Table of Contents

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Trauma in the South African Police force: personality and coping as risk factors for developing post-traumatic stress disorder.

A research project submitted in partial fulfilment of the requirements for the degree of MA Research Psychology in the Faculty of Humanities, University of the Witwatersrand, <25 November 2013>.
I declare that this research project is my own, unaided work. It has not been submitted before for any other degree or examination at this or any other university.

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Acknowledgements

"The world breaks everyone, and after, some are strong in the broken places."

I would like to thank my supervisor Esther for her support. Despite everything we have successfully accomplished this together. I would like to thank my family. I now understand the meaning of support and love.

Trauma in the South African Police force: personality and coping as risk factors for developing post-traumatic stress disorder.

1. INTRODUCTION

Policing is an extremely stressful occupation as the police force has a crucial role in preserving law and order within the communities they work in (Mostert & Rothmann, 2006; Violanti, 2006). Being exposed to dangerous and traumatic situations on a regular basis puts police members at great physical, as well as psychological risk, such as the development of post-traumatic stress disorder (PTSD) (Rothmann & Van Rensburg, 2002; Violant, 2006; Violanti, 1996). PTSD has been associated with this type of employment (Haisch & Meyers, 2004). As a result, those employed in such high stress occupations, such as the police force, have been found to be at risk for experiencing prominent symptoms of PTSD (Paton & Violanti, 1999). Additionally, suicide and suicidal ideation have been reported to be prevalent in police populations worldwide (Kopel &Friedman, 1997; Rothmann & Van Rensburg, 2002; Violanti, 2006; Violanti, 1996), including in the South African police force (Gulle & Tredoux, 1998; Mostert & Rothmann, 2006). The high rates of violent crime in South Africa combined with the turbulent political history of Apartheid have been understood as some of the contributing factors towards South African police members having high rates of work stress and PTSD (Mostert & Rothmann, 2006). Such repeated exposure to traumatic and life-threatening events ultimately increases police officers risk of developing PTSD (Emsley, Seedat & Stein, 2003).

1.1 Rationale

There is a wide variety of research centred on PTSD within the police population globally and in the South African police population (e.g. Kopel & Friedman, 1997). However, there has been less research conducted on certain police services within the police

population who assist in crime prevention. The police reservists are a population within the police who serve and protect the country by means of a voluntary service. This group of individuals are subjected to the same levels of trauma that the rest of the police population is. However, reservists do not receive any monetary reward for their services. It is plausible to state that police officers will face these traumatic situations as it is their job; however it is unknown as to why reservists will face similar critical incidents. It is possible that a certain type of individual may be more likely to enrol as a police reservist. In order to assess this certain contributory factors would need to be understood, Personal factors such as personality and coping are such factors that may aid in explaining the identity of the police reservist. These factors will also assist in understanding how reservists respond to trauma.

1.2 Research Aims

The South African police force is exposed to a variety of traumatic events on a continuous basis. These events may leave long lasting effects which may affect this populations' psychological wellness. There are many factors that influence one's response to trauma, such as personal. For the present study, the personal factors that will be investigated will include personality types and coping strategies. These factors will be conceptualised as potential risk factors, or perhaps as mediators for the development of post-traumatic stress disorder (PTSD) in this sample of police reservists. The present study will investigate the above factors and their influence on the South African police forces' vulnerability towards developing PTSD. The South African police force is comprised of police reservists in the Gauteng region.

2. LITERATURE REVIEW

2.1 South African Police Service

The police service is diverse and consists of a number of departments: South African Police Service (SAPS) (general); Municipal Police Services/Metropolitan Police services/Metro and Police Reservists (Rauch, Shaw & Louw, 2001). The SAPS operates on a ranking system and this indicates the seniority of the police official. The police officials receive intensive training in order to acquire the necessary skills needed in critical situations and the civilian employee's aid in micro and administrative duties which help organise the policing department. This ranking system is evident in all areas of the SAPS: general force, metro and reservists. Police reservists are volunteers who are ordinary members of the community (Saffer, 2007). Reservists offer their services to the South African Police Services with no remuneration or compensation.

Police work has been widely recognised as an extremely stressful occupation and as one of the most dangerous occupations as well (Dick, 2000; Gulle & Tredoux, 1998; Kopel & Friedman, 1997; Marmar, McCaslin, Metzler et al., 2006; Paton & Violanti, 1999; Violanti, 1985). Police members are a high risk population for developing PTSD as they are exposed to gruesome and life-threatening situations on an on-going basis (Emsley et al., 2003). The danger that the SAPS is faced with every day is amplified in the South African context; this is due to the socioeconomic and political chaos that has contributed to dangerously high crime rates (Gulle & Tredoux, 1998; Mostert & Rothmann, 2006). This socioeconomic and political addition is a direct result of the South African history (Gulle & Tredoux, 1998; Mostert & Rothmann, 2006). With reference to this point, Kopel and Friedman (1997) explain that that the SAPS deals with additional unnatural stressors, such as extreme levels of violence. Research shows that after 1996 crime in South Africa escalated at an alarming rate, particularly house-robberies, hijacking, rape and assault with the intent to commit bodily harm (Schoenteich & Louw, 2011). Political violence reduced drastically after Apartheid ended (Violanti, 2006), however the rates of violent crime following the

introduction of the democracy increased significantly (Schoenteich & Louw, 2011). High levels of violent crime, such as sexual violence and domestic abuse were recorded (Kaminer, Grimsrud, Myer, Stein & Williams, 2008). Statistics regarding continuous exposure to violence has shown that high rates of individuals within the police culture retire as a result of stress-related psychological disorder and that the suicide rate amongst the force is significant (Rothmann & Van de Vijver, 2010). These occurrences are indicative that many SAPS members experience their occupation as stressful and traumatic (Kopel & Friedman, 1997). In general, stress related problems are common in the workplace and these consist of sickness, absenteeism, burnout and early retirement (Schaufeli & Bakker, 2003). However, the combination of these typical work stressors plus the dangerous context the SAPS are immersed in everyday creates an extremely volatile environment for these men and women with the potential for negative personal consequences to occur (Pienaar, Rothmann & Van de Vijver, 2007). The police officers' lifestyles often do not allow for time to reflect, recover or mentally restore themselves after experiencing traumatic events. As a result these stressors accumulate and can result in decompensating greatly in proficiency and suffering psychologically (Haisch & Meyers, 2004; Moran & Britton, 1994). Research suggests that this increases SAPS members' risk for engaging in dysfunctional coping mechanisms such as substance abuse. In addition, there is an increased risk for other serious problems as evidenced in high rates of marital problems and high suicide rates (Regehr, Johanis, Dimitropolous, Bartram & Hope, 2003). By avoiding the effects of constant exposure to traumatic events and coping in a maladaptive manner, police officers are inevitably placed at a high risk of developing (PTSD) (Violanti, 2006). This type of coping presents the illusion that the police members can 'bounce back' easily and are therefore not perceived as traumatised (Violanti, 2006). Despite the high signs of PTSD and suicide ideation (Pienaar et al., 2007; Violanti, 2006) personal or social resilience is evident in a subgroup of police officers (Violanti, 2006). This resilience may elicit growth outcomes and may be associated with decreased risk of developing PTSD or other psychopathological disorders (Huddleston, Paton & Stephens, 2006). The police culture itself is greatly influenced by the values, attitudes and ideologies within its surrounding community (O'Toole, 1994). Therefore the social construction of resilience – being the ability to 'bounce back' or overcome adversity

(McCubbin, 2001) - dictates how one should respond to trauma within the police organisation.

2.2 Trauma and Post-traumatic Stress Disorder (PTSD)

Trauma is understood as a personal experience (Herman, 1992). However there are universal symptoms that individuals may experience and exhibit following a traumatic event. The American Psychological Association (APA, 2000) categorises these symptoms into three clusters: the Intrusion cluster, where one may experience reliving of the traumatic event; the avoidance cluster, where one may avoid certain stimuli associated with the event; and the hyperarousal cluster, where one is in a constant state of alert and arousal and may encompass an exaggerated, and inappropriate, startle response. The risk of distress is strongly correlated with the stressor itself (Tamres, Janicki & Helgeson, 2002). This is also true for developing PTSD as one's risk is dependent on the severity of the traumatic incident (Carlier, Lambert & Gersons, 2000). Research has consistently shown (e.g. Creamer, Burgess & McFarlin, 2001; Perkonnig, Kessler, Storz & Wittchen, 2000; Zlotnick, Johnson, Kohn, Vicente, Rioseco & Saldivia, 2006) that violence is the most common form of trauma associated with PTSD (Caminer, Grimsrud, Myer, Stein & Williams, 2008). PTSD is a significant health concern that is a possible consequence after experiencing a traumatic event (Retief, 2005). The APA (2000) categorises traumatic events into criterion A1 and A2: A1 criterion refers to the external stressor (traumatic event) and A2 criterion refers to the person's emotional/subjective response to the stressor (criterion A1). As such, the diagnosis of PTSD takes into account both the traumatic event and the individual's response to that event. The requirements for a diagnosis of PTSD according to the APA (2000) are: (A) A person experienced, witnessed or was confronted with an event(s) that involved actual or threatened death or serious injury, or a threat to one or someone else's physical integrity; (B) The response of the traumatised person involved intense fear, helplessness or horror. This definition explains that one can experience being traumatised or develop PTSD from a primary traumatic event as well as from a secondary traumatic event (Hathaway, Boals & Banks, 2009). Hathaway et al. (2009) conducted a study in order to understand which

emotional reactions/responses are related to the highest levels of PTSD. Their study concluded that individuals, in the sample, who developed more severe symptoms of PTSD experienced a variety of emotions (fear, disgust, anger etc). The results from this study suggest that one does not have to only experience criterion A2 (fear/helplessness) in order to develop PTSD. PTSD can therefore develop despite the emotions experienced during the event (Hathaway et al., 2009). Foa, Tolin, Clark and Orsillo (1999) emphasise that not everyone who experiences criterion A1 or criterion A2 traumatic events will develop PTSD, and many who do develop PTSD recover over time. Zlotnick et al. (2006) explain that rape, childhood/adulthood physical assault and political violence (torture and human rights violations) are the most commonly associated forms of violence associated with PTSD. Furthermore, these results were shown to be consistent in both developed and developing countries (Zlotnick et al., 2006).

Traumatisation can be defined as stress caused by a particularly distressing experience (Hathaway et al., 2010). This can be a single event or a series of events. Although a traumatic event can be stressful it does not always result in PTSD. As previously mentioned PTSD can only occur if both criterion A and criterion B is experienced (APA, 2000).

The South African Stress and Health Study (SASH; Williams, Herman, Kessler, Sonnega, Seedat et al., 2004) is a large epidemiological study which formed part of the World Health Organisation's World Mental Health (WMH) initiative (Williams et al., 2004). The study aimed at exploring psychiatric disorders in the South African population, as well as the prevalence of exposure to physical and psychological torture/trauma. The study managed to draw a number of conclusions such as associations between type of trauma exposure and general levels of distress as well as the influence of sociodemographic predictors and different types of trauma exposure (Williams, Williams, Stein, Seedat, Jackson & Moomal, 2007). Violanti and Paton (1999) explain that the some of the types of trauma police are exposed to range from natural disasters, bombings, riots to violent crimes and life threatening critical incidents.

