stress Model. *Journal of Traumatic Stress*, 5, 441-454.

- Friedland, D. (1999). *Direct and indirect exposure to criminal violence in South Africa: Post-traumatic stress symptoms and disruptions in cognitive schema*. Unpublished master's thesis, University of the Witwatersrand, Johannesburg.
- Friedman, M. (1995). *The twin peaks effect*. Unpublished raw data.
- Garcia-Moreno, C., Jansen, H.A., Ellsberg, M., Heise, L., & Watts, C.H. (2006). Prevalence of intimate partner violence: Findings from the WHO multi-country study on women's health and domestic violence. *Lancet*, *368*, 1260-1269.
- Giaconia, R.M., Reinherz, H.Z., Silverman, A.B., Pakiz, B., Frost, A.K., & Cohen, E. (1995). Traumas and posttraumatic stress disorder in a community population of older adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, *34*(10), 1369-1380.
- Gilbert, L. (1996). Urban violence and health – South Africa 1995. *Social Science and Medicine*, *43*(5), 873-886.
- Gilchrist, E., Bannister, J., Ditton, J., & Farrall, S. (1998). Women and the 'fear of crime': Challenging the accepted stereotype. *British Journal of Criminology*, *38*, 283-298.
- Glanz, L. (1994). *Crime in South Africa: Perceptions, fear and victimization*. Pretoria: Human Sciences Research Council.
- Goodey, J. (1994). Fear of crime: What can children tell us? *International Review of Victimology*, *3*, 195-210.
- Goodey, J. (1997). 'Boys don't cry': Masculinities, fear of crime and fearlessness. *British Journal of Criminology*, *37*, 401-418.
- Graziano, A.M., & Raulin, M.L. (2004). *Research methods: A process of inquiry* (5th ed.). Boston: Pearson Education Group, Inc.
- Green, B.L. (1993). Identifying survivors at risk: Traumas and stressors across events. In J.P. Wilson & B. Raphael (Eds.), *International handbook of traumatic stress syndromes* (pp.135-144). New York: Plenum Press.
- Green, B.L. (1994). Psychosocial research in traumatic stress: An update. *Journal of Traumatic Stress*, *7*, 341-362.
- Green, B.L., Goodman, L.A., Krupnick, J.L., Corcoran, C.B., Petty, R.M., Stockton, P., et al. (2000). Outcomes of single versus multiple trauma exposure in a screening sample. *Journal of Traumatic Stress*, *13*, 271-296.
- Green, L. (1994). Fear as a way of life. *Cultural Anthropology*, *9*(2), 227-256.
- Gwandure, C. (2007). Home-based care for parents with AIDS: Impact on children's psychological functioning. *Journal of Child and Adolescent Mental Health*, *19*(1), 29-44.

- Hagan, F.E. (1989). *Research methods in criminal justice and criminology* (2nd ed.). MacMillan: New York.
- Hale, C. (1996). Fear of crime: A review of the literature. *International Review of Victimology*, 4, 79-150.
- Hamber, B. (1999). Have no doubt it is fear in the land: An exploration of the continuing cycles of violence in South Africa. *South African Journal of Child and Adolescent Mental Health*, 12, 5-18.
- Hamber, B., & Lewis, S. (1997). *An overview of the consequences of violence and trauma in South Africa*. Research report written for the Centre for the Study of Violence and Reconciliation. Retrieved October 23, 2009, from <http://www.csvr.org.za/wits/papers/papptsd.htm>
- Harris, M., & Radaelli, S. (2007). Paralyzed by fear: Perceptions of crime and violence in South Africa. *South African Crime Quarterly*, 20, 1-6.
- Haynie, D.L. (1998). The gender gap in fear of crime, 1973-1994: A methodological approach. *Criminal Justice Review*, 23, 29-50.
- Herman, A.A., Stein, D.J., Seedat, S., Heeringa, S. G., Moomal, H., & Williams, D.R. (2009). The South African Stress and Health (SASH) study: 12-month and lifetime prevalence of common mental disorders. *South African Medical Journal*, 99(5), 339-344.
- Herman, J.L. (1992). *Trauma and recovery*. London: Harper Collins.
- Hoffman, W., & McKendrick, B.W. (1990). The nature of violence. In B.W. McKendrick & W. Hoffman (Eds.), *People and violence in South Africa* (pp.3-35). Cape Town: Oxford University Press.
- Hope, T., & Sparks, R. (2000). *Crime, risk and insecurity: Law and order in every day life and political discourse*. London: Routledge.
- Horowitz, M.J. (1976). *Stress response syndromes*. New York: Jason Aronson.
- Horowitz, M.J., Wilner, N., & Alvarez, W. (1979). Impact of Event Scale: A measure of subjective distress. *Psychometric Medicine*, 41(3), 209-218.
- Hough, M. (1995). *Anxiety about crime: Findings from the 1994 British Crime Survey*. Home Office Research Study No. 147. London: Home Office.
- Human Rights Watch. (1995). *Violence against women in South Africa: State response to domestic violence and rape*. New York: Human Rights Watch.
- Jacobs, F.P. (2002). *The extent and some of the vicissitudes of psychological traumatising at the hands of violent crime in first year university students*. Unpublished master's thesis, University of the Witwatersrand, Johannesburg.
- Jewkes, R., & Abrahams, N. (2002). The epidemiology of rape and sexual coercion in South Africa: An overview. *Social Science and Medicine*, 55, 1231-1244.

