

Trauma levels and coping strategies of Southern Gauteng crime scene examiners exposed to traumatic crime scenes and autopsies

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Trauma levels and coping strategies of Southern Gauteng crime scene
examiners exposed to traumatic crime scenes and autopsies

by

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DECLARATION

I, Katherine Julia Thandiwe Goldman, hereby declare that the dissertation “*Trauma levels and coping strategies of Southern Gauteng crime scene examiners exposed to traumatic crime scenes and autopsies*” submitted in fulfilment for the degree MA (Criminology) is my own independent work and has not previously been submitted for a degree at another university. Additionally, all sources utilised have been indicated and acknowledged. Furthermore, I cede copyright of the study to the University of Pretoria.

Katherine Julia Thandiwe Goldman

Date: 2021/01/12



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ABSTRACT

Crime scene examiners (CSEs) spend long hours at traumatic crime scenes, and interact closely with various elements of crime scenes. The topic has only recently attracted international research interest, and in the South African context the offering is meagre. The study set out to determine the profile of Southern Gauteng CSEs; to establish the scope of their tasks and responsibilities; to ascertain their trauma levels in relation to traumatic crime scenes and autopsies; to identify the specific coping strategies they use; to determine their context-specific experiences of job-related stress and trauma; and to ascertain the measure to which they experience contentedness within their workplace and their views on both briefing and debriefing.

In pursuit of the objectives of the study, the research paradigm was rooted in positivism. Consequently, a quantitative approach was adopted and a cross-sectional design was employed. Through convenience sampling, 103 respondents were recruited from all eight Local Criminal Record Centres (LCRCs) in Southern Gauteng. The data gathering instrument was a paper-based, self-administered structured questionnaire, which included two standardised measuring instruments for trauma levels and coping strategies respectively. The Kolmogorov-Smirnov and Shapiro-Wilk tests indicated that non-parametric statistical procedures were required. Using the Mann Whitney *U* test, bivariate analysis allowed for testing the relationships between variables.

The findings demonstrate that male CSEs outnumber female CSEs by approximately 3:1. CSEs attend violent crime scenes with striking regularity, but autopsies less frequently. Significant proportions of CSEs are routinely required to both take photographs of crime scenes and compile photo albums. A sizeable number of CSEs present with concerning levels of Post-traumatic Stress Disorder (PTSD) symptomology. The coping strategy adopted by majority of respondents is acceptance. Although attended less frequently, crime scenes involving deceased children are experienced as very distressing. A large proportion of CSEs are hesitant to access debriefing services, for numerous reasons, despite feeling the need to talk to someone about their work. The trauma experienced by CSEs is unique compared with other policing units. Therefore, it is recommended that trauma interventions should be responsive to their needs. Lastly, the CSEs who have been diagnosed with mental health conditions seem to be at significant risk, and thus they should receive special attention in future interventions.

Keywords: crime scene examiner, Local Criminal Record Centres, trauma, traumatic event, crime scene, traumatic crime scene, emotional stress, coping strategy, autopsy, Post-traumatic Stress Disorder, Southern Gauteng.

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Chapter 1: Introduction and purpose

1.1 Introduction

Crime is a problem that is universal, which necessitates the deployment of police officials in order to prevent, combat, and investigate crime, participate in efforts to address the causes thereof, and bring offenders to justice (South African Police Services [SAPS], 2020b:11). South Africa is a country that is rife with crime and many of the offences that are committed within the country are of a brutal and violent nature (Lamb & Warton, 2016:9; Klopper & Bezuidenhout, 2020:224). Consequently, the police officials who are required to investigate crimes of violence are frequently exposed to sights of trauma (Koortzen, Oosthuizen & Young, 2012:2). Repetitive exposure to trauma can cause various problems for exposed individuals, ranging from physical to psychological. Trauma exposure may also lead to the use of maladaptive coping strategies in an attempt to manage the consequences of exposure to traumatic incidents (Arble et al., 2017:2). Research evidence attests that the trauma to which police officials in general are subject can wreak havoc in both their personal and professional lives (Kang & Lee, 2018:44). As proof of the aforementioned, numerous studies have demonstrated a higher prevalence of stress-related problems amongst crime scene examiners (CSEs) in comparison to the general public, including cancer, heart disease, alcoholism, drug abuse, and divorce (Anshel, 2000:376; Clark et al., 2015:930; Kang & Lee, 2018:45; Kohan & O'Connor, 2002:315; Roach, Cartwright & Sharratt, 2017:252; Violanti et al., 2013:6).

Extensive international research has been conducted on the trauma that police officials and CSEs experience, with studies originating in Korea (Kang & Lee, 2018; Yang-Sook et al., 2013), the Netherlands (Van der Meer et al., 2017), the United States of America (USA) (Chopko & Swartz, 2012; Clark et al., 2015; Hartley et al., 2013; Jetelina et al., 2020; Soomro & Yanos, 2019; Violanti et al., 2018), the United Kingdom (UK) (Brewin et al., 2020), Germany (Wolter et al., 2018), India (Singh et al., 2019), Greece (Galanis et al., 2019) and Norway (Fyhn, Fjell & Johnsen, 2016). In South Africa the topic has also attracted research attention, with studies mostly focussing on police officials, but less so on CSEs (Boshoff & Strydom 2015; Boshoff & Strydom, 2017; Elntib & Armstrong, 2014; Gumani, 2017; Gumani, Fourie & Terre Blanche, 2013a; Gumani et al., 2013b; Jorgensen & Rothmann, 2008; Kittur, 2017; Koortzen et al., 2012; Paulsen, 2008; Rothmann & Jorgensen, 2007; Steyn, 2009; Subramaney et al., 2012; Van den Heever, 2013; Van Staden, 2019; Wassermann, Meiring & Becker, 2019; Young, 2004).

The cited studies illustrate a worldwide plethora of research interest in the topic of police trauma and stress. International studies have focussed on trauma and stress in wider policing contexts

as well as CSE units. However, South African researchers have not directed a great deal of research interest at CSEs in particular. With regards to more general police trauma research in the South African context, Paulsen (2008) conducted a study utilising members of the South African Police Services (SAPS) in Cape Town, while Steyn (2009) used general functional police officials in Limpopo. Subramaney et al. (2012) targeted members of the Metropolitan Police Services in Gauteng, while Elntib and Armstrong's research (2014) focussed on members of the Metropolitan Police Services. A longitudinal study involving SAPS members, starting with police recruits, then involving police trainees, and ending with fully deployed police officials, was conducted by Wassermann et al. (2019), while Van Staden (2019) conducted research with Metropolitan police members in Gauteng.

There have been a few studies in South Africa that focussed on CSEs or groups of SAPS officials who perform more specialised duties than foot patrol. For example, research conducted by Young (2004) and Koortzen et al. (2012) focus on police officials in the Special Task Force, Highway Patrol Unit, and the Crime Combatting Unit. Jorgensen and Rothmann (2007 and 2008) conducted studies with the employees of the Local Criminal Record Centre (LCRC) of the North West SAPS, some of whom included CSEs (8.1% of the sample), and research by Van den Heever (2013) involved participants from the National Intervention Unit. Boshoff and Strydom (2015) centred their attention on specialist policing units in the North West, which included CSEs amongst a number of other units, however, a qualitative research approach was employed. Further, an unpublished study, which resulted in a technical report compiled for SAPS, was conducted with CSEs in Tshwane as part of Criminology Honours practical training in research at the Department of Social Work and Criminology, University of Pretoria (Steyn & Klopper, 2015). The most recent South African study which shone the spotlight on CSEs exclusively, is a mixed methods doctoral study by Kittur (2017), wherein the focus is placed on personality types and resilience. Of significance to the focus of the present study, the researcher identified protective factors, which shield resilient CSEs against the trauma associated with their work context, as well as risk factors, which render non-resilient CSEs vulnerable to traumatic experiences (Kittur, 2017:261-266).

The preceding discussion bears testimony to the fact that, although various local studies have focussed on police stress and trauma, there are few that centre on CSEs, and within that small group there are even fewer who then direct attention to the trauma of CSEs with regards to the types of scenes they visit, how they perceive those scenes, and what coping strategies they utilise. Therefore, there remains a distinct knowledge gap in the South African CSE setting with

regards to the trauma they experience, as well as the coping strategies they adopt to deal with their work experiences.

1.2 Conceptualisation of key concepts

Owing to the prominence they shall carry throughout the research report, the concepts crime scene examiners (CSEs), Local Criminal Record Centre (LCRC), trauma, traumatic event, crime scene, traumatic crime scene, emotional stress, coping strategy, autopsy, Post-Traumatic Stress Disorder (PTSD), and Southern Gauteng require conceptualisation from the onset.

Crime scene examiners: CSEs are members employed by the SAPS in the Forensic Services Division (SAPS, 2015a:2). CSEs are required to be present at crime scenes, where their duties include the forensic examination and processing of crime scenes in order for physical evidence to be collected (SAPS, 2015a:3). In addition, CSEs are often required to take photographs of crime scenes and to compile photo albums (SAPS, 2015a:10) and attend autopsies (SAPS, 2014:2). The CSEs are responsible for any items gathered from crime scenes and are tasked with maintaining an exhibit log, as well as ensuring that the investigating officer is supplied a copy thereof. Additionally, CSEs are required to ensure that the CSE report is fully completed and submitted to the crime scene commander, who is in attendance at major crime scenes. A CSE must also take responsibility for allocating tasks to be performed at a later stage to relevant members of the SAPS. Making decisions regarding procedures to be followed with regards to evidence gathered from crime scenes is also the duty of a CSE, as well as procuring a copy of the access log, in order to decide who should supply fingerprints and other samples to be utilised for elimination purposes (SAPS, 2015a:18). In addition to the above, CSEs are also required to present evidence in court (SAPS, 2017).

Local Criminal Record Centres: Within South Africa, LCRCs operate with the intention of managing criminal records and applying techniques to recover physical information from crime scenes (Rothmann & Jorgensen, 2007:74). The processing of crime scenes is undertaken by CSEs who work

at the LCRCs. The LCRCs dispatch crime scene information to the forensic science laboratories (FSLs) for analysis and assessment (Klopper, 2020:623). In Southern Gauteng there are eight LCRCs, each of which provides the aforementioned services in the area in which they are located. They cover the areas of Krugersdorp, Johannesburg Central, Protea Glen, Sandton, Kempton Park, Germiston, Springs, and Vereeniging. (See conceptualisation of Southern Gauteng and Map 1).

Trauma:

The word “trauma” originates from the Greek word for “wound”. Extending into the late nineteenth century, the word “trauma” was used to describe solely physical wounds, which is not a definition that is applicable to the current study (Kang & Lee, 2018:35; Merriman-Khanna, 2018:190). However, over the years the word “trauma” has evolved to refer to emotional suffering, in addition to physical wounds. Trauma, specific to the context of the study, is therefore described as “an emotional or psychological shock that may produce disordered feelings or behaviour” (Taber’s Cyclopedic Medical Dictionary, 2009:2366). Additional definitions are “a physical or emotional injury” (Webster’s New World Medical Dictionary, 2008:429), “circumstances experienced by an individual as physically or emotionally harmful or life threatening” (Substance Abuse and Mental Health Services Administration, 2014a:7) and “any event which inflicts physical damage on the body or severe shock on the mind, or both” (The Cambridge Dictionary of Psychology, 2009:552). Trauma within the present study refers to the emotional strain or shock that CSEs suffer as a result of their daily work experiences, and which may result in disrupted feelings or behaviour such as maladaptive coping strategies, as well as detrimental physical and mental health outcomes.

Traumatic event:

A traumatic event is described as an event that falls outside of the everyday experience of an individual and is one that would be distressing to almost anyone (O’Donnell et al., 2017:209; Topcu, Köroğlu & Gençöz, 2018:68; Van Wijk, 2006:77). Examples of

common traumatic events are catastrophic life events, such as being affected by a natural disaster, going through armed combat situations, and falling victim to a sexual assault (The Encyclopedia of Psychological Trauma, 2008:657). A traumatic event may be further defined as an event that overwhelms a person's existing defence mechanisms against anxiety (Koortzen et al., 2012:3). Often, the work that CSEs perform falls beyond the scope of ordinary experiences that most people endure. Traumatic events in the study comprise occupational responsibilities that CSEs carry, which cause them to feel distress and anxiety, such as working at scenes of violence and/or attending autopsies.

Crime scene:

A crime scene, or the scene of incident, is broadly recognised as the location of the aftermath of an occurrence that is considered an offence in legal terms (Inman & Rudin, 2001:197; Wang et al., 2018:244). The crime scene includes the inside perimeter of the scene where the event took place and the outside perimeter, which includes entry and exit points. Routes travelled to and from the scene, sites further away from the perimeter such as those at which stolen property is disposed of, and locations where planning takes place also comprise the crime scene. Crime scenes can be outdoors or indoors, as well as in vehicles. Bodies of victims are also seen as crime scenes (Lochner & Zinn, 2015:33). Crime scenes are additionally defined as the site where forensic information pertinent to a crime may be gathered, which can lead to the detection or explanation of crime (Borah, 2020:1; Prinsloo, 1996:19). At crime scenes, CSEs are expected to recognise, collect, and preserve crime scene information in order to assist with solving the crime (SAPS, 2017). When a crime scene is classified based on location, scenes are divided into primary crime scenes and secondary crime scenes. Primary crime scenes are the location of the first criminal activity, whereas secondary crime scenes are all subsequent locations involved (James, Nordby & Bell, 2014:42). Crime scenes may additionally be divided into macroscopic and microscopic crime scenes, whereby they are classified based on

their size. A building would be viewed as a macroscopic scene, with the rooms inside being classified as multiple microscopic scenes (Lochner & Zinn, 2015:33). In the study, a crime scene encompasses all locales that CSEs are required to visit and process in order for the physical information pertaining to the crime to be collected and recorded through note-taking, photography, and videography, including both primary and secondary locations.

Traumatic crime scene: Based on the aforementioned conceptualisations of “crime scene” and “traumatic event”, a traumatic crime scene is operationalised for the present study as a scene at which CSEs work, which causes them trauma or was linked to a traumatic event. Some crime scenes in and of themselves are not necessarily traumatic to CSEs, such as a non-violent burglary. Therefore, traumatic crime scenes refer to those in which violence had occurred, which can potentially result in disrupted feelings or behaviour amongst CSEs, such as maladaptive coping strategies as well as detrimental physical and mental health outcomes.

Emotional stress: Emotional stress has typically been described as “a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (Lazarus & Folkman, 1984:19). Stress is additionally an emotional experience that is negative, and is formed after exposure to conditions that are threatening, and signify loss or harm to the individual or to those valued by the individual (The Encyclopedia of Psychological Trauma, 2008:627). An additional definition is that emotional stress is a reaction to negative stimuli (Dilevski, Paterson & van Golde, 2020:425). Emotional stress may exert negative effects on a person that can be physical, psychological, or both (Baron, Branscombe & Byrne, 2009:436). In the present study emotional stress refers to the negative emotional and physical impact of traumatic crime scenes on CSEs to the extent that their ability to cope constructively is surpassed.

Coping strategy:

Coping strategies are behaviours individuals employ in response to trauma, and which assist them to adapt to the trauma they experienced. Coping is a term that is used to describe the recovery process that is associated with trauma, whereas coping strategies are more specific mechanisms through which a person controls their environmental and social contexts (Huang, van der Veen & Song, 2018:928; The Encyclopedia of Psychological Trauma, 2008:159). Coping strategies may include active coping, alcohol and substance use, seeking emotional support, denial, behavioural disengagement, acceptance, or seeking tangible support, amongst varying strategies (The Encyclopedia of Psychological Trauma, 2008:161). Coping strategies may be used to avoid or approach the specific stressor and are an indication of the manner in which individuals respond to stressors or potential stressors (Louw & Viviers, 2010:3). Coping strategies are developed in order to “deal with both internal and external stress and to expend effort in the most useful ways while postponing some tasks in order to accomplish the most pressing first” (The Cambridge Dictionary of Psychology, 2009:134). Within the study, coping strategies will refer to both the adaptive and maladaptive range of actions, or inactions, that CSEs employ as a direct reaction to the trauma they experience in the workplace.

Autopsy:

An autopsy is also known as a post-mortem examination, or a necropsy (Webster’s New World Medical Dictionary, 2008:37). Post mortem is Latin, meaning “after death” (Nolo’s Plain-English Law Dictionary, 2009:325). An autopsy is almost universally defined as a “post-mortem examination of the organs and tissues of a body to determine the cause of death or pathological conditions” (Scantling et al., 2017:140; Taber’s Cyclopedic Medical Dictionary, 2009:222). An autopsy is also defined as “a physician’s examination of the body of a deceased person to determine the cause of death” (Nolo’s Plain-English Law Dictionary, 2009:37). CSEs are often required to attend autopsies as part of their routine tasks and responsibilities. In fact, attendance of autopsies is considered a vital resource at the

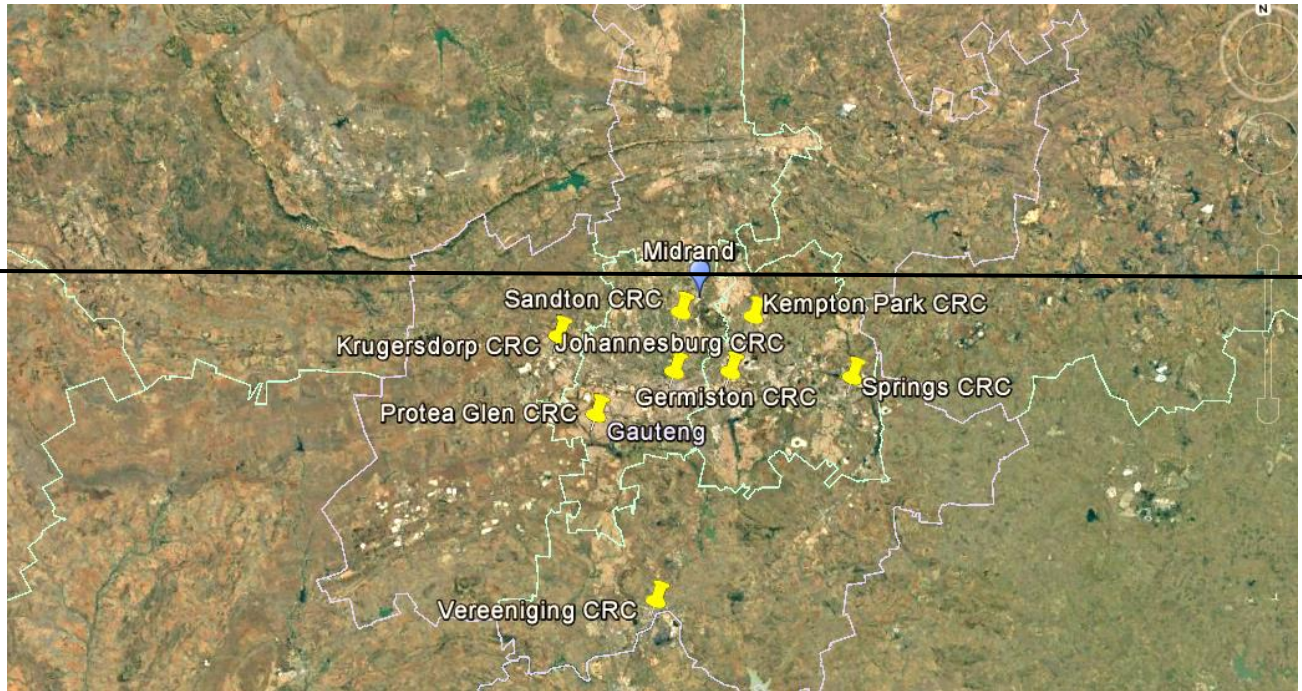
disposal of CSEs, as they provide first-hand information about both the cause of death and “the nature of injuries” to the deceased (SAPS, 2014:2). In the study, an autopsy comprises a post-mortem examination of a body by a pathologist in order to draw conclusions regarding the cause of death and to provide details regarding the injuries to the body.

Post-Traumatic Stress
Disorder:

PTSD is a psychiatric disorder characterised by exposure to a traumatic stressor. The exposure subsequently leads to re-experiencing the trauma, numbing, and avoidance, as well as increased vigilance and arousal (Levin, Kleinman, & Adler, 2014:146). CSEs are often exposed to traumatic stressors, both through working with victims of trauma who describe their direct experiences, and through being required to process scenes of trauma (MacEachern et al., 2019:166). PTSD within the study is based on the Diagnostic and Statistical Manual (DSM) definition, which has varying criteria that need to be met in order for diagnosis to be made. PTSD broadly consists of six criterion and three symptom clusters, namely re-experiencing, avoidance, and arousal (DSM-IV, 1994:427-429). Further detail will be provided in the literature review. Motivation is presented later in the research report for using the DSM-IV as opposed to the DSM-V definition.

Southern Gauteng:

Southern Gauteng is used in the study as a collective name to demarcate the utilised research sites geographically. The research sites include all the LCRCs that fall outside the boundaries of the City of Tshwane. When a horizontal line is drawn through Midrand, the Gauteng Province is divided into two broad geographical areas, namely Northern Gauteng and Southern Gauteng (see Map 1). The following eight LCRCs are located in the Southern Gauteng region and have all been included as research sites: Germiston, Johannesburg, Kempton Park, Krugersdorp, Protea Glen, Sandton, Springs and Vereeniging.



Map 1: Gauteng province

(Source: Google maps)

1.3 Origin and rationale for the study

The researcher's interest in the effect of traumatic crime scenes on CSEs was sparked during her Honours year in Criminology. The Department of Social Work and Criminology at the University of Pretoria was approached in 2015 by the then Section Head of the Decentralised Criminal Record Centre of the Division of Forensic Services in Gauteng, Brigadier John Lambert, to undertake research in order to determine the effect of traumatic crime scenes on CSEs. It was additionally requested that the SAPS be provided with recommendations, based on the empirical research results, to improve the support services the SAPS offer to CSEs.

The Criminology Honours class of 2015 was tasked with carrying out the study as part of their practical research training in the KRM781 module. The 2015 study was of great importance, because it was the first time that CSEs were the exclusive focus of research in South Africa regarding trauma, stress, and coping strategies. The study was conducted in Tshwane, covering the LCRCs of Ga-Rankuwa, Lyttleton, Pretoria Central, and Pretoria North. The key findings were that about a quarter of respondents has been diagnosed with a chronic health condition, and a fifth with a mental health condition. Almost half of the respondents worked at crime scenes five or more times per week and three-quarters were regularly attending autopsies several times per

month. The crime scenes at which they worked were sometimes violent in nature, and the majority of respondents found such scenes to be stressful. In addition, for some of the respondents their levels of stress were elevated upon arriving at, and leaving a crime scene. The most traumatic scenes were found to involve children, teenagers and fetuses. The female CSEs in particular found scenes involving fetuses significantly more traumatic than the male CSEs. Moreover, scenes with decomposed, disfigured, and dismembered bodies were found to be more traumatic than those with relatively undamaged bodies (Steyn & Klopper, 2015:13).

Despite the aforementioned, it was found that the majority of respondents rated their work satisfaction as good/very good, and few considered resignation as an option. The respondents were asked for feedback on symptoms of PTSD that they were experiencing. The study did not intend to diagnose any of the CSEs with PTSD, but the results bore testimony that many of them were experiencing PTSD symptoms. Feedback about seeking psychological support was requested. The finding was that more than two-thirds of CSEs felt the need to speak to someone about their work, and of those, almost one in three did. Briefing and debriefing were viewed in a positive light, but were found not to be readily accessible to the CSEs. Similarly, training to cope with their work was viewed as beneficial, but few respondents had received specific training in coping strategies. Many of the respondents indicated that they used maladaptive coping strategies and the services of Employee Health and Wellness (EHW) were rarely utilised (Steyn & Klopper, 2015:14).

Several recommendations emanated from the 2015 study, including increasing the availability of briefing and debriefing, and limiting female CSEs' exposure to crime scenes involving fetuses. A further suggestion was that CSEs who seem to cope better with violent crime scenes be sent to process them, whilst still monitoring their emotional and mental health. Lastly, it was proposed that training on effective and healthy coping strategies should be provided to all CSEs, and that suspected cases of PTSD should be referred for diagnosis and intervention without delay (Steyn & Klopper, 2015:15).

The 2015 study was therefore valuable in terms of exploring the effect of traumatic crime scenes on CSEs in Northern Gauteng and paved the way for future research. Nevertheless, it was neither broad enough, nor as comprehensive as it could ideally have been. The shortfalls included that due to time constraints, a pilot study could not be implemented. Consequently, it was not detected that two of the questions in the questionnaire was problematic. The questions regarding how often CSEs work at crime scenes in general and at crime scenes involving violent death both omitted an option for less than one to two times per week. Due to the fact that a less frequent option was

not provided, the statistics for the questions were assumed to be inaccurate, because it was unknown how many CSEs would have selected a less frequent option. However, the questions were only two of many and did not have a significant effect on the overall results, although they are still noted as a limitation.

The 2015 study utilised the Brief COPE (Coping Orientation to Problems Experienced) Inventory, which was also utilised in the current study as it is an effective measure of coping strategies. The Trauma Screening Questionnaire (TSQ) was utilised in the 2015 study to measure symptoms of PTSD in the respondents, however the IES-R (Impact of Event Scale – Revised) was used in the current study. The TSQ consisted of ten questions related to PTSD symptoms. In the present study, the IES-R was deemed to be a more in-depth scale to utilise as a screening tool to provide an indication of whether the CSEs could potentially be diagnosed with PTSD. The IES-R is a 22-item scale that uses repetitive questions, but worded differently, in order to validate that respondents are answering questions consistently (The Impact of Event Scale-Revised (IES-R), 2018).

The 2015 study was additionally limited due to the LCRCs being visited only once. This meant that CSEs who were not present during the early morning parade on the day that the LCRC was visited, were not provided an opportunity to take part in the study. The current study involved repeated visits to LCRCs for respondent recruitment in order to give as many CSEs as possible the opportunity to participate in the study. The consequence was that, by the end of the data gathering period (over the course of approximately two months), the pool of CSEs willing to participate in the research had been depleted. In addition, anonymity was advanced in the current study due to the fact that CSEs were afforded the opportunity to complete self-administered questionnaires, and to submit them into strategically placed boxes at the LCRCs at a time which suited them best. Although tracing specific questionnaires back to individual respondents in the 2015 study would have been impossible, the questionnaires were group-administered during the early morning parade at which time colleagues would have obviously noticed who chose to participate, thus compromising complete anonymity.

Both national and international research has consistently shown that police work entails high levels of stress and risk. International studies indicate that police officials suffer disproportionately from health problems that are related to stress, including alcoholism, heart disease and gastrointestinal disorders. Higher rates of marital and family problems, as well as suicide and emotional disorders are linked to policing too. In addition, police hostility and aggression may also be related to occupational stress (Queirós, Kaiseler & Da Silva, 2013:122). Psychological

symptoms that have been found to be exacerbated by exposure to trauma are irritability, anger, unpleasant memories, reduction in empathy, insomnia, anxiety, and feeling constantly on guard (Warren, 2015:20). The higher the duration, frequency, and severity of exposure to trauma, the poorer are the mental health outcomes, including maladaptive information processing and coping styles (Warren, 2015:44).

Stress additionally takes its toll on the policing profession in general through the loss of efficiency in the officials who are stressed (Kenwright, 2008:20; Papazoglou & Tuttle, 2018:1). Loss in efficiency in police organisations due to stress has been evidenced to result in public complaints; lawsuits that arise from police malpractice; workmen compensation claims; disability retirements; sick leave; absenteeism; low morale; poor job satisfaction; as well as burnout among managers and supervisors, whom create even more stress in their subordinates, commanding officers and peers (Kim et al., 2016:168; Sewell, 1984:515; Young, 2004:165).

Although there are several occupations that deal with death, such as those in the medical field, police encounters with death often occur in circumstances of trauma and violence (Kittur, 2017:15). Police workers are often exposed to the deaths of citizens and colleagues, and even sometimes have to take another person's life in the line of duty. Each encounter with death is also a reminder of their own mortality and entails some degree of psychological trauma. Police work is often overshadowed by a sense of danger as there is a continual reminder that their own death may occur whilst on duty (Arble et al., 2017:3; Henry, 2004:3). Local studies which indicate elevated levels of suicide in comparison to the general public highlight the stress that law enforcement officials experience (Kittur, 2017:12).

Whilst police are internationally exposed to violent crime, when compared to other countries in which similar research has taken place, South Africa has a crime rate, and particularly a violent crime rate, that is quite high. In 2017 the murder rate in South Africa was 28.6 homicides per 100 000 people. In stark contrast, in the same year, the homicide rate in the USA was 6.1 per 100 000, the United Kingdom 0.5 per 100 000, Australia 1.4 per 100 000, India 3.0 per 100 000, China 1.0 per 100 000, Russia 14.8 homicides per 100 000, Canada 1.5 per 100 000, and New Zealand 1.3 per 100 000 (Roser & Ritchie, 2019). In the 2019/20 SAPS reporting period, the murder rate was the highest it had been in the past ten years. With an average of 58.4 murders per day, South Africa's murder rate had skyrocketed to slightly more than 36 per 100 000 of the population (SAPS, 2020a:5). It is therefore evident that South African police officials are likely exposed to more scenes of violence than police officials in numerous other countries, which could

cause trauma. Whilst international research on CSE trauma is useful, research within the South African context is required, due to the elevated levels of violent crime exposure of CSEs.

Within South Africa, Tshwane in particular was found to have the lowest murder rate of all metropolitans in South Africa for the year 2017/2018 (Urban Safety Reference Group, 2019:23), with a rate of 17 per 100 000 (Urban Safety Reference Group, 2019:66), whereas the City of Johannesburg recorded 31 homicides per 100 000 (Urban Safety Reference Group, 2019:58). The current research is therefore conducted in an area with almost double the murder rate of the area in which the 2015 study took place, which indicates that the CSEs involved are most likely exposed to more traumatic scenes than those of the 2015 study. In particular, Gauteng is faced with a history of rising violent crime rates, placing the Gauteng CSEs at a higher risk of trauma (SAPS, 2019).

Research centred on SAPS officials has previously indicated that they present with decreased levels of job performance and job satisfaction (Kittur, 2017:12; Steyn, 2009:147; Swanepoel & Pienaar, 2004:17). SAPS has also been found to have high turnover of personnel, high suicide rates amongst employees, as well as a high prevalence of cases of medical boarding (Young, 2004:23). Additionally, research has historically indicated that individuals who have been traumatised before, are at an increased risk of being traumatised again (Brooks, Rubin & Greenberg, 2019:2; Young, 2004:54).

There is a lack of recent research into the trauma that CSEs in the SAPS experience and the coping strategies they employ. One of the most recent studies conducted in South Africa in regard to trauma, utilised forensic pathology officers (FPOs) as a study population. The study found that the majority of FPOs, who work in similar environments and under comparable circumstances to CSEs, experienced trauma in their work context (Mwelase, 2018:82). There were numerous variables that were found to be of statistical significance in the study. For example, the death of children is experienced to be more traumatic by those who are parents than those who are not, and that the use of EHW services assists in supporting the study participants in their workplace (Mwelase, 2018:83). FPOs are a similar study population to CSEs, however due to the fact that they do not perform the exact same occupational work, studies involving FPOs cannot be directly applied to CSEs. It is therefore important to conduct research with CSEs on the abovementioned factors which have been found to be significant for FPOs.

It has additionally been found in alternate studies that there are several factors that assist in limiting the psychological impact of exposure to death and trauma, in particular, the quality and

type of available social supports, training and preparation provided for the work, the sympathy and support of superiors, and the effectiveness of distancing oneself from the trauma, such as using humour (Henry, 2004:25; Nolen-Hoeksema, 2011:121; Young, 2004:8). There is no recent research regarding the trauma levels and coping strategies of the SAPS CSEs, therefore more extensive research can fill this lacuna of information, as well as inform the nature and scope of training and assistance offered to CSEs. Shedding light on the effect that traumatic scenes of death have on CSEs in the South African context and the coping strategies they adopt are consequently both prudent and timeous.

Therefore, the research question for the present study was as follows: What are the trauma levels and coping strategies of Southern Gauteng CSEs who are exposed to traumatic crime scenes and autopsies?

1.4 Aim and objectives

The aim of the study was to determine the trauma levels and coping strategies of Southern Gauteng CSEs who are exposed to traumatic crime scenes and autopsies. In pursuit of the aim, the objectives were as follows:

- To determine the profile of Southern Gauteng CSEs.
- To establish the scope of the tasks and responsibilities of Southern Gauteng CSEs.
- To ascertain the trauma levels of Southern Gauteng CSEs in relation to traumatic crime scenes and autopsies.
- To discover the coping strategies of Southern Gauteng CSEs to traumatic crime scenes and autopsies.
- To determine the context-specific experiences of job-related stress and trauma among Southern Gauteng CSEs.
- To ascertain the measure to which Southern Gauteng CSEs experience contentedness within their workplace and their views on both briefing and debriefing.

1.5 Value of the research

In 2016 the SAPS released a research agenda for 2016-2020. The research agenda was published with the intention to guide research within the SAPS for the five-year period stated. Attention was brought to the fact that well-coordinated external and internal policing research, with the objective of supporting various policing environments and capabilities within the SAPS, was at the time of publication quite limited. Various academic research organisations and

institutions have been conducting research in the area of policing, however the resultant studies have tended to be specific to the interests of these organisations and institutions, as opposed to being aligned with the SAPS goals. The research agenda was designed to support the current and emerging priorities of the SAPS, and to identify areas that require new scientific knowledge (SAPS, 2016:8).

The research agenda is based on four pillars, which represent research focus areas, namely enabling resources for policing, enabling assets for policing, better service delivery, and building ideal policing systems (SAPS, 2016:13). The present study reconciles with three priorities identified in pillar one, namely enabling resources for policing, which comprises five research priority areas. More specifically, the objectives of the study are aligned with priority areas one, three and five. Priority area one highlights the necessity to understand the causes of the increase in service terminations in the SAPS. The study sheds light on experiences of trauma among members of a specialised policing unit (CSEs), which has been demonstrated to cause medical boarding as well as discontentedness in the workplace, leading to resignations. Research priority area three is focussed on improving the retention of the services of SAPS employees. The development of strategies that will enhance sustainability and the retention of the services of members are flagged as requiring attention (SAPS, 2016:16). The study sheds light on issues that may contribute towards terminations and resignations, thereby allowing for the implementation of plans to assist in the retention of CSEs. Priority area five focusses on the need to evaluate EHW services and its accessibility. Research in this priority area is requested to, amongst others, assess the impact of EHW's programmes on employees, determine ways to improve the relationship between employees and EHW's practitioners, and improve the quality of wellness services rendered to employees (SAPS, 2016:17). The findings of the study offer insight into CSEs' contentedness in the workplace as well as their views on briefing and debriefing services offered by EHW.

Therefore, the research is of value as it addresses a gap in information that is experienced in the policing context. It has been ascertained that many police services deal with issues regarding the trauma that their employees experience in the course of their work, however, not much research addresses the issues. What little research there is, has been conducted in other countries, and whilst such research is useful, South Africa is a unique country with unique problems related to the violent crime experienced by its citizens. A lack of research within the South African context consequently leads to little, to no solutions, for the problem at hand. The results of the research could potentially assist in the conceptualisation of intervention strategies that can be implemented

in order to assist CSEs deal with the traumatic types of crime scenes that they must often attend. If the CSEs are supported in their work in such a manner that they are able to cope with the scenes that they must attend in an adaptive manner, it can lead to a more effective CSE workforce. Providing the SAPS with evidence-based recommendations to support their employees, helps the broader public in the long run too. For Criminology, such research is additionally useful as it adds knowledge to the field. An understanding of how CSEs cope in their work is a relevant and useful topic to add to the field of Criminology in general as some Criminology graduates find employment as CSEs.

1.6 Synopsis of research design and methods

The research design that was employed in the study was a survey. The main goal of a survey design is to accumulate information about a large study population through the use of a sample of the population (Creswell & Hirose, 2019:3). More specifically, a cross-sectional survey was selected as the most appropriate design. Surveys that are cross-sectional allow the researcher to describe a single entity in its entirety within a specific time frame (Dantzker & Hunter, 2012:85). Often-mentioned advantages of cross-sectional surveys are that they are not costly to carry out and are not time-consuming. As the study surveyed CSEs across the whole of the Southern Gauteng region, a research design aimed at saving time and costs was deemed appropriate.

The research approach that was dictated by the research question was quantitative. As the design being used was a survey and a relatively large sample of CSEs was involved in the survey, quantitative methods were the most expedient, as the data needed to be tabulated and analysed. Convenience sampling, a non-probability sampling design, was utilised. In convenience sampling, members of the target population who meet practical criteria are chosen to participate in a study. Such practical criteria include availability and proximity (Etikan, Musa & Alkassim, 2016:2). A total of 103 CSEs were recruited for participation in the study at the eight LCRCs in Southern Gauteng. The research instrument was a structured questionnaire and consisted of the Brief COPE Inventory and the IES-R, amongst other questions.

The data collected was analysed by coding and was computerised. Answers within the questionnaire were assigned numerical codes and entered into Microsoft Excel. The codes from Excel were subsequently transported into the Statistical Package for Social Sciences programme, which is used for data analysis (McCormick, Salcedo & Poh, 2015:12). The quality of the data was ensured through demonstrating validity and reliability. Validity refers to the extent to which the empirical measure reflects accurately the variable that it claims to be measuring (Andrade,

2018:498), while reliability refers to the consistency of a measurement (Tavakol & Dennick, 2011:53).

1.7 Structure and layout of report

The research report consists of six chapters. In **Chapter 1 (Background and purpose)** the reader was introduced to the study and the purpose thereof. The key concepts were operationalised, the origin and rationale of the study were described, and the aim and objectives were stated. Further, the chapter reflected on the value of the research and concluded with a synopsis of the research methods used in the study.

Chapter 2 (Literature review) will comprise an examination of extant research evidence in order to understand trauma and coping strategies comprehensively. Aspects that will be reviewed are, a historical synopsis of the clinical recognition of trauma and PTSD; the diagnostic criteria for PTSD and trauma symptomology in the DSM IV; mental health, trauma, and PTSD in trauma-inducing work contexts; factors linked to trauma responses; coping with trauma in general; EHW; as well as briefing and debriefing in policing contexts. Additionally, research evidence pertaining to police and CSE trauma exposure, both internationally and locally, will be inspected.

Chapter 3 (Theoretical framework) presents the theoretical framework that is applicable to the study. Lazarus and Folkman's model of stress and coping, Agnew's general strain theory, Greenberg, Solomon and Pyszczynski's terror management theory, and Pyszczynski and Kesebir's anxiety buffer disruption theory, are explained.

In **Chapter 4 (Methodology)** the researcher will explain the research methods and procedures used in the study in terms of the research paradigm, the approach taken, the purpose of the research, the type of research and the research design. The study population, sampling, data gathering methods and instruments used are further expounded upon. Data analysis and presentation will also be discussed. The measurement quality, pilot study, ethical considerations, limitations of the study and challenges encountered during the execution of the study, will also be stated in the chapter.

Chapter 5 (Empirical results) accommodates the empirical results, wherein the data will be presented through statistical graphs and tables. The purpose of the chapter is to draw the reader's attention to key findings within the data set.

Chapter 6 (Discussion and recommendations) will offer a discussion and interpretation of the results. The chapter serves to compare evidence and arguments from extant research findings

and the theoretical framework, with the current study's results. Furthermore, any inconsistencies will be discussed accordingly and recommendations will be made with regards to policy and practise.

The reference list will be provided next and the appendixes will follow thereafter.

1.8 Summary

Trauma in the workplace has gained international recognition as an important health problem among police officials in general. However, CSEs, compared to first responder police officials, spend more time at traumatic crime scenes and interact closely with various elements of crime scenes. The topic has only recently attracted international research attention. In the South African context only two studies have focussed on CSEs, with only one directing attention toward trauma and coping strategies among Tshwane CSEs specifically. The chapter served as a general introduction to the study. The purpose of the study was delineated, and the need for the research to be conducted, were explained by briefly reviewing both international and local studies. Chapter 2 provides an in-depth appraisal of literature that is pertinent to the study.

Chapter 2: Literature review

2.1 Introduction

The purpose of a literature review is to abstract, evaluate, critically review, synthesise and compare various sources such as scholarly articles, books, research reports, technical reports, and conference proceedings, which are relevant to a particular research focus area, in order to gain an in-depth understanding of past and current research in relation to the identified research problem (Arshed & Danson, 2015:33; Greenfield, 2002:1; Nakano & Muniz, 2018:4). Therefore, the literature review will be guided by the aim and objectives of the study. In order to gain a comprehensive understanding of the trauma levels and coping strategies of Southern Gauteng CSEs who are exposed to traumatic crime scenes and autopsies, a historical synopsis of the clinical recognition of trauma and PTSD will be provided, as well as an overview of the diagnostic criteria for PTSD and trauma symptomology in the DSM IV. Mental health, trauma, and PTSD in trauma-inducing work contexts will be outlined next, with special attention being paid to police work. Subsequently, factors linked to trauma responses are addressed and supported with extant research evidence in policing contexts where available, particularly referencing social support, gender, career length, alcohol use, and smoking. Coping with trauma in general, EHW, as well as briefing and debriefing in policing contexts are also surveyed. The aforementioned section is followed by a review of research evidence pertaining to police trauma exposure both internationally and locally. The chapter concludes with an inspection of international and local research evidence concerning CSE trauma exposure in particular. Local CSE research evidence is presented against the backdrop of the South African violent crime rate, as well as the tasks and responsibilities of CSEs in the local context.

A number of occupations in the world are considered to be high-risk professions due to the nature of the work that is performed on a daily basis. Firefighters, police officials, paramedics, military combatants, frontline healthcare workers (especially at present during the COVID-19 pandemic), and police forensic investigators, also known as CSEs in the South African context, are examples of individuals who work in trauma-inducing contexts (Chew et al., 2020:560; Kim et al., 2019:2; Michael, Streb & Häller, 2016:58; Nho & Kim, 2017:40; Solomon & Mikulinver, 2006:662; Violanti et al., 2013:7). Some of the most trauma-inducing work is conducted by the police who, in the course of their daily duties, experience events that are of a traumatic nature. In fact, policing has been recognised as one of the most stressful occupations worldwide due to the trauma to which police officials are exposed in various contexts (Purba & Demou, 2019:1; Warren, 2015:45). In

the policing profession, CSEs are a specialised occupational group that are frequently and repeatedly exposed to traumatic events in their workplace (Nho & Kim, 2017:40).

While workers in many other professions, such as bank tellers or correctional officials, face the risk of potentially encountering trauma, such professions in general tend to experience a lower number of traumatic incidents. In addition, incidents that do result in trauma tend to be confined to the parameters of one type of incident, which is not the case with police work (Brooks et al., 2019:2; Huddleston, Paton & Stephens, 2007:199). While other occupations also work directly with deceased persons who had died violent deaths, such as forensic pathology workers, police officials are not only required to face the death of others, but their own mortality, as they face life-threatening circumstances which may require physical or deadly force to save their own lives and the lives of others (Arble et al., 2017:3; Henry, 2004:9; Kittur, 2017:15; Mwelase, 2018:1). In addition, CSEs are often exposed to circumstances of death that are far more fear-filled and painful than the death encounters most people would deal with in their occupational environments (Yang-Sook et al., 2013:139).

2.2 Clinical recognition of trauma and PTSD

What follows is a synopsis of the historical development of the clinical recognition of trauma and PTSD, as well as the diagnostic criteria for PTSD and trauma symptomology.

2.2.1 Historical development of the clinical recognition of trauma

Trauma in humans was first academically described in the 1860s by physicians Herbert Page and John Erichsen, who focussed on railway accidents. Incidents of concussion where there were no physical injuries had been occurring since the start of the Industrial Age in the 1760s, however the rise in the use of steam-powered rail transportation since the 1830s increased the regularity of reports (Gasquoine, 2020:236). With the rise in railway accidents came the recognition of the role that mental factors played in the aftermath of an accident. From a medico-legal perspective, victims were seeking compensation for their injuries sustained during railway accidents and were claiming for psychogenic illnesses, which are physical illnesses believed to have arisen from mental or emotional stressors. Numerous financial claims of this nature were settled, which drew further attention to psychological trauma, extending the concept of trauma from solely physical to a psychological ailment (Gasquoine, 2020:240).

Sigmund Freud, known as the father of psychoanalysis, initially connected psychiatric history with trauma around 1895, noting that sexually molested women often manifested symptoms of

“hysteria” related to the trauma that they had endured (Zepf & Zepf, 2008:332). However, Freud stated that it was not realistic that numerous adults were sexually abusing children and thus he claimed that the reaction could be ascribed to fantasies that the women held, not to their actual reality (Rees & Smith, 2007:268). Freud also viewed a person’s birth as their first exposure to trauma and anxiety, and as an exposure for which the individual was not equipped (Zepf & Zepf, 2008:333). In 1926, well after World War I, Freud acknowledged that a traumatic experience would result in a feeling of helplessness and an accumulation of “excitation” that an individual would need to work through with motor reaction (Zepf & Zepf, 2008:334).

Focus on trauma intensified after World Wars I and II. Combat techniques employed in World War I (1914-1918) introduced new types of stressors that had not occurred during previous conflicts. Trench warfare was utilised, rendering soldiers fairly immobile, thus leading to a heightened sense of vulnerability. Novel threats such as machine gun fire, armoured tanks, land mines, poison gas, and mortar attacks led to devastating casualties and high fatality rates. Having been faced with their possible demise on a daily basis, veterans from World War I were often diagnosed with “shell shock”, their symptoms including difficulty concentrating, confusion, headaches, sensitivity to loud noises, memory impairment, and tremors (Andreasen, 2011:240). Soldiers who fought in World War II (1939-1945) were labelled as “combat fatigued”, due to the violence they witnessed (Brown et al., 2020:1; Green, 2016:3; Rees & Smith, 2007:268). At that point in time the effects violence had on soldiers were considered to be a weakness on the behalf of the individual, and army doctors, particularly in World War I, tended to hold the view that a person’s constitution and a flawed heredity were responsible for most of the so-called war neuroses cases reported. Psychoanalysts in World War II hypothesised that reactions to traumatic events were methods of adaptation (Roberts, 2017:5; Young, 2004:35).

After the end of World War II, the specialist field of psychiatry in the USA resolved that standard terminology needed to be created to be used by all psychiatrists in order to discuss psychopathology, provide diagnoses, and determine disability. The DSM-I, published in 1952, included a diagnostic category named Gross Stress Reaction. The emphasis was on the disorder being a reaction to an unusual or great stressor that resulted in an overwhelming fear in an individual with a “normal personality”. The disorder was said to be temporary and reversible, with the stipulation that if symptoms were persistent, another diagnosis would need to be given (Andreasen, 2011:241).

The diagnosis of Gross Stress Reaction was retired in the years after 1952, as it was linked to a history of warfare, and because relative world peace followed. When the DSM-II was published

in 1968, the diagnosis had been removed entirely. After the involvement of the USA in the Vietnam War (1955-1975), a group of veterans requested that a diagnosis be introduced to recognise combat stress, which would give those diagnosed access to treatment and disability benefits. Veteran advocacy groups wanted the disorder to be named “post-Vietnam-syndrome”, however this was decided against as it would narrow the range of the disorder. Therefore, “Post-traumatic Stress Disorder” was adopted and included in the DSM-III in 1980. The earlier narrow approach of including only those of a previously “normal personality” as diagnosable was thus abandoned, thereby including individuals who had prior disabilities such as substance abuse, depression, and epilepsy (Andreasen, 2011:242).

Beyond 1980, the definition of PTSD continued to evolve. The definition of trauma in the DSM-III required an individual to have experienced a threat of serious injury or death themselves, whereas the DSM-IV and DSM-V, published in 1994 and 2013 respectively, included witnessing events that threaten serious injury or well-being of others. The DSM-III definition had in mind events linked to armed conflict as part of a PTSD diagnosis, whereas the publication of the DSM-IV reconceptualised what a traumatic event constitutes (Kang & Lee, 2018:37; O'Donnell et al., 2017:209).

2.2.2 Diagnostic criteria for PTSD and trauma symptomology

As mentioned before, the DSM is used to diagnose individuals with mental disorders, and in particular, provides diagnostic criteria for PTSD. What is of elevated importance is that, when individuals do not meet the diagnostic criteria for PTSD, it must not be assumed that they are not experiencing trauma symptomology. Their symptoms may simply not be wide enough, or severe enough for clinical diagnosis, but the person may still suffer from severe trauma and anxiety as a result of trauma exposure (Åkerblom et al., 2017:257; Huddleston et. al, 2007:204).

The IES-R scale that is utilised in the present study to measure the trauma levels of Southern Gauteng CSEs, is based on the DSM-IV criteria for a PTSD diagnosis wherein it is categorised as an anxiety disorder, not the more recent DSM-V criteria wherein it is listed as a stress disorder. Justification for opting for this scale is provided in Chapter 4. For this reason, the diagnostic criteria for PTSD as published in the DSM-IV will be discussed next. Based on the literature review and the IES-R scale, the sections of the DSM IV for PTSD highlighted below, are most relevant in regard to trauma in the policing context (Table 1).

Table 1: Diagnostic and Statistical Manual IV criteria for the diagnosis of PTSD

CRITERIA	SYMPTOMS
A. The person has been exposed to a traumatic event in which both of the following were present:	1. The person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others.
	2. The person's response involved intense fear, helplessness, or horror.
B. The traumatic event is persistently re-experienced in one (or more) of the following ways:	1. Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions.
	2. Recurrent distressing dreams of the event.
	3. Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated).
	4. Intense psychological distress at exposure to internal or external cues that symbolise or resemble an aspect of the traumatic event.
	5. Physiological reactivity on exposure to internal or external cues that symbolise or resemble an aspect of the traumatic event.
C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:	1. Efforts to avoid thoughts, feelings, or conversations associated with the trauma.
	2. Efforts to avoid activities, places, or people that arouse recollections of the trauma.
	3. Inability to recall an important aspect of the trauma.
	4. Markedly diminished interest or participation in significant activities.
	5. Feelings of detachment or estrangement from others.
	6. Restricted range of affect (e.g. unable to have loving feelings).
	7. Sense of a foreshortened future (e.g. does not expect to have a career, marriage, children, or a normal life span).

D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:	1. Difficulty falling or staying asleep.
	2. Irritability or outbursts of anger.
	3. Difficulty concentrating.
	4. Hypervigilance.
	5. Exaggerated startle response.
E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than 1 month.	
F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.	

Source: Adapted from the DSM-IV, 1994:427-429.

With reference to Criterion A, police officials are often exposed to death and serious injury and a natural response may involve fear, helplessness, or horror (Da Silva et al., 2014:7). With respect to Criterion B, it has been documented that police officials experience many of the listed symptoms in association with being exposed to traumatic crime scenes, such as dreams, recurring thoughts, psychological distress, and physiological reactions (Andersen et al., 2015:1). Persistent avoidance of stimuli in relation to trauma in Criterion C has also been well documented in the South African policing context (Boshoff & Strydom, 2015:26). Similarly, Criterion D is demonstrated in research evidence, as many police officials report experiencing the symptoms listed, such as anger and problems with concentration (Makgale, 2014:1). Lastly, point F is illustrated by the fact that police officials are sometimes medically boarded due to being unable to fulfil their occupational duties as a result of exposure to trauma (Sunder, 2019:22). In the year 2019, SAPS approved 2 204 cases of incapacity leave, with 797 of the cases identified as being psychologically motivated (SAPS, 2020b:339). In addition, recurring, long-term stress may lead to diminished motivation and burnout, both of which may contribute to police officials resigning from their jobs (Kim et al., 2016:168).

As per Criterion E, the aforementioned symptoms must be present for more than a one-month period in order for diagnosis to take place (DSM-IV, 1994:428). If symptoms occur within one month of the occurrence of the traumatic event, and persist for less than one month, acute stress disorder can be diagnosed (DSM-IV, 1994:427). PTSD may not develop immediately after a traumatic experience. It can take several months or even years to manifest (DSM-IV, 1994:426; Roberts, 2017:3; Sadock & Sadock, 2007:615).

Only a doctor, most commonly a psychiatrist, has the authority to diagnose patients with PTSD, however there are several scales available that can provide an indication of the risk of an individual receiving a PTSD diagnosis (Matlala et al., 2018:49). One such scale is the IES-R. Consisting of 22 items, the IES-R is a self-report measure that provides an assessment of subjective distress caused by traumatic events. Items in the scale correspond directly with the symptoms of PTSD as listed in the DSM IV (The Impact of Event Scale-Revised (IES-R), 2018).

Three subscales are measured in the instrument, which provide scores for intrusion, avoidance, and hyperarousal symptomology. The three subscales are representative of the major symptom clusters of PTSD. The intrusion subscale consists of eight items related to intrusive feelings, thoughts, imagery, and nightmares associated with trauma. The avoidance subscale also consists of eight items, related to avoidance of situations, ideas, and feelings. Six items make up the hyperarousal subscale, related to anger, irritability, psychophysiological arousal, and difficulty concentrating (The Impact of Event Scale-Revised (IES-R), 2018).

The IES-R is a revised version of the original Impact of Event Scale. It was developed due to the original version not including a subscale for hyperarousal. The IES-R additionally measures the degree of distress that a person experiences, rather than frequency of symptoms. No special training is required to administer the IES-R, which takes approximately ten minutes to complete (Motlagh, 2010:203). In Chapter 4 the researcher provides justification for using the IES-R in the present study, as well as a more detailed discussion of the scoring and validation of the scale.

2.3 Mental health, trauma and PTSD in trauma-inducing work contexts

It should be acknowledged that not everyone who encounters traumatic events is negatively affected in the long term. Psychiatric disorders and symptoms, such as PTSD, are not inevitable. Exposure to trauma places an individual at risk for developing psychiatric disorders and symptoms, but it does not mean that they necessarily will do so. The level of risk a person experiences is dependent not only on how severe and frequent the trauma encountered is, but also on how vulnerable the exposed individual is (Allen, 2005:23; O'Donnell et al., 2017:209). However, it is not unexpected for individuals who work with disaster and trauma to be at an increased risk of developing depression, PTSD, and acute stress disorder, due to the nature of their occupation (Subramaney et al., 2012:176). PTSD is one example of an often-experienced disorder, classified as an anxiety disorder in the DSM-IV, and a stress disorder in the DSM-V. Various other diagnoses that can be linked to incidents of trauma are impulse-control, mood,

adjustment, substance use, and anxiety disorders (Ashley & Cross, 2004:25; Green, 2016:1; O'Donnell, 2017:209).

Before addressing mental health, trauma, and PTSD in trauma-inducing work contexts, it is useful to draw attention to the prevalence of mental illness, and PTSD specifically, in the general South African population. The South African Stress and Health Survey (SASHS) is a study that was conducted within South Africa regarding common mental disorders in the country. The survey involved respondents from all provinces in South Africa, included males and females of all races, and recruited a wide range of ages. The lifetime prevalence for mental disorders was calculated at 30.3% for any disorder. Respondents with two or more lifetime disorders were calculated at 11.2%, with 3.5% experiencing three or more lifetime disorders. The most prevalent lifetime disorders were anxiety disorders, experienced by 15.8%; followed closely by substance use disorders, experienced by 13.3%; and mood disorders, experienced by 9.8% (Herman et al., 2009:341). Cognisant of the country's unique socio-political history, characterised by racial injustice, state-sponsored oppression, and political violence over an extended period of time, the SASHS also established the prevalence of PTSD among South Africans. The finding was that the prevalence of PTSD amongst the general South African population was around 11.1% at the time of the survey (Atwoli et al., 2013:1; Shisana et al., 2014:280).

Police officials and CSEs in South Africa, who are required to attend scenes involving violence, are exposed to trauma even more so than the average South African citizen (Kempen, 2014:38). During the course of their careers, police workers will be exposed to more violent and traumatic events or images than most citizens would encounter in a lifetime. Traumatic events may consist of attending stabbing or shooting incidents; investigating traffic accidents involving injury; viewing murder or suicide victims; attending to victims of violent sexual or physical assault; and violent crimes committed against children, resulting in witnessing the abuse or death of children (Warren, 2015:3). The fear of death is a primal instinct in humans. Death may be feared because it is beyond human control (Lehto & Stein, 2009:24). CSEs are required to work at scenes of death, which are often violent and traumatic in nature, on a regular basis (Yang-Sook et al., 2013:136). An event that falls outside of the everyday experience of an individual and is one that would be distressing to almost anyone, is defined as a traumatic event (Boshoff & Strydom, 2015:13).

The traumatic nature of crime scenes that police officials and CSEs encounter in their work context are distressing, and would be so to most people, and thus fall into the category of traumatic events. Therefore, the traumatic incidents that police frequently face are often far beyond the bounds of events that most civilians experience. Even the most qualified and

experienced police officials suffer from physical, emotional, and psychological impacts on their lives, due to the scenes they witness (Ashley & Cross, 2004:24; Manzella & Papazoglou, 2014:105). Police workers face recurrent trauma, and are often under chronic stress due to the exposure to repeated, frequent, acute trauma. Such chronic exposure to trauma can cause a negative effect on the physical and mental health of police officials (Andersen & Papazoglou, 2014:185).

Research has indicated that numerous stressors within the policing context render police officials susceptible to mental illness. Such stressors include recurrent exposure to physical danger, violence, severe injury, and death. Moreover, police officials are often required to engage with complex trauma survivors and traumatic incident victims. They additionally often need to function in contexts plagued by staff shortages, high workloads, and gruelling working hours (Wills, 2013:3). Two South African studies have confirmed that a lack of resources has a detrimental effect on the well-being of police officials. A study in the Eastern Cape reported that a lack of resources was negatively affecting the work of the police workers involved, as well as leading to burnout among the study participants (Hlengane & Bayat, 2013:86). A study conducted with detectives deployed at station level within the nine provinces across South Africa, revealed that 92.9% of respondents agreed that a lack of human and physical resources hampered their performances (Mofokeng, 2015:39).

It is not uncommon for police officials to experience severe enough trauma from the crime scenes they attend, to be diagnosed with an anxiety or stress disorder (Sibisi, 2019:20; Sunder, 2019:17; Wolter et al., 2018:45). Moreover, individuals who have already been experiencing mental health issues before a traumatic event occurs, are more likely to react adversely to trauma exposure (Nolen-Hoeksema, 2011:121). Hence, police work has been shown to be inherently stressful, due to the dangers associated with the job and the violence witnessed (Vaughan et al., 2016:1; Violanti et al., 2013:7). In particular, PTSD among police officials can manifest due to experiencing helplessness, horror or intense fear (Sibisi, 2019:34; Sunder, 2019:83).

Police work is additionally one of very few professions in which employees are repeatedly exposed to violence (Van der Meer et al., 2017:87). Repeated exposure to violence or trauma increases the risk of an individual developing PTSD. PTSD symptomology can be debilitating and may persist many years after the traumatic event. PTSD also has high comorbidity with other mental health conditions, such as anxiety disorders and depression, as well as drug and alcohol abuse. Symptoms of PTSD may affect police officials in a way that jeopardises their work

performance and consequently endangers the citizens under their jurisdiction (Van der Meer et al., 2017:87).

Moreover, PTSD has been strongly associated with suicide risk. Suicidal ideation and suicide attempts have been linked to both PTSD and major depressive disorder. PTSD is also predictive of future suicide attempts. Although not everyone who presents with PTSD symptomology, or is diagnosed with PTSD, will attempt suicide or be at risk of suicide, research does indicate that those with PTSD are more inclined towards suicide than individuals with no PTSD symptoms (Boffa et al., 2017:277).

Individuals who are often exposed to trauma in their work contexts, experience an increase in psychological arousal, such as suffering from images and thoughts that are intrusive, distressing emotions, various physical complaints, and changes in behaviour that are negative in nature, all of which constitute PTSD (Manzella & Papazoglou, 2014:104). Poor physical and psychological health has been reliably related to the number of experienced traumatic events while on duty in the New Zealand Police. Over a full career, police officials can expect to be exposed to numerous traumatic events, which can have a detrimental effect on both their physical and mental health (Huddleston et. al, 2007:200). Notably, both exposure to multiple traumatic incidents, or even one particularly traumatic event, are linked to the development of PTSD in trauma-inducing work contexts (Steyn, 2009:139; Surgenor, Snell & Dorahy, 2020:2).

PTSD symptoms may manifest sporadically or continuously. The presence of stress or adversity may serve to exacerbate PTSD symptoms. It is also fairly common for sufferers of PTSD to appear to have recovered, only to relapse at a later stage. For example, a 20-year follow-up study of Israeli combat casualties indicated that of the group of soldiers who presented with PTSD one year after a combat stress reaction, 22.6% did not present with PTSD at the end of the second year of the study. However, of the 22.6%, 36.8% were found to present once again with PTSD symptoms at the end of the third year of the study (Solomon & Mikulinver, 2006:662).

The duration that an individual suffers from PTSD also has a negative effect on psychological and physical health outcomes. Respondents in a Mexican study who had presented with PTSD symptoms lasting more than one year showed elevated depression scores and additional chronic physical complaints in comparison to respondents whose PTSD symptoms lasted for less than one year (Norris et al., 2003:654). Data from the National Comorbidity Survey in the USA has also indicated that both women and men diagnosed with PTSD were more than twice as likely to experience a non-psychiatric health condition than individuals without a PTSD diagnosis, even

after controlling for socioeconomic status, major depression, and age (Institute of Medicine and National Research Council of the National Academies, 2007:74). Additional research confirms that individuals who are exposed to traumatic events experience higher numbers of adverse health outcomes in numerous areas, including mortality, morbidity, utilisation of healthcare, and self-reported health (Schnurr & Green, 2004:18). It has been shown that being witness to traumatic events, increases the risk of chronic physical diseases, such as hypertension and circulatory diseases (Andersen et al., 2015:2).

The impact that a traumatic event has on an individual differs between people. The most typical response begins with panic and anxiety reactions, which in turn may lead to feelings of being overwhelmed or out of control, and to difficulty concentrating. Such symptoms can subsequently make way for physical symptoms, such as hypertension, gastrointestinal distress and tachycardia (a fast heart rate). If prompt intervention does not occur, apathy on behalf of the individual tends to increase, which may lead to procrastination, tardiness, and absenteeism (Ashley & Cross, 2004:26; Salinas & Webb, 2018:239). Alcoholism, depression, and other forms of chemical dependency have also been positively linked to the work-related stresses of police officials (Kang & Lee, 2018:45; Manzella & Papazoglou, 2014:105; Purba & Demou, 2019:2). If intervention has still not occurred, major depressive symptoms tend to increase, leading to feelings of helplessness and hopelessness. The individual may even begin to have suicidal thoughts (Soomro & Yanos, 2019:176). Research confirms that the rate of suicide is higher amongst those working in the policing profession than the general population (Clark et al., 2015:930).

Working at a traumatic crime scene or attending an autopsy can evoke trauma in an individual. Symptoms resulting from the traumatic nature of such incidents include physical symptoms, such as headaches, muscle tension, hypertension, shortness of breath, changes in sleep patterns or appetite, and fatigue; behavioural symptoms, such as withdrawal, substance use, and acting out; cognitive symptoms, such as confusion, difficulty concentrating, and intrusive thoughts; and emotional symptoms, such as feeling guilt, helplessness, and experiencing anger. Most frequently a combination of symptoms occurs in response to trauma. Such symptoms may compound and worsen over time as the individual is exposed to additional trauma. The aftermath of witnessing traumatic crime scenes and autopsies can happen in various scales, with symptoms being acute or chronic. Additionally, if any symptoms are experienced, they can manifest at any point in time after the traumatic incident has occurred. Some people may experience symptoms during, or immediately after, the incident, whilst others may reveal symptoms only days, weeks, months, or

even years after the traumatic event had occurred (Åkerblom et al., 2017:257; Ashley & Cross, 2004:25; Huddleston et. al, 2007:204; Jorgensen & Rothmann, 2008:11).

A situation that one police official finds traumatic, might not have the same effect on another. However, specific types of scenes have been commonly identified as traumatic by police officials in general, namely violent crimes against children; bomb explosions; homicides; extreme motor vehicle accidents; hostile contact with citizens; shooting of a civilian or perpetrator; witnessing excessive use of force by a police partner; serious injury or death of a colleague; being required to make a time-pressured life or death decision; engaging in a vehicle pursuit; domestic abuse; and a personal brush with death (Arble et al., 2017:3; Green, 2016:35). Extant research has additionally indicated extreme stress specifically with reference to scenes involving mutilated victims (Elntib & Armstrong, 2014:420). In addition, certain factors serve to make crime scenes more stressful, such as poor lighting (Kumar & Kamalanabhan, 2014:85), feeling the need to be guarded at a night crime scene, or being at a scene at night as a woman (Kgalema, 2002:8).

When police officials identify with the deceased, or with the manner of, or circumstances surrounding the deceased individual's death, they may become more traumatised by the incident (Henry, 2004:132). In addition, police workers have reported that they feel particularly stressed when the deceased's family is present at crime scenes, especially if the individuals are visibly agitated or openly grieving. A described pattern of responses amongst police officials is the distress of not being able to ease the emotional torment of relatives of victims (Henry, 2004:25). Individuals who are required to attend to scenes of violence often are subjected to vicarious trauma, whereby they experience disturbing feelings, images, and thoughts in relation to working with victims of trauma and their families (Seely, 2017:13). When civilians are present it is also harder for the workers to engage in emotional numbing, as they may feel that it is expected of them to comfort the bystanders and family members (Henry, 2004:119; Papazoglou & Tuttle, 2018:3). Exposure to the remains of a child has also been found to be particularly traumatic as it triggers a sense of familiarity and emotional involvement. For officials who are parents, the sight of a dead child may invoke intrusive thoughts, recollections, and images of their own children (Henry, 2004:23).

The trauma CSEs experience may have enough of a dire effect on them that it might lead to being medically boarded. A practical example of crime scenes becoming inordinately stressful for a CSE to cope with, is that of Morné du Toit, one of the CSEs who was required to process the murder scene of Reeva Steenkamp. Du Toit recalled how the smell of blood and death at the scene left him with a taste of blood in his mouth, months after processing the scene. In desperation, Du Toit

turned to the Pretoria High Court to request that SAPS medically board him. He stated that the Steenkamp scene haunted him “day and night” to the extent that it controlled his dreams. He found himself unable to remove the images from his mind, and he often experienced nightmares of lying in a bath of blood. Du Toit had already been diagnosed with PTSD two years prior to the Steenkamp case, but it was that scene that made him realise that he was unable to continue working as a CSE, after 20 years’ experience in the profession. Admitted to hospital for PTSD and major depression in the three weeks after Steenkamp’s death, Du Toit is one of numerous examples of CSEs who are traumatised through their work and are unable to continue (Venter, 2015).

The Public Service Co-ordinating Bargaining Council (PSCBC) is an independent organisation which promotes sound labour relations through collective bargaining and the management of disputes between public service workers and their employers. The PSCBC was established in terms of Section 35 of the Labour Relations Act 66 of 1995 (PSCBC, 2017). Regulation 7.5.2 of Resolution 5 of the PBCBC deals with permanent disability leave. It provides that if an employee is certified as permanently disabled, they shall, with the approval of their employer, be granted a maximum of 30 working days paid sick leave. Within those 30 days of sick leave, the employer is required to ascertain whether it would be feasible to retain the employee in an alternate role, or to adapt their duties in order to accommodate their disability. If both the employee and employer agree that the employee shall never again be able to perform any type of duties at their level or rank, an application for ill health benefits in terms of the Pension Law of 1996 will be submitted. The researcher was unable to determine how many such cases the PSCBC facilitates where CSEs are involved, but the aforementioned regulation is cited in numerous court cases involving SAPS members who suffered from PTSD (Adams v PSCBC, 2015; Du Plessis v PSCBC and Others, 2015; Eicker v PSCBC and Others, 2018; Liebenberg v Mbekwa and Others, 2014; S v Minister of SAPS, 2017; Spies v National Commissioner of SAPS and Others, 2008).

Sick and incapacity leave days taken by employees of SAPS increased from January to December 2018 (1 526 449 days) to January to December 2019 (1 637 737 days). Further, in the timespan from January 2019 to December 2019, 2 886 police officials applied for short term temporary incapacity leave, while 594 members applied for long term incapacity leave. A total of 2 204 cases of incapacity leave were approved, with 797 of the cases being psychologically motivated (SAPS, 2020b:339). Such numbers bear testimony to the fact that police work can lead to debilitating psychological and/or physical conditions which have an effect on the ability of officials to perform their tasks effectively.

2.4 Factors linked to trauma reactions

People react differently to trauma that they experience, and such reactions may be linked to various factors. What follows is a discussion of social support, gender differences, career length, alcohol use, and smoking, which are linked to trauma reactions. Where available, research evidence among police workers will be highlighted.

2.4.1 Social support

A person's environment is an important factor in determining how they react to trauma. Many people remain psychologically sound after a traumatic experience, if their immediate environment provides them with a sense of safety and trust (Ménard & Arter, 2013:40; Young, 2004:8). Police officials who are surrounded by a solid social support structure, both organisational and familial, have been shown to be able to cope with job stress more effectively (Mushwana, Govender & Nel, 2019:2; Singh & Nayak, 2015:748). Social support is experienced from several sources, including colleagues, family, friends, religious leaders, and the general public. Positive social support fosters a sense of appreciation, belonging, and heightened feelings of self-worth, and has been shown to be a factor in reducing the effects of trauma experienced by police officials (Ménard & Arter, 2013:40). Police members have a unified identity as a group, which research has indicated plays a role in social support and improving stress levels. Social interactions with a support group after a traumatic incident have historically demonstrated a reduction in symptoms of distress (Papazoglou & Manzella, 2013:2; Young, 2004:73).

It is important to note, however, that the family lives of police officials are also influenced by the stressors that they experience (Da Silva et al., 2014:7; Green, 2016:8; Roberts et al., 2013:272). Police work is both physically and psychologically exhausting, and officials might find it difficult to oscillate between managing their emotions in the workplace by suppressing personal feelings, and being open about their emotions in their home environment (Mushwana et al., 2019:2; Roberts et al., 2013:272). Further, owing to the fact that police officials work erratic hours, they can potentially experience a decrease in social support, such as when family and friends become resentful when the official misses spending time with them on important holidays, such as Christmas (Ménard & Arter, 2013:38).

Police officials who experience marital problems have been a recognised and recorded phenomenon for years. When a person is trying to cope with trauma, such coping consumes much of their mental and often physical energy, leaving them drained and unable to direct any additional energy into their personal relationships. In addition, police officials have indicated that

they do not want to bring home the negativity that they experience at work, which may in fact lead to further alienation and distance within the marriage, as communication and understanding breaks down (Kang & Lee, 2018:44). Compounding the aforementioned is the fact that work-related problems can often not be shared because this may compromise the confidentiality of cases that the official is working on (Mushwana et al., 2019:1). Studies have additionally shown that officials who learned to cope with the stress of their occupational work by psychologically detaching themselves, experienced heightened marital conflicts with their spouses (Maynard et al., 1980:495; Roberts et al., 2013:272). Moreover, romantic partners also experience the stress of a law enforcement career as they worry about their partners' safety. Additionally, they need to face challenges regarding shift work and their partners potentially being called out to scenes at erratic hours (Horan, Bochantin & Booth-Butterfield, 2012:556). One of the consequences of the aforementioned issues is the high divorce rate among police officials (Mushwana et al., 2019:1).

The psychological symptoms that police workers experience due to their work, such as loss of motivation, alcohol and substance abuse, depression, tension, aggression, loss of patience, emotional numbness, and loss of interest in the outside world, have an adverse effect on their ability to function in their professional, family, and social environments (Arble et al., 2017:2). In a study, a novice police official recalled feeling frustrated with his wife after his first encounter with a deceased individual, in which he felt that he was unfairly exposed to the trauma associated with a week-old, decomposing body. Although his wife was not associated with the work incident, he became angry with her. Although he said that he did not take his irritation out on her in a physical manner, some police officials do (Henry, 2004:127).

Disquieting is the fact that individuals who work in law enforcement, have a much higher likelihood of committing family suicides or murders, than individuals who work in other professions (Kempen, 2012:6; Mushwana et al., 2019:2). Elevated levels of domestic violence, including physical and verbal abuse, have also been linked to police officials (Baron, 2018:136; Stinson & Liederbach, 2013:12).

2.4.2 Gender differences in reactions to trauma

Men and women have been found to be affected differently by trauma and stress, and therefore they also respond differently. Women have historically been found to utilise emotion-driven and avoidant coping styles more than men, who are more prone to utilise problem-focussed coping strategies (Eisenbarth, 2019:152; Matud, 2004:1408; Mushwana et al., 2019:2; Olf, 2017:1; Olf et al, 2007:196; Salinas & Webb, 2018:244; Van der Meer et al., 2017:87).

It has been suggested that male police officials may struggle to process their trauma more than their female counterparts. Traditional police culture dictates that police officials are masculine and strong, and able to cope with trauma. Female police officials often manage to escape the masculine stereotypes. Within the workplace, male police workers in particular are expected to be self-reliant, to suppress their emotions, and to remain tough. Contrastingly, they are then expected to be supportive and caring in their family context. The traditional stereotype is that male police officials are required to be self-sufficient, independent, and strong, which takes a toll on their health. Help-seeking behaviours, in particular with regard to mental health wellness, chafe against the stereotypes that male police workers may feel they need to embody. Seeking psychological help is often seen as non-masculine and weak (Papazoglou & Tuttle, 2018:3).

A study focussed on officials working with internet child abuse, indicated that female police officials were more likely to report trauma and PTSD symptoms related to their work than their male counterparts (Tehrani, 2016:406). Another study found that female police officials experience working with child victims of crime differently from male police members. The female police officials reported greater distress because their roles as mothers, and as women in general, interfere when being faced with young victims (Gumani, 2017:435).

Differences have been found between men and women with regard to being diagnosed with PTSD, which is a reaction to trauma. Women have been shown to be more likely than men to develop PTSD after experiencing trauma, however a concrete reason for this is not clear (Christiansen & Hansen, 2015:1; Olf, 2017:1; Shansky, 2014:60). Research indicates that there are several factors that might be influential. Types of trauma to which one is exposed, is a potential influencer of gender differences in PTSD. For example, women are more likely to have been exposed to sexual trauma, which has been shown to be a form of trauma that is particularly likely to lead to a PTSD diagnosis (Christiansen & Elklit, 2011:115; Christiansen & Hansen, 2015:1). In addition, women are more likely to report symptoms of anxiety and depression than men, which are variables associated with higher levels of PTSD (Christiansen & Hansen, 2015:2). While some research indicates that men are affected less by trauma, other studies do not deliver conclusive answers. For example, studies regarding gender differences have not always taken into account the different types of social-ecological stressors that men and women face, for example expectations based on gender roles (Portnoy et al., 2018:846).

There is a paucity of PTSD studies comparing male and female police officials, and again results have been inconsistent. It is hypothesised that the inconsistency in findings could be linked to prior research in the 1990s having taken place when the policing sector was much more male-

dominated and female police officials were treated differently to their male counterparts. The argument is that male and female officials were exposed to different stressful events, thereby contributing to men and women not having the same experiences in the policing context. In addition, the results of police trauma exposure research have not ordinarily focussed on male versus female experiences and as such there are limited studies to compare (Van der Meer et al., 2017:87). Of importance is that although policing is still male-dominated, it is less so currently than it used to be (Bikos, 2016:2; Bull et al., 2020:1; Kim et al., 2016:168; Mushwana et al., 2019:2; Simpson & Croft, 2020:1; The Western Cape Department of Community Safety, 2018:36; Yalley & Olutayo, 2020:1). In a recent South African study, female SAPS officials were shown to experience more job-related stress than their male SAPS counterparts (Mushwana et al., 2019:4).

2.4.3 Career length

Levels of stress and trauma have not consistently been linked to length of career in police officials who work in stressful environments worldwide. Some studies have found trauma to be higher in participants who had shorter careers as police (Green, 2016:29; Yang-Sook et al., 2003:139). Many individuals who work in policing have reported feeling particular trauma with regard to the first crime scene that they had attended (Kang & Lee, 2018:42). In one specific study, each participant could describe, in detail, the first crime scene they were present. One participant, who had attended hundreds of crime scenes over the course of his 32-year long career, was able to recall the address of his first crime scene, the layout of the apartment in which the victim was found, and the exact position in which the victim was found (Henry, 2004:111). Such detailed recollection indicates that emotional trauma is felt particularly with regard to the first crime scene that an individual attends.

Oftentimes it has been found that repeated exposure to certain types of trauma, such as handling human remains, reduces anxiety surrounding the experience. The anticipation or expectation of handling such trauma results in significant distress. However, with experience can come desensitisation, whereby repeatedly performing the psychologically difficult task can in fact decrease the police official's anxiety (Henry, 2004:23; Papazoglou & Manzella, 2013:2).

Some studies have found that career length does not affect stress levels at all (Manzella & Papazoglou, 2014:105; Oh & Lim, 2006:102). In contrast, other studies have indicated that the longer an individual works in a CSE-type context, the more likely they are to be stressed (Van der Meer et al., 2017:87; Violanti et al., 2018:277). More specifically, a correlation has been shown to exist between amount of trauma and subsequent stress. Named the "dose-response relationship",

the higher the “dose” of trauma to which an individual is exposed, the more potentially damaging its effects are (Allen, 2005:16). The greater a stressor, the higher the likelihood that the person experiencing the stressor will develop PTSD. The “dosage” of trauma can refer to both how traumatic each event itself is, and the frequency of exposures to traumatic events. The dose-response relationship was demonstrated in a study of PTSD in Vietnam veterans. Early experience and genetic makeup were controlled by using identical twins for the study. The twins were exposed to different levels of combat and the findings of the study indicated that the more combat to which individuals were exposed, the higher their risk of developing PTSD symptoms (Allen, 2005:17).

CSEs are constantly exposed to scenes of violence, murder, and abuse. Research has indicated a clear correlation between the intensity and frequency of specific types of trauma exposure, more specifically murder scenes and accident scenes. The traumatising of a CSE is more likely when factors such as frequency, intensity, cumulative exposure, and duration are high, although traumatising may occur even with lower levels of the aforementioned factors (Boshoff & Strydom, 2015:26). Police workers exposed to longer-lasting and more severe trauma are more adversely affected by it than those whose exposure is more limited (Nolen-Hoeksema, 2011:471).

The effects of traumatic scenes are therefore often cumulative, in that many police officials do not just forget the incidents once they leave the scene. Memories and images of scenes that they have attended may often be recalled by officials, which causes further trauma. In addition, police officials may be exposed to more than one violent scene each day (Manzella & Papazoglou, 2014:105). Repeated exposure can cause police workers to become depressed, to have difficulty sleeping, to feel short-tempered, tense, and fatigued. Exposure to stress is also linked to an increase in the diagnosis of various psychiatric conditions. Physical health, as well as mental health, may be negatively affected due to exposure to trauma. Consequently, interpersonal relationships may also suffer (Warren, 2015:24).

The conclusion is that the differing outcomes are related to types of traumatic events experienced, frequency of exposure to these events, and environmental and personal factors, and coping methods. All of the aforementioned factors varied between studies conducted, producing different outcomes (Yang-Sook et al., 2013:139). As different countries experience differing levels of crime and types of crime, it is most likely that career length versus stress and trauma is country-specific, as most CSEs within the same country will have similar experiences to one another. They will also have access to the same resources to assist them with the stress and trauma that they encounter.

2.4.4 Alcohol

Police officials have been shown in several studies to have high alcohol usage (Green, 2016:28; Papazoglou & Manzella, 2013:2; Pietrzak et al., 2012:837). Research has shown that such alcohol consumption is employed as a maladaptive coping strategy linked to the critical incidents that police workers encounter and to work-related stressors (Ballenger et al., 2011:27; Ménard & Arter, 2013:38; Ménard & Arter, 2014:308; Mushwana et al., 2019:2; Weir, Stewart & Morris, 2012:73). In addition, police culture has been found to encourage alcohol consumption. Police officials have reported drinking alcohol after work with colleagues as a means of coping (Ménard & Arter, 2013:41). Police officials have also reported drinking alcohol in order to adhere to police subculture and to “fit in” (Boshoff & Strydom, 2015:27; Lindsay & Shelley, 2009:91; Ménard & Arter, 2013:49).

Excessive alcohol consumption can have a severe impact on the health of an individual. Some physical effects include nausea, vomiting, liver damage, pancreatitis, oral damage, gastritis, brain cell death, cognition and memory problems, cