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COPING STYLE, POSTTRAUMATIC STRESS SYMPTOMATOLOGY, AND FEAR OF CRIME IN VICTIMS OF CRIME.

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

February 2012

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.

_____ _____

Nicolene Scott Date

ABSTRACT

This study aimed to examine the relationships between crime exposure and posttraumatic stress symptomatology, and crime exposure and fear of crime. More specifically it set out to establish a possible causal link between crime exposure and posttraumatic stress symptomatology and fear of crime. In addition, it then aimed to identify and explore the possible moderating effect of coping style, (problem-focused, emotion-focused and dysfunctional coping) on the afore-mentioned relationships. The study was conducted on a Johannesburg based, tertiary student population (n = 123) and employed self-report questionnaires to solicit responses which were then subject to statistical analyses. Findings for the relationship between crime exposure and posttraumatic stress symptomatology indicated that increased exposure to crime was predictive of higher posttraumatic stress symptomatology. However a comparison of the relationship between non-crime related traumas and posttraumatic stress symptomatology suggested that crime exposure was not the only predictor of posttraumatic stress symptomatology. Similarly, findings for the relationship between crime exposure and fear of crime indicated that increased exposure to crime was predictive of increased fear of crime levels. Again, however, a comparison of the relationship between non-crime related traumas and fear of crime suggested that crime exposure was not the only predictor of fear of crime. In reference to the possible moderating effects of coping styles on the relationships between crime exposure and posttraumatic stress symptomatology, and crime exposure and fear of crime, no significant moderating effects were found for problem-focused, emotion-focused or dysfunctional coping. Dysfunctional coping was significantly associated with higher levels of traumatic stress symptomatology and fear of crime, but independent of exposure patterns. Visible patterns of relationship with regard to both problem focused and emotion focused coping appeared to be more complex than would be expected based on existing findings in the literature.

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CHAPTER 1

AIMS, RATIONALE AND HYPOTHESES

1.1. Aims of the Study

The study aimed to contribute to findings on the relationship between exposure to traumatic events, particularly exposure to crime, and levels of posttraumatic stress symptomatology and fear of crime in a South African population. Further the study aimed to explore the relationship between coping style (Problem-focused, Emotion-focused and Dysfunctional) and (a) posttraumatic stress symptomatology; and (b) fear of crime; in individuals who reported having been exposed to crime in their lifetime. More specifically, the researcher wished to determine if certain coping styles appear to be related to high or low levels of posttraumatic stress symptomatology and fear of crime in South Africans who had been exposed to crime (directly or indirectly) over the course of their lifetime.

1.2. Rationale

A previous study on a South African student population was conducted by Engelbrecht (2009) who investigated the relationships between exposure to crime, traumatic stress symptomatology, and fear of crime. The current research was initiated both to attempt to replicate aspects of this study in order to build a bigger body of evidence on these relationships and to extend the research focus. One of the recommendations for further research stemming from Engelbrecht's study was to assess the possible role of coping styles in influencing the relationship between exposure to traumatic events and traumatic stress symptomatology (Engelbrecht, 2009). Therefore, the present study aimed to build on Engelbrecht's study by exploring coping style as a possible mediating variable in the relationship between exposure to crime and both posttraumatic stress symptomatology and fear of crime.

The research topic was designed to contribute to the traumatic stress literature, aiming to enrich theory surrounding coping style as related to posttraumatic stress and/or fear of crime. O' Brien (2010) highlights the need for more research on protective and risk factors among crime victims, as predicting who might be more vulnerable to victimisation and what makes these victims susceptible to mental disorders or functional impairment remains a challenge. Green, Choi, and Kane (2010) suggest that although problem-focused, emotion-focused, and

dysfunctional coping strategies are distinct approaches to coping, further research is necessary to identify the unique effects of each strategy. With a better knowledge of the coping styles that may contribute to resilience, treatments and interventions may be enhanced which facilitate positive outcomes following victimization by crime (Dutton & Greene, 2010; Green, Choi, & Kane, 2010).

Part of the rationale for this study was the hope that the findings might add to the literature in a way that could enhance therapeutic interventions for victims of crime. Gravetter and Forzano (2003) describe how establishing a link between variables is valuable in assisting therapists to make significant predictions. They give the example of clinicians being alert to warning signs of suicidality based on an established relationship between specific behaviours and imminent suicide attempts, and therefore being better able to intervene before a client attempts suicide (Gravetter & Forzano, 2003). Similarly, if studies can establish a link between particular coping styles and (a) posttraumatic stress symptoms and (b) high fear of crime levels, then victims of crime may be better assisted in being relieved of their distress by clinicians addressing coping styles in a therapeutic context and perhaps assisting clients in developing healthier, more adaptive coping styles. Furthermore, if there is a particular coping style that seems to predict the onset of posttraumatic stress symptoms after the experience of a traumatic event, then clinicians can better predict the onset of such symptoms in crime victims with this particular coping style, or identify crime victims who are at greater risk of developing posttraumatic stress symptoms and thus act accordingly.

1.3. Hypotheses

Based on current theory and research findings (as elaborated in the literature review to follow) the hypotheses of this study are:

H_1. Exposure to crime is positively associated with posttraumatic stress symptomatology.

H_2. Exposure to crime is positively associated with fear of crime.

H_3. Coping style will moderate the relationships in H_1 and H_2 specifically in that:

a. Increased use of problem-focused coping will be associated with i) decreased levels of posttraumatic stress symptomatology and ii) decreased levels of fear of crime.

b. Increased use of emotion-focused coping will be associated with i) increased levels of posttraumatic stress symptomatology and ii) increased levels of fear of crime.

c. Increased use of dysfunctional coping will be associated with increased levels of i) posttraumatic stress symptomatology and ii) increased levels of fear of crime.

1.4 Overview of Report

Following conventional guidelines in the lay-out of research reports it will be evident that the first introductory chapter has provided an orientation towards the study outlining the primary aims, rationale and core hypotheses. Following this, chapter 2 provides a review of literature relating to the topic/s under study. Chapter 3 outlines the method used in the study including details of the population on whom the research was conducted and methods of data collection and analysis. The results of the statistical analyses are presented in Chapter 4 and then discussed in greater length in chapter 5. The report concludes with a summary of the main findings and some observations regarding limitations of the study and directions for future research.

CHAPTER 2
LITERATURE REVIEW

The literature review elaborates on several key dimensions of the research, focusing initially largely on those characteristics that have relevance for describing the main variables of interest in the study. Following on from the outlining of each variable of interest is a more elaborated discussion of the findings of existing research studies as pertains to the kinds of relationships between variables explored in this study.

2.1. Crime Statistics and Trauma Exposure in South Africa

Recent crime statistics in South Africa are reflected in the 2007 National Victims of Crime Survey (NVCS). According to the NVCS, out of the nationally representative sample of 4500 South African adults who were interviewed, 22.3% of respondents had experienced a crime in the 12 months preceding the survey (Pharoah, 2008). Statistics for crime victimisation were as follows: 0.4% of South African adults had been exposed to murder, 1.3% to physical assault, 0.2% to rape/sexual assault, 2.1% to robbery, 0.4% to car hijacking, and 1.3% to car theft (Pharoah, 2008). Percentages for attempted murder, mugging, intimidation and burglary, which are also of interest in the current study, were not reflected in the 2007 NVCS.

Statistics obtained from the South African Police Service (2010) for 2009/2010 reported 34.1 murders per 100 000 of the population, 35.3 attempted murders per 100 000, 416.2 assaults with intent to inflict grievous bodily harm per 100 000, 138.5 sexual offenses per 100 000, 129.4 robberies per 100 000, 520.2 burglaries at residential premises per 100 000, 145.5 burglaries at non-residential premises per 100 000, and 145.5 motor vehicle and motorcycle thefts per 100 000. These figures represent high volumes of population exposure in comparison to general global norms. It is clear that a high proportion of the South African population is exposed to crime, much of it being violent in nature (Bruce, 2010). Kaminer and Eagle (2010) explain that many South Africans have experienced trauma as a result of exposure to traumatic events. This includes high rates of exposure to criminal violence. How people deal with exposure to crime is of particular concern in this study, the variable of central interest in this instance being what is referred to in the literature as ‘coping style’.

2.2. Defining Coping Styles

Folkman and Lazarus (1980), two authors whose contributions are reflected in much of the original literature surrounding stress, coping, and coping styles, define coping as "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of a person." (Lazarus and Folkman, as cited in Green et al., 2010, p.733). Similarly, Billings (cited in Scarpa & Haden, 2006, p.504) defines coping as "the cognitive and behavioral strategies an individual employs to reduce distress/tension or eliminate stressors"; and Fleishman (1984, p.229), defines coping as " both overt and covert behaviours that are taken to reduce or eliminate psychological distress or stressful conditions". Stone, Helder, and Schneider (as cited in Green et al., 2010, p.733) define coping as "those conscious or unconscious thoughts and actions that provide the means of dealing with a stressful event". Thus all of the definitions seem to encompass notions that coping includes internal and external mechanisms designed to modify or ameliorate psychological and structural aspects of stress or distress. According to Folkman and Lazarus (1980), the main functions of these coping efforts are either problem-focused; aimed at managing or making changes to the person-environment relationship which is the source of stress, or emotion-focused; aimed at managing the accompanying stressful emotions.

Researchers following on from Billings and Lazarus and Folkman have enriched the literature with their definitions of coping, although new definitions in essence seem to be modelled around the kinds of original definitions provided above. A more recent definition of coping offered by Davison, Neale and Kring (2004) describes coping as the means by which people attempt to deal with problems and manage the consequent negative emotions associated with such problems.

In reviewing the literature in the area, it appears that coping as an overarching construct is easier to define than coping style/s. Just what kinds of forms of behaviour and practices constitute coping has proven much harder to conceptualize and has reflected considerable variation in theorization. As Krause, Kaltman, Goodman and Dutton (2008) indicate, "...there has been a great deal of variability in the dimensions used to organize coping responses..." (p.83). In Fleishman's early studies (1984) it was already apparent that coping could encompass a vast array of 'styles'. Fleishman (1984) acknowledges Folkman and Lazarus'

concepts of problem-focused and emotion-focused coping, Pearlin and Schooler's three categories of coping, namely "(1) responses that change the situation, (2) responses that alter the meaning or appraisal of the stress, and (3) responses intended to control distressful feelings" (p.230), and Billings and Moos' categories of active-behavioural, avoidance, and active-cognitive coping. While there appear to be some overlaps in several of these categories or 'styles' it is also evident that there are points of divergence.

It is evident that, as was the case as far back as in 1984 when Fleishman researched personality characteristics and coping patterns, "consensus upon a clear-cut typology of coping remains to be achieved" (Fleishman, 1984, p.230). However, there is evidence that the most widely accepted categories of styles of coping are the problem-focused and emotion-focused coping styles first formulated by Folkman and Lazarus, as these two styles tend to be most frequently discussed in the stress literature. It is important to note, however, that although subsequent theorists have adopted problem and emotion focused coping as an acceptable broad conceptualisation of types or styles of coping, many argue that these two coping styles are not necessarily all encompassing. Carver, Scheier and Weintraub (1989), for example, argue that these two constructs are too simplistic and that too great a degree of diversity exists across the coping mechanisms or behaviours assessed by the Ways of Coping scale devised by Folkman and Lazarus to cluster them together under only two broad types. Carver et al (1989) proposed at minimum a third broad coping style which has come to be known as dysfunctional coping (Cooper et al., 2008) in order to account for less useful coping techniques such as venting of emotions and behavioural and mental disengagement.

Another complication that arises when trying to conceptualise coping lies in the observation that very often people tend not rely on only one style of coping when faced with a particular stressor, but may employ different styles of coping depending on the type of stressor and on how the situation unfolds. Carver et al. (1989) highlight that people generally employ both emotion and problem focused types of coping when confronted with stressors. The predominant style employed will depend on whether one views the stressor as one that has to be endured, which calls for a more emotion-focused type of coping, or whether one feels that constructive action can be taken against the stressor, which calls for a more problem-focused type of coping. Thus there is continuing debate as to whether coping style is primarily determined by the individual and their characteristic way of responding, or primarily by the

environmental demand. While the answer appears to lie somewhere between both poles it has become increasingly accepted that coping styles are not mutually exclusive and that individuals may use different styles interchangeably. For the purpose of the current study, each coping style is examined individually for its possible moderating effect, although it is acknowledged that any one coping style may be employed in conjunction with another during a stressful interaction. What is also apparent is that individuals will tend to identify certain ways of coping as more characteristic of them than others and that this will allow for some degree of stability in examining possible patterns of response in terms of high and low levels of reported usage of a particular style. For the purposes of the study the three coping styles identified by Carver et al. (1989), i.e. problem-focused, emotion-focused, and dysfunctional coping, will be assessed based on the established construct validity of these concepts (Cooper et al., 2008). Each of the three styles is now briefly elaborated.

2.2.1. Problem-focused coping

Problem-focused coping strategies are goal-directed cognitive strategies aimed at regulating stress (Green, et al., 2010) by actively dealing with and managing a problem and may include planned action to correct the problem (Kowalski & Crocker, cited in Pienaar and Rothman, 2003; Barton, 2002) and solve or minimise the stressor (Endler & Parker, cited in Green at al., 2010). Folkman (cited in Green et al., 2010) found problem-focused coping effective in leading to positive emotional outcomes due in part to the sense of control the person has in the problem-solving process. Green et al. (2010) assert that problem-focused strategies are aimed at altering person-environment relationships.

Examples of problem-focused coping strategies include seeking information, trying to get help, inhibiting action, taking direct action (Folkman and Lazarus, 1980), defining the problem, generating, evaluating and implementing solutions (Green et al. 2010), planning (Nes & Segerstrom, 2006), problem solving (Krause, Kaltman, Goodman, & Dutton, 2008), and changing situations and/or one's view of the situation through positive appraisal (Scarpa & Haden, 2006).

2.2.2. Emotion-focused coping

Emotion-focused coping is aimed at managing emotions and regulating the emotional distress and emotional impact of a stressful event such as feelings of fear, anger, and sadness. These

types of coping strategies are generally considered to be less adaptive than problem-focused coping strategies (Green et al., 2010) except under specific conditions. For example, as discussed earlier, emotion focused coping may be adaptive when instrumental solutions are not available or likely to prove effective in a particular stressful situation.

Examples of emotion-focused coping strategies include finding humour in the situation, assignment of blame, fatalism, projection and fantasy (Folkman and Lazarus, 1980), cognitive restructuring, seeking emotional support, turning to religion, acceptance and positive reinterpretation (Nes & Segerstrom, 2006). Folkman and Lazarus (1980) also included avoidance and detachment as emotion-focused coping strategies; however, in keeping with more recent additions to the coping literature, these behaviours are now seen as falling under the separate category of dysfunctional coping.

2.2.3. Dysfunctional coping

Dysfunctional coping was previously commonly referred to in the literature as *avoidant-oriented* coping. Dysfunctional coping incorporates (and sometimes is seen as synonymous with) avoidant-oriented coping and refers broadly to efforts to distract oneself and divert attention away from the stress, and to avoid and/or not think about the stressful situation (Endler & Parker, as cited in Green et al., 2010; Green et al., 2010; Scarpa and Haden). In contrast to problem- and emotion-focused coping, where a person attempts to manage the stressful situation while in it, dysfunctional coping 'removes' the person from the stressful situation either internally or behaviourally (Kowalski & Crocker, as cited in Pienaar and Rothman, 2003). Strategies can be person- or task-oriented (Endler and Parker, as cited in Pienaar and Rothman, 2003).

Examples of dysfunctional coping strategies include denial (Scarpa and Haden, 2006; Krause et al, 2008), wishful thinking, behavioural avoidance (Krause et al, 2008), mental avoidance, substance abuse (Scarpa & Haden, 2006), problem avoidance, social withdrawal and distancing (Nes & Segerstrom, 2006).

As raised previously, one of the difficulties in assessing coping styles lies in the fact that people may employ more than one style of coping, and research which ignores this is likely to be incomplete (Fleishman, 1984). Furthermore, as Jalowiec (cited in Cronqvist, Klang, &

Björvell, 1997) pointed out, a particular coping strategy may serve to both manage the problem and to regulate the associated affect. Therefore, the labelling of coping type in terms of the function is performs is not always clear cut. While this conceptual complexity may create a challenge in accurately depicting the relationship between coping style, posttraumatic stress symptoms and fear of crime, the research was designed to assess the role (if any) played by the three commonly recognised categories of coping as presented here.

2.3. Defining Posttraumatic Stress Symptomatology (PTSS)

As outlined in the Quick Reference to the Diagnostic Criteria from the Fourth (text revised) Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) (American Psychiatric Association, 2000) symptoms of posttraumatic stress disorder (PTSD) are grouped into three clusters: persistent reexperiencing of the traumatic event; persistent avoidance of stimuli associated with the trauma, and numbing of general responsiveness; and hyperarousal.

The persistent reexperiencing of the traumatic event may take the form of recurrent and intrusive recollections of the event, including images, thoughts, or perceptions; recurrent distressing dreams of the event; acting or feeling as though the traumatic event were recurring (including sense of reliving the experience, illusions, hallucinations, and dissociative flashbacks); intense psychological distress at exposure to cues that symbolise an aspect of the traumatic event; and physiological reactivity on exposure to cues that symbolise an aspect of the traumatic event (American Psychiatric Association, 2000, p.219).

The persistent avoidance of stimuli associated with the trauma, and numbing of general responsiveness may take the form of efforts to avoid thoughts, feelings, or conversations associated with the trauma; efforts to avoid activities, places or people that arouse recollections of the trauma; inability to recall an important aspect of the trauma; markedly diminished interest or participation in significant activities; feelings of detachment or estrangement from others; restricted range of affect; and a sense of foreshortened future (American Psychiatric Association, 2000, p.219-220).

Hyperarousal may take the form of difficulty falling or staying asleep; irritability or outbursts of anger; difficulty concentrating; hyperarousal, and exaggerated startle response (American Psychiatric Association, 2000, p.220).

2.4. Posttraumatic Stress and Crime Exposure

Macmillan (2001) reports on the mental distress experienced as a result of stress and trauma exposure, and on investigating prior research surrounding crime trauma. He concluded that crime victimisation (and particularly violent crime victimisation) had severe psychological consequences which included the onset of Posttraumatic Stress Disorder (PTSD). This was especially prominent when this victimisation occurred during the earlier stages of the life cycle, such as during childhood and adolescence. Findings of a study by Kilpatrick and Acierno (2003) also support the notion that PTSD is among the emotional problems that victims of violent crime face. They also explain the compounding effects of PTSD development in the aftermath of violent crime exposure, such that the likelihood of developing other psychological disorders such as depression and substance abuse is increased when there has been a preceding PTSD.

More specific to a South African context, the research of Norman et al. (2010) suggests that interpersonal violence is a major health risk as death, physical injury and HIV infection are amongst its consequences. However they also highlight the mental health risk of interpersonal violence which may lead to major depression and anxiety disorders, including PTSD. Edwards (2005) is in agreement and stresses the significant public health concern created by the high levels of PTSD in South Africa as well as on the African continent at large. These high levels of PTSD are attributable in his study to the alarmingly high degree of exposure to violence, including to war and violent crime.

Kaminer and Eagle (2010) report that despite evidence that many South Africans are exposed directly or indirectly to criminal violence, research on the effects of this exposure on mental health is scarce. However, they refer to two studies; Peltzer's (2000) "Trauma symptom correlates of criminal victimization in an urban community sample, South Africa" and McGregor, Schoeman and Stuart's (2002) "The victim's experience of hijacking: an exploratory study", both of which suggest that symptoms of posttraumatic stress are common among victims of violent crime (cited in Kaminer & Eagle, 2010). Some further international

studies which explore the effects of crime on functioning are mentioned here. Hanson, Sawyer, Begle, and Hubel (2010) stress that crime victimization may affect an individual's ability to carry out various roles (including those relating to parenting, intimate relationships, and occupational and social functioning), and is related to a multitude of physical and psychological health problems and impairments in functioning that have negative effects on quality of life. Furthermore, O'Brien (2010) asserts that in the United States, crime victimization and its associated psychological trauma is the leading cause of trauma-related Acute Stress Disorder and PTSD.

Although these studies suggest that crime exposure predicts possible posttraumatic stress, Dunmore, Clark and Ehlers (1999) highlight the role of cognitive factors in the onset and maintenance of PTSD, arguing that event characteristics alone are not sufficient to predict the development of PTSD related responses. They identified mental defeat, mental confusion, negative appraisal of emotions, negative appraisal of symptoms, and perceived negative responses from others, as just some of the cognitive factors that contributed to the onset and maintenance of PTSD, while they also found detachment during assault, the failure to perceive positive responses from others and attempts to mentally undo the assault as factors contributing to the onset of PTSD. This suggests that it is more than just crime exposure that makes an individual vulnerable to developing posttraumatic stress, and that in fact the internal cognitive processes that occur are of importance. Further, Ehlers and Clark (2000) assert that although PTSD is commonly experienced in reaction to traumatic events which include assault, it is most persistent when an individual's means of processing the trauma results in feelings of severe and current threat. While these cognitive factors are not the focus of this study, it is possible that the negative appraisal style associated with greater vulnerability to PTSD in the aftermath of trauma exposure may be aligned to the more maladaptive styles of coping, i.e. emotion-focused and dysfunctional coping, identified in the previous discussion. What is evident is that links between crime exposure and subsequent symptom development and distress may be complex and may include both cognitive style and coping style.

Green et al. (2010) also highlight a gap in the literature by stating that although research in the area of victims of crime is growing, not much empirical research has been conducted in the area of effective coping strategies employed by victims of violent and nonviolent crime.

A literature review search for this proposed study reflects this, as only a few studies in this area were identified.

2.5. Posttraumatic Stress and Coping Research

Green et al. (2010) investigated the effects of the use of emotion-focused, problem-focused, and dysfunctional coping among victims of crime. Their study looked particularly at distress, social support and well-being as experienced by these crime victims and findings were as follows: increased use of emotion-focused coping was positively related to increased distress, poorer social support and decreased well-being; increased use of dysfunctional coping was negatively related to decreased distress, better social support and increased well-being; and increased use of problem-focused coping was positively related to increased social support, but negatively related to levels of distress and well-being.

Krause et al., (2008), conducted a study which explored the impact of dysfunctional coping (among other variables) on PTSD symptoms in women exposed to intimate partner violence and found dysfunctional coping to be a predictor of PTSD symptoms. Similarly, Scarpa, Haden, and Hurley's study (2006) exploring the roles of social support and coping as moderators of the relationship between community violence victimisation and the severity of PTSD symptoms, found that dysfunctional coping styles predicted heightened PTSD symptom severity while problem-focused coping and interpersonal coping (i.e. approach styles) were surprisingly unrelated to PTSD scores. Perceived social support appeared to be a predictor of reduced PTSD severity.

Furthermore, Scarpa and Haden (2006), in their study of violent victimisation and it's risk for later aggressive behaviour in victims, found that disengagement (representing dysfunctional coping strategies such as mental and behavioural avoidance, denial of the event, and substance abuse), and interpersonal coping styles (representing primarily emotion-focused coping strategies such as venting of emotions and seeking emotional and social support) were associated with negative effects. These included an increase in aggressive behaviour (being the main focus of the study) as well as increased risk for depressive reactions and PTSD symptoms. Problem-focused coping on the other hand was not found to be related to aggressive behaviour (Scarpa & Haden, 2006).

In a study by Arias and Pape (1999), the researchers undertook to test a number of hypotheses, one of which was that:

> ...perceptions of control over the violence and type of coping strategies used in response to physical abuse will moderate the relationship between psychological abuse and PTSD symptomatology such that the relationship will be stronger for women who do not perceive themselves to be in control over their partners' violence and for women who engage in emotion-focused coping (Arias & Pape, 1999, p.58).

These researchers referenced the work of Folkman and Lazarus which stated that employing problem-focused strategies for dealing with stressful events, such as devising a plan of action, and having a perception of control over such events was more likely to reduce distress as compared to the use of emotion-focused coping, such as fantasising about good outcomes (Lazarus and Folkman, as cited in Arias & Pape, 1999). Their research supported this set of hypotheses as findings indicated that frequently and preferably employing emotion-focused coping strategies was associated with greater levels of PTSD symptomatology in battered women, whereas women who relied on problem-focused coping strategies were buffered against negative psychological effects (Arias & Pape, 1999). This study did not explore the effects of dysfunctional coping.

Studies on non-crime related trauma are also worth mentioning. Bryant and Harvey, (1995) conducted a study on survivors of motor vehicle accidents and found that dysfunctional coping styles predicted the intrusive cluster of posttraumatic stress symptoms. Whealin, Ruzek, and Southwick (2008) cite multiple research studies with findings supportive of an association between dysfunctional coping styles and higher levels of PTSD symptomatology, as well as studies which affirm that adaptive coping strategies, such as problem solving, goal setting, stress management and use of social support, are related to higher resistance to developing PTSD. Similarly, in a study of coping among members of the South African Police Service, Violanti (cited in Pienaar & Rothman, 2003) found that problem-focused

strategies led to lower levels of psychological distress while higher levels of psychological distress were associated with emotion-focused coping strategies.

Agaibi and Wilson, (2005) reviewed literature surrounding trauma, PTSD and resilience, and reported that the literature shows problem-focused coping to be more effective in dealing with posttraumatic stress than emotion-focused coping. They also report that in a study by Sutker, Davis, Uddo and Ditta of war-zone stress, personal resources, and PTSD in Persian Gulf War veterans, veterans with PTSD evidenced higher levels of dysfunctional coping styles among other characteristics (cited in Agaibi & Wilson, 2005).

An overview of literature in the area of coping style and vulnerability to PTSD and trauma related responses thus suggests that researchers largely concur on the positive effects of problem-focused coping and the negative effects of dysfunctional coping when dealing with stressful situations, however it is evident that mixed results have been found in relation to the effects of emotion-focused coping. Perhaps this latter finding is a reflection of the previous brief discussion of the fact that emotion-focused coping generally appears to be ineffective but that there are certain circumstances in which this may not be the case.

2.6. Defining Fear of Crime (FOC)

Garofalo, Skogan and Maxfield (as cited in Adams & Serpe, 2000, p.607) define fear of crime as "the emotional response to potential victimization". Adams and Serpe (2000) also highlight the differences between fear of crime and the perceived risk of vulnerability to crime, with the latter referring to one's perception of the likelihood of being victimized and of expected reactions to the victimization. Ferraro and LaGrange (cited in Adams and Serpe, 2000) emphasised the importance of this distinction as judgements about crime are assessments about the likelihood of being victimized or what might happen in the event of the person falling victim to crime. These are fantasies or cognitions surrounding perceptions of risk, which do not portray the emotional content of fear that accompanies the experience of victimization (Adams and Serpe, 2000). However these cognitive processes are thought to be predictors of FOC (Warr, as cited in Jackson, 2006).

FOC will be explored as a non-clinical measure for assessing the impact of exposure to crime as crime victims may not necessarily experience reactions to crime that are as intense as posttraumatic stress symptoms, but may be likely to experience FOC as a result of their exposure to crime. Assessing levels of FOC may serve as some form of proxy for sub-clinical levels of PTSD since FOC appears to carry elements of hyperarousal and avoidance, for example.

2.7. Fear of Crime and Crime Exposure

Møller (2005) affirms that South Africa's crime rate is amongst the highest in the world. More particularly a number of forms of violent crime are particularly prevalent in South Africa and Moller suggests that one consequence of this is FOC. Moller's study on the impact of criminal victimisation focused on quality of life. He concluded that sense of well-being and of personal safety was more strongly compromised by FOC than by actual victimisation. Jackson (2006) supports this proposal as he argues that the impact of crime is aggravated by the fact that it has a diminishing effect on quality of life.

Although crime exposure may predict FOC (Macmillan, 2001), it is not the sole contributor to FOC. Taylor and Covington (1993) point out that FOC may be influenced by unexpected changes in the structure of one's community. These changes may include a growing central business district, economic decline, transformed distribution of racial groups, and relocation of community members; either into or out of community. Increasing activity of unsupervised and rowdy youth has also been linked to FOC.

Theories of gender differences in FOC have also been postulated based on findings that FOC is reduced with increased age in women but not in men; that increased income in men is associated with increased FOC levels while the opposite is found in women (Franklin & Franklin, 2009); and that men are more fearful of crime in relation to others while women are more fearful of crime in relation to their personal safety (Snedker, 2006). Furthermore, Snedker (2006) found that when concerned about the safety of others, women were more fearful of crime related to their children, elderly parents and siblings while men were more fearful of crime in relation to their spouses. Although gender differences were not the focus of investigation in this study, what this research is used to illustrate is that there may not be a

straightforward relationship between exposure to crime and FOC and that a range of different factors may mediate this relationship, including coping style.