- Jewkes, R., Levin, J., Mbananga, N., & Bradshaw, D. (2002). Rape of girls in South Africa. *The Lancet*, 359(9303), 319-320.
- Jewkes, R., Penn-Kekana, L., Levin, J., Ratsaka, M., & Schriber, M. (1999). "He must give me money, he mustn't beat me": Violence against women in three South African Provinces. CERSA (Women's Health), Medical Research Council. Retrieved February 14, 2007, from <http://www.mrc.ac.za/gender/violence.pdf>
- Joseph, J. (1997). Fear of crime among Black Elderly. *Journal of Black Studies*, 27(5), 698-717.
- Kaminer, D., Grimsrud, A., Myer, L., Stein, D., & Williams, D. (2008). Risk for posttraumatic stress disorder associated with different forms of interpersonal violence in South Africa. *Social Science and Medicine*, 67(10), 1589-1595.
- Kamphuis, J.H., & Emmelkamp, P.M.G. (1998). Crime-related trauma: Psychological distress in victims of bankrobbery. *Journal of Anxiety Disorders*, 12(3), 199-208.
- Kassen, M. (2002). *Post-traumatic response, ego defense style and sense of coherence amongst a sample of police officers*. Unpublished master's thesis, University of the Witwatersrand, Johannesburg.
- Kessler, R.C., Chiu, W.T., Demler, O., Merikangas, K.R., & Walters, E.E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 617-627.
- Kessler, R.C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C.B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, 52, 1048-1060.
- Killias, M. (1990). Vulnerability: Towards a better understanding of a key variable in the genesis of fear of crime. *Violence and Victims*, 5, 275-295.
- Killias, M., & Clerici, C. (2000). Different measures of vulnerability and their relation to different dimensions of fear of crime. *British Journal of Criminology*, 40(3), 437-450.
- Kilpatrick, D.G., Acierno, R., Resnick, H.S., Saunders, B.E., & Best, C.L. (1997). A 2-year long longitudinal analysis of the relationship between violent assault and substance use in women. *Journal of Consulting and Clinical Psychology*, 65, 834-847.
- Kilpatrick, D., & Resnick, H. (1993). PTSD associated with exposure to criminal victimization in clinical and community populations. In J.R.T. Davidson & E.B. Foa (Eds.), *Post-traumatic stress disorder in review: Recent research and future directions* (pp.113-146). Washington, DC: American Psychiatric Press.
- Kleber, R.J., & Brom, D. (1992). *Coping with trauma: Theory, prevention and treatment*. Amsterdam & Berwyn, Pennsylvania: Swets & Zeitlinger International.
- Koffman, L. (1996). *Crime surveys and victims of crime*. Cardiff: University of Wales Press.