2.2.1 *Traumatisation in the police service*

The concept of political violence is an important one to consider when exploring the police population as it is the SAPS members who are exposed to a great deal of this type of violence, given their area of work/volunteering. PTSD within the police population is widely misunderstood due to the frequent exposure to traumatic events (Tolin & Foa, 1999). Another major factor that contributes to police stress is that of critical incident exposure (Liberman, Best, Metzler, Fagan, Weiss & Marmar, 2002). A critical incident can be understood as when a person has experienced or has been exposed to or witnessed an event that involved actual or threatened death or serious injury or threat to themselves or to someone else (APA, 2000). It is a combination of these critical incidents as well as routine aspects of work that can cause traumatisation within the police population (Liberman et al., 2002). Liberman et al. (2002) explained that the bureaucratic, routine administrative and organisational aspects of police work can be as traumatising as the dangers experienced in policing. This point is further supported by a study conducted by Maguen, Metzler, McCaslin, Inslicht, Henn-Haase, Neylon and Marmar (2009) in which it was concluded that police members who experience daily operational hassles, lack of support and malfunctioning equipment are more likely to experience more severe symptoms of PTSD.

The police culture is one that represents strength and resilience and as a result, police officers are expected to behave in a certain manner at all times. Tolin and Foa (1998) explain that traumatised police members view themselves as weak, damaged and incompetent which contradicts the police ideal. As a result many police members who have developed PTSD are at risk of engaging in impulsive and high risk behaviours in order to counteract the emotions they often feel and to avoid behaving improperly (Mann & Neece, 1990). This expectation for police officers' to manage themselves professionally and in a controllable manner ultimately minimises the effects caused by both primary and secondary trauma, therefore potentially preventing efforts at recovering from traumatization with the potential for

negative consequences (Williams, 1993). By minimising the event the police members suppress the experience(s) as well as their responses to the events. Such behaviours can cause devastating health effects on a physical, emotional and psychological level (e.g. Mann & Neece, 1990).

Trauma in the police service is also a very unique experience as the nature of the traumatic events is very different to that of a lay person's traumatic experience (Tolin & Foa, 1999). Occupational-related trauma is not exclusive to the police population. Work-related stress can be understood as the mind-body arousal which results from physical and/or psychological work demands. However, exposure to life threatening events is at the core of the police responsibilities; therefore it is inevitable that police members will encounter traumatic events (Tolin & Foa, 1999). Research suggests that avoidance, as is often employed by police members in an attempt to deal with high trauma exposure, is associated with more chronic traumatization, and with poorer outcomes in the longer run (Reiser & Geiger, 1984; Tolin & Foa, 1999). The combination of repeated exposure, avoidant behaviour and desensitisation caused by these traumatic experiences can often lead to an interruption in one's personal and work life. This interruption is related to the manner in which an individual manages their PTSS as incorrect managing and acknowledgement may lead to negative outcomes (Bryant & Harvey, 1995). As a result one's PTSS will become exacerbated and it is unlikely that recovery will occur unless the disorder is managed correctly.

Horowitz (1986) explains that the traumatic memory replays itself in the individual's mind in an active manner. This type of intrusive memory is part of a process that enables the person to try resolve and understand what has happened. However, this meaning-making process can be perceived as intrusive as the individual is reliving the experience (Horwitz, 1986). Dalgleish and Power (2004) explain that the emotional reaction associated with this type of intrusion may result in the person experiencing avoidant symptoms of PTSD. However, Creamer, Burgess and Pattison (1992) explain that this type of intrusion facilitates

cognitive processing which is a normal aspect of dealing with a trauma. This suggests that the person is dealing with the event (Creamer et al., 1992). Research suggests that the symptom of intrusion is most often associated with post-traumatic growth (e.g. Helgeson, Reynolds & Tomich, 2006). It must be noted that although intrusion is understood as a necessary and normal experience, the type of intrusive emotions experienced can dictate whether the intrusive-experience will result in growth or in psychological distress. Dalgleish and Power (2004) present a model that represents emotion specific vs. emotion non-specific reactions to a traumatic event. The emotion non-specific reaction involves the meaning-making process which results in PTG and the emotion specific reaction result in feelings of fear and anxiety. It is the emotion specific reaction that is likely to lead to avoidance symptoms of PTSD.

Although the cause of PTSD has been known to be a traumatic event, research has shown that there are other contributing factors, such as environmental and social, biological and psychological influences (Joseph, Williams & Yule, 1997). Foa et al. (1999) highlight the importance of individual differences which have been suggested to influence one's development of PTSD following a traumatic event. A study by Gold, Marx, Soler-Baillo and Sloane (2005) found that individuals who reported an event as non-traumatic (non-Criterion A) presented with significantly higher levels of PTSD symptomology than those who experienced a traumatic event consistent with Criterion-A. The findings from this study suggest that the emotional response to the event at the moment may be a significant risk factor for developing and experiencing future PTSD symptoms (Boals & Schuettler, 2009). This indicates that the event itself may not be the primary cause of PTSD but instead it may be the emotional and psychological response one has to the event (Cameron, Palm & Follette, 2010). This response may also be related, in part, to pre-existing vulnerabilities such as previous exposure to trauma, personality structure and cognitive vulnerabilities, to name a few. An important consideration in the police population is the fact that police culture encourages the use of denial or psychic distancing as a means of coping with difficult events such as occupationally encountered trauma (Kopel & Freidman, 1997; Williams, 1987).

These behaviours do serve as survival behaviours however when used as frequently as police members do, the results can include avoidant behaviours such as emotional distancing and suppressed feelings (Kopel & Friedman, 1997). This thought-suppression (Cameron et al., 2010) technique does not work in the long term and results in more persistent and intrusive reminders of the event. This ultimately results in the maintenance of and higher rates of PTSD (Cameron et al., 2010). The police population is at high risk for developing PTSD and it is important to explore mechanisms that may potentially buffer this risk in this potentially vulnerable population. Research suggests that individual differences, such as one's coping or personality traits, may influence one's predisposition to developing PTSD after experiencing a traumatic event (Foa et al., 1999).

2.3 Stress and Occupational Stress

One of the most recent definitions of stress can be illustrated by Gurung (2006) who explains that stress is an upsetting of the ideal bodily functions in an individual. This definition allows stress to be understood on both a psychological and physiological levels. The cognitive-transactional model was developed by Lazarus in the 1970's and is one of the most widely used theories when understanding stress (Volrath, 2001). This model emphasises that the individual experiencing the stressful event is an active participant responding to the situation (Lazaraus, 1990; Louw & Viviers, 2010). Stressful events are described as appraisals and are categorised into primary and secondary appraisals (Gurung, 2006). In primary appraisal a will person consider the nature of the stressor that they are experiencing (Lazarus, 1990; Louw & Viviers, 2010). These stressors are then perceived as either harmful, threatening, challenging or benign (Lazarus, 1990; Louw & Viviers, 2010). Depending on the type of stressor, the person undergoing secondary appraisal will assess the resources and coping abilities that he/she has available to help deal with the situation (Lazarus & Folkman, 1984). These appraisals are said to occur simultaneously (Lazarus & Folkman, 1984). Furthermore there are many elements that affect the type of appraisal that will be utilised, one such being control (Sarafino, 1990). The event will either be perceived as controllable or uncontrollable and this observation will determine the level of stress

(Sarafino, 1990). Lazarus's work proposes that emotional impressions and the way in which an individual will perceive an event will influence the way in which they will respond to that event as well as how they will respond to future stressors. With this in mind it is plausible to state that this model emphasises the individuality of events (Lazarus & Folkman, 1984).

As previously mentioned, occupational stress can be understood as the mind-body arousal caused by physical and/or psychological work demands (Pienaar et al., 2007). With regards to the police population occupational stress involves experiencing traumatic events as well as experiencing symptoms of or burnout (Regehr, Johanis, Dimitropolous, Bartram & Hope, 2003). Particular to the police occupation, these types of stressors can cause physical and emotional consequences, such as post-traumatic stress disorder and exhaustion (Reghr et al., 2003). The symptoms of these stressors can manifest both physically and emotionally (Reghr et al., 2003). It was previously mentioned that occupational stress, in the police force, is a combination of traumatic stress and burnout (Reghr et al., 2003). In the police organisation, PTSD has shown to be a consequence of traumatic stressors therefore it is important to understand the stressor that causes burnout. Schaufeli and Bakker (2004) explain that job, organisational and personal characteristics are possible factors that contribute to burnout amongst police officers. From an organisational perspective the factors that may cause distress include lack of administrative support, poor interpersonal relationships with supervisors, lack of participation in decision-making, unfair discipline, unfair promotion as well as the nature of police work (Rothman & Van Rensburg, 2002). Schaufeli and Enzem (2003) define burnout as a negative work-state of mind in 'normal' individuals that is distinguished by symptoms of demotivation, distress, reduced effectiveness and high levels of exhaustion. Police members who experience such high levels of stress/burnout are prone to high rates of sickness, absenteeism as well as early retirement (Haisch & Meyers, 2004; Quick, Quick, Nelson & Hurrell, 1997).

2.4 Personality and Coping

Individual differences in response to trauma are influenced by a variety of factors. Two very important factors that contribute towards one's susceptibility to develop PTSD are personality and coping factors (Paris, 2000). These factors – as predispositions – can be best understood by combining them with a cognitive processing model (Paris, 2000). This model suggests that one cannot understand the impact of life events without understanding how one processes such events i.e. their cognitive schemas (Paris, 2000). Coping and personality factors can pose as a means to explain why some individuals experience traumatic events and life stressors more intensely than others.

Personality definitions have been of much debate over the years; however it is plausible to state that personality consists of behaviours that are consistent in the same situation over time (Robert, 2009). The Big Five Factor Model (FFM) of personality is one of the most prominent means of assessing, measuring and understanding personality traits (Friborg, Barlaug, Martinussen, Rosenvinge & Hjemdal, 2005; McCrae & Costa, 1997). The Big Five personality factors, on which the FFM is based, are: neuroticism, extraversion, openness to experience, agreeableness and conscientiousness (McCrae & Costa, 1997; McCrae, 2001). These factors can be best understood as inherited basic tendencies (Church, 2001). These factors are comprised of a variety of traits (Vollrath, 2001). The first two personality factors proposed were neuroticism and extraversion; known as the 'Big Two' personality factors (Eysenck & Eysenck, 1967). The former is associated with traits such as being anxious, depressed, worried and insecure whilst the common traits that are associated to the latter are social, gregarious, talkative and active (Barrick & Mount, 1991). Barrick and Mount (1991) further explain the remaining factors and their associative traits: openness to experience is associated with being curious, imaginative and intelligent; agreeableness is mostly associated with being cooperative, forgiving and easy going; conscientiousness has been commonly associated with organised, planful and achievement-oriented traits. The FFM allows for a framework of personality that is unified and solid (Vollrath, 2001). Furthermore this framework has shown to be consistent across different theoretical frameworks and

assessments, thus strengthening the theory as a model (McCrae & Costa, 1987). The Big Five factors can be associated with both negative and positive outcomes of stressful events (Vollrath, 2001). Carver and Connor- Smith (2007) explain that the trait neuroticism leads to negative outcomes of events as this is associated with worry, anxiety and other negative emotions that may affect one's emotional stability. In contrast, extraversion and conscientiousness are considered to be more positive, optimistic and resourceful traits, as these aspects have been understood to reduce the negative outcomes of stressful events (Carver & Connor-Smith, 2007). Digman and Takemoto-Chok (1981) explain that although conscientiousness has been associated with positive outcomes of events it has been the most difficult factor to define. This is due to additional factors, such as culture and intelligence that have complicated its meaning. This is an important point to consider as one's environmental/surrounding factors can impact greatly on an individual, thus influencing the way in which they approach and handle situations.

The level of stress one experiences and the coping they employ is likely to be related to specific personality factors namely, neuroticism, extraversion and conscientiousness (Haisch & Meyers, 2004). Agreeableness and openness to experience have not shown to be as strongly related. The most common trait associated with PTSD is neuroticism (Paris, 2000). Neuroticism is composed of sub-traits such as anger, anxiety, hostility, depression, self-consciousness, impulsiveness and vulnerability (Vollrath, 2001). Fauerbach, Lawrence, Schmidt, Munster and Costa (2000) found neuroticism as a predictor of PTSD in a sample of burn victims. This was also found in a study by Lauterbach and Vrana (2001) who investigated PTSD amongst college students. In research conducted by Deary (1996) it was confirmed that a relationship exists between burnout, neuroticism, cynicism and exhaustion. In contrast to neuroticism and its strong negative relationship to mental health, Riolli, Savicki and Cepani (2002) explained in their work that faster recovery and less PTSS has been associated with conscientiousness, extraversion, openness to experience and agreeableness. Furthermore, they discuss that the above mentioned personality factors have shown to have a relationship with high emotional stability.

The traits that make up conscientiousness are those of persistence, self-discipline, organisation, achievement and using a deliberative approach (Carver & Connor-Smith, 2010; McCrae & John, 1992). Conscientiousness is unique in itself as it is associated with very planful, logical and systematic cognitions and behaviours (Carver & Connor-Smith, 2010). This precise and methodical approach is understood as being very facilitative when confronted with problematic situations as one who is high on this personality factor is capable of cognitively restructuring the negative event (Vollrath, 2001). This restructuring allows for a healthy level of disengagement from the negative thoughts associated with the event (Vollrath, 2001). Conscientiousness has been proven (e.g. Vollrath, 2001) to predict low stress exposure as it is hypothesised that conscientious individuals demonstrate a methodical approach when faced with stressful situations. This type of approach ensures that they do not act impulsively and as a result their response is thought through and is far more strategic in nature (Carver & Connor-Smith, 2010). It is plausible to state that conscientiousness has properties that allow it to act as a buffer to the risks for lasting distress that are associated with high levels of neuroticism (Muris, 2006). In a study conducted by Fauerbach et al. (2001) on a sample of burn victims, it was found that those individuals' who developed PTSD were shown to be lower in the personality trait extraversion. Cohen and Hoberman (1983) also found a relationship between extraversion, positive well-being and beneficial experiences. Although extraversion is associated with low levels of PTSD as well as with more positive trait-attributes (e.g. Barrick & Mount, 1991) the personality factor possesses sub-traits, such us impulsivity and high-risk behaviour (Headey & Wearing, 1989). In addition, Heady and Wearing (1989) further state that this type of high-risk behaviour is likely to result in high levels of stress and potentially poor coping choices.

Vollrath (2001) indicates that persons high on neuroticism will perceive life events as threats, whilst persons high on conscientiousness will perceive the same events as challenges. Thus, the latter will then make use of positive coping appraisals whilst the former will make

use of negative appraisals. Vollrath and Torgersen (2000) explained in their research that high neuroticism associated with low levels of conscientiousness resulted in high levels of stress exposure and threat appraisals. In addition when high levels of conscientiousness are associated with low levels of neuroticism; the expected outcome is that of particularly low levels of stress exposure and threat appraisals. This has become the anticipated outcome when individuals strong in these personality factors, neuroticism and conscientiousness, are confronted with unexpected life events.

Resilience has become a very popular term over the past few decades as it has been used to discuss resistance to psychopathology (Ingram & Price, 2001). By understanding resilience in this way places the concept on a continuum with vulnerability. Resilience refers to a dynamic process (Luthar & Ciccheti, 2000) that encompasses one to recover from an emotionally taxing experience whilst adapting to the stressful demands of these experiences (Tugade & Fredrickson, 2004). McCubbin (2001) explains that resilience can act as both a process and an outcome. Resilience, as a process, is associated with positive outcomes and personal growth or with negative outcomes. Resilience will then act as a moderator in this regard as it will influence the relationship between the PTSD risk factors and the outcome – developing or not developing PTSD. Posttraumatic growth (Tedeschi, Park & Calhoun, 1998) and hardiness (Kaplan, 1999) have been documented as outcomes of the resilience process. Such outcomes have resulted in positive adaptation and personal growth, therefore the outcome of developing PTSD is reduced to quite an extent. Campell-Sills, Cohan and Stein (2006) stated that neuroticism is negatively associated with resilience and that, conversely, conscientiousness is positively associated with resilience. One who scores high on neuroticism is likely to struggle with negative outcomes associated with traumatic events, such as PTSD. Furthermore, Watson and Clark (1984) found that those who display high traits of neuroticism may experience negative emotions even in the absence of stressful events. This is extremely important as it implies that those who are high on neuroticism are likely to negatively respond to all situations, thus treating any event as a threat.

Personality has been deemed as a protective factor for developing PTSD (Yuan, Wang, Inslicht, McCaslin, Metzler, Henn-Haase et al., 2011). As it has been previously mentioned, there are five personality factors (McCrae & Costa, 1997; McCrae, 2001). Lockenhoff, Terraciano, Patriciu, Eaton and Costa (2009) conducted a study in which they reported that extraversion and conscientiousness are personality traits that are favourably associated with mental health. The same study reported that neuroticism is negatively associated to mental health. This negative relationship was further confirmed in Campell-Sills et al. (2006) research. Yuan et al. (2011) emphasise the importance of conscientiousness as a protective factor. Conscientiousness is an indirect measure of emotion regulation and this measure can act as a moderator to the way in which one responds to a traumatic event. As it has been previously mentioned, one who is high on conscientiousness will prove to have very methodical behaviour as well as the ability to cognitively restructure negative events. Therefore the greater one is able to exert emotional regulation during traumatic events the more likely one is to have decreased fear conditioning and memory consolidation (Yuan et al., 2006). Fear conditioning and memory consolidation are factors associated with PTSD therefore the more these variables are buffered the less one is at risk of developing PTSD (Yuan et al., 2006). Knezevic, Opacic, Savic and Priebe (2005) found in their study that personality traits do have a relationship with intrusive symptoms after a traumatic experience. Their study deduced that pre-trauma personality traits may be less strongly related to PTSD than personality traits obtained after the traumatic event. Knezevic et al. (2005) conducted this study over 2 years. Their study found a relationship between openness to experience and intrusion symptoms of PTSD. The researchers discussed that it is possible that a higher degree in openness may increase one's vulnerability to developing PTSD/PTSS (Knezevic et al., 2005). As a result, one may experience higher levels of intrusive symptoms.

There appears to be a small amount of research on police personality and PTSD. Haisch and Meyers (2004) reported in their study of a sample of police that individuals with a higher risk of PTSD development showed to be less agreeable, less extroverted and less conscientious and were more neurotic than those at a lower risk for developing PTSD. These

personality traits displayed by police members has been suggested to be linked to the coping implemented after experiencing traumatic events as well as the level of stress experienced (Haisch & Meyers, 2004). Quick et al. (1997) explain that the stress experienced by police members is usually evidenced by high rates of sickness, absenteeism, burnout and early retirement. Although these manifestations of stress can be seen across a variety of occupations an important distinguishing factor of police work is the amount of experience they have (Moran & Britton, 1994). Police members are exposed to trauma on a continuous basis, therefore the longer they have been involved in police work the more trauma they have been exposed to. This stress is accumulative and high levels of such traumatic stress are likely to result in the development of PTSD (Haisch & Meyers, 2004). Carver and Connor-Smith (2010) explain that individuals respond to stressful situations that are encompassed by harm, threat and loss in a range of ways. One way in which individuals respond to events is by utilising coping strategies. Vollrath (2001) explains that even before coping strategies are utilised one's personality traits influence the frequency of exposure to stressors, the type of stressors experienced as well as the appraisal utilised. Vollrath (2001) illustrates this point by explaining that conscientious individuals plan for predictable stressors and avoid impulsive reactions to such situations. Conversely, neurotic individuals anticipate events to be threatening and to cause interpersonal stress. Such individuals have lower coping resources and as a result experience higher levels of stress. Skinner and Zimmer-Gembeck (2007) explain, from a biological perspective, that personality is likely to influence one's coping as personality is rooted in approach/avoidant temperament and attentional regulation systems. If one implements strong approach tendencies it is likely that they will be successful in problem solving (Vollrath, 2001). However, if one utilises an avoidant temperament it is likely that this approach together with the negative affect associated with avoidance will restrict the individual's problem solving.

Knezevic's et al. (2005) suggests that personality traits – although valuable and important – are not the only determinants of PTSD. This suggests that other variables, such as coping, could hold responsibility for PTSD development. Furthermore, there has been

research demonstrating a relationship between personality traits and coping preferences (Carver & Connor-Smith, 2007; Costa & McCrae, 1992).

Coping is a dynamic process involving a combination of one's cognitive and behavioural efforts (Carver & Connor-Smith, 2007; Folkman & Lazarus, 1984; McCrae & Costa, 1986; Tamres et al., 2002; Vollrath, 2001). These efforts manage the internal and external demands of the individual-environmental relationship that is appraised as exceeding the person's resources (Carpenter & Scott, 1992; Folkman, Lazarus, Rand & DeLongis, 1986). Coping is a protecting behaviour that makes use of cognitive efforts as an aid against people being psychologically harmed by problematic social experiences (Pearlin & Schooler, 1978; Tamres et al., 2002). Lazarus and Folkman's (1984) model on coping emphasises that one's coping choices are dependent on the appraisal (primary appraisal) of the event and the resources (secondary appraisal) one has to address that threat. The initial appraisal of the threat is very important as this is the determining factor as to what coping strategy will be used (Tamres et al., 2002). Pearlin and Schooler (1978) emphasises the importance of the resource component as resources is something that is available to the individual in order for them to expand their coping repertoire. The researchers further explain that resources can be understood as psychological and social recourses as well as coping resources. Therefore the amplitude of the stressor is reliant on the availability of resources to handle the stressor. In order to cope with these stressors one needs to employ certain coping strategies. These strategies can be clustered into problem-focused coping (PFC) and emotion-focused coping (EFC) (Carver & Connor-Smith, 2007; Folkman & Lazarus, 1984). Problem-focused strategies are more confrontative whilst emotion-focused strategies centre on distancing (Carver & Connor-Smith, 2001). These coping strategies can be either used in a functional or dysfunctional manner (McCrae & Costa, 1986). This is dependent on the stressor and the person as the stressor triggers which coping strategy will be employed by the person and this response will either be appropriate for the stressor or inappropriate, thus rendering the coping style as adaptive or maladaptive (Carver & Connor-Smith, 2007; McCrae & Costa, 1986). Mendelsohn and Sewell (2004) explain that there is a lot of pressure among the police culture to appear unaffected by trauma and ultimately portray an image which is the opposite

of a victim. They further explain that in order to do this police members may alter their coping strategies in order to reduce any obvious symptoms of distress. As a result, these individuals cope in a dysfunctional or maladaptive manner by avoiding or denying the incident that has traumatised them (Kopel & Friedman, 1997). This strong solidarity towards the police force as well as past research on their coping (e.g. Alexander & Walker, 1994) renders it plausible to state that members of the police show similarities in their use of maladaptive and adaptive coping strategies (Patterson, 2003). Research has suggested that police use both PFC and EFC strategies in order to cope (e.g. Evans, Coman, Stanley & Burrows, 1993; Haisch & Meyers, 2004). Dysfunctional coping is associated with an overreliance on these coping strategies and research has shown (e.g. Evans et al., 1993; Haisch & Meyers, 2004) that the police tend to rely either on PFC or EFC styles, thus rendering their coping to be maladaptive and dysfunctional.

In sum, this literature review has highlighted the manner in which personality and coping may be associated with both susceptibility to, as well as resilience from the experience of PTSD in police populations. It is clear that there is a general paucity of research in this area and these effects are generally poorly understood. Given the high rates of occupational stress and vicarious traumatisation in the SAPS, a preventative approach to PTSD is a necessity. It is thus crucial that these factors should be explored in order to facilitate and inform any potential preventative intervention efforts. In addition, the prevalence of PTSD in the South African police reservist division remains, as yet, undocumented. It is important to obtain some estimate of the prevalence of prominent posttraumatic stress symptomatology in this population. The present study will investigate how personality and coping are associated with the experience of PTSD in the South African police reservist division. Secondly, this study will explore the mediation effect that coping has on one's personality and the development of PTSD. The following research questions will be explored:

2.5 Research hypothesis

1) What is the relation between levels of posttraumatic stress symptoms (PTSS) and each of neuroticism, extraversion, openness to experience, agreeableness and conscientiousness?
2) Does coping style mediate the relation between personality style and the level of PTSS?
3) Does personality style predict coping style?

3. METHODOLOGY

3.1 Introduction

This research report has been conducted quantitatively. The data that was collected by means of standardised questionnaires as described in subsequent sections. The traumatic events which the police members experience were documented by means of the Traumatic Stress Schedule (Norris, 1990).The revised version of the Impact of Events Scale (IES-R) was utilised in order to determine the type of traumatic impact the reservists' experienced after the traumatic event(s) (Horowitz, Wilner & Alvarez, 1979; Weiss & Marmar, 1997). This report further investigated two main factors that have been shown to influence the police members' vulnerability and resilience towards developing PTSD. These main factors are personality and coping. Personality was measured by use of the NEO-PI-R (Costa & McCrae, 1992) and the Brief COPE (BCI) (Carver, 1997) was used for assessing the style of coping utilised after experiencing a traumatic event. These results will be analysed and interpreted to reveal whether the factors, personality and coping, influence the reservists' tendency towards developing PTSD. An interpretation will be carried out to determine whether a relationship exists within this population between the post-traumatic symptoms exhibited, personality and coping.

3.2 Sample/Sampling

The sample for this study consists of 36 police reservists within the Gauteng area in South Africa. The participants were comprised of an ethnically diverse sample of police reservists aged between 18 and 50 years old. There were a total of 31 male reservists and 5 female reservists. The stations that participated in the study are: Sandton, Norwood, Bramley, Randburg and Douglasdale. The participating reservists volunteered to be part of the study. The sample completed the questionnaires at their monthly reservist meetings. The police reservist population is a very specific and unique population that is not as large as other areas of the police force. Each police station has a squad of reservists that have shown to range from 10-20 reservists. Therefore although the total sample size is small it is

expected to be a representative sample of the reservist population. Probability sampling was employed when collecting the data.

3.3 Research Design

This study takes the form of a quantitative, non-experimental, cross-sectional, with-in group design. Quantitative analyses make use of numerical information in order to make sense of behaviour (Whitley, 2002). This type of analyses allows the researcher to remain value-neutral and objective towards the research (Babbie & Mouton, 1998). Furthermore, the data collected was done at one point in time which is in line with a non-experimental cross-sectional design.

The questionnaires explained previously were administered to police reservists sourced from four different police stations. It was important to reach as many reservists as possible in order to gain as large sample as possible. Questionnaires were used as a tool to achieve this as a key characteristic in survey research is that it can be distributed to large samples (Babbie & Mouton, 1998). The data collected was subjected to a quantitative analysis.

3.4 Measures/Instruments

The present study will make use of the following measures/instruments: NEO-PI-R (Costa & McCrae, 1992); Brief COPE inventory (Carver, 1997); Impact of Events Scale-Revised (Horowitz et al., 1979; Weiss & Marmar, 1997); Traumatic Stress Schedule (Norris, 1990).

3.4.1 *NEO-PI-R*

The NEO-PI-R is a personality measure that makes use of the five factors of the five-factor model (FFM) of personality (Costa & McCrae, 1992). This measure assesses personality traits in adults (Costa & McCrae, 1992). The test can be used in both corporate and clinical settings and is readily adaptable for obtaining personality ratings used to predict behaviour (Kurtz et al., 1999). Laher (2010) explains that two types of forms exist, one as an observer assessment (Form R) and the other as a self-report assessment (Form S). The original self-report NEO-PI-R consists of 240 items rated on a 5-point Likeart scale ranging from 0-4 (Heuchert, Parker, Stumpf & Myburgh, 2000; Kurtz et al, 1999; Laher, 2010). A degree of agreement to disagreement (*strongly agree – strongly disagree)* is used for the individual to record their ratings (Kurtz et al, 1999). The NEO-PI-R measures the five factors of personality which are proposed in the FFM, namely: Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A) and Conscientiousness (C) (Costa & McCrae, 1992; Heuchert et al., 2000; Kurtz et al., 1999). These factors are measured through 48 items each (48 items per factor) and these are further sub-divided into six clusters of eight items (Kurtz et al, 1999). These clusters are designed to supply more important notions within the five domains. The items are answered on a 5-point Likert-type scale and range from 4-0 (strongly agree-strongly disagree). The internal consistency reliability is proposed as good (range from .89 - .96 over two studies) (Kurtz et al., 1999). The domain level reliabilities for the self and observer ratings range from .86 to .95 which is high and the facet reliabilities for both forms range from .56 to .90 which is also a good result (Botwin, 1995). Short term test-retest reliability has also been proven with the revised version (Botwin, 1995; Kurtz et al, 1999). The reliability and the validity of the NEO-PI-R have been expressed internationally, as well as locally (Laher, 2010). The NEO-PI-R scales have shown evidence of validity in many samples (Costa & McCrae, 1992). Not only has Form R been proven to validate Form S but the test also contains a validity check in order to monitor for inconsistency, thus invalidity within tests (Costa & McCrae, 1992). Construct validity is said to be present (Costa & McCrae, 1992). The current study will be using the abbreviated version of the NEO-PI-R which consists of 60 items. The psychometric properties for this

shortened version are supported by the psychometric properties of the revised 250 item questionnaire.

3.4.2 *Brief COPE*

The Brief COPE questionnaire is a 14-item Likert scale and is the condensed version of the original COPE inventory (Carver, Scheier, Weuntraub & Jagdish, 1989). The original COPE is a multifaceted measure that is aimed at assessing the various ways in which people respond to stressors (Carver et al, 1989). The abbreviated version, Brief COPE (Carver, 1997) is shorter than that of the original COPE and as a result it reduces the time taken to complete the questionnaire. The Brief COPE has been used in the South African context (Olley, Zaier, Seedat & Stein, 2007). The original COPE has proven to have strong psychometric properties which render it as a suitable measure to use with regards to the one personal factor, coping (Carver et al, 1989). The Brief COPE is therefore an appropriate measure to investigate coping (Carver, 1997). One of the study's aims is to understand how the police forces' coping influences their vulnerability and/or their resiliency towards developing PTSD. The following facets of the brief COPE measure resilience: active coping, acceptance, emotional support, instrumental support, and positive reframing (Yi-Frazier, Smith, Vitaliano, Yi, Mai, Hillman, Weinger, 2010). The Brief COPE is a fitting measure to address this aim.

3.4.3 *IES-R (Impact of Events Scale Revised)*

The original IES is a Likeart scale that consists of 22 items (Horowitz et al., 1979). Initially, the IES was used to study bereavement of individuals; however later the scale was used as a measure for traumatic incidents (Sundin & Horowitz, 2002). This original IES was created before PTSD was entered as a diagnosis on the DSM-III (Sundin & Horowitz, 2002). The scale is used to measure two fundamental reactions of PTSD, namely intrusion and avoidance. The intrusive measure can be referred to as repetitive thoughts and images which

impose on one's consciousness in a very intrusive manner and avoidance includes behaviours, such as denial, constriction and emotional numbness (Horowitz, 1979). Statements most frequently used by people who had experienced such extreme life circumstances were used in order to create the items used in the IES and these items were then used in turn to describe the symptoms previously discussed (Horowitz et al, 1979). Horowitz et al. (1979) aimed at creating a scale that would produce two objective sub-scores and an overall subjective stress score. The APA (2000) classifies the symptoms intrusion and avoidance as two of the main reactions a trauma survivor would experience following a distressing experience. The term 'denial' was replaced by 'avoidance in the IES as Horowitz et al. (1979) felt that denial was more of an unconscious experience and avoidance presented as a more concrete term to explain one's behaviour after a traumatic experience. The release of the DSM-IV included an additional PTSD core symptom – hyperarousal, therefore the IES had to be revised in order to accommodate the new PTSD criteria, and as a result the Impact of Events Scale-Revised (IES-R) was created (Creamer et al, 2003). The revised scale consisted of 15 items and three sub-scales, namely: Intrusion, avoidance and hyperarousal (Barakat, Alderfer & Kazak, 2006).

The IES's reliability and validity has been assessed and the psychometric properties and their results have been proven to be stable over time (Sundin & Horowitz, 2002). Both the IES and the IES-R have been used in the South African context (Kopel & Friedman, 1997; Pezler, 2000; Ward, Lombard & Gwebushe, 2010). Sundin and Horowitz (2002) strongly advise that the IES is extremely useful and beneficial for detecting PTSD symptoms in traumatised individuals and its popularity is further supported by Creamer, Bell and Failla (2003) as they state that the IES is most likely the most used self-report measure on traumatic stress.

3.4.4 *Traumatic Stress Schedule (TSS)*

The Traumatic Stress Schedule (Norris, 1990; Norris 1992) is a 9-item questionnaire that assesses past traumatic events. The theory behind this instrument proposes that loss,

scope, threat, blame, familiarity and PTS are dimensions of traumatic events that are difficult to measure (Norris, 1990; Norris, 1992). This assessment measures widely agreed upon traumatic life events (e.g. loss of a loved one) and is used to detect the occurrence and the impact of these traumatic events (Norris, 1990; Norris, 1992). The TSS has been used in the South African context (Ortlepp & Friedman, 2002). As this is a life events scale no indicators of internal consistency are available (Ortlepp & Friedman, 2002).

3.5 Procedure

A four-part questionnaire was used and administered to the sample. The sample consisted of 36 police reservists from six different police stations within the Gauteng area. The questionnaires administered are listed as well as their uses: the NEO-PI-R is a personality measure and was employed to understand personality traits within the sample; BCI was implemented to assess the types of coping strategies utilised by the participants; the IES-R measures the type of impact the traumatic event had on the participant and was used to determine this. Finally the TSS was used in order to collect important information regarding previous traumatic incidents that the reservists may have experienced in the past as well as their responses to these traumas.

The questionnaires were completed on site as they were handed out at the police reservists' monthly meetings. This was in an attempt to maintain strict confidentiality and anonymity as possible. As this study was based on a voluntary basis the questionnaires were distributed and completed at the end of the monthly meeting in order to reduce any feelings of obligation in participating in the study. A participation information sheet was distributed amongst the reservists in order to inform them of the nature of the study. The participant information sheet contained all the relevant information about the study, as well as contact details of referrals if re-traumatisation were to occur. This information was then verbally reiterated to the groups by the researcher in order to reduce any confusion and to answer questions. Upon completion of the questionnaire the participants were requested to place their completed questionnaires face down into a box situated at the exit. This was done in order to ensure the privacy and confidentiality between the participants and the researcher. This process also ensured the anonymity of the respondents. The researcher remained

present when the participants were completing the questionnaire. In order to reduce any feelings of anxiety or uneasiness the researcher sat on a chair away from the participants.

3.6 Data Analysis

The aim of this study was to understand and investigate the ways in which personality and coping are associated with PTSS in South African police reservists. A further aim was to explore the potential for coping styles to act as a mediator for the relation between personality styles and PTSS. In order to achieve these aims, a series of Pearson's Product Moment correlations were conducted. In addition, the hypothesized mediations were tested in a series of analyses that involved multiple regressions to establish a predictive relation between the original variable and the mediator variable, and between the mediator and outcome variable. In order to test whether the mediation was significant or not, a series of Sobel tests were performed using an online Sobel test calculator (insert the reference of one here). This required inputing the standard errors and parameter estimates of both variables used in the regression analysis. This analysis yielded a Sobel test statistic and probability estimate which was then used to estimate whether Variable A (one of the personality domains) was mediated by Variable B (a coping pattern) in predicting PTSS. All analyses were performed using SAS v9.3.. Correlations and multiple regressions are appropriate statistical tools to use in this study as associations and relations between PTSD and social/personal factors are being explored.

4. RESULTS

4.1 Preliminary analyses

4.1.1 *Sample*

The final sample that took place in this study consisted of 36 police reservists in Johannesburg, South Africa. The study consisted of the following demographic information: demographics for the police reservists are as follows. Gender: Male n=31 (86%), Female n=5

(14%). Race: White n= 30 (83%), African n=3 (8%), Indian n=2 (6%), Coloured n=1 (3%). The reservists' age ranged from 18 years old to over 50 years old. The marital status of the reservists' was also reported: single n=17 (47%), married n=18 (50%), divorced n=1 (3%).

The years in force varied in the sample: 3% of the reservists had been in the force for less than one year, 36% of the sample had been in the force for one to five years, 28% of the sample had been in the force for six to ten years, 19% of the sample had been in the force for 11 to 20 years and 14% of the sample had been in the force for over 21 years.

4.1.2 *Correlations*

A Pearson product-moment correlation was run in order to assess the bivariate relationships between all pairs of variables. Table 1 illustrates these relationships and shows the strength of the correlations between all variables.

4.1.2.1 IES and Personality Factors

As would be expected all the domains of PTSS on the IES scale were significantly correlated with one another as they measure the same construct.

When correlated with the personality domains, the overall IES score was significantly positively correlated with Neuroticism (r= 0.33, n= 36, p= <0.05) and Conscientiousness (r= -0.34, n= 36, p= <0.05). IES was not significantly correlated with any other variable. When looking at the individual clusters of PTSS, the results showed a significant relationship between the IES subscales Intrusion and Avoidance with the personality factors Neuroticism and Conscientiousness. Specifically, Intrusion was positively correlated with Neuroticism (r=0.33, n= 36, p< 0.05) as well as to Conscientiousness (r= -0.36, n= 36, p= < 0.05). Avoidance was negatively correlated with Conscientiousness (r= -0.34, n= 36, p= <0.05) suggesting that conscientious participants were more likely to report avoidance symptoms

4.1.2.2 IES and Coping Styles

Further analyses were conducted to correlate the overall IES score with the three coping domains. IES was significantly positively correlated with each of PFC (r= 0.35 n= 36, p= <0.05), EFC (r= 0.52, n= 36, p= <0.01) and DC (r= 0.46, n=36, p= <0.01).

Hyperarousal was positively correlated with all levels of coping: PFC (r= 0.4, n=36, p= <0.05), EFC (r= 0.57, n=36, p= <0.01), and DC (r= 0.47, n=36, p= <0.01).

Intrusion was positively correlated with all levels of coping: PFC (r=0.38, n= 36, p= <0.05), EFC (r= 0.47, n= 36, p= <0.01), DC (r= 0.36, n= 36, p= <0.05). This suggests that, reservists who reported higher levels of intrusion symptoms were more likely to be engaged in active coping strategies; regardless whether that coping was adaptive or perhaps maladaptive as in the case of DC.

Avoidance was significantly correlated to two types of coping: EFC (r= 0.41, n= 36, p= <0.01) and DC (r= 0.43, n= 36, p= <0.01). This suggests that reservist's, who reported experiencing more avoidance symptoms of PTSD, were also more likely to report using emotion focused and dysfunctional coping mechanisms in dealing with their traumatic experiences.

4.1.2.3 Coping Styles and Personality Factors

When the three coping domains were correlated with the personality factors, EFC was positively correlated with Neuroticism (r= 0.36, n= 36, p= <0.05) suggesting that participants who were higher in neuroticism were also more likely to use emotion focused coping. Furthermore, DC was significantly positively correlated with Neuroticism (r= 0.41, n= 36, p= <0.01). This suggests that neurotic reservists were more likely to engage in dysfunctional coping.

PFC was not significantly related to any of the personality factors.

4.1.2.4 Personality Factors and Years in Force (YIF)

Extraversion was positively correlated with YIF (r= 0.41, n= 36, p= <0.01). This result suggests that the longer participants have served as a reservist on the force, the more likely their personality was extraverted in nature

4.2 Main Analyses

4.2.1 H1*: The relation between level of posttraumatic stress symptoms (PTSS) and each of neuroticism, extraversion, openness to experience, agreeableness and conscientiousness.*

For the research question ‘What is the relation between level of PTSS and each of neuroticism, conscientiousness, extraversion, agreeableness and openness to experience?’ the Impact of Events Scale Revised and the NEO-PI-R were used. The NEO-PI-R was used to elicit the Big Five personality traits.

The aim of this research question was to understand the potential relationship between PTSS and the five personality factors. A correlation was the selected statistical procedure utilised in this research question. The aim of using the correlation matrix was to assess the relationship between PTSS (by means of the IES) and each of the personality factors (see Table 2. for descriptive statistics of the analysis).

Intrusion was positively correlated with Neuroticism ($r=0.33$, $n= 36$, $p< 0.05$) as well as to Conscientiousness ($r= -0.36$, $n= 36$, $p= < 0.05$). Furthermore, Avoidance showed to be negatively correlated with Conscientiousness ($r= -0.34$, $n= 36$, $p= <0.05$).Those who reported experiencing more avoidance symptoms were also less likely to be conscientious.

Table 1. Descriptive statistics variables

Variable	N	M	SD
TSS	36	3.58	1.71
Hyperarousal	36	6.69	4.16
Intrusion	36	9.44	6.13
Avoidance	36	9.69	5.29
IES	36	25.83	14.14
PFC	36	14.44	5.11
EFC	36	22.94	7.09
DC	36	15.31	4.93
Neurotic	36	26.72	8.03
Conscientiousness	36	40.06	5.17
Agreeableness	36	46.86	7.10
Extraversion	36	43.36	5.19
Openness	36	30.97	4.27
Years in force	36	3.14	1.07

The descriptive statistics in Table 2 show that the means for intrusion (9.44) and avoidance (9.69) are higher than that of hyperarousal (6.69). This suggests that the sample used in the study is more likely to experience PTSS resulting in intrusive thoughts and avoidant behaviour. The sample is likely to experience feelings of hyperarousal as well;

however this will be experienced to a lesser degree than the other two PTSS. The overall IES mean for this sample is 25.83. Paton, Violanti, Burke and Gehrke (2009) created an 'optimal cut-off' point for PTSD in the IES-R. This point is 20. The current sample's IES score is 25.85 which is above the optimal cut-off point. Given this result, it is plausible to state that this sample of police reservists' is suffering from PTSD.

The mean for EFC (22.94) is higher than the other two coping strategies. This suggests that the current sample utilises EFC to a much greater extent than the other two levels of coping: PFC, DC. The sample does make use of PFC and DC coping, however EFC strategies appear to be a far more prevalent coping strategy in the current sample.

The descriptive statistics further show that the means for neurotic (26.72) and openness to experience (30.97) personality factors are far lower than that of the remaining three personality factors: conscientiousness (40.06), agreeableness (46.86), extraversion (43.36). Although the sample displays sings of the former factors they are done so to a lesser degree than the latter factors. The neurotics mean is the lowest and agreeableness is the highest mean. This suggests that the dominant personality factor present in the sample is that of agreeableness and the least prominent factor is that of neuroticism. Extraversion and conscientiousness also showed to be quite prominent personality factors in the current sample.

4.2.2 H2: *Does coping style mediate the relation between personality style and the level of PTSS?*

For the research question 'Does coping mediate the relation between personality style and the level of PTSS?' the IES-R, NEO-PI-R and the Brief COPE were utilised. The Brief COPE was used to measure coping.

The aim of this research question was to look for mediation between personality factors/styles and PTSS. The mediating variable that was used in this part of the analysis was coping. The statistical analysis used to carry out this research question was the Sobel test of

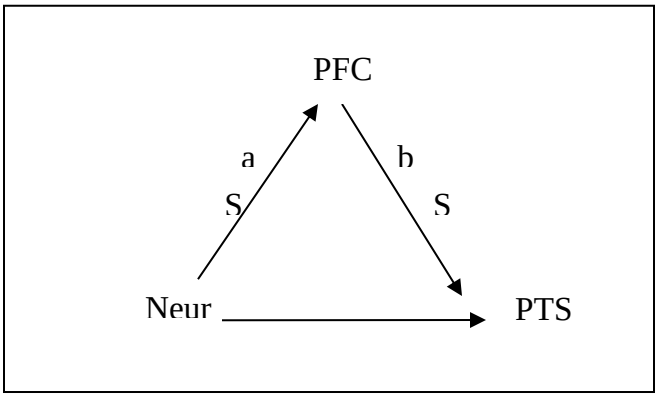
mediation. The Sobel test is used to assess whether a mediating relationship exists between the independent and dependent variable (Sobel, 1982). This is done as theory suggests that the relationship between the independent and the dependent variable is due to the influence of a third (mediating) variable. As a result, the effect of the independent variable is reduced and the effect of the mediator remains significant (Sobel, 1982). In essence, this test determines whether the influence of the mediator variable is significant (Sobel, 1982). In the current study, the variables used in this analysis were personality (independent variable), PTSS (dependent variable) and coping. Coping was used as the mediating variable in the analysis. On running the analyses the following models showed to be significant.

In accordance with the steps provided by Barron and Kenney (1986) the following Sobel results were recorded:

4.2.2.1 Mediation between Neuroticism, PFC and PTSS

The regression weight (***b)*** for the relationship between Neuroticism and PTSS was 0.11 and the standard error (SE) of the relationship was 0.29. With a significant correlation of The regression weight for Neuroticism and PFC showed to be $r^2 = 0.05$ and the SEa = 0.107. The regression weight for PFC and PTSS showed to be $r^2 = 0.47$and the SEb = 0.44. The results for this analysis are represented below in figure 1.

Figure 1: Mediation between Neuroticism, PFC and PTSS

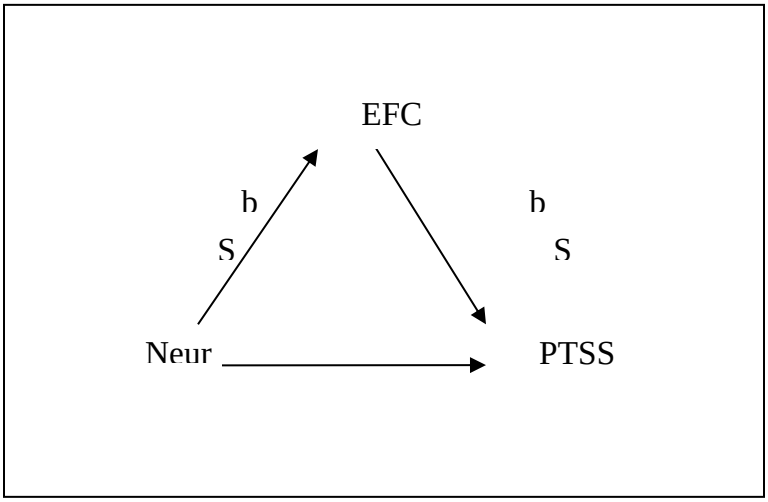


The Sobel test statistic for this mediation was 1.119 and the one-tailed p = 0.132. This result shows to be non-significant. This suggests that in this sample Neuroticism does have an association with PTSS however this not mediated by PFC.

4.2.2.2 Mediation between Neuroticism, EFC and PTSS

The regression weight for the relationship between Neuroticism and PTSS was *b* = 0.11 and the standard error (SE) of the relationship showed to be 0.29. The regression weight for Neuroticism and EFC showed to be *b* = 0.13 and the SEa = 0.14. The regression weight for EFC and PTSS showed to be *b* = 0.0.27 and the SEb = 0.29. The results for this analysis are represented below in figure 2.

Figure 2: Mediation between Neuroticism, EFC and PTSS

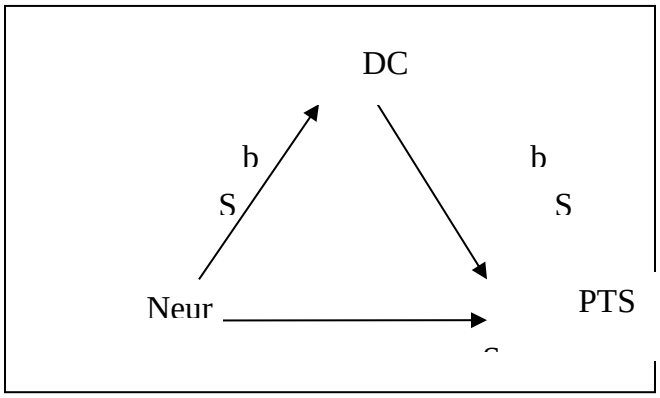


The Sobel test statistic for this mediation was 1.91 with the one-tailed p value of 0.03. Therefore this suggests that in this sample, the relationship between Neuroticism and PTSS is mediated by EFC.

4.2.2.3 Mediation between Neuroticism, DC and IES

The regression weight for the relationship between Neuroticism and PTSS was *b*= 0.11 and the standard error (SE) of the relationship showed to be 0.29. The regression weight for Neuroticism and DC showed to be *b* = 0.17 and the SEa = 0.1. The regression weight for DC and PTSS showed to be *b* = 0.21 and the SEb = 0.44. The results for this analysis are represented below in figure 3.

Figure 3: Mediation between Neuroticism, DC and PTSS.



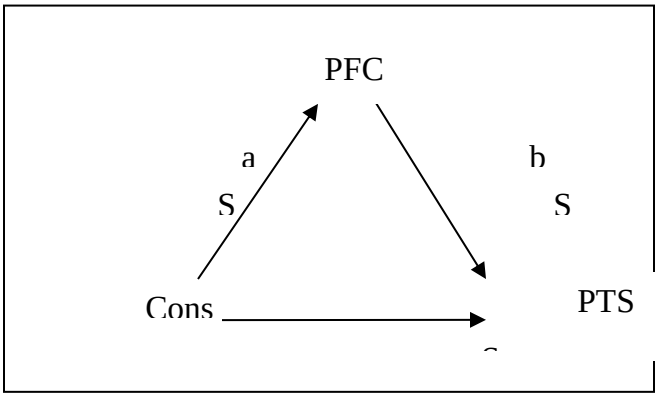
The Sobel test statistic for this mediation was 1.97 with the one-tailed p = 0.03 Therefore this suggests that in this sample, the relation between Neuroticism and PTSS is mediated by DC.

4.2.2.4 Mediation between Conscientiousness, PFC and IES

The regression weight for the relationship between Conscientiousness and PTSS was *b* = 0.12 and the standard error (SE) of the relationship was 0.32. The regression weight for the relationship between Conscientiousness and PFC was *b* = 0.01 and the SEa = 0.13. The

regression weight for the relationship between Coping and PTSS was *b* = 0.13 and the SEb was 0.44. This is represented in Figure 4 below.

Figure 4. Mediation between Conscientiousness, PFC and PTSS



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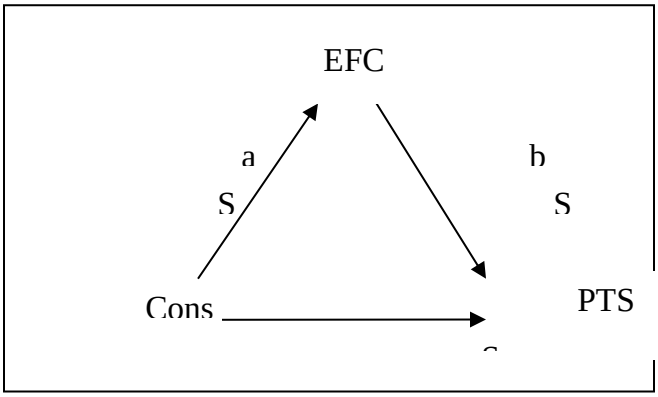
The Sobel test statistic for this mediation was 0.41 with the one-tailed p = 0.342. Therefore this suggests that in this sample, while Conscientiousness is related to PTSS, the relation is not mediated by PFC.

4.2.2.5 Mediation between Conscientiousness, EFC and IES

The regression weight for the relationship between Conscientiousness and PTSS was *b* = 0.12 and the standard error (SE) of the relationship was 0.32. The regression weight for the relationship between Conscientiousness and EFC *b* = 0 and the SEa = 0.17. The regression weight for the relationship between EFC and PTSS was *b* = 1.27 and the SEb = 0.14. This is represented in Figure 5 below.

Figure 5. **Mediation between Conscientiousness , EFC and PTSS.**

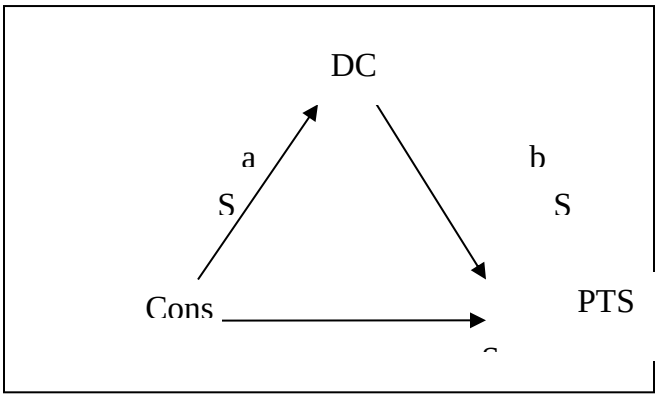


The Sobel test statistic for this mediation was 0.53 with the one-tailed p of 0.3 being non-significant. Therefore this suggests that in this sample, Conscientiousness does have a relationship with PTSS but this is not mediated by EFC.

4.2.2.6 Mediation between Conscientiousness, DC and PTSS

The regression weight for the relationship between Conscientiousness and PTSS was *b* = 0.12 and the standard error (SE) of the relationship was 0.32. The regression weight for the relationship between Conscientiousness and DC *b* = 0 and the SEa = 0.12. The regression weight for the relationship between DC and PTSS was *b* = 0.21 and the SEb was 0.44. This is represented in Figure 6below.

Figure 6. **Mediation between Conscientiousness, DC and PTSS.**



The Sobel test statistic for this mediation was 0.02 with the one-tailed (p = 0.5). Therefore this suggests that in this sample, Conscientiousness does have a relationship with PTSS but this relationship is not mediated by DC.

4.2.3 *H3: Does personality style predict coping style?*

For the research question 'Does personality predict coping style?' the NEO-PI-R and the Brief COPE were used. The aim of this research question was to explore whether personality style was associated with coping style.

On running the regression analyses the following models showed to be significant. The personality factor, neuroticism, showed to be significantly related to EFC ($F_{(1, 34)} = 5.03$; p= 0.03). The R-square value for neuroticism showed to be 0.129, therefore 12.9% of the variance in EFC is explained by the personality factor neuroticism.. Neuroticism also showed to be significantly related to DC ($F_{(1, 34)} = 6.9$; p= 0.01). The R-square value for neuroticism showed to be 0.1686, therefore 16.9% of the variance in DC is explained by the personality factor neuroticism. Furthermore, considering the t-value of neuroticism (t=2.36; p=0.0129) it appears that neuroticism does affect DC. It can be concluded that the personality style

neuroticism does predict coping style (EFC, DC). Extraversion showed to be significantly related to EFC ($F_{(1, 34)} = 0.949$; $p = 0.04$). Furthermore, considering the t-value of extraversion ($t=2.309$; $p=0.027$) it appears that extraversion does affect EFC. The R-square value for extraversion 0.000, therefore 0% of the variance in EFC is explained by the personality factor extraversion.

The personality factor, conscientiousness, showed to have no significant relationship to any of the three coping styles: EFC, PFC, DC. Therefore it can be deduced that the personality style conscientiousness does not predict coping style.

The personality factor agreeableness showed to have no significant relationship to any of the coping styles. This suggests that the personality factor agreeableness does not predict coping style.

The personality factor openness to experience showed to have no significant relationship to any of the coping styles. Therefore, openness to experience does not predict coping style.

5. DISCUSSION

5.1 Discussion of main findings

One of the aims of this study was to determine the relationship between PTSS and the five personality factors: neuroticism, extraversion, openness to experience, agreeableness and conscientiousness. The PTSS symptoms are understood as: intrusion, avoidance and hyperarousal (APA, 2000). It was crucial to separate these symptoms in order to gage the relationship between these key variables.

The results for this research question suggested several significant results. The overall IES model showed to be related to personality, specifically to the neurotic and conscientious personality factors. Haisch and Meyers (2004) explained in their research that the level of stress one experiences and the coping they employ is directly related to the following personality factors: neuroticism, conscientiousness and extraversion. This is consistent with the current findings.

Intrusion showed to be positively correlated with neuroticism as well as negatively correlated to conscientiousness. This result suggests that neurotic reservists are more likely to report symptoms of intrusion. This result further suggests that reservists, who are more conscientious, are less likely to experience intrusive symptoms after experiencing a traumatic event. This result is in accordance with research conducted by Knezˇevic et al. (2005) who deduced that a relationship does exist between intrusion and certain personality factors. Studies have shown (Stockton et al., 2011; Horowitz, 1986) that higher levels of posttraumatic growth are associated with higher levels of intrusive PTSS. Posttraumatic growth is said to be associated with intrusion as it is in the struggle with a traumatic event that the process of posttraumatic growth is said to occur (Tedeschi & Calhoun, 1992). As it has been previously mentioned, intrusion assists with cognitive processing of an event. Therefore, although intrusive thoughts are an overall negative experience it assists the

traumatised individual to make sense and acquire 'meaning-making' with regards to the event. This is an essential step with regards to recovery from traumatic experiences. This suggests that neurotic reservists who experience heightened levels of intrusion are more likely to engage in cognitive processing which is implied to lead to posttraumatic growth (Helgeson, Reynolds & Tamich, 2006; Helgeson et al., 2006). Vollrath (2001) explained that those who are more neurotic will perceive life events as threats and those who are more conscientious will perceive life events as challenges. Furthermore, as previously mentioned by Vollrath (2001) conscientiousness facilitates cognitive restructuring of a negative event. It is possible to assume in this instance that conscientious police reservists make sense and meaning of their traumatic ordeals simply by default of their dominant personality trait. Although intrusion is associated with posttraumatic growth it is still a symptom of trauma and an unpleasant experience. As a result it is plausible to understand that an individual who is more neurotic will experience a higher level of intrusive symptoms as they are simply unable to process the traumatic event in an adaptive manner. Previous research supports that neuroticism is a strong predictor of post-traumatic stress disorder diagnosis (e.g. Fauerbach, 2000). As a result, intrusion in this instance will not be helpful but rather restrictive to their recovery. Muris (2006) indicated that conscientiousness can act as a buffer against long-lasting distress that is caused by neuroticism. The current sample of police reservists showed to be more inclined to possess personality factors of both neuroticism and conscientiousness. It is possible that conscientiousness acts as a buffer, as suggested by Muris (2006). However, the sample did show to be suffering from post-traumatic stress disorder diagnosis – given the Impact of Events Scale Revised cut off score which was discussed above – therefore this conclusion will need to be further researched in order to be more conclusive.

Avoidance was found to be negatively correlated with conscientiousness. This result suggests that reservists who are more conscientious are less likely to experience PTSS avoidance symptoms. As it has been previously mentioned conscientiousness aids in cognitive restructuring of an event and it is understood to be an indirect measure of emotional regulation (Vollrath, 2001). Furthermore, characteristics of the personality factor conscientiousness range from being planful, methodical to achievement-oriented. This

suggests that a police reservist who is more conscientious is more likely to approach a negative event in a systematic and logical manner rather than avoid the consequences or the event. This type of behaviour ultimately facilitates recovery.

A second main objective of this study was to determine whether coping mediates the relationship between personality factors and post-traumatic stress symptoms / post-traumatic stress disorder. The types of coping sub-categories that comprise Problem-Focused Coping, Emotion-Focused Coping and Dysfunctional Coping are: active coping; planning; positive reframing; acceptance; humour; turning to religion; venting of emotions; mental disengagement; denial; substance use; behavioural disengagement; emotional support (Olley, Seedat, Nei & Stein, 2004). The results showed that the relationship between neuroticism and PTSS was mediated by Emotion-Focused Coping and by Dysfunctional Coping. The results suggest that police reservists who are more neurotic and are more likely to use emotion focused or dysfunctional coping, are likely to develop post-traumatic stress disorder. This suggests that the relationship between neuroticism and post-traumatic stress symptomology is best accounted for by coping style as it is an indirect relationship. This result is in accordance with Evans et al. (1993) and Haisch and Meyers (2004). They concluded that police make use of Emotion-Focused Coping and tend to over rely on it. This dependence/overreliance can be dysfunctional and as a result they will cope in a dysfunctional manner. Campbell-Sills et al. (2006) elaborate on this by explaining that neurotic personality types are associated with more negativity perceptions and outcomes. A relationship between conscientiousness and PTSS was found in this study. However, this relationship was not mediated by coping type suggesting that the relation between conscientiousness and PTSS is a direct one. Perhaps people high in conscientiousness are more likely to perceive traumatic events as a challenge and as events that they need to achieve mastery over in a planful manner. In so doing, this directly impacts on the severity and extent of their post-traumatic stress symptoms.

The final main objective to this research was to determine if personality type predicts which coping strategy will be utilised when a trauma is experienced. As previously

mentioned it was important to understand how each personality factor relates to the key variables.

Therefore, it was essential to separate the coping strategies into: Problem-Focused Coping, Emotion-Focused Coping and Dysfunctional Coping. All five personality factors were used in this analysis.

This report showed that neuroticism had a significant relationship to Emotion-Focused Coping and therefore has an effect on the utilisation of Emotion-Focused Coping as a coping strategy. Research has shown that police show to over-rely on Emotion-Focused Coping strategies rendering them as a maladaptive type of coping (e.g. Evans et al., 1993; Haisch & Meyers, 2004). Furthermore, neuroticism showed to have a significant relationship to Dysfunctional Coping. Research conducted by Carver and Connor- Smith (2007) and Cambell-Sills et al. (2006) explain that neurotic personality traits are associated with more negative outcomes. This compliments the relationship between neuroticism and Dysfunctional Coping as it is likely that one who is more neurotic will not cope in an adaptive manner. Research by Vollrath (2001) further emphasises this point as neurotic individuals are more likely to perceive life events as more threatening than less neurotic individuals. Therefore it can be concluded that reservists who are more neurotic are more likely to make use of both Emotion-Focused Coping and Dysfunctional Coping strategies, which, as discussed above, places them at even greater risk of debilitating post-traumatic stress symptoms.

This report further indicated a significant relationship between extraversion and Emotion-Focused Coping. This indicates that a reservist who is more extraverted is likely to make use of Emotion-Focused Coping when faced with a traumatic experience. Extraversion is associated with positive outcomes, low stress and more positive coping (Hasich & Meyers, 2004). Although an overreliance of Emotion-Focused Coping is considered to be dysfunctional and is likely to result in negative outcomes, extraverted individuals are associated with positive coping (Haisch & Meyers, 2004). This suggests that extraverted individuals will utilise Emotion-Focused Coping, however this will be done to a healthy

extent. Perhaps this suggests that the relation between Emotion-Focused Coping and post-traumatic stress symptoms is moderated by extraversion? Perhaps emotion focused coping is associated with increased risk for PTSD but it depends on whether the individual is extraverted or not. This needs to be explored further in future studies as it was beyond the scope of this research. Previous research has also indicated that police rely on Emotion-Focused Coping strategies to cope (e.g. Evans et al., 1993; Haisch & Meyers, 2004).

Conscientiousness, agreeableness and openness to experience showed to have no significant relationship to any of the coping strategies. It can be assumed that reservists who are higher in conscientiousness, agreeableness as well as openness to experience are likely to utilise all levels of coping. Further research should be conducted into understanding why these personality factors do not have a significant relationship.

This study used Paton et al's. (2009) IES-R cut-off point for post-traumatic stress disorder. This cut-off point (a score of 20) is used as an indication as to whether individuals are likely to suffer from post-traumatic stress disorder. Those who score higher that the cut-off are implied to have post-traumatic stress disorder. The current sample scored much higher than the cut-off point. This suggests that this sample of police reservists potentially has high rates of post-traumatic stress disorder, or is at least at risk of developing post-traumatic stress disorder. The level of their traumatisation is unknown, however given the measures used (Traumatic Stress Schedule) it is evident that repeat and vicarious trauma has been heavily involved in their reported post-traumatic stress disorder symptomology. It is expected that these symptoms interfere with their daily functioning. The significant results of the current research paper indicate that one's method of coping after experiencing a traumatic event plays an important role in developing post-traumatic stress disorder.

5.2 Strengths and Limitations

The current study had certain strengths as well as limitations. There is a significant amount of research focused on police and trauma globally. As it has been previously mentioned the South African police force is a more unique population than most others given

the high crime rate. Although there is some research focused on the police population in South Africa there is far less information regarding the special units within the police force, such as the police reservists. Given the small amount of research on the South African police population, this study will provide important information regarding the South African police reservist population responses to trauma and how personality and coping factors influence that response. To date, this is the second study conducted on police reservists within South Africa. The first study having been conducted by Waterston (2010). The sample consisted of police reservists from six different stations across Gauteng. Therefore this sample may act as a representative of the police reservists in Gauteng. The focus of this study was centred on the reservists' coping and personality factors. As a result this report was able to deduce certain information regarding personal factors that may affect one's susceptibility towards developing PTSD.

Certain limitations coincided with these strengths. The sample size is extremely small (n=36). This could affect the representativeness of the sample. A larger sample would have increased the statistical power. In spite of this, some significant relations were still found. The lack of volunteers within the stations could have been due to fear of alienation from the police culture. However, given that the reservist population is very specific and small by nature this sample may be able to pose as a representative for the Gauteng police reservists. This study used reservists from Gauteng only. Therefore the results are restricted to the Gauteng region. As a result the conclusions from this study are unlikely to be able to be generalised to the South African police reservist population overall.

The study made use of four self-report questionnaires. Although self-report questionnaires are a well-used collection method for data it is very subjective. This subjectivity is not standardised and therefore how one reservist perceives a traumatic event will differ to the next person.

5.3 Recommendations for future research

The current research looked at potential mediating effects of coping as well as predetermining variables of trauma, namely personality. It is strongly recommended that future research on this topic should further investigate predetermining variables, such as culture (individualism/collectivism), genetic predisposition as well as previous traumas. Previous traumatic experiences have been suggested to be an important factor that needs to be explored more in trauma research. The police population (especially in South Africa) is very unique therefore understanding prior traumas as predispositions to PTSS/PTSD could aid in understanding trauma in the South African police population. Such traumatic incidents could be categorised and controlled for, such as development, work-oriented and personal traumas. Future research could also use the demographic information collected in the analyses. This type of information is often overlooked yet it contains valuable information regarding the sample

This study made use of quantitative methods. Although this type of research methodology is used extensively in the social science field it is unable to gain the personal and descriptive nature data that is associated with trauma. As a result future research should aim at using a qualitative/mixed-method approach. This type of analysis could be valuable to trauma research conducted on the police population as it will collect data which is subjective and more personal to the traumatic experience as well as elucidate more nuances experiences of the sample.

Furthermore, this study made use of a cross-sectional design. As PTSD can only be diagnosed after one month of being exposed to a trauma (APA, 2000) a cross-sectional design does not account for this time due to its design nature. As a result, future research should consider making use of a longitudinal design in order to understand trauma in the police population over a period of time. By doing so the results may be more representative of the police population and the experiences as well as the traumatic responses post-trauma may be more understood. Lastly, further research should explore coping, personality and traumatization in the greater police force. This is in part due to the fact that the reservist population represents a unique population, comprised of volunteers who have other vocations

in addition. They are likely drawn from a systematically different population than the rest of the police force. This needs to be explored by future research.

6. CONCLUSION

The current study was conducted in order to better understand the South African police reservist population. A particular focus was on how certain factors, such as personality and coping, influence the way in which this population manages trauma. The SAPS experience crime and deviant behaviour on an ongoing basis. The reservist population is especially intriguing as they offer their services free of charge. Their want to help better society against crime is of interest as they risk both their physical and psychological lives in order to do so and they receive no monetary or rewards by other means. In order to do so it was hypothesised a relationship existed between all personality factors and PTSS. Furthermore, it was hypothesised that coping mediates the relationship between personality and PTSS. The final hypothesis centred on the assumption that personality style predicts coping style. This report consisted of a four-part questionnaire which was utilised in order to satisfy the above aims. The final sample that comprised the study was 36 police reservists from the Gauteng area of South Africa.

The questionnaires utilised in this study were: Traumatic Stress Schedule (TSS); Impact of Events Scale Revised (IES-R); Brief COPE Inventory; NEO-PI-R. A number of regression and correlation analyses were employed in order to analyse the data collected from this sample. Sobel tests for mediation were also employed in order to analyse the mediational relationship. As a result many interesting results emerged.

There were several informative results. Firstly, there appeared to be a number of significant relationships between personality factors (Neuroticism and Conscientiousness) with the types of PTSS (Intrusion and Avoidance). Secondly, the results concluded that a relationship between neuroticism and PTSS does exist however this is via mediation of coping (EFC, DC). Finally, it was concluded that Neuroticism and Extraversion predict types of coping (EFC, DC).

Previous research and literature supported the data that arose from the analyses. These results were somewhat anticipated. Given the recorded literature and the results obtained it is evident that personality and coping have a relationship with PTSS/PTSD. Furthermore, it is evident that this sample of reservists relies on certain coping strategies (EFC and DC) more so than others. This type of overreliance is maladaptive and ultimately this sample of reservists makes use of negative/dysfunctional coping strategies. This sample is also more prone to having a specific personality type. In order to understand why this sample is more prone to use certain coping strategies and as to why they are more likely to be a specific personality type it is necessary for more studies to be conducted.

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9. APPENDICES

9.1 APPENDIX A: NEO-PI-R (Costa & McCrae, 1992)

Carefully read all of the instructions before beginning. This questionnaire contains 60 statements. Read each statement carefully. For each statement circle the response that best represents your opinion. Circle only one response for each statement. Respond to all the statements, making sure that you circle the correct response.

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.	I am not a worrier.	1	2	3	4	5
2.	I like to have a lot of people around me.	1	2	3	4	5
3.	I don't like to waste my time daydreaming.	1	2	3	4	5
4.	I try to be courteous to everyone I meet.	1	2	3	4	5
5.	I keep my belongings clean and neat.	1	2	3	4	5
6.	I often feel inferior to others.	1	2	3	4	5
7.	I laugh easily.	1	2	3	4	5
8.	Once I find the right way to do something, I stick to it.	1	2	3	4	5
9.	I often get into arguments with my family and co-workers.	1	2	3	4	5
10.	I'm pretty good about pacing myself so as to get things done on time.	1	2	3	4	5
11.	When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.	1	2	3	4	5

12.	I don't consider myself especially "light-hearted".	1	2	3	4	5
13.	I am intrigued by the patterns I find in art and nature.	1	2	3	4	5
14.	Some people think I'm selfish and egotistical.	1	2	3	4	5
15.	I am not a very methodical person.	1	2	3	4	5
16.	I rarely feel lonely or blue.	1	2	3	4	5
17.	I really enjoy talking to people.	1	2	3	4	5
18.	I believe letting students hear controversial speakers can only confuse and mislead them.	1	2	3	4	5
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
19.	I would rather cooperate with others than compete with them.	1	2	3	4	5
20.	I try to perform all the tasks assigned to me conscientiously.	1	2	3	4	5
21.	I often feel tense and jittery.	1	2	3	4	5
22.	I like to be where the action is.	1	2	3	4	5
23.	Poetry has little or no effect on me.	1	2	3	4	5
24.	I tend to be cynical and skeptical of others' intentions.	1	2	3	4	5
25.	I have a clear set of goals and work toward them in an orderly fashion.	1	2	3	4	5
26.	Sometimes I feel completely worthless.	1	2	3	4	5
27.	I usually prefer things done alone.	1	2	3	4	5
28.	I often try new and foreign foods.	1	2	3	4	5

29.	I believe that most people will take advantage of you if you let them.	1	2	3	4	5
30.	I waste a lot of time before settling down to work.	1	2	3	4	5
31.	I rarely feel fearful or anxious.	1	2	3	4	5
32.	I often feel as if I'm bursting with energy.	1	2	3	4	5
33.	I seldom notice the moods or feelings that different environments produce.	1	2	3	4	5
34.	Most people I know like me.	1	2	3	4	5
35.	I work hard to accomplish my goals.	1	2	3	4	5
36.	I often get angry at the way people treat me.	1	2	3	4	5
37.	I am a cheerful, high-spirited person.	1	2	3	4	5
38.	I believe we should look to our religious authorities for decisions on moral issues.	1	2	3	4	5
39.	Some people think of me as cold and calculating.	1	2	3	4	5
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
40.	When I make a commitment, I can always be counted on to follow through.	1	2	3	4	5
41.	Too often, when things go wrong, I get discouraged and feel like giving up.	1	2	3	4	5
42.	I am not a cheerful optimist.	1	2	3	4	5

43.	Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement.	1	2	3	4	5
44.	I'm hard-headed and tough-minded in my attitudes.	1	2	3	4	5
45.	Sometimes I'm not as dependable or reliable as I should be.	1	2	3	4	5
46.	I am seldom sad or depressed.	1	2	3	4	5
47.	My life is fast-paced.	1	2	3	4	5
48.	I have little interest in speculating on the nature of the universe or the human condition.	1	2	3	4	5
49.	I generally try to be thoughtful and considerate.	1	2	3	4	5
50.	I am a productive person who always gets the job done.	1	2	3	4	5
51.	I often feel helpless and want someone else to solve my problems.	1	2	3	4	5
52.	I am a very active person.	1	2	3	4	5
53.	I have a lot of intellectual curiosity.	1	2	3	4	5
54.	If I don't like people, I let them know it.	1	2	3	4	5
55.	I never seem to be able to get organized.	1	2	3	4	5
56.	At times I have been so ashamed I just wanted to hide.	1	2	3	4	5
57.	I would rather go my own way than be a leader of others.	1	2	3	4	5
58.	I often enjoy playing with theories or abstract ideas.	1	2	3	4	5

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
59.	If necessary, I am willing to manipulate people to get what I want.	1	2	3	4	5
60.	I strive for excellence in everything I do.	1	2	3	4	5

9.2 APPENDIX B: Brief Cope Inventory (Carver, 1997).

We are interested in how people respond when they confront difficult or stressful events in their lives. This questionnaire asks you to indicate ways that you are coping with your work as a police reservist. 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.		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
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

9.3 APPENDIX C: Impact of Events Scale Revised (Weiss & Marmar, 1996)

Impact of Events Scale Revised (Weiss & Marmar, 1996)

Instructions

The following is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you **during the past seven days** with respect to **the stressful life event**.

How much were you distressed or bothered by these difficulties?

	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. *Any reminder brought back feelings about it.*			2		4
2. *I had trouble staying asleep.*			2		4
3. *Other things kept making me think about it.*			2		4
4. *I felt irritable and angry.*			2		4
5. *I avoided letting myself get upset when I thought about it or was reminded of it*			2		4
6. *I thought about it when I didn't mean to.*			2		4
7. *I felt as if it hadn't happened or wasn't real.*			2		4
8. *I stayed away from reminders of it.*			2		4
9. *Pictures about it popped into my mind.*			2		4
10. *I was jumpy and easily startled.*			2		4
11. *I tried not to think about it.*			2		4
12. *I was aware that I still had a lot of feelings about it, but I didn't deal with them.*			2		4

13. My feelings about it were kind of numb.	2	:	4
14. I found myself acting or feeling as if I was back at that time.	2	:	4
15. I had trouble falling asleep.	2	:	4
16. I had strong waves of feeling about it.	2	:	4
17. I tried to remove it from my memory.	2	:	4
18. I had trouble concentrating.	2	:	4
19. Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea or a pounding heart.	2	:	4
20. I had dreams about it.	2	:	4
21. I felt watchful and on guard.	2	:	4
22. I tried not to talk about it.	2	:	4

9.4 APPENDIX D: Traumatic Stress Schedule (Norris, 1990)

Please read the statements below and answer the questions by choosing the answer of your choice. You are required to 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 because of fire?	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

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	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, _____

9.5 APPENDIX E: participant information sheet

School of Human & Community Development

University of the Witwatersrand

Private Bag 3, WITS, 2050

Tel: (011) 717 4500

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Hello,

My name is Danielle Waterston, and I am conducting research for the purposes of obtaining my Masters degree in Research Psychology at the University of the Witwatersrand. My research aims to look at the ways in which personality and coping factors influence the South African police forces' responses to trauma. I would like to invite you to participate in this study.

Participation in this research will entail completing the attached questionnaires. The questionnaires will take approximately 10 - 15 minutes to complete. Participation in this study is voluntary, and nobody will be advantaged or disadvantaged in any way for choosing to complete or not complete the questionnaire. The questionnaires will be completely anonymous, therefore no identifying information, such as your name or I.D. number will be asked for. Your completed questionnaire will not be seen by any person at any time, and will only be processed by myself. Your responses will only be looked at in relation to all other

responses. This means that when the results are written up for the final research report, only group responses and trends will be reported as opposed to individual perceptions. In addition, the findings may be written up for publication in scientific journals.

If you choose to participate in the study please read and complete the questions as carefully and honestly as possible. Please note that you can withdraw participation at any time, and you can choose to omit any questions that you may not feel comfortable completing. Upon completion of the questionnaire please place the document in the sealed box provided by the exit of the venue. Anonymity will be guaranteed and I will not be able to identify you by any means. If you do complete the questionnaire this will be considered as consent to participate in the study.

Some of the questions in the questionnaires may remind you of some difficult experiences you may have encountered in your work, and may leave you feeling bothered. If this happens, please notify me immediately, and I will assist you in securing free counselling. Alternatively, feel free to contact one of the following free counselling resources listed below:

- Lifeline (011-728-1347)
- Emthonjeni Community Psychology Clinic (011-717-4513)
- The South African Depression and Anxiety Group (SADAG) (0800 205 026)
- Centre for the Study of Violence and Reconciliation Trauma Clinic (011-403-5102)

If you are interested in the results of this study, please contact me for a summary after April 2011. I can be request via email at dani.waterston@gmail.com. Alternately my supervisor, Dr. Esther Price, can be contacted by e-mail at esther.price@wits.ac.za.

Danielle Waterston	Esther Price
Researcher	Supervisor