2.8. Fear of Crime and Coping Research

The 2007 National Victims of Crime Survey conducted in South Africa (Pharoah, 2008) reports a decline in feelings of safety since 1998 with only 21% of respondents feeling safe walking alone in their neighbourhood after dark in 2007, and 23% feeling safe in 2003 compared to a considerably larger 56% in 1998. When reporting on their feelings of safety while walking around their neighbourhood during the day, 75% of respondents reported feeling safe in 2007 as compared to the higher percentages of 2003 and 1998 (both 85%). It is apparent then that South Africans' feelings of safety in general have decreased. These statistics reflect a need for extended research on FOC in South Africa. Studies which explore how people manage their FOC will be of particular use.

There is very little research available on possible links between FOC and coping style. One study by Garofalo (1981, p.847) asserts that "rather large proportions of people report that they have done something in response to crime or the fear of crime". DuBow, McCabe, and Kaplan (cited in Garofalo, 1981) describe such responses as including: (1) avoidance actions which remove the person from or increase the distance from situations in which the risk of criminal victimization is believed to be high; (2) protective behaviour such as increasing home protection or personal protection; (3) insurance behaviour which alters the potential consequences and losses associated with victimisation; (4) communicative behaviour which involves sharing crime related information and emotions with others; and (5) participation behaviour being the collective actions of networks of people motivated by crime. This study therefore highlights coping strategies which people employ as a means of dealing with crime related fear, many of which appear to reflect an orientation towards problem-focused coping. Beyond this research study there appears to be no research that has explicitly investigated ways of managing FOC, perhaps because the construct has been researched as a primarily sociological rather than psychological variable. There appears to be a need for some study into the effectiveness of particular coping strategies in reducing FOC levels. This is one of the aims of the present study.

CHAPTER 3

METHOD

3.1. Sample

Participants were selected for this study by means of cluster sampling, in that pre-existing groups of students at the University of the Witwatersrand were approached for participation. This method of sampling was used due to the accessibility of the sample, the fact that they were a suitable population with which to pursue the study objectives, and for time-efficiency (Gravetter & Forzano, 2003). The sample was made up of first year health sciences and second year mainstream psychology students from the University of the Witwatersrand. There is no reason to believe that this sample differs markedly from the general population in terms of responses to the variables under study, although they clearly represent a particular age and class cohort of the general South African population. Data were collected by means of distributing measurement instruments (i.e. self-report questionnaires and checklists) to an entire class of first year health sciences and second year mainstream psychology students. Participation was voluntary in keeping with general research ethics.

The study aimed to collect data from a minimum of 60 students who reported exposure to crime. Previous research has indicated that about one third of university classes report exposure to crime (Engelbrecht, 2009), hence the need to access a large group of students. For this reason large undergraduate classes of students registered to study Psychology from both the Health Sciences and Humanities faculties were approached. The sample was made up of 123 students most of whom completed all of the research instrument battery. (Of the 123, 11 participants did not complete the IES-R measure and 2 did not complete the FOC measure).

The completed questionnaires and checklists were then assessed and participants were allocated to two groups based on their self-reports of having either been exposed to crime or not having been exposed to crime over their lifetime. The exposure to crime group represented the core sample, although the data from the non-crime exposure group was also used for comparative purposes. The sample was also broken down into further sub-groups in order to investigate the relationship between type of trauma exposure (crime and non-crime) and other variables.

3.1.1. Crime versus Non-Crime Exposure

The researcher aimed to determine that portion of the sample who reported exposure to crime and that portion of the sample who reported no crime exposure (life-time prevalence), in order to determine whether there were differences in the independent variables of Impact of Events Scale Revised (IES-R) and the FOC scores for the two different groups. Participants were divided into a 'crime exposure' group and a 'non-crime exposure' group based on their responses on the Traumatic Stress Schedule (TSS). However, some difficulty was encountered due to the ambiguity of item 4 on the Traumatic Stress Schedule (TSS) which reads "Did a very close friend or a close family member ever die because of an accident, homicide, or suicide?" As participants were not required to specify which of these specific events they experienced, a simple "yes" response on this item made it difficult to distinguish whether the incident was a crime or non-crime related trauma. A total of 73 participants responded "yes" to item 4 on the TSS, and had thus experienced a traumatic bereavement. Of these, 59 of these the participants had also experienced a crime related trauma or both crime and non-crime related traumas (as indicated by their other TSS responses or their response on the Exposure to Crime Measure) and were placed accordingly into either the 'crime exposure only' or 'crime and other trauma exposure' groups. Individual scrutiny of responses of those remaining 14 who had endorsed only item 4 indicated that all of these responses appeared to pertain to non-crime related death and they were therefore allocated to the non-crime trauma category. Based on their responses to the TSS, subjects were divided into one of four sub-groups in order to facilitate analyses.

The first sub-group of participants included those who reported neither exposure to crime related nor non-crime related trauma, the '*no exposure*' group. Participants who had not been exposed to any crime related trauma but who had been exposed to other non-crime related trauma were assigned to the '*non-crime trauma exposure*' group. Allocation to the '*crime exposure only*' group was based on reports of exposure to crime but not non-crime related trauma. Finally the fourth group comprised those who indicated that they had been exposed to both crime and non-crime related trauma, the '*both crime and non-crime trauma*' sub-group.

To summarise, two main groups of participants included the 'crime exposure' group and the 'non-crime exposure' group. The 'crime exposure group' was further divided into two groups, namely 'crime exposure only' and 'both crime and non-crime trauma'. The 'non-

crime exposure' group was also further divided into two groups, namely 'no exposure' and 'non-crime trauma exposure'. Data pertaining to the 'crime exposure' group was used to test the first two hypotheses of the current study (i.e. H_1. Exposure to crime is positively associated with PTSS; H_2. Exposure to crime is positively associated with FOC), while comparisons of data from the two main groups, and then the four subgroups, were analysed when testing the third hypothesis (H_3. Coping style will moderate the relationships in H_1 and H_2).

3.1.2 Demographic Profile of Sample (see Appendix A)

The mean age of the sample was 20.4 years. Of the sample, 75.83% were female (n = 91) and 24.17% were male (n = 29). Three participants did not indicate their sex. The majority (41.46%) of the sample were Black students (n = 51), 39.84% (n = 49) were White, 10.57% (n = 13) were Indian, 6.50% (n = 8) were Coloured, and 1.63% (n = 2) were Asian. The demographic data on the participants was collected for descriptive rather than analytic purposes. It was of interest that although the majority of students indicated their race to be 'black', the majority of the sample (53.66%; n = 66) indicated that their home language was English, which suggested that the majority of participants would not have had difficulties in understanding the instructions or items of the measurements which were all in English and also that many of these students may well have been schooled in English.

3.2. Measurement Instruments

Data for this study was collected through the administration of a battery of self-report questionnaires. (See appendices for all measures).

3.2.1. Demographic Questionnaire

A short demographic questionnaire was devised in order to collect demographic information such as age, sex, and race, marital status, religion and home language.

3.2.2. Exposure to Crime Measure

A self-report questionnaire was given to students where they were asked to indicate and briefly describe what types of crime related trauma they had been exposed to (if any) over the

past 12 month period. (This open-ended self-report instrument was employed successfully in Engelbrecht's (2009) study).

3.2.3. The Traumatic Stress Schedule (TSS)

The Traumatic Stress Schedule (TSS) was used as a second, more structured measure of general trauma related exposure. This measure was used to allocate participants into 'crime exposure' and 'non-crime exposure' groups as indicated previously.

This measure was devised by Norris (1990) to assess lifetime and past-year exposure to ten categories of extreme events (Wilson & Keane, 1997). According to Freidman (2006), this brief, self-report screening questionnaire has good reliability. Norris and Perilla (cited in Wilson & Keane, 1997) reported a test-retest correlation of .88 between English and Spanish versions of the measure completed by 53 bilingual volunteers 1 week apart.

3.2.4. The Brief COPE

Coping style was assessed using the Brief COPE. The COPE measure, devised by Carver, Scheier and Weintraub (1989), was derived from Lazarus and Folkman's model of coping, as well as from Carver and Scheier's model of behavioural self-regulation (Carver, 1997). The Brief COPE is a shortened version of the COPE, and consists of 14 scales of two items each which are measured on a 4 point Likert scale. These items measure responses that are generally seen as adaptive, as well as others viewed as problematic. The 14 types of coping assessed are: active coping, planning, positive reframing, acceptance, humour, religion, using emotional support, using instrumental support, self-distraction, denial, venting, substance abuse, behavioural disengagement, and self-blame (Miyazaki, Bodenhorn, Zalaquett, & Ng, 2008). These coping styles can then be grouped into the three broader categories of *problem-focused*, *emotion-focused* and *dysfunctional* coping styles. The last mentioned sub-type is often referred to as 'avoidant coping' in the literature but includes a slightly broader range of problematic coping strategies in Carver et al.'s (1989) model.

Data obtained from a study of survivors of Hurricane Andrew indicate that the a priori scales have adequate internal reliability (Carver, 1997). Miyazaki, Bodenhorn, Zalaquett, and Ng

(2008) also report on the reliability of the measure. "The alpha reliabilities of the scales for the population of 294 participants involved in the validation study ranged from .50 - .90, with only three falling below .60" (2008, p.796). Fillion, Kovacs, Gagnon, and Endler's (2002) study reports that:

> using factor-base scales, strong reliability coefficients were observed, as the test-retest coefficients for the shortened COPE were similar to those found in the original COPE. Test-retest coefficients for the factor-based scores of the shortened COPE (measures taken at weeks two and four) ranged from .60 to .82, whereas coefficients for the full COPE ranged from .48 to .86. Furthermore, internal consistency coefficients ranged from .69 to .89 in the shortened COPE and ranged from .45 to .92 in the full COPE, when no factor-based scores were computed (Fillion et al, 2002, p.31)

Thus the measure appears to have adequate reliability and validity.

3.2.5. The Impact of Event Scale-Revised (IES-R)

In order to measure the PTSS of the participants, the Impact of Event Scale Revised (IES-R) was used. Creamer, Bell and Failla (2003) validate the IES-R as a diagnostic tool for posttraumatic stress related symptoms due to the high internal consistency (alpha = 0.96) of the entire scale. Similarly, as reported in Engelbrecht's study (2009), good indications of reliability and validity for the IES-R were found in the longitudinal studies of Marmar, Weiss, Metzler, Ronfeldt and Foreman (1996), and Weiss, Marmar, Metzler and Ronfeldt (1995). In the 1995 Weiss et al. study the internal consistency of the measure was assessed, and 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 were reported. The Wave 2 data (approximately 6 months after Wave 1 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 both the Weiss et al. and Marmar et al. studies (cited in Engelbrecht, 2009) none of the 6 sets of data include a single

item not positively correlated with its assigned subscale. Weiss et al. (cited in Engelbrecht, 2009) also reported good test-retest correlation coefficients of .94 for the Intrusion subscale, .89 for the Avoidance subscale, and .92 for the Hyperarousal subscale.

The IES-R has been used successfully on the South African population in studies on PTSD as a major health concern in South Africa (Edwards, 2005; Norman et al., 2010). Appropriateness of the use of this measure in a South African context is also suggested by Engelbrecht (2009).

3.2.6. Fear of Crime Measure

As in Engelbrecht's study (2009), the FOC measure included von Klemperer's (2009) 5 items as well as a sixth item, all of which were rated on a 4-point Likert scale. The 5-item measure has adequate validity for use in a South African study as the questionnaire is relatively straight forward and direct in the questions it poses. The sixth item, namely, "How safe do you feel walking and/or driving alone in your neighbourhood during the day?" is an item added by Engelbrecht (2009) based on the items included in the 2003 National Victims of Crime Survey in South Africa (ISS, cited in Engelbrecht, 2009). This measure has clear face validity and is based on questions generally used in population surveys to assess FOC.

3.3. Procedure

Data collection was conducted during formal lecture sessions of each of the two academic groups making up the sample. Permission was obtained from the respective lecturers and course coordinators of each academic course to invite students in these classes to take part in the study and to use a portion of their lecture time to collect data. Given that two Master of Arts in Clinical Psychology students were using largely similar instruments in the execution of their research, data for both studies was collected simultaneously. The questionnaire pack thus included two additional measures that were not used for this particular study. The questionnaire packs were administered by one or both of the masters' candidates to each of the two chosen classes. Students were first given a participant information letter informing them of the nature of the study i.e. that they were requested to fill out short questionnaires that would take a total of 20-30 minutes to complete. This letter also informed each participant that their participation was voluntary and that returned responses would be taken as consent to participate in the study, also ensuring anonymity. By way of the participation

information letter, participants were provided with contact details for counselling services should their participation evoke any psychological distress. Participants were also encouraged to email the researcher should they wish to receive a summarised report of the findings. Questionnaires were then handed out to each student and completed responses were placed by those who chose to participate into boxes made available at the front of the lecture hall. Participants were also given a debriefing sheet describing the basic purpose of the studies being conducted. Participants were thanked for their participation

3.4. Method of Data Analysis

The study employed quantitative, statistical analyses to make sense of the data and includes three levels of data analyses:

At the first level, descriptive statistics were conducted including assessment of the mean, standard deviations and ranges of scores on each of the measures. In addition an intercorrelation correlation matrix of the variables was calculated. The direction and strength of the relationships were calculated (Gravetter & Forzano, 2003).

At the second level, the main analysis included various aspects:

First, simple regression analyses were used to determine whether exposure to crime (used as a continuous variable based on frequency of exposure) could be used as a predictor of firstly, increased PTSS, and secondly, FOC (used as continuous variables based on scores) (Breakwell, Hammond & Fife-Schaw, 1995)

Following this, the possible moderating effects of the three coping styles (i.e. problem-focused, emotion-focused and dysfunctional coping) on the relationships between crime exposure (independent variable) and each of the posttraumatic stress symptoms (PTSS) and FOC (dependent variables) were analysed. Two-way ANOVA's were used to test the main effects and interactions as described above (Breakwell et al., 1995). Parametric assumptions of ANOVA were tested for prior to the main analyses. The two-way ANOVA's used crime exposure as a categorical variable; firstly running calculations with the two broad categories of crime exposure, i.e. 'crime exposure' and 'non-crime exposure', and secondly, with the four more differentiated exposure categories ('no exposure', 'non-crime trauma exposure', 'crime exposure only' and 'both crime and non-crime trauma'). It was anticipated that the latter set of calculations might produce some interesting findings in relation to looking at the

possible moderating effects of coping style with regard to both crime exposure and exposure to other types of trauma. Coping style was initially used as a continuous variable, for instance in the correlation matrix calculations. However, for the purposes of running the two way ANOVA's in order to investigate possible moderator effects median splits were used to divide the sample into high and low use sub-groups in respect of the three coping styles, i.e. problem-focused, emotion-focused and dysfunctional coping.

Although it is acknowledged that median splits are not generally favoured as a method of splitting the sample into groups for comparison (MacCallum, Zhang, Preacher, & Rucker, 2002), their use as a means of graphing interactions is widely accepted and useful. The method of analysis was also constrained by the size of sample and statistical power considerations.

At the third level, post-hoc analyses were conducted by means of the Tukey-Kramer procedure in order to analyse differences between individual means where the ANOVA's produced significant results in either the interaction or the main effects (Caldwell, 2007; Struwig & Stead, 2001).

The results of the statistical analyses are presented in the next chapter.

CHAPTER 4

RESULTS

4.1.Organisation of Findings

This chapter is structured in accordance with the different stages of analyses discussed in the previous chapter. It begins with a reporting of the reliability of measures used followed by the presentation of the basic descriptive statistics for the TSS, Brief COPE, IES-R, and the FOC measure. These will be referred to as Trauma (referring to how many traumas have been experienced), Coping, PTSS and FOC respectively. Secondly the correlations between all of the pertinent measures are reported, including the subscales of the IES-R (i.e. avoidant, intrusive and hyperarousal symptoms) and of the Brief COPE (i.e. problem-focused, emotion-focused and dysfunctional coping).

Following this, the main analysis pertaining to the hypothesised relationships between various variables is reported on. The relationships between exposure to crime and firstly, PTSS, and secondly, FOC, are presented, based on simple regression analyses. The findings with regard to the possible moderating effects of three coping styles, (problem-focused coping, emotion-focused coping, and dysfunctional coping), on the relationship between exposure and the two outcome variables is reported as well the results of the post hoc analyses.

4.2. Reliability of Measures

The reliability of the Brief COPE, IES-R and FOC measures was assessed by testing for internal consistency (Breakwell, Hammond & Fife-Schaw, 1995). The Cronbach alpha coefficients were calculated for the total scores of these measures as well as for subscale scores, and were all above .75 confirming their internal consistency (Terre Blanche, Durrheim & Painter, 2006). Acceptable sub-scale values were also found.

Table 1

Cronbach Alpha Coefficients for the Brief COPE, IES-R and Fear of Crime Measure

Measure/Instrument	Cronbach Alpha Coefficient
Brief COPE	.81
Brief COPE Problem-Focused Subscale	.81
Brief COPE Emotion-Focused Subscale	.74
Brief COPE Dysfunctional Subscale	.76
IES-R	.93
IES-R Avoidance Subscale	.83
IES-R Intrusion Subscale	.89
IES-R Hyperarousal Subscale	.80
Fear of Crime	.85

All the measures used in the study thus appeared to have adequate validity. (It was not possible to test for internal consistency of the Exposure to Crime measure and the TSS as these measures are made up of both nominal and interval scales.)

4.3. Descriptive Statistics

4.3.1. Crime and Non-Crime Exposure

In order to assess trauma related exposure and particularly crime related exposure it was decided to concentrate on the scores on the TSS as this is a standardised measure. The open-ended question was then used primarily to back-up responses on the TSS and to provide more elaborated descriptions of crime related events that the participants indicated that they had experienced in the previous 12 months. Of the total sample, 74.8% of participants (n = 92) indicated lifetime exposure to some form of crime. This 74.8% was made up of participants

who had either been exposed to crime *and* non-crime traumas (52.85% with $n = 65$), or had been exposed to crime trauma only (21.95% with $n = 27$). Just over a fifth of the sample (20.33%; $n = 25$) had been exposed to non-crime trauma without any exposure to crime, and only 4.88% ($n = 6$) reported no exposure to trauma.

Table 2

Exposure to Crime and/ or Non-Crime Trauma (Life Time Prevalence)

Type of Exposure*	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	6	4.88	6	4.88
1	25	20.33	31	25.20
2	27	21.95	58	47.15
3	65	52.85	123	100.00

*Key for Type of Exposure

0 = no crime or non-crime exposure

1 = non-crime trauma exposure only

2 = crime exposure only

3 = both crime and non-crime trauma exposure

Table 3 depicts the types of crime related trauma experienced by participants. The table includes exposure to second and third crime related events for those participants who indicated on the Exposure to Crime Measure that they had experienced multiple crime related events. The "other" category comprised of three events; one drug related, one drug use and consequent abuse related, and one event for which no description was provided. Out of all responses, only 5 respondents indicated that the crime exposure experienced was indirect. (It

is important to note that crime exposure as assessed by the Exposure to Crime measure assesses exposure across the previous 12 months whereas the TSS looks at lifetime exposure. This table based on the former measure therefore represents patterns of recent exposure).

Table 3

Type and Frequency of Crime Exposure

Type of Crime Exposure 1	**Frequency**	**Type of Crime Exposure 2**	**Frequency**	**Type of Crime Exposure 3**	**Frequency**
Mugging	10	Mugging	5	Armed Robbery	1
Theft	9	Sexual Assault	2	Physical Assault	1
Burglary	5	Burglary	1		
Attempted Theft/Robbery	4	Attempted Hijacking	1		
Physical Assault	4				
Armed Robbery	4				
Attempted Hijacking	3				
Vehicle Theft	3				
Other					
Hijacking	1				
Murder	1				
Domestic Violence	1				
Total	**48**		**9**		**2**

4.3.2. Coping Styles

Coping styles included problem-focused, emotion-focused and dysfunctional coping and were measured using the Brief COPE. The potential range of scores for problem-focused coping is 6-24. The reported range for this sample was 6-24 (*M*= 17.11, *SD*= 3.99). The potential range of scores for emotion-focused coping is 10-40. The reported range for this sample was 12-38 (*M*= 26.85, *SD*= 5.63). The potential range of scores for dysfunctional coping is 12-48. The reported range for this sample was 14-40 (*M*= 24.33, *SD*= 6.03). It was apparent that there was a fair range of scores on each of the three types of coping sub-scales across the sample.

4.3.3. Posttraumatic Stress Symptomatology

Posttraumatic stress symptoms were measured using the IES-R. Symptoms clusters include avoidance, hyperarousal and intrusive symptoms. The potential range of scores for avoidance symptoms is 0-32. The reported range for this sample was 0-30.86 (*M*= 14.89, *SD*= 7.58). The potential range of scores for hyperarousal symptoms is 0-24. The reported range for this sample was 0-23.48 (*M*= 10.09, *SD*= 6.31). The potential range of scores for intrusive symptoms is 0-32. The reported range for this sample was 0-32 (*M*= 16.74, *SD*= 7.92). The potential range of the total IES-R score is 0-88. The reported range for this sample was 0-84.86 (*M*= 41.72, *SD*= 19.92). Sixty one point six percent of the sample (*n=69)* reported posttraumatic stress symptoms of clinical concern at a 33 point cut-off (Creamer et al., 2003) while 79.46% (*n=89)* reported posttraumatic stress symptoms of clinical concern at a 24 point cut-off (Asukai et al., 2002).

4.3.4. Fear of Crime

Responses on the FOC measure were totalled in order to obtain an overall FOC score for each participant. The potential range of scores is 6-36. The reported range for this sample was 6-23 (*M*= 14.12, *SD*= 4.31), with the highest score in the sample being some way below the possible total score. Across all participants' responses, response option 2 ("somewhat safe") was most frequently endorsed, totalling 244 responses, in response to questions of how safe one feels across a variety of environments (see appendix F). This was followed closely by response option 3 ("somewhat unsafe") totalling 203 responses. This would suggest that the sample generally experiences moderate FOC levels.

4.4. Correlations

A correlation matrix indicating the relationship between all of the key variables in the study is presented in table 4.

Table 4

Intercorrelation Matrix of all Key Variables

	1	2	3	4	5	6	7	8
1. IES-R	1.00000	-	-	-	-	-	-	-
2. Avoid	**0.9	1.00000	-	-	-	-	-	-
3. Intrus	**0.93	**0.73	1.00000	-	-	-	-	-
4. Hyper	**0.91	**0.72	**0.8	1.00000	-	-	-	-
5. FOC	*0.19	0.13	0.18	*0.21	1.00000	-	-	-
6. EmotF	0.17	0.14	0.17	0.16	0.11	1.00000	-	-
7. ProbF	0.14	*0.19	0.11	0.07	0.14	**0.61	1.00000	-
8. Dysfunct	**0.52	**0.47	**0.49	**0.47	0.16	0.17	0.11	1.00000

Avoid = Avoidant Symptoms; Intrus = Intrusive Symptoms; Hyper = Hyperarousal Symptoms; FOC = Fear of Crime; EmotF = Emotion Focused Coping; ProbF = Problem Focused Coping; Dysfunct = Dysfunctional Coping

*p< .05 **p<.01

The correlation matrix indicated the following:

1. As would be anticipated there were significant positive correlations between each of the IES-R subscales and the total IES-R score.
2. There is a significant positive correlation between FOC and total PTSS as measured by the IES-R ($p<.05$). The FOC is also specifically related to Hyperarousal ($p< .05$).
3. Dysfunctional coping is significantly positively correlated with the IES-R total scores as well as each of the three sub-scales of Avoidance, Intrusion and Hyperarousal, all a $p< .01$ level of significance.
4. There is also a significant positive correlation between emotion focused and problem focused ways of coping ($p< .01$).

4.5. Main Analyses

4.5.1. Parametric Assumptions

The parametric assumptions for the use of the statistics obtained have been met such that:

1. The responses obtained from each participant are assumed to be independent as there is no reason to believe that scores obtained from any individual participant would have influenced scores of other participants, which may sometimes be a concern when using a cluster sampling method (Gravetter & Forzano, 2003). Participants were asked not to respond collaboratively. Furthermore, due to the nature and content of the questionnaires used in this study, responses are based on individual and personal experience.

2. Normality for PTSS scores, as measured by the IES-R; and FOC scores was established based on Shapiro-Wilk's *W* statistic obtained for the sample. This suggests that scores obtained for these variables within the sample are reasonably assumed to mirror scores found in the general population (Terre Blanche, Durrheim & Painter, 2006). Results suggest that PTSS (IES-R) is normally distributed in this sample. FOC, however, was found to be not normally distributed. This may be due to the fact that FOC would not be expected to be normally distributed in the population as a skewed distribution is more likely. In addition, given the large sample size, the central limit theorem can be invoked, making the procedures quite robust to violations of this assumption for normality, if expected in the normal population (which is not the case here).

Table 5

Testing for Assumption of Normality with the Shapiro-Wilk Test

Variable	Statistic	p Value
IES-R	0.983362	Pr < W 0.1786
Avoidant symptoms	0.979674	Pr < W 0.0857
Intrusion symptoms	0.972131	Pr < W 0.0191
Hyperarousal symptoms	0.960934	Pr < W 0.0024
Fear of crime	0.974391	Pr < W 0.0208

3. A Levene's test was carried out for homogeneity of variance and this assumption was met. In addition, analysis of PROC UNIVARIATE indices suggested that there were no outliers that had significant influence on the IES-R or the FC.

4. The measurement instruments from which scores were obtained and with which analyses were run had interval scales (apart from the TSS which is made up of both categorical and interval scales). This assumption was thus met.

Given that the parametric assumptions were met satisfactorily, parametric tests were therefore conducted as anticipated.

4.5.2. Exposure to Crime as a Predictor of Posttraumatic Stress Symptomatology

A simple regression was used to analyse whether crime exposure serves as a predictor of PTSS. Out of a possible 123 observations $n = 112$ were used as 11 responses on the IES-R had missing values. Results showed a significant effect ($p = 0.02$ and is therefore significant at $p < .05$ level) of crime exposure on PTSS. Results were in the direction expected indicating

that crime exposure appears to play a significant role in the development of posttraumatic stress symptoms.

Table 6

Simple Regression for Crime Exposure as a Predictor of Posttraumatic Stress Symptomatology

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	2315.15812	2315.15812	6.10	0.0150
Error	110	41717	379.24889		
Corrected Total	111	44033			

4.5.3. Exposure to Crime as a Predictor of Fear of Crime

A simple regression was used to analyse whether crime exposure serves as a predictor of FOC. Out of a possible 123 observations n=121 were used as two responses on the FOC measure had missing values. Results showed a significant effect ($p = 0.04$) of crime exposure on FOC. Thus, results suggest that crime exposure does play a significant role in the elevation of FOC levels.

Table 7

Simple Regression for Crime Exposure as a Predictor of Fear of Crime

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	78.11967	78.11967	4.32	0.0397
Error	119	2150.26050	18.06942		
Corrected Total	120	2228.38017			

4.5.4. Coping Styles as Moderators of the Relationship between Crime Exposure, and Posttraumatic Stress Symptomatology and Fear of Crime

Two-way ANOVA's were run in order to analyse the main effects and interactions of crime exposure and coping style on each of PTSS, and FOC. The crime exposure variable was tested for by analysing the mean scores of different categories of trauma exposure. The first set of ANOVA's was run with crime versus non-crime groups (and will be referred to as "exposure 1 categories"). The second set of ANOVA's was run with the four subgroups of exposure, i.e. no exposure, non-crime trauma exposure, crime exposure, and both crime and non-crime trauma exposure (and will be referred to as "exposure 2 categories". The results are reported for each of the three potential moderating coping styles in relation to the exposure categories and to each dependent variable, i.e. PTSS and FOC. Interactions as well as main effects will be reported on. All results are taken as significant at the $p < .05$ level unless otherwise specified.

4.5.4.1. The Moderating Effect of Problem-Focused Coping on the Relationship between Crime Exposure and Posttraumatic Stress Symptomatology

Results of the two-way ANOVA for problem-focused coping, exposure 1 categories and PTSS show a non-significant effect of the interaction between exposure and problem-focused coping ($p = .92$) on PTSS. Thus, problem-focused coping does not appear to moderate the

relationship between crime exposure (and other types of trauma exposure) and the production of PTSS. Analysis of the main effects indicates a non-significant effect (p = .21) of problem-focused coping (independently of crime exposure) on the production of PTSS as there appears to be no significant difference between mean scores on the IES-R for participants in the low or high problem-focused coping categories. It appears that the effect of exposure 1 categories on IES-R scores approaches but does not reach significance (p = .07).

Table 8

Two-way ANOVA for Interaction Effects of Exposure 1 Categories and Problem-Focused Coping on Posttraumatic Stress Symptomatology

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Crime VS Non-crime Exposure	1	1303.580124	1303.580124	3.34	0.0702
Problem-Focused Coping	1	625.726795	625.726795	1.61	0.2079
Crime VS Non-Crime Exposure * Problem-Focused Coping	1	3.881086	3.881086	0.01	0.9207

Results of the two-way ANOVA for problem-focused coping, exposure 2 categories and PTSS also show a non-significant effect of the interaction between exposure and problem-focused coping (p = 0.6) on the production of posttraumatic stress symptoms. This suggests that problem-focused coping does not moderate the relationship between crime exposure (and other types of trauma exposure) and the production of posttraumatic stress symptoms. Main effects indicate a non-significant effect (p = .14) of problem-focused coping on PTSS. Contradictory to the assumption that analyses employing the more differentiated subtypes of exposure might produce significant results, the effect of exposure 2 categories on PTSS scores also appeared non-significant (p = .11), indicating no significant differences in mean scores for those participants who fell into the four sub-types of trauma exposure in respect of PTSS.

Table 9

Two-way ANOVA for Interaction Effects of Exposure 2 Categories and Problem-Focused Coping on Posttraumatic Stress Symptomatology

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Exposure Subtypes	3	2353.821972	784.607324	2.03	0.1146
Problem-Focused Coping	1	852.830715	852.830715	2.20	0.1407
Exposure Subtypes * Problem-Focused Coping	3	726.812026	242.270675	0.63	0.5998

4.5.4.2. The Moderating Effect of Problem-Focused Coping on the Relationship between Crime Exposure and Fear of Crime

Results of the two-way ANOVA for problem-focused coping, exposure 1 categories and FOC show a non-significant interaction effect (p = .85). As with PTSS, problem-focused coping does not appear to moderate the relationship between crime exposure (and other types of trauma exposure) and FOC. Analysis of the main effects indicates a non-significant effect (p = .21) of problem-focused coping (independently of crime exposure) on FOC. It also appears that exposure 1 categories have a non-significant effect on FOC (p = .63).

Table 10

Two-way ANOVA for Interaction Effects of Exposure 1 Categories and Problem-Focused Coping on Fear of Crime

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Crime VS Non-crime Exposure	1	4.25798101	4.25798101	0.23	0.6345
Problem-Focused Coping	1	20.77295920	20.77295920	1.11	0.2079
Crime VS Non-Crime Exposure* Problem-Focused Coping	1	0.68134504	0.68134504	0.04	0.8491

Results of the two-way ANOVA for problem-focused coping, exposure 2 categories and FOC also produced largely non-significant results for all effects. There was a non-significant effect of the interaction between exposure and problem-focused coping ($p = 0.58$) on FOC. This suggests that problem-focused coping does not moderate the relationship between crime exposure (and other types of trauma exposure) and FOC levels. Main effects indicate a non-significant effect ($p = .89$) of problem-focused coping on FOC. There appears to be no significant difference between mean scores on the FOC for participants in the low or high problem-focused coping categories. Again results contradict the assumption that further differentiated subtypes of exposure may produce significant results of effect as the effect of exposure 2 categories on FOC scores produced non-significant results ($p = .94$), indicating no significant differences in mean scores on the FOC for those participants who have been exposed to crime, those who have been exposed to non-crime trauma only, those who have had both these types of exposure and those who have had none.

Table 11

Two-way ANOVA for Interaction Effects of Exposure 2 Categories and Problem-Focused Coping on Fear of Crime

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Exposure Subtypes	3	7.83926525	2.61308842	0.14	0.9377
Problem-Focused Coping	1	0.35227441	0.35227441	0.02	0.8921
Exposure Subtypes* Problem-Focused Coping	3	37.94952970	12.64984323	0.66	0.5762

4.5.4.3. The Moderating Effect of Emotion-Focused Coping on the Relationship between Crime Exposure and Posttraumatic Stress Symptomatology

Results of the two-way ANOVA for emotion-focused coping, exposure 1 categories and PTSS show a non-significant effect of the interaction between exposure and emotion-focused coping ($p = 0.36$) on the production of PTSS suggesting that emotion-focused coping does not appear to moderate the relationship between crime exposure (and other types of trauma exposure) and the production of posttraumatic stress symptoms. Results of the main effects suggest a non-significant effect ($p = .1$) for emotion-focused coping and PTSS and a non-significant effect of exposure 1 categories on PTSS scores ($p = .08$).

Table 12

Two-way ANOVA for Interaction Effects of Exposure 1 Categories and Emotion-Focused Coping on Posttraumatic Stress Symptomatology

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Crime VS Non-crime Exposure	1	1150.418425	1150.418425	3.07	0.0826
Emotion-Focused Coping	1	1060.584567	1060.584567	2.83	0.0954
Crime VS Non-crime Exposure * Emotion-Focused Coping	1	318.921757	318.921757	0.85	0.3583

Results of the two-way ANOVA for emotion-focused coping, exposure 2 categories and PTSS show a non-significant effect of the interaction between exposure and emotion-focused coping ($p = 0.11$) on PTSS, suggesting that emotion-focused coping does not moderate the relationship between crime exposure (and other types of trauma exposure) and PTSS. Main effect results indicate a non-significant effect ($p = .06$) of emotion-focused coping on PTSS, although this result falls just outside of the range of significance, and could perhaps still be interpreted. The effect of exposure 2 categories on PTSS scores also appeared non-significant ($p = .5$).

Table 13

Two-way ANOVA for Interaction Effects of Exposure 2 Categories and Emotion-Focused Coping on Posttraumatic Stress Symptomatology

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Exposure Subtypes	3	862.910154	287.636718	0.79	0.5039
Emotion-Focused Coping	1	1366.198337	1366.198	3.74	0.0559
Exposure Subtypes * Emotion-Focused Coping	3	2222.909370	740.969790	2.03	0.1146

4.5.4.4. The Moderating Effect of Emotion-Focused Coping on the Relationship between Crime Exposure and Fear of Crime

Results of the two-way ANOVA for emotion-focused coping, exposure 1 categories and FOC show a non-significant effect of the interaction between exposure and emotion-focused coping ($p = 0.82$) on FOC. Thus, emotion-focused coping does not appear to moderate the relationship between crime exposure (and other types of trauma exposure) and FOC. Analysis of the main effects indicates a non-significant effect ($p = .08$) of emotion-focused coping on FOC and a non-significant effect of exposure type on FOC ($p = .61$).

Table 14

Two-way ANOVA for Interaction Effects of Exposure 1 Categories and Emotion-Focused Coping on Fear of Crime

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Crime VS Non-crime Exposure	1	4.86567069	4.86567069	0.26	0.6083
Emotion-Focused Coping	1	59.30869490	59.30869490	3.22	0.0754
Crime VS Non-crime Exposure * Emotion-Focused Coping	1	0.90805460	0.90805460	0.05	0.8247

Results of the two-way ANOVA for emotion-focused coping, exposure 2 categories and FOC show a non-significant effect of the interaction between exposure and emotion-focused coping ($p = 0.75$) on FOC levels, suggesting that emotion-focused coping does not moderate the relationship between crime exposure (and other types of trauma exposure) and FOC levels. Main effects indicates a non-significant effect ($p = .16$) of emotion-focused coping on FOC. The effect of exposure 2 categories on FOC scores also appears non-significant ($p = .66$) as a main effect.

Table 15

Two-way ANOVA for Interaction Effects of Exposure 2 Categories and Emotion-Focused Coping on Fear of Crime

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Exposure Subtypes	3	30.10919437	10.03639812	0.53	0.6601
Emotion-Focused Coping	1	47.237943115	47.23794311	2.51	0.1158
Exposure Subtypes * Emotion-Focused Coping	3	22.80833377	7.60277792	0.40	0.7502

4.5.4.5. The Moderating Effect of Dysfunctional Coping on the Relationship between Crime Exposure and Posttraumatic Stress Symptomatology

Results of the two-way ANOVA's with dysfunctional coping as the moderating variable produced some significant results. However these were for the main effects of dysfunctional coping and not for the main effects of exposure or for the interaction between dysfunctional coping and exposure. Analysis of exposure 1 categories and PTSS again show a non-significant effect of the interaction between exposure and dysfunctional coping ($p = 0.84$) on the production of PTSS. Thus, dysfunctional coping does not appear to moderate the relationship between crime exposure (and other types of trauma exposure) and the production of PTSS. Analysis of the main effects however indicates a strong significant effect at the $p < .01$ level ($p = .001$) of dysfunctional coping on PTSS indicating that there are significant differences between mean scores on the IES-R for participants in the low or high dysfunctional coping categories. Results of effect of exposure 1 categories on PTSS scores, however, were non-significant ($p = .34$).

Table 16

Two-way ANOVA for Interaction Effects of Exposure 1 Categories and Dysfunctional Coping on Posttraumatic Stress Symptomatology

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Crime VS Non-crime Exposure	1	325.193795	325.193795	0.94	0.3355
Dysfunctional Coping	1	3813.811565	3813.811565	10.97	0.0013
Crime VS Non-crime Exposure * Dysfunctional Coping	1	14.102296	14.102296	0.04	0.8407

Results the two-way ANOVA for dysfunctional coping, exposure 2 categories and PTSS also show a non-significant effect of the interaction between exposure and dysfunctional coping ($p = 0.21$) on PTSS. This suggests that dysfunctional coping does not moderate the relationship between crime exposure (and other types of trauma exposure) and PTSS. Main effects indicate a strongly significant effect, at the $p < .01$ level ($p = .001$) of dysfunctional coping (independently of crime exposure) on the production of PTSS. The effect of exposure 2 categories on PTSS scores again appeared non-significant ($p = .85$).

Table 17

Two-way ANOVA for Interaction Effects of Exposure 2 Categories and Dysfunctional Coping on Posttraumatic Stress Symptomatology

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Exposure Subtypes	3	269.490927	89.830309	0.26	0.8517
Dysfunctional Coping	1	3708.951667	3708.951667	10.87	0.0013
Exposure Subtypes * Dysfunctional Coping	3	1573.745404	524.581801	1.54	0.2091

4.5.4.6. The Moderating Effect of Dysfunctional Coping on the Relationship between Crime Exposure and Fear of Crime

Results of the two-way ANOVA for dysfunctional coping, exposure 1 categories and FOC show a non-significant effect of the interaction between exposure and dysfunctional coping ($p = 0.38$) on FOC levels suggesting that dysfunctional coping does not moderate the relationship between crime exposure (and other types of trauma exposure) and FOC. Analysis of the main effects however indicate a strongly significant effect at the $p < .01$ level ($p = .01$) of dysfunctional coping (independently of crime exposure) on FOC levels as there appears to be significant differences between mean scores on the FOC for participants in the low or high dysfunctional coping categories. The effect of exposure 1 categories on FOC scores produced non-significant results ($p = .79$).

Table 18

Two-way ANOVA for Interaction Effects of Exposure 1 Categories and Dysfunctional Coping on Fear of Crime

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Crime VS Non-crime Exposure	1	1.3398577	1.3398577	0.07	0.7855
Dysfunctional Coping	1	114.7657746	114.7657746	6.37	0.0129
Crime VS Non-crime Exposure * Dysfunctional Coping	1	13.7545277	13.7545277	0.76	0.3840

Results the two-way ANOVA for dysfunctional coping, exposure 2 categories and FOC show a non-significant effect of the interaction between exposure and dysfunctional coping (p = 0.68) on FOC. This suggests that dysfunctional coping does not moderate the relationship between crime exposure (and other types of trauma exposure) and FOC. Main effects again indicate a significant effect (p = .03) of dysfunctional coping (independently of crime exposure) on FOC and a non-significant (p = .87) effect for Exposure 2 on FOC.

Table 19

Two-way ANOVA for Interaction Effects of Exposure 2 Categories and Dysfunctional Coping on Fear of Crime

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Exposure Subtypes	3	13.14375717	4.38125239	0.24	0.8701
Dysfunctional Coping	1	90.77342483	90.77342483	4.92	0.0286
Exposure Subtypes * Dysfunctional Coping	3	28.27475058	9.42491686	0.51	0.6757

CHAPTER 5
DISCUSSION

5.1. Organisation of Discussion

The discussion of findings commences with those related to the descriptive data reported on in the results chapter. Following this, the results of the correlations between all of the pertinent measures are commented on. Thirdly the discussion focuses on the main analyses i.e. simple regressions and two-way ANOVA's and what these findings indicate about the hypotheses that framed the research study.

5.2. Discussion of Descriptive Statistics

5.2.1. Crime Exposure

A large portion of the sample (74.8%, *n*=92) reported lifetime exposure to crime of some kind, indicating that crime exposure levels are high among this young adult sample. Statistics and literature surrounding crime in South Africa, as highlighted in chapter 2, are in line with this finding. Of the crime incidents which the sample reported having been exposed to over the preceding 12 months, in terms of first events reported, mugging was most frequently described, followed by theft, burglary, attempted theft/robbery, physical assault, armed robbery, attempted hijacking, and least frequently, vehicle theft or "other" (which included one incident of hijacking, one incident of murder and one incident of domestic violence) (as depicted in Table 3). In addition, it was evident that less than five percent of the sample (4.88%) had experienced no life time trauma of any kind and that many of the participants had experienced multiple traumatic events, including multiple criminal events. While it must be noted that exposure included both direct and indirect forms of exposure, it is recognized that indirect exposure can have serious deleterious effects. However, the bulk of the sample reported direct exposure and the figures from this study suggest that young adult, Johannesburg based, South Africans have to cope with rather alarmingly high levels of trauma exposure in their lives.

5.2.2. Coping Styles

Measurements of coping styles yielded a considerable range of scores across the sample, with responses yielding scores representative of both ends of the continuum for all the coping styles under question, i.e. problem-focused, emotion-focused and dysfunctional coping. As it was necessary to have responses within the sample that reflected both high and low use of particular coping styles, the ranges obtained were useful for the purposes of this study.

5.2.3. Posttraumatic Stress Symptomatology

Creamer et al. (2003) identified a cut-off total score of 33 on the IES-R as diagnostic of PTSD. Asukai et al. (2002) investigated the reliability and validity of their Japanese-language version of the Impact of Events Scale Revised (IES-R-J) which they found to be a reliable measure of posttraumatic stress. They found that a cut-off total score of 24/25 was useful in that it allowed the researchers to detect posttraumatic stress at levels that did not quite meet the diagnosis of PTSD ('partial PTSD') but were still of clinical concern. Within this sample, nearly 80 percent of the respondents (79.46%) reported posttraumatic stress symptoms that would be considered as clinically concerning and distressing according to the Asukai et al (2002) cut off point, while 61.61% of the sample obtained total scores above the 33 cut-off point, suggesting that they experienced trauma related symptoms at close to PTSD diagnosable levels (Creamer et al, 2003). These percentages are indicative of a traumatised sample and are of considerable concern. They also suggest much higher levels of traumatisation in this population than would be anticipated in comparison to other findings of PTSD prevalence in international and South African populations (Kaminer & Eagle, 2010). However, given that the IES-R cannot be used as a formal diagnostic tool such comparison is necessarily tentative. What is evident is that amongst this Johannesburg based student population a high percentage of individuals are experiencing troubling levels of PTSS in their everyday lives. Given the high levels of crime that this sample has been exposed to, as well as the nature of these crimes, many being crimes committed against the person, it is not surprising that the sample reports such psychological distress, particularly as only 4.88% (*n*= 6) had not been exposed to any traumatic event.

5.2.4. Fear of Crime

Interestingly, scores on the FOC measure suggest that the sample experiences moderate FOC levels, despite high levels of exposure and of PTSS. This is reflected in the total range of scores for the sample, the highest score being 23 out of a possible 36. The finding that high crime levels produced high levels of PTSS and moderate FOC levels simultaneously is surprising but perhaps explicable in that the South African population are in some sense desensitised to crime as it is so frequently occurring for many individuals.

It has also been emphasised that FOC measures may be limited in offering "vague global" indications of FOC rather than asking respondents how often or when they are fearful or what the effects of fear are for them (Gray, Jackson & Farrall, 2008, p.364). In the case of the current study, FOC levels do not appear to be highly elevated. Despite the clear face validity of the FOC measure used, it is possible that this non standardised measure produced some under-reporting of crime fears, or that as Gray et al. (2008) suggest, did not capture the specific dynamics of FOC that would possibly offer a more accurate depiction of this feature in the sample. This is not to dismiss the fact that there was evidence of FOC and of inhibition of movement and anxiety in certain locations and at certain times, such as after dark. It should be noted that Engelbrecht's findings in this regard were not very different and it is also possible that for the young adults who took part in the study there is some degree of omnipotence in engaging in the environment that comes with this developmental phase and therefore less fear in their everyday environments. Given that many students live at home or within university residences it is also possible that their sense of vigilance in their environments is lessened by the fact that there are others who are viewed as more clearly responsible for their residential and environmental safety. Despite the restricted range of FOC scores there was still sufficient variation across the sample to undertake meaningful statistical comparisons.

5.3. Discussion of Correlations

Pearson's Correlation matrices indicated that the IES-R subscales of avoidance, intrusion and hyperarousal symptoms were significantly correlated with the total IES-R scores of PTSS. Therefore, as would be expected, increased levels of posttraumatic stress in this sample correspond with increased scores on the three clusters of symptoms of posttraumatic stress disorder. Furthermore increased levels of PTSS correspond with increased levels of FOC for the sample, showing a moderate correlation (0.19). The correlation suggests that while the

two forms of distress or 'impact' are related they also appear to tap into different dimensions of distress. In terms of the three sub-scales of the IES-R, FOC was correlated most strongly with hyperarousal symptoms. This is in keeping with Engelbrecht's (2009) findings and is not unexpected given that FOC involves some vigilance and anxiety in engaging with the environment, features that may overlap with hyperarousal symptoms.

The correlation between emotion-focused coping and the intrusion subscale scores of the IES-R approached significant levels, indicating that intrusion symptoms may be associated with increased employment of emotion-focused coping. Contrary to the findings of much of the existing literature surrounding coping styles and PTSS, increased use of problem-focused coping did not seem to be negatively correlated to posttraumatic stress generally (this mirrors findings of the main analyses to be discussed). Rather, increased use of problem-focused coping appeared to correlate with increased avoidance symptoms. Perhaps this is again a finding that reflects the somewhat unique nature of this population. Perhaps in a sample that is particularly traumatised due to extremely high crime (and other trauma) exposure levels the use of problem focused coping is not necessarily of help and is associated with higher avoidance rather than higher efficacy in dealing with the environment (and reduced symptom levels). Although the literature suggests that problem-focused coping is the healthiest coping style, the findings suggest that even problem-focused coping users are not immune from the detrimental effects of pervasive victimisation. A finding that is remarkably consistent across the stress and coping literature is that dysfunctional coping tends to be detrimental to adjustment and associated with great pathology. In the case of this sample, dysfunctional coping was significantly correlated with the total IES-R score, with a high level of correlation of 0.52, and also with all three of the IES-R subscales with correlations above the 0.4 level in each instance. It was thus apparent that in this respect findings from the present study tended to bear out more general findings in the literature. Vulnerability to higher symptom levels appears to be strongly associated with increased use of dysfunctional ways of coping.

Another interesting finding was the positive correlation between problem-focused and emotion-focused coping suggesting that those who employ higher levels of problem-focused coping also tend to employ higher levels of emotion-focused coping. The literature reviewed suggests that problem-focused coping is generally more adaptive than emotion-focused coping and that while the two styles of coping are not mutually exclusive they do represent different patterns of adjustment to stressful life events. As discussed previously, mixed results

have been found regarding the effectiveness of emotion-focused coping in relation to trauma, more particularly when traumatic events are not open to modification via problem focused coping. It is hypothesised that this correlation between problem- and emotion-focused coping reflects something of the disabling effect of multiple crime exposure i.e. repeated exposure to crime (whether direct or indirect) in this population. Many South Africans may feel helpless in the face of crime in that problem-focused attempts to reduce their vulnerability to crime are not necessarily successful. When this is the case, there may be increased use of emotion focused strategies alongside problem focused coping. In the case of crime exposure, emotion-focused coping strategies are possibly employed to alleviate emotional stress, while simultaneously utilising practical measures to better ensure one's safety.

More generally, it has become increasingly accepted that coping styles are not used exclusively (Carver et al., 1989), which appears to be the case in this sample. It appears that individuals who used problem focused coping were more likely to also use emotion focused coping and vice versa. This suggests that those who do attempt to cope in active ways may draw upon the full repertoire of coping mechanisms, whereas for others there is decreased employment of both types of coping. There were no significant correlations between dysfunctional coping and the other two forms of coping suggesting that in this sample dysfunctional coping tended to be dissociated with the use of other forms of coping.

5.4. Discussion of the Main Analyses

5.4.1. The Relationship between Crime Exposure and Posttraumatic Stress Symptomatology

Simple regression analysis was used to explore whether crime exposure was predictive of PTSS within the sample. Results indicated a significant effect, suggesting that exposure to crime has a causal relationship with PTSS in this sample. Hypothesis 1 is thus supported.

This finding is consistent with the literature that has identified crime exposure to be predictive of PTSD (Macmillan, 2001; Kilpatrick & Acierno, 2003; Norman et al., 2010; Edwards, 2005); and is also consistent with the previous findings of Engelbrecht (2009) on a similar population. It appears that exposure to crime as a traumatic stressor places individuals at increased risk of developing traumatic stress related symptoms, and in the case of this sample, symptoms that may be of a level that suggests clinical impairment and compromises to optimal everyday functioning.

5.4.2. The Relationship between Crime Exposure and Fear of Crime

Simple regression analysis was also used to explore whether crime exposure was predictive of FOC within the sample. Based on the significant effect found on the relationship between these two variables, it is suggested that exposure to crime does indeed predict FOC, as literature suggests (Møller, 2005; Macmillan, 2001). Hypothesis 2 was thus supported by the results.

While the finding is not unexpected it confirms that exposure to crime may lead to behavioural inhibition with regard to freedom of movement in one's environment and also that it may lead to increased anxiety about future attacks as reflected in FOC. It appears that there might be some merit in continuing to explore FOC as a possible impact variable in looking at crime related trauma exposure.

5.4.3. Coping Styles as Moderators

Two-way ANOVA's were run in order to investigate the moderating effects of problem-focused, emotion-focused and dysfunctional coping on both the relationship between crime exposure and PTSS, and the relationship between crime exposure and FOC. The moderating effects were examined by comparing means for two categories of trauma exposure; category 1 representing crime and non-crime exposure, and category 2 comparing the four more differentiated exposure sub-groups. The results are discussed in the sections that follow.

5.4.3.1. The Moderating Effect of Problem-Focused Coping on the Relationship between Crime Exposure and Posttraumatic Stress Symptomatology

The two-way ANOVA for problem focused coping as a moderator in the relationship between exposure to crime (exposure category 1) and PTSS produced a non-significant p value of .92 indicating no significant difference in mean PTSS scores for those who reported high and low use of problem-focused coping strategies. Contradictory to the literature reviewed, problem-focused coping did not appear to buffer against the production of PTSS in the face of crime exposure for this sample. Hypotheses 3(a) is thus not supported.

Perhaps this finding can be thought of in light of learned helplessness theory. As already suggested, it is possible that the high victimisation levels in the sample (as a reflection of the larger South African population) leave individuals feeling that their problem-focused

attempts to escape crime related trauma are ineffective. Thus some similar psychological processes may be operating to those identified by Folkman and Lazarus' (cited in Arias and Pape, 1999) who suggest that *perceptions* of the likely efficacy of particular strategies in reducing psychological abuse are linked to perceptions of control (or lack of control) and may affect the deployment of problem-focused coping strategies. If one believes that one's efforts are going to be ineffective then one perhaps chooses not to embark on instrumental action at all in the first place. Although the Tukey-Kramer procedure produced visible differences in least squares mean PTSS scores between low problem-focused and high problem-focused coping, these differences were not large enough to warrant significance. These figures were also in a counter-intuitive direction in that higher problem focused coping was associated with somewhat higher PTSS scores for both trauma exposed and non-trauma exposed groups (see below). Again, this suggests a somewhat unusual relationship in which employment of problem focused coping is associated with higher distress levels. This tends to support the hypothesis that there is possibly something about the reliance on problem focused coping in contexts in which such strategies do not have sufficient efficacy that may lead to increased anxiety and distress. However, given the non-significance of the interaction discussion of such possible relational connections is necessarily highly speculative. It remains for further research to be done in this area.

Table 20

Tukey-Kramer's Least Squares Means for the Moderating Effect of Problem-Focused Coping between Exposure 1 Categories and IES-Scores

Exposure Category	Prob-Foc Coping	IES-R LSMean	LSMean #
0	1	33.4636364	1
0	2	38.5263158	2
1	1	40.9628261	3
1	2	46.8911111	4

*Key for Exposure Category

0= no crime exposure

1= crime exposure

*Key for Prob-Foc Coping

1= Low use

2= High use

Analysis of the main effects indicated that problem-focused coping, independent of crime exposure, did not produce significant differences in mean PTSS scores. However there was an almost significant interaction between exposure to crime and PTSS ($p = 0.07$) as might be expected given that the regression analysis established a significant relationship between these two variables as discussed earlier in the chapter.

The two-way ANOVA for problem-focused coping as a moderator in the relationship between exposure to crime (exposure category 2) and PTSS produced a non-significant p value of .60, again suggesting that problem-focused coping does not moderate the relationship between crime exposure and PTSS. Although the least mean scores for those sub-categories which include crime exposure i.e. crime exposure, and both crime and non-crime exposure, were visibly different from those relating to the non-crime exposure groups, when testing for the moderating effects of coping style these differences were not large

enough to warrant significance. Furthermore, these differences are again not in the direction that would be assumed based on the literature reviewed as those who employ problem-focused coping strategies are not exempt for the distress caused by crime exposure. Interestingly, however, results for the non-crime trauma group were in the direction expected based on the reviewed literature such that high problem-focused coping appeared to be associated with lower levels of PTSS, although not significantly. Again this suggests some interesting directions for future research.

Table 21

Tukey-Kramer's Least Squares Means for the Moderating Effect of Problem-Focused Coping between Exposure 2 Categories and IES-Scores

Exposure Category	Prob-Foc Coping	IES-R LSMean	LSMean #
0	1	16.0000000	1
0	2	38.3333333	2
1	1	40.0125000	3
1	2	38.5625000	4
2	1	37.8061538	5
2	2	41.0533333	6
3	1	42.2063636	7
3	2	48.8370370	8

*Key for Exposure Category

0= no trauma exposure

1= non-crime related trauma exposure

2= crime exposure

3= both crime and non-crime related trauma exposure

*Key for Prob-Foc Coping

1= Low use

2= High use

Analysis of the main effects is in line with that of the ANOVA run for exposure category 1. Problem-focused coping, independent of crime exposure, does not appear to produce significant differences in levels of PTSS. Hypothesis 3 (a) is again not supported in this further set of calculations.

Analysis of the main effects of the interaction between exposure to trauma subtypes and PTSS ($p = 0.11$) surprisingly demonstrate non-significant differences in the PTSS mean scores for the four sub-groups of exposure. Each of these groups thus appear to experience PTSS at similarly distressing levels. One possible explanation for this might be the level of indirect or vicarious traumatisation experienced, as members of the South African population are constantly being exposed to accounts of crime in the media and anecdotally (Kaminer & Eagle, 2010). Thus even in those who report no trauma and no crime exposure it is possible that some traumatic stress related responses develop as a consequence of this kind of indirect exposure. One also needs to take into consideration that portion of the sample who did not report any trauma exposure was extremely small (n=6) making comparisons across the sample in terms of exposure more difficult.

To summarise, problem-focused coping does not appear to moderate the relationship between crime exposure and PTSS, nor does it appear to be significantly related to levels of PTSS independent of exposure. Furthermore, crime exposure did not appear to produce higher PTSS in comparison with non-crime exposure, or with other types of trauma exposure. This does not invalidate the results of the simple regressions which showed crime to be predictive of PTSS. However, ANOVA results suggest that although crime appears to predict PTSS, it is not necessarily a stronger predictor of PTSS than non-crime related trauma exposure and mixed crime and non-crime related trauma exposure.

5.4.3.2. The Moderating Effect of Problem-Focused Coping on the Relationship between Crime Exposure and Fear of Crime

The two-way ANOVA for problem focused coping as a moderator in the relationship between exposure to crime (exposure category 1) and FOC produced a non-significant p value of .85, suggesting that increased use of problem-focused coping strategies does not lead to significantly decreased FOC in participants exposed to crime as compared to those with decreased use of problem-focused coping strategies. Hypothesis 3 (a) is thus not supported

with respect to FOC.

Perhaps this finding reflects a similar set of contextual concerns, such that when problem-focused strategies have been employed by individuals who have fallen victim to crime, perceptions of safety are not improved by reliance on these kinds of practical measures. The Tukey-Kramer showed marginal differences in least squares means between low problem-focused and high problem-focused coping for FOC.

Analysis of the main effects suggest that problem-focused coping, regardless of exposure, does not produce significant differences in FOC A non-significant interaction between exposure to crime and FOC ($p = 0.63$) was also demonstrated, which was contradictory to the findings of the regression analysis.

The two-way ANOVA for problem focused coping as a moderator in the relationship between exposure to crime (exposure category 2) and FOC also produced non-significant results. In addition, the marginal differences that were evident in the least mean FOC scores for all three sub-categories which included some form of trauma exposure, were again not in the direction expected. Interestingly, however, within the sub-category of participants who had no trauma exposure whatsoever, FOC levels were in fact higher amongst those who more frequently employed problem-focused coping. However, this was not a significant difference.

Table 22

Tukey-Kramer's Least Squares Means for the Moderating Effect of Problem-Focused Coping between Exposure 2 Categories and Fear of Crime Scores

Exposure Category	Prob-Foc Coping	FOC LSMean	LSMean #
0	1	15.3333333	1
0	2	11.6666667	2
1	1	12.7777778	3
1	2	14.6875000	4
2	1	13.7500000	5
2	2	15.0000000	6
3	1	13.6470588	7
3	2	14.7666667	8

*Key for Exposure Category

0= no trauma exposure

1= non-crime related trauma exposure

2= crime exposure

3= both crime and non-crime related trauma exposure

*Key for Prob-Foc Coping

1= Low use

2= High use

While sample size and lack of significance make the trends in the data difficult to interpret and it is recognised that circumspection is required in commenting on any non-significant results there are some unexpected relationships in the data that might warrant further research. For example, does high problem focused coping in non-exposed populations

stimulate increased FOC in that it is associated with substantive entertainment of future or potential risk?

Analysis of the main effects for exposure category 2 is in line with that of the ANOVA run for exposure category 1 and will therefore not be discussed further as it does not bring new information to the fore.

To summarise, problem-focused coping does not appear to moderate the relationship between crime exposure and FOC. Problem-focused coping also appeared to be less adaptive for this sample than literature shows it to be generally and employment of problem focused coping (independent of exposure) did not seem to ameliorate FOC. There is also an implication that crime is not necessarily a stronger predictor of FOC than non-crime related trauma exposure.

5.4.3.3. The Moderating Effect of Emotion-Focused Coping on the Relationship between Crime Exposure and Posttraumatic Stress Symptomatology

The two-way ANOVA for emotion-focused coping as a moderator in the relationship between exposure to crime (exposure category 1) and PTSS produced a non-significant result. Emotion-focused coping therefore did not appear to moderate the relationship between crime exposure and PTSS. Hypothesis 3 (b) is therefore not supported.

Literature suggests that as emotion-focused coping strategies are generally viewed as less adaptive and associated with increased symptoms of and risk for PTSD (Arais & Pape, 1999; Scarpa & Haden, 2006; Violanti as cited in Pienaar & Rothman, 2003), a significant difference between the means might be expected. The least squares means for PTSS scores show levels of PTSS in the presumed direction, higher emotion-focused coping being associated with higher PTSS, but not at levels found to be statistically significant.

Table 23

Tukey-Kramer's Least Squares Means for the Moderating Effect of Emotion-Focused Coping between Exposure 1 Categories and IES-R scores

Exposure Category	Emot-Foc Coping	IES-R LSMean	LSMean #
0	1	34.7583333	1
0	2	37.9444444	2
1	1	38.2371429	3
1	2	49.1602500	4

*Key for Exposure Category
0= no crime exposure
1= crime exposure

*Key for Emot-Foc Coping
1= Low use
2= High use

Schnider, Elhai and Gray (2007) distinguish between active emotional coping which is generally found to be adaptive, and avoidant emotional coping which is generally found to be maladaptive. Perhaps the non-significance of the differences in PTSS mean scores represents the employment of a mix of active and avoidant emotional coping strategies among the sample.

Main effects were also non-significant for both emotion-focused coping and exposure. The former suggests that emotion focused coping has a variable relationship with PTSS and the latter represents a similar finding to that discussed already with regard to the ANOVA's pertaining to problem focused coping.

The two-way ANOVA for emotion- focused coping and exposure category 2 sub-groups was also non-significant. The least squares mean IES-R scores again generally show higher levels

of PTSS associated with higher emotion-focused coping in all but one sub-category of trauma exposure, i.e. the non-crime related trauma exposure group. These higher mean scores, however, were not at levels found to be statistically significant. In commenting on the distinction in relationship found for the non-crime related trauma exposure group, the early research of Mattlin, Wethington and Kessler (1990) is perhaps relevant. They argue for the effect of situational determinants in assessing the effectiveness of coping strategies and illustrate this with the example of positive reappraisal, an aspect of emotion-focused coping. Positive reappraisal may be adaptive when coping with the loss of a loved one, but in what they term "low-threat or practical situations" (such as a mugging), this coping strategy may be maladaptive. It appears that in the case of non-crime related trauma, such as bereavement, illness and MVA's emotion focused coping may be associated with more beneficial effects in terms of reduced PTSS. However, again, this commentary is made with great caution given the non-significance of the results.

Table 24

Tukey-Kramer's Least Squares Means for the Moderating Effect of Emotion-Focused Coping between Exposure 2 Categories and IES-R Scores

Exposure Category	Emot-Foc Coping	IES-R LSMean	LSMean #
0	1	16.5000000	1
0	2	48.5000000	2
1	1	43.8875000	3
1	2	36.6250000	4
2	1	37.9388235	5
2	2	43.2000000	6
3	1	38.4400000	7
3	2	50.0117143	8

*Key for Exposure Category

0= no trauma exposure

1= non-crime related trauma exposure

2= crime exposure

3= both crime and non-crime related trauma exposure

*Key for Emot-Foc Coping

1= Low use

2= High use

Analysis of the main effects suggest that there is a marginal difference in mean IES-R scores such that increased emotion-focused coping, regardless of exposure, appears to result in increased PTSS at a level approaching significance (p=.06). Again the main effect for exposure was non-significant.

To summarise, emotion-focused coping does not appear to moderate the relationship between crime exposure and PTSS. There was some indication that increased use of emotion-focused coping was associated with higher levels of PTSS except in those respondents who reported exposure to non-crime trauma only where the relationship was reversed. However, the relationships were only evidenced in a visual scrutiny of the tables and were not statistically significant.

5.4.3.4. The Moderating Effect of Emotion-Focused Coping on the Relationship between Crime Exposure and Fear of Crime

The two-way ANOVA for emotion-focused coping as a moderator in the relationship between exposure to crime (exposure category 1) and FOC was non-significant. Emotion-focused coping therefore did not appear to moderate the relationship between crime exposure and FOC. Hypothesis 3 (b) is not supported with regard to FOC.

The least squares mean FOC scores do show fear levels increasing in the presumed direction, i.e. higher emotion-focused coping being associated with higher FOC, however these findings were not at levels found to be statistically significant.

Table 25

Tukey-Kramer's Least Squares Means for the Moderating Effect of Emotion-Focused Coping between Exposure 1 Categories and Fear of Crime scores

Exposure Category	Emot-Foc Coping	FOC LSMean	LSMean #
0	1	12.8461538	1
0	2	14.6666667	2
1	1	13.5106383	3
1	2	14.9302326	4

*Key for Exposure Category

0= no crime exposure

1= crime exposure

*Key for Emot-Foc Coping

1= Low use

2= High use

Analysis of the main effects were also non-significant indicating that increased use of emotion-focused coping strategies did not appear to result in significantly higher FOC as might be expected. A non-significant interaction between exposure to crime and FOC ($p = .61$) was also demonstrated suggesting that the crime and non-crime subgroups of the sample experienced relatively similar intensities of FOC in contrast to the findings of the regression analyses. Again, the fact that the non-crime exposure group included those with some level of non-crime related trauma is noteworthy.

The two-way ANOVA for emotion- focused coping as a moderator in the relationship between exposure to crime and other trauma (exposure category 2), and FOC also produced a non-significant findings. The least squares mean FOC scores show higher levels of FOC when employing higher emotion-focused coping in all sub-categories of trauma exposure as suggested in the hypotheses. However, these were not at levels found to be statistically

significant.

Table 26

Tukey-Kramer's Least Squares Means for the Moderating Effect of Emotion-Focused Coping between Exposure 2 Categories and Fear of Crime Scores

Exposure Category	Emot-Foc Coping	FOC LSMean	LSMean #
0	1	13.2500000	1
0	2	14.0000000	2
1	1	12.6666667	3
1	2	14.7500000	4
2	1	13.5238095	5
2	2	17.2000000	6
3	1	13.5000000	7
3	2	14.6315789	8

*Key for Exposure Category

0= no trauma exposure

1= non-crime related trauma exposure

2= crime exposure

3= both crime and non-crime related trauma exposure

*Key for Emot-Foc Coping

1= Low use

2= High use

Analysis of the main effects in the second set of calculations was also non-significant. To summarise, emotion-focused coping does not appear to moderate the relationship between crime and trauma crime exposure and FOC such that employing emotion-focused strategies

would lead to significantly lower levels of FOC in participants who have been exposed to crime and/or other types of trauma. Increased use of emotion-focused coping appeared to generally be associated with increased FOC but not at levels of statistical significance. Similarly, crime exposure did not appear to produce higher FOC in comparison with non-crime exposure, or with other types of trauma exposure. This does not, however, invalidate the results of the simple regressions which implied crime as a predictor of fear, although it implies that crime is not necessarily a stronger predictor than non-crime related trauma exposure which is more surprising in the case of FOC than it is in the case of PTSS.

5.4.3.5. The Moderating Effect of Dysfunctional Coping on the Relationship between Crime Exposure and Posttraumatic Stress Symptomatology

As with the ANOVA's for the other two forms of coping, the two-way ANOVA for dysfunctional coping as a moderator in the relationship between exposure to crime (exposure category 1) and PTSS produced a non-significant p value. Dysfunctional coping therefore did not appear to moderate the relationship between crime exposure and PTSS. Hypothesis 3 © is therefore not supported.

Although the least squares mean PTSS scores clearly indicate that higher use of dysfunctional coping is associated with higher levels of PTSS, these differences are not statistically significant.

Table 27

Tukey-Kramer's Least Squares Means for the Moderating Effect of Dysfunctional Coping between Exposure 1 Categories and IES-R scores

Exposure Category	Dysfunct Coping	IES-R LSMean	LSMean #
0	1	32.3550000	1
0	2	45.3000000	2
1	1	35.5416216	3
1	2	50.1628889	4

*Key for Exposure Category

0= no crime exposure

1= crime exposure

*Key for Dysfunct Coping

1= Low use

2= High use

However, analysis of the main effects for dysfunctional coping indicates findings that are considerably different from those pertaining to problem- and emotion-focused coping. Extremely significant differences (p=.001) were found between mean PTSS scores for low and high dysfunctional coping groups such that increased use of dysfunctional coping strategies was associated with considerably higher PTSS. The non-significant interaction between exposure to crime and PTSS was again confirmed.

The two-way ANOVA for dysfunctional coping as a moderator in the relationship between exposure to trauma which included crime trauma (exposure category 2), and PTSS was non-significant. The least squares mean IES-R scores show higher levels of PTSS when employing higher dysfunctional coping in all sub-categories of trauma exposure, however, these differences were not statistically significant.

Table 28

Tukey-Kramer's Least Squares Means for the Moderating Effect of Dysfunctional Coping between Exposure 2 Categories and IES-R Scores

Exposure Category	Dysfunct Coping	IES-R LSMean	LSMean #
0	1	19.2000000	1
0	2	67.0000000	2
1	1	36.7400000	3
1	2	42.8888889	4
2	1	36.3200000	5
2	2	44.0600000	6
3	1	35.0678261	7
3	2	51.4824324	8

*Key for Exposure Category

0= no trauma exposure

1= non-crime related trauma exposure

2= crime exposure

3= both crime and non-crime related trauma exposure

*Key for Dysfunct Coping

1= Low use

2= High use

To summarise, dysfunctional coping does not appear to moderate the relationship between crime exposure and PTSS such that increased use of dysfunctional strategies is related to significantly higher levels of PTSS in participants who have been exposed to crime and/or other types of trauma. The effect of increased or decreased use of dysfunctional coping, however, did produce significant differences in PTSS scores independent of trauma exposure

such that posttraumatic stress symptoms were clearly higher in those participants with increased use of dysfunctional coping. This finding bears out the findings with regards to dysfunctional coping and the IES-R in the correlational matrix and suggests a strong relationship between employment of dysfunctional coping styles and vulnerability to elevated traumatic stress related symptoms. This is in keeping with what the literature suggests to be the case and provides partial validation of Hypothesis 3c in that the negative effects of dysfunctional coping are confirmed albeit this not as a moderating effect between crime exposure and PTSS.

5.4.3.6. The Moderating Effect of Dysfunctional Coping on the Relationship between Crime Exposure and Fear of Crime

The two-way ANOVA for dysfunctional coping as a moderator in the relationship between exposure to crime (exposure category 1) and FOC produced a non-significant p value of .38. Dysfunctional coping therefore did not appear to moderate the relationship between crime exposure and FOC and Hypothesis 3 c was not confirmed in this respect.

The least squares mean FOC scores again show changes in FOC levels in the presumed direction, i.e. higher dysfunctional coping being associated with higher FOC than in low use of dysfunctional coping, however these findings were not at levels considered statistically significant.

Table 29

Tukey-Kramer's Least Squares Means for the Moderating Effect of Dysfunctional Coping between Exposure 1 Categories and Fear of Crime scores

Exposure Category	Dysfunct Coping	FOC LSMean	LSMean #
0	1	12.8000000	1
0	2	15.9090909	2
1	1	13.3500000	3
1	2	14.8600000	4

*Key for Exposure Category

0= no crime exposure

1= crime exposure

*Key for Dysfunct Coping

1= Low use

2= High use

Analysis of the main effects however suggest a significant difference (p= .01) in mean FOC scores for low and high dysfunctional coping users of the sample, such that increased use of dysfunctional coping strategies did appear to correspond to significantly higher FOC . A non-significant interaction between exposure to crime and FOC was however found.

The two-way ANOVA for dysfunctional coping as a moderator in the relationship between exposure to trauma including crime trauma (exposure category 2), and FOC also produced a non-significant p value. The least squares mean FOC scores show higher levels of FOC when employing higher dysfunctional coping in all sub-categories of trauma exposure, however, not at statistically significant levels.

Table 30

Tukey-Kramer's Least Squares Means for the Moderating Effect of Dysfunctional Coping between Exposure 2 Categories and Fear of Crime Scores

Exposure Category	Dysfunct Coping	FOC LSMean	LSMean #
0	1	12.4000000	1
0	2	19.0000000	2
1	1	12.9333333	3
1	2	15.6000000	4
2	1	13.9411765	5
2	2	14.7777778	6
3	1	12.9130435	7
3	2	14.8780488	8

*Key for Exposure Category

0= no trauma exposure

1= non-crime related trauma exposure

2= crime exposure

3= both crime and non-crime related trauma exposure

*Key for Dysfunct Coping

1= Low use

2= High use

Analysis of the main effects suggest that there is a significant difference (p=.03) in mean FOC scores such that increased dysfunctional coping, independent of exposure, does appear to result in increased FOC.

To summarise, dysfunctional coping does not appear to moderate the relationship between crime and trauma crime exposure and FOC such that employing dysfunctional coping

strategies is related to significantly higher FOC in participants who have been exposed to crime and/or other types of trauma. The effect of increased or decreased use of dysfunctional coping does however appear to produce statistically significant differences in FOC independent of exposure.

CHAPTER 6
CONCLUSION

6.1. Summary of the Findings

This study aimed to examine the relationships between crime exposure and PTSS and crime exposure and FOC. More specifically it set out to establish a causal link with crime exposure acting as a predictor of both PTSS and FOC. It then aimed to identify and explain possible moderating effects of three coping styles, i.e. problem-focused, emotion-focused and dysfunctional coping on the fore-mentioned relationships, using theory and research driven hypotheses as to what the likely direction of such moderating relationships might be in each instance.

Of the sample, a substantial portion (74.8%,) reported having been exposed to crime in some form over their lifetimes, indicating that crime exposure levels are high among the sample. Furthermore, 79.46% of the sample reported experiencing PTSS at levels considered to be clinically significant at a 24/25 cut-off score on the IES-R. This indicates a highly traumatised sample. However, the FOC scores for the sample suggest moderate FOC levels; with the highest score of 23 falling 13 points below the highest score in the potential range, despite high crime exposure levels and high PTSS. Across the sample, a reasonably broad variability in employment of each of the three coping styles under study was evident.

Findings for the relationship between crime exposure and PTSS indicated that increased exposure crime was predictive of an increase in PTSS however a comparison of the relationship between non-crime related traumas and PTSS based on two way ANOVA's suggested that crime exposure was not the only predictor of PTSS. The study indicates that being exposed to crime is likely to result in elevated levels of traumatic stress related responses but that individuals exposed to crime related trauma will not necessarily present with higher levels of symptoms than people exposed to other forms of trauma.

Similarly, findings for the relationship between crime exposure and FOC indicated that increased exposure crime was predictive of an increase in FOC. Again, however, a comparison of the relationship between non-crime related traumas and FOC using two-way ANOVA's suggested that crime exposure was not the only predictor of FOC. This latter finding is rather more puzzling and may be related to the fact that there was a positive

correlation between FOC and PTSS within the sample, although this relationship would only go so far in explaining why people exposed, for example, to non-crime trauma, might evidence similarly high levels of FOC to those who do report crime exposure. This may also be evidence of the pervasive impact of indirect traumatisation discussed earlier such that FOC is fairly widespread at similar levels across this Johannesburg based sample.

In reference to the possible moderating effects of coping styles on the relationships between crime exposure and PTSS, and crime exposure and FOC, no significant moderating effects were found for problem-focused, emotion-focused or dysfunctional coping. Thus, based on the results of this study the employment of a particular form of coping to manage the impact of crime exposure does not appear to moderate the impact of such exposure as measured in terms of PTSS and FOC. This is an interesting if somewhat disappointing finding as it appears to suggest that the cultivation of a particular coping style is not necessarily beneficial to post-crime-trauma adjustment in the kinds of circumstances reported by these students. As also suggested in the discussion, it is possible that the high levels of direct and indirect exposure, coupled with multiple exposure levels in many instances (although this was not systematically explored in the study), creates a context in which conventional understandings of ways of coping are challenged. Correlations suggested that in this sample, subjects who used emotion-focused coping were also very likely to report the use of problem focused coping suggesting that there may be some degree of flexibility and situational adjustment in their use of different forms of coping. Whether this is helpful or not to the sample cannot be assessed within the current analysis. However, it is evident that increased used of either problem or emotion-focused coping is not necessarily beneficial in ameliorating the effects of exposure to crime.

As a further level of investigation, possible moderating effects were then also explored for trauma generally, and not just crime trauma. Emotion-focused and dysfunctional coping did seem to produce visible differences in the presumed direction, i.e. increased use of these coping styles led to increases in PTSS and FOC, but at levels not found to be statistically significant or of sufficient significance to confirm initial hypotheses regarding moderating effects. Interestingly however, the slight visible differences in PTSS and FOC in association with problem-focused coping were not in the presumed direction, i.e. increases in problem-focused coping were not consistently associated with decreases in PTSS and FOC as would be expected based on the literature. Although findings with regard to these relationships were

not statistically significant they suggest that the benefits of problem focused coping may be limited in certain contexts and even that over-reliance on problem focused coping may be counter-productive. This suggests some useful directions for further research and exploration since there appears to be some tentative confirmation of theorisation that suggests that problem solving may not be the optimal way of coping in situations in which there is either realistically little agency or a perceived lack of agency. However, this section of the discussion is offered tentatively with due consideration of the fact that limited extrapolation can be made from findings that are only tending towards significance.

Findings with regard to main effects produced only one set of significant results, these being with regard to dysfunctional coping in both cases, i.e. with regard to both PTSS and FOC. Higher dysfunctional coping use was associated with higher PTSS and higher FOC levels as was anticipated. It is apparent that dysfunctional coping, as captured in its labelling, is at best ineffective and at worst detrimental regardless of the circumstances under which it is employed. However, it appears that for problem and emotion focused coping situational determinants are more strongly implicated in the effectiveness of either these two types of coping strategies.

The clinical implications of these findings would call for mental health professionals who treat victims of crime and non-crime related trauma to be attentive to the coping styles employed by those to whom they offer treatment, as it appears that individuals who employ dysfunctional coping techniques are at increased risk for developing posttraumatic stress symptoms at either clinical or sub-clinical levels, as well as for experiencing heightened FOC. Furthermore, it appears that for those individuals favouring problem and emotion-focused coping, their choice of strategies will only be effective if appropriately matched to the situational determinants that might call for employment of one or the other, or even both of these coping styles. The study also suggests that coping style is not necessarily one of the most significant variables in moderating the impact of crime and trauma exposure in the kinds of context in which the research was conducted. This suggests that other forms of defence or resilience might require greater attention, such as ego strength and Sense of Coherence. A more differentiated appreciation of what does and does not appear to help in reducing the negative effects of crime and trauma exposure seems necessary.

6.2. Limitations of the Study and Recommendations for Future Research

At the point of data analysis, it was evident that the sample was large enough to investigate a number of relationships, however it was not large enough to give statistical power to all of the findings. The number of variables in the study required a larger sample size as, for example, the participants were not equally distributed among the crime and non-crime exposure groups, or among the further differentiated trauma exposure groups for comparison purposes. A larger sub-group of non-crime exposure participants would have allowed for more meaningful comparisons with regard to several of the hypothesized relationships. Future research investigating the moderating effects of coping styles on the relationships between crime exposure and PTSS, and/or crime exposure and FOC would need to make use of a bigger and more varied sample if possible.

A further limitation lay in the ambiguity of item 4 on the TSS which reads "Did a very close friend or a close family member ever die because of an accident, homicide, or suicide?" As participants were not required to specify which of these specific events they experienced, a simple "yes" response on this item made it difficult to distinguish whether the related traumatic incident was a crime or non-crime trauma. Future studies could ask participants to specify whether the traumatic incident referred to in this item 4 was the result of an accident, homicide, or suicide as the category seems overly inclusive at present.

Future studies could also explore moderating effects of coping styles when crime exposure is categorised into both single and multiple exposure in comparison to 'no exposure' sub-groups, as multiple exposure does appear to be important in exploring issues of impact and vulnerability and resilience and is a particularly significant issue in researching South African populations. An investigation of this aspect of traumatisation, was, however, beyond the scope of the present study which already included several variables and permutations of exposure.

6.3. Concluding Comments

This study has offered some interesting findings which highlight the severity of trauma exposure and impact in this young adult South African population and the fact that this might have both symptomatic and everyday behavioural consequences. It also perhaps generated as many questions as answers with regard to the potentially detrimental or beneficial effects of particular coping styles in this kind of context. The study highlighted the detrimental effects

of dysfunctional coping styles and suggests that mental health care workers would do well to be attentive to the deployment of this kind of coping in individuals to whom they provide their services. The study tended to confirm the somewhat mixed findings in the literature with regard to the use of emotion focused coping but rather unexpectedly found that where there was some directionality in the findings with regard to problem focused coping this was counter to predominant findings in the literature in that this form of coping appeared to be associated with higher negative impacts. While this may be an artefact of the research and all non-significant findings need to be treated with great caution, there is perhaps some merit in considering the implications of these relationships for designing further studies in this context.

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Appendix A: Demographic Questionnaire

Please complete the following questionnaire by circling the appropriate answer or filling in the answer:

- Sex: MALE FEMALE
- Age: _____
- Marital status: MARRIED SINGLE DIVORCED WIDOWED
- Race Group (for descriptive purposes only):
  WHITE COLOURED BLACK INDIAN ASIAN OTHER: _____
- Religion: _____
- Home Language / Mother Tongue:

ENGLISH AFRIKAANS XHOSA ZULU SOTHO TSWANA OTHER:_____

Appendix B: Exposure to Crime Measure

1. In the past 12 months, have you been exposed to crime (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

2. If "yes", please provide a brief description of all such events in the past 12 months (in other words, please list these events):

_____

_____

_____

_____

3. If "yes", how threatening did you find the event (as listed above in 2)?

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

Appendix C: The Traumatic Stress Schedule (TSS)

Please read the statements below and answer the questions by choosing the answer of your choice. Please place a cross (x) over the chosen answer. Write in your answer for question 10.

1	Did anyone ever take or attempt to take something from you by force or threat of force, such as in a robbery, mugging, smash and grab or holdup?	No	Yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
2	Did anyone ever beat you up or attack you?	No	Yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
3	Did anyone ever make you have sex by using force or threatening to harm you? This includes any type of unwanted sexual activity.	No	Yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
4	Did a very close friend or a close family member ever die because of an accident, homicide, or suicide?	No	Yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
5	Have you ever been hijacked or someone very close to you been hijacked?	No	Yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
6	Were you ever in a motor vehicle accident serious enough to cause injury to one or more passengers?	No	Yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
7	Did you ever serve in combat?	No	Yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
8	Did you ever suffer injury or extensive property damage	No	Yes	0-3 months	3-6 months	6-12 months	12-18 months	18-24 months	more than 24

	because of fire?			ago	ago	ago	ago	ago	months ago
9	Did you ever suffer injury or property damage because of severe weather or either a natural or manmade disaster?	No	Yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago
10	Did you experience any other events not mentioned above? If so, please specify below.	No	Yes	0-3 months ago	3-6 months ago	6-12 months ago	12-18 months ago	18-24 months ago	more than 24 months ago

Specify other

_____

_____

Appendix D: The Brief COPE

Please indicate ways that you cope with difficult or stressful events in your life. When answering these questions think about how you have dealt with stress over the past couple of weeks or months. There are lots of ways to deal with stress. There are no right or wrong answers. Think of your experience in a broad sense; how it affects your life on any level (i.e. personal, family, job, and so forth). (Circle the appropriate number.)

		I haven't been doing this at all	I've been doing this a little bit	I've been doing this a medium amount	I've been doing this a lot
1.	I've been turning to work or other activities to take my mind off things.	1	2	3	4
2.	I've been concentrating my efforts on doing something about the situation I'm in.	1	2	3	4
3.	I've been saying to myself "this isn't real."	1	2	3	4
4.	I've been using alcohol or other drugs to make myself feel better.	1	2	3	4
5.	I've been getting emotional support from others.	1	2	3	4
6.	I've been giving up trying to deal with it.	1	2	3	4
7.	I've been taking action to try to make the situation better.	1	2	3	4
8.	I've been refusing to believe that it has happened.	1	2	3	4
9.	I've been saying things to let my unpleasant feelings escape.	1	2	3	4
10.	I've been getting help and advice from other people.	1	2	3	4
11.	I've been using alcohol or other drugs to help me get through it.	1	2	3	4
12.	I've been trying to see it in a different light, to make it seem more positive.	1	2	3	4

		I haven't been doing this at all	I've been doing this a little bit	I've been doing this a medium amount	I've been doing this a lot
13.	I've been criticizing myself.	1	2	3	4
14.	I've been trying to come up with a strategy about what to do.	1	2	3	4
15.	I've been getting comfort and understanding from someone.	1	2	3	4
16.	I've been giving up the attempt to cope.	1	2	3	4
17.	I've been looking for something good in what is happening.	1	2	3	4
18.	I've been making jokes about it.	1	2	3	4
19.	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	1	2	3	4
20.	I've been accepting the reality of the fact that it has happened.	1	2	3	4
21.	I've been expressing my negative feelings.	1	2	3	4
22.	I've been trying to find comfort in my religion or spiritual beliefs.	1	2	3	4
23.	I've been trying to get advice or help from other people about what to do.	1	2	3	4
24.	I've been learning to live with it.	1	2	3	4
25.	I've been thinking hard about what steps to take.	1	2	3	4
26.	I've been blaming myself for things that happened.	1	2	3	4
27.	I've been praying or meditating.	1	2	3	4
28.	I've been making fun of the situation.	1	2	3	4

Appendix E: The Impact of Events Scale Revised (IES-R)

The following is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you during the past month with respect to the most recent/significant stressful life event. Please indicate which event you were thinking of and how long ago this event took place.

Stressful/ traumatic event:_____ How long ago:

	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 of 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	0	1	2	3	4

about it.					
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 F: Fear of Crime Measure

Please answer the following questions with respect to your experiences over the previous 7 days.

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 sometime	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 G: Participant Information Sheet



UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

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

Dear Student

We are conducting research for the purposes of obtaining a Master's degree at the University of the Witwatersrand. Our area of focus includes the ways in which people cope in the aftermath of experiencing different traumatic events.

We would like to invite you to participate in this research study whereby your participation will entail completing several short questionnaires which will take about 20-30 minutes to complete. Please respond as carefully and honestly as possible. Once you have answered the questions, place the questionnaire in the sealed box/boxes in front of the venue to ensure confidentiality. No identifying information is asked for and you will remain anonymous. No one other than our supervisors and ourselves will have access to the completed questionnaires. You will not be asked to sign a consent form as this may interfere with anonymity. Therefore, if you do return your questionnaire, this will be considered consent to participate in the study.

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.

Your responses will only be looked at in relation to all other responses and the information you provide will be kept confidential. The raw research data will be destroyed following the completion and examination of the Master's degree. Until that time, all physical data will be kept in a secure place. The end results will be reported in research reports for our Master's degrees and potentially in a journal article or similar publication. Any participants who wish to receive a one page summary of the research findings should email us at nickyscott@iburst.co.za after April 30th 2012.

If 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), the Counselling and Careers Development Unit (CCDU) at the University of the Witwatersrand on (011) 717 9140/32, or Wits Trauma Clinic on (011) 403 5102/3. All 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 trauma, and how we respond to and cope in aftermath of trauma.

Kind Regards

Nicolene Scott and Victoria Webster

Supervised by Professor Gillian Eagle and Esther Price