- Kopel, H., & Friedman, M. (1997). Posttraumatic symptoms in South African police exposed to violence. *Journal of Traumatic Stress, 10*(2), 307-317.
- Krupnick, J.L., Green, B.L., Stockton, P., Goodman, L., Corcoran, C., & Petty, R. (2004). Mental health effects of adolescent trauma exposure in a female college sample: Exploring differential outcomes based on experiences of unique trauma types and dimensions. *Psychiatry, 67*, 264-279.
- Kury, H., & Ferdinand, T. (1998). The victim's experience and fear of crime. *International Review of Victimology, 5*, 93-140.
- LaGrange, R.L., Ferraro, K.F., & Supancic, M. (1992). Perceived risk and fear of crime: The role of social and physical incivilities. *Journal of Research in Crime and Delinquency, 29*, 311-334.
- Lauer, R.H. (1989). *Social problems and the quality of life*. Duubueque: Wm. C Brown Publishers.
- Lewis, D.A., & Salem, G. (1980). *Community crime prevention: An analysis of a developing strategy*. Unpublished manuscript, North-western University.
- Louw, A. (2005). *Freedom and Security: Workpackage 1 research project*. Confidential draft report for the National Prosecuting Authority's Serurubele Program.
- Louw, A. (2007). Crime and perceptions after a decade of democracy. *Social Indicators Research, 81*, 235-255.
- Lucas, M., Damianova, M., Burney, S., & Ponto, M. (2006, July). Stress and coping in students exposed to crime and violence: A comparative study of students studying at campuses in South Africa, Australia and England. In P. Roussi, E. Vassilaki, K. Kaniasty & J. D. Barker (Eds.), *Electronic Proceedings of the 27th Conference of the STAR Society* (pp.106-115). University of Crete, Rethymnon.
- Madriz, E. (1997). *Nothing bad happens to good girls: Fear of crime in women's lives*. Berkley: University of California Press.
- Marais, A., & Stuart, A.D. (2005). The role of temperament in the development of post-traumatic stress disorder amongst journalists. *South African Journal of Psychology, 35*, 89-105.
- March, J.A. (1993). What constitutes a stressor? The "Criterion A" issue. In J.R.T. Davidson & E.B. Foa (Eds.), *Post-traumatic stress disorder: DSM-IV and beyond* (pp.37-54). Washington, DC: American Psychiatric Press.
- Marmar, C.R., Weiss, D.S., Metzler, T., Ronfeldt, H., & Foreman, C. (1996). Stress responses of emergency services personnel to the Loma Prieta earthquake Interstate 880 freeway collapse and control traumatic incidents. *Journal of Traumatic Stress, 9*, 63-85.
- Masuku, S. (2002). Prevention is better than cure: Addressing violent crime in South Africa. *South African Crime Quarterly, 3*(2), 5-12.

- May, D.C. (2001). The effect of fear of sexual victimization on adolescent fear of crime. *Sociological Spectrum, 21*, 141-174.
- McBurney, D. (1994). *Research methods*. California: Brooks/Cole.
- McCann, L., & Pearlman, L. (1990). *Psychological trauma and the adult survivor: Theory, therapy and transformation*. New York: Brunner/Mazel.
- McConnell, E.E.H. (1989). *An examination of relationships among fear of crime, crime seriousness, crime victimization, and crime precaution behaviors*. Ann Arbor: UMI.
- McCoy, H.V., Woolredge, J.D., Cullen, F.T., Dubeck, P.J., & Browning, S.L. (1996). Lifestyles of the old and not so fearful: Life situation and older persons' fear of crime. *Journal of Criminal Justice, 24*(3), 191-205.
- McGarrell, E.F., Giacomazzi, A.L., & Thurman, Q.C. (1997). Neighborhood disorder, integration, and the fear of crime. *Justice Quarterly, 14*, 479-497.
- Mendelsohn, T. (2002). *Fear of crime: How it affects academic performance in a South African adolescent population*. Unpublished master's thesis, University of the Witwatersrand, Johannesburg.
- Mesko, G., & Farrall, S. (2000). The social psychology of the fear of crime: A comparison of Slovenian, Scottish and Dutch local crime surveys. *Croatian Review of Rehabilitation Research, 35*(2), 151-159.
- Messerschmidt, J.W. (1993). *Masculinity and crime: Critique and reconceptualization of theory*. Lanham, Maryland: Rowman & Littlefield.
- Miranda, J.M., Green, B.L., & Krupnick, J. (1997, December). *Mental disorders in disadvantaged gynecology patients*. Paper presented at the North American Meeting of the Society for Psychotherapy Research, Tucson, Arizona.
- Mistry, D. (2004). Falling crime, rising fear: 2003 National Victims of Crime Survey. *South African Crime Quarterly, 8*(1), 17-24.
- Mkize, D.L. (2008). Post traumatic stress disorder symptoms in a psychiatric population not presenting with trauma: A preliminary study. *African Journal of Psychiatry, 11*, 51-53.
- Mostert, J.S. (2001). *Stress, post-traumatic stress disorder and coping mechanisms amongst correctional officers: An exploratory study*. Unpublished master's thesis, University of Natal, Pietermaritzburg.
- Muckart, D.J. (1991). Trauma: The malignant epidemic. *South African Medical Journal, 79*(2), 93-95.
- Newham, G. (2002). Promoting police integrity at station level: The case of the Hillbrow police station. *Urban Forum, 13*(3), 20-52.
- Newhart, L. (1991) *Crime-specific fear in North Carolina: The effects of demographic, victimization, and perceptual variables*. Ann Arbor: UMI.

- Norris, F.H. (1992). Epidemiology of trauma: Frequency and impact of different potentially traumatic events on different demographic groups. *Journal of Consulting and Clinical Psychology, 60*, 409-418.
- Norris, F. H., & Kaniasty, K. (1994). Psychological distress following criminal victimization in the general population: Cross-section, longitudinal, and prospective analyses. *Journal of Consulting and Clinical Psychology, 62*, 111-123.
- Olf, M., Langeland, W., Draijer, N., & Gersons, B.P.R. (2007). Gender differences in posttraumatic stress disorder. *Psychological Bulletin, 133*(2), 183-204.
- Ozer, E.J., Best, S.R., Lipsey, T.L., & Weiss, D.S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin, 129*, 52-73.
- Pain, R.H. (1993). Women's fear of sexual violence: Explaining the spatial paradox. In H. Jones (Ed.), *Crime and the Urban Environment*. Aldershot: Avebury.
- Pain, R.H. (1995). Elderly women and fear of violent crime: The least likely victims? A reconsideration of the extent and nature of risk. *British Journal of Criminology, 35*(4), 584-598.
- Pain, R.H. (1997). Social geographies of women's fear of crime. *Transactions of the Institute of British Geographers, 22*(2), 231-244.
- Pain, R.H. (2001). Gender, race, age, and fear of the city. *Urban Studies, 38*, 899-913.
- Painter, K. (1992). Different worlds: The spatial, temporal and social dimensions of female victimization. In D. Evans, N. Fyf & D. Herbert (Eds.), *Crime, policing and place* (pp.164-195). London: Routledge.
- Parker, K.D., Onyekwuluje, A.B., & Komanduri, S.M. (1995). African Americans' attitudes toward the local police: A multivariate analysis. *Journal of Black Studies, 25*, 396-409.
- Pelcovitz, D., Kaplan, S.J., DeRosa, R.R., Mandel, F.S., & Salzinger, S. (2000). Psychiatric disorders in adolescents exposed to domestic violence and physical abuse. *American Journal of Orthopsychiatry, 70*, 360-369.
- Peltzer, K. (1998). Traumatic experiences and posttraumatic psychological symptoms in South African universities. *Central African Journal of Medicine, 44*(11), 280-283.
- Peltzer, K. (1999). Posttraumatic stress symptoms in a population of rural children in South Africa. *Psychological Reports, 85*, 646-650.
- Peltzer, K. (2000a). Characteristics of violent crime victims in an urban community, South Africa. *Acta Criminologica, 13*(2), 75-82.
- Peltzer, K. (2000b). Exposure to violence and posttraumatic stress disorder in a rural adult population in South Africa. *Acta Academica, 32*(3), 73-84.
- Peltzer, K. (2000c). Lifetime traumas and symptomatic sequelae in victims of violent crime in an urban community, South Africa. *Psychopathologie Africaine, 30*(3), 341-354.

- Peltzer, K. (2001). Stress and traumatic symptoms among police officers at a South African police station. *Acta Criminologica*, 14(3), 52-56.
- Peltzer, K. (2003). Prevalence of traumatic events and post-traumatic stress symptoms among taxi drivers and passengers in South Africa. *Acta Criminologica*, 16(1), 21-26.
- Peltzer, K., & Renner, W. (2004). Psychosocial correlates of the impact of road traffic accidents among South African drivers and passengers. *Accident Analysis and Prevention*, 36, 367-374.
- Peltzer, K., Seakamela, M.J., Manganye, L., Mamiane, K.G., Motsei, M.S., & Mathebula, T.T. (2007). Trauma and posttraumatic stress disorder in a rural primary care population in South Africa. *Psychological Reports*, 100, 1115-1120
- Pillay, K., & Claase-Schutte, C. (2004). Private security officers as victims of trauma and stress: The South African experience and initiatives to manage it. *Acta Criminologica*, 17(1), 121-128.
- Pretorius, R. (2008). Armed robbery, violent assault and perceptions of personal insecurity and society as a risk. *Acta Criminologica*, 21(2), 81-91.
- Prinsloo, J. (2006). The impact of victimisation on fear of crime. *Acta Criminologica*, 19(2), 1-17.
- Pynoos, R.S., Steinberg, A.M., & Goenjian, A. (1996). Traumatic stress in childhood and adolescence: Recent developments and current controversies. In B.A. Van der Kolk, A.C. McFarlane & L. Weisæth (Eds.), *Traumatic stress: The effects of overwhelming experience on mind, body, and society* (pp.331-358). New York: Guilford Press.
- Renck, B., Weisæth, L., & Skarbö, S. (2002). Stress reactions in police officers after a disaster rescue operation. *Nordic Journal of Psychiatry*, 56, 7-14.
- Resnick, H.S., Kilpatrick, D.G., Best, C.L., & Kramer, T.L. (1992). Vulnerability-stress factors in development of posttraumatic stress disorder. *Journal of Nervous and Mental Disease*, 180, 424-430.
- Resnick, H.S., Kilpatrick, D.G., Dansky, B.S., Saunders, B.E., & Best, C.L. (1993). Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *Journal of Consulting and Clinical Psychology*, 61, 984-991.
- Roberts, B. (2008). *Age of hope or anxiety? Dynamics of the fear of crime in South Africa*. Human Sciences Research Council Policy Brief March 2008. Retrieved March 10, 2009, from <http://www.hsrc.ac.za/Document-2718.phtml>
- Robin, R.W., Chester, B., & Goldman, D. (1996). Cumulative trauma and PTSD in American Indian communities. In A.J. Marsella, M.J. Friedman, E.T. Gerrity & R.M. Scurfield (Eds.), *Ethnocultural aspects of PTSD: Issues, research, and clinical applications* (pp.239-253). Washington, DC: American Psychological Association.

- Romer, D., Jamieson, K.H., & Aday, S. (2003). Television news and the cultivation of fear of crime. *Journal of Communication, 53*, 88-104.
- Root, M.P. (1996). Women of color and traumatic stress in 'domestic captivity': Gender and race as disempowering statuses. In A.J. Marsella, M.J. Friedman, E.T. Gerrity & R.M. Scurfield (Eds.), *Ethnocultural aspects of PTSD: Issues, research, and clinical applications* (pp.363-387). Washington, DC: American Psychological Association.
- Rosnow, R.L., & Rosenthal, R. (1996). *Beginning behavioral research: A conceptual primer* (2nd ed.). New Jersey: Prentice Hall.
- Rothbaum, B.O., Foa, E.B., Riggs, D.S., Murdock, T., & Walsh, W. (1992). A prospective examination of posttraumatic stress disorder in rape victims. *Journal of Traumatic Stress, 5*, 455-475.
- Rountree, P. (1996). Perceived risk versus fear of crime: Empirical evidence of conceptually distinct reactions in survey data. *Social Forces, 74*(4), 1353-1376.
- Rountree, P.W. (1998). A reexamination of the crime-fear linkage. *Journal of Research in Crime and Delinquency, 35*(3), 341-372.
- Sadock, B.J., & Sadock, V.A. (2003). *Synopsis of psychiatry: Behavioral sciences/Clinical Psychiatry* (9th ed.). Philadelphia: Lippincott Williams & Wilkins.
- Schafer, J.A., Huebner, B.M., & Bynum, T.S. (2006). Fear of crime and criminal victimization: Gender-based contrasts. *Journal of Criminal Justice, 34*, 285-301.
- Schönteich, M., & Louw, A. (2001). *Crime in South Africa: A country and cities profile*. Crime and Justice Programme, Institute for Security Studies, Occasional Paper No 49. Retrieved March 10, 2009, from <http://www.iss.co.za/Pubs/Papers/49/Paper49.html>
- Scott, H. (2003). Stranger danger: Explaining women's fear of crime. *Western Criminology Review, 4*, 203-214.
- Seedat, S., Nyamai, C., Njenja, F., Vythilingum, B., & Stein, D.J. (2004). Trauma exposure and post-traumatic stress symptoms in urban African schools. *British Journal of Psychiatry, 184*, 169-175.
- Seedat, S., van Nood, E., Vythilingum, B., Stein, D.J., & Kaminer, D. (2000). School survey of exposure to violence and posttraumatic stress symptoms in adolescents. *South African Journal of Child and Adolescent Mental Health, 12*, 38-44.
- Shalev, A. Y. (1996). Stress versus traumatic stress: From acute homeostatic reactions to chronic psychopathology. In B.A. Van der Kolk, A.C. McFarlane & L. Weisæth (Eds.), *Traumatic stress: The effects of overwhelming experience on mind, body, and society* (pp.77-101). New York: Guilford Press.
- Skogan, W.G. (1987). The impact of victimization on fear. *Crime and Delinquency, 33*, 135-154.

- Skogan, W.G. (1990). *Disorder and decline: Crime and the spiral of decay in American neighborhoods*. New York: Free Press.
- Smith, L.N., & Hill, G.D. (1991). Victimization and fear of crime. *Criminal Justice and Behavior*, 18, 217-239.
- Smith, S.J. (1989). Social relations, neighborhood structure and the fear of crime in Britain. In D. Evans & D. Herbert (Eds.), *The geography of crime* (pp.193-227). London: Routledge.
- Smith, S.K., Steadman, G.W., Minton, T.D., & Townsend, M. (1999). *Criminal victimization and perceptions of community safety in 12 cities, 1998*. Washington, DC: US Department of Justice. Retrieved November 15, 2009, from <http://www.ojp.usdoj.gov/bjs/pub/pdf/cvpcs98.pdf>
- Smith, W.R., & Torstensson, M. (1997). Gender differences in risk perception and neutralizing fear of crime: Toward resolving the paradoxes. *British Journal of Criminology*, 37(4), 608-634.
- Sorenson, S., & Golding, J. (1990). Depressive sequelae of recent criminal victimization. *Journal of Traumatic Stress*, 3(3), 337-350.
- South African Police Service. (2005). Annual Report of the South African Police Service for 2004/2005. Pretoria: South African Police Service.
- Stanko, E.A. (1990). *Everyday violence: How men and women experience sexual and physical danger*. London: Pandora.
- Stanko, E.A. (1995). Women, crime, and fear. *Annals of the American Academy of Political and Social Science*, 539, 46-58.
- Stanko, E.A., & Hobdell, K. (1993). Assault on men: Masculinity and male victimization. *British Journal of Criminology*, 33(3), 400-415.
- Stein, M.B., Walker, J.R., & Forde, D.R. (2000). Gender differences in susceptibility to posttraumatic stress disorder. *Behaviour Research and Therapy*, 38, 619-628.
- Stein, M.B., Walker, J.R., Hazen, A.L., & Forde, D.R. (1997). Full and partial posttraumatic stress disorder: Findings from a community survey. *American Journal of Psychiatry*, 154, 1114-1119.
- Stuber, J., Resnick, H., & Galea, S. (2006). Gender disparities in posttraumatic stress disorder after mass trauma. *Gender Medicine*, 3(1), 54-67.
- Suliman, S., Kaminer, D., Seedat, S., & Stein, D.J. (2005). Assessing posttraumatic stress disorder in South African adolescents: Using the child and adolescent trauma survey (CATS) as a screening tool. *Annals of General Psychiatry*, 4(2). Retrieved September 2, 2009, from <http://www.annals-general-psychiatry.com/content/4/1/2>

- Suliman, S., Mkabile, S.G., Fincham, D.S., Ahmed, R., Stein, D.J., & Seedat, S. (2009). Cumulative effect of multiple trauma on symptoms of posttraumatic stress disorder, anxiety, and depression in adolescents. *Comprehensive Psychiatry*, *50*, 121-127.
- Sutton, R.M., & Farrall, S. (2005). Gender, socially desirable responding and the fear of crime: Are women really more anxious about crime? *British Journal of Criminology*, *45*(2), 212-224.
- Tolin, D.F., & Foa, E.B. (2006). Sex differences in trauma and posttraumatic stress disorder: A quantitative review of 25 years of research. *Psychological Bulletin*, *132*(6), 959-992.
- Valentine, G. (1989). *Women's fear of male violence in public space: A spatial expression of patriarchy*. Unpublished doctoral dissertation, University of Reading, United Kingdom.
- Van Kesteren, J., Mayhew, P., & Nieuwbeerta, P. (2000). *Criminal victimisation in seventeen industrialised countries: Key findings from the 2000 International Crime Victims Survey*. Onderzoek en beleid 187. The Hague: WODC/NSCR.
- Van Someren, M.W., Barnard, Y.F., & Sandberg, J.A.C. (1994). *The think aloud method: A practical guide to modeling cognitive processes*. London: Academic Press.
- Van Velzen, F.A. (1998). *Fear of crime: A socio-criminological investigation*. Unpublished master's thesis, University of Zululand, KwaDlangezwa.
- Van Zyl, M., Oosthuizen, P.P., & Seedat, S. (2008). Post-traumatic stress disorder: Undiagnosed cases in a tertiary inpatient setting. *African Journal of Psychiatry*, *11*, 119-122.
- Viedge, M. (2001). *Posttraumatic stress disorder in firefighters: Its impact on intimate relationships*. Unpublished master's thesis, University of the Witwatersrand, Johannesburg.
- Vogelman, L., & Simpson, G. (1990). *Current violence in South Africa*. Sunday Star Review, 17 June 1990.
- Von Klemperer, A. (2009). *The relationship between fear of crime, proximity of trauma exposure and self capacities*. Unpublished master's thesis, University of the Witwatersrand, Johannesburg.
- Vrana, S., & Lauterbach, D. (1994). Prevalence of traumatic events and posttraumatic psychological symptoms in a nonclinical sample of college students. *Journal of Traumatic Stress*, *7*, 289-302.
- Ward, C.L., Flisher, A.J., Zissis, C., Muller, M., & Lombard, C. (2001). Exposure to violence and its relationship to psychopathology in adolescents. *Injury Prevention*, *7*, 297-301.
- Warr, M. (1984). Fear of victimization: Why are women and the elderly more afraid? *Social Science Quarterly*, *65*, 681-702.
- Warr, M. (1987). Fear of victimization and sensitivity to risk. *Journal of Quantitative Criminology*, *3*(1), 29-46.

- Warr, M. (1990). Dangerous situations: Social context and fear of victimization. *Social Forces*, 68(3), 891-907.
- Weiss, D.S., & Marmar, C.R. (1997). The Impact of Event Scale-Revised. In J.P. Wilson & T.M. Keane (Eds.), *Assessing psychological trauma and PTSD* (pp.399-411). New York: Guilford Press.
- Weiss, D.S., Marmar, C.R., Metzler, T., & Ronfeldt, H. (1995). Predicting symptomatic distress in emergency services personnel. *Journal of Consulting and Clinical Psychology*, 63, 361-368.
- Whitzman, C. (2007). Stuck at the front door: Gender, fear of crime and the challenge of creating safer space. *Environment and Planning A*, 39(11), 2715-2732.
- Widdop, S.E. (2007). *European social survey codebook: Round 1 and round 2*. London: Centre for Comparative Social Surveys.
- Williams, S.L., Williams, D.R., Stein, D.J., Seedat, S., Jackson, P.B., & Moomal, H. (2007). Multiple traumatic events and psychological distress: The South Africa Stress and Health Study. *Journal of Traumatic Stress*, 20(5), 845-855.
- Wolfe, J., & Kimerling, R. (1997). Gender issues in the assessment of posttraumatic stress disorder. In J.P. Wilson & T.M. Keane (Eds.), *Assessing psychological trauma and PTSD* (pp.192-238). New York: Guilford Press.
- Yehuda, R., & McFarlane, A.C. (1999). Conflict between current knowledge about posttraumatic stress disorder and its original conceptual basis. In M.J. Horowitz (Ed.), *Essential papers on posttraumatic stress disorder* (pp.41-60). New York: New York University Press.

APPENDIX A: DEMOGRAPHIC QUESTIONNAIRE

Biographical Information

Age:

Sex: Male Female

Are you living in a university residence? Yes No

Residential area:

Duration of residence in current residential area:

**APPENDIX B:
CODING CATEGORIES FOR RESIDENTIAL AREAS**

Johannesburg, inner-city

Auckland Park
Bellevue
Booyens
Braamfontein
Crosby
Featherbrooke
Fordsburg
Greenside
Hillbrow
Linden
Mayfair
Melville
Parktown
Robertsham
Troyeville
Unspecified, Johannesburg

Randburg

Bosmat
Boskruin
Emmarentia
Honeydew Ridge
Parkwood
Roosevelt Park
Sundowner

Benoni / Boksburg**Germiston / Bedfordview**

Dawnview (Germiston)
Kensington (Bedfordview)

Roodepoort

Constantia Kloof
Delaray
Florida
Weltevreden Park

Northcliff**Sandton**

Bucceleuch
Glenhazel
Waverly

Fourways / Bryanston / Douglasdale

Johannesburg South

Mondeor

Mulbarton

Winchester Hills

Alberton**Soweto****Lenasia****Midrand****Centurion****Vosloorus**

APPENDIX C: MEASURE FOR EXPOSURE TO VIOLENT CRIME

Section A

1a) In the past 12 months, have you been exposed to criminal violence in which you experienced, witnessed, *or* were confronted with an event that involved actual or threatened death or serious injury or a threat of harm towards yourself or others?

[This may include, but is not limited to, attempted murder, physical assault, rape or sexual assault, armed robbery, burglary, mugging, car hijacking, and motor vehicle theft.]

Yes No

1b) If “yes”, please provide a brief description of all such events in the past 12 months (in other words, please list these events):

1c) If “yes”, how threatening did you find the event (as listed above in 1b)?

Event 1

1. not at all	2. a little	3. moderately	4. a lot	5. extremely
---------------	-------------	---------------	----------	--------------

Event 2

1. not at all	2. a little	3. moderately	4. a lot	5. extremely
---------------	-------------	---------------	----------	--------------

Event 3

1. not at all	2. a little	3. moderately	4. a lot	5. extremely
---------------	-------------	---------------	----------	--------------

2) Have you been exposed to other trauma of a non-criminal nature in the past 12 months?

[This may include, but is not limited to, bereavement (‘natural’ death of a loved one), HIV or serious illness, motor vehicle accidents, and other accidents.]

Yes No

APPENDIX D: IMPACT OF EVENT SCALE-REVISED

Section B

Instructions: 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

Section C

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: SUBJECT INFORMATION SHEET



School of Human and Community Development

Private Bag 3, Wits 2050, Johannesburg, South Africa

Tel: (011) 717-4500 Fax: (011) 717-4559

Email: 018lucy@muse.wits.ac.za

Dear Student

My name is Sarah-Kate Engelbrecht, 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 criminal violence, fear of crime, and traumatic stress, and how these three 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 exposure to criminal violence, a brief measure about fear of crime, and a lengthier questionnaire on responses to stress. The questionnaires will take about 20 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). 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, a summarised set of findings will be made available to you, either in the form of a blog or in hard copy to be handed out in class.

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 and deposit it in the sealed box. This will ensure that no one will have access to the completed questionnaires except me, and will ensure confidentiality. If you do return your questionnaire, this will be considered consent to participate in the study. If for any reason you should require psychological support following completion of the questionnaires, for example 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.

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

Kind Regards

Sarah-Kate Engelbrecht (083 253 8985)

Supervised by Professor Gillian Eagle

**APPENDIX G: RESULTS FOR THE INTERACTION EFFECT OF SUBJECT SEX AND
EXPOSURE TO VIOLENT CRIME**

Interaction of Subject Sex and Exposure to Violent Crime on Traumatic Stress Symptomatology

Mean Scores on the IES-R of Groups According to Subject Sex and Exposure to Violent Crime

Subject sex	EVC (yes/no)	Mean
Females	Yes	2.04681626
	No	1.67125634
Males	Yes	1.72500000
	No	1.42820321

Two-way Analysis of Variance for Subject Sex and Exposure to Violent Crime on the IES-R

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Model	3	10.2397991	3.4132664	4.72*	.0033
Error	206	148.8196505	0.7224255		
Corrected Total	209	159.0594496			

* $p < .01$.

Two-way Analysis of Variance for Subject Sex and Exposure to Violent Crime on the IES-R: Interaction Effect and Main Effects

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Subject sex	1	2.91831698	2.91831698	4.04*	.0457
EVC	1	4.13462266	4.13462266	5.72*	.0176
Subject sexEVC	1	0.05673910	0.05673910	0.08	.7796

* $p < .05$.

Interaction of Subject Sex and Exposure to Violent Crime on Fear of Crime

Mean Scores on the FC Measure of Groups According to Subject Sex and Exposure to Violent Crime

Subject sex	EVC (yes/no)	Mean
Females	Yes	2.87130802
	No	2.59067460
Males	Yes	2.77500000
	No	2.22988506

Two-way Analysis of Variance for Subject Sex and Exposure to Violent Crime on the FC Measure

Source	df	SS	MS	F	p
Model	3	9.55831775	3.18610592	7.63*	<.0001
Error	208	86.80287067	0.41732149		
Corrected Total	211	96.36118842			

* $p < .0001$.

*Two-way Analysis of Variance for Subject Sex and Exposure to Violent Crime on the FC Measure:
Interaction Effect and Main Effects*

Source	df	SS	MS	F	p
Subject sex	1	1.91605986	1.91605986	4.59*	.0333
EVC	1	6.25297509	6.25297509	14.98**	.0001
Subject sexEVC	1	0.64147828	0.64147828	1.54	.2164

* $p < .05$. ** $p \leq .0001$.

**APPENDIX H: RESULTS FOR THE SEX DIFFERENCE IN LEVELS OF EXPOSURE TO
NON-CRIME TRAUMA**

Size of Groups According to Exposure to Non-crime Trauma and Subject Sex

	Exposure to non-crime trauma		Total
	Yes	No	
Females	95	70	165
Males	31	19	50
Total	126	89	215

Pearson's Chi-Square for Exposure to Non-crime Trauma by Subject Sex

	<i>x</i> ²	<i>df</i>	<i>p</i>
Exposure to Non-crime trauma by Subject sex	0.3096	1	.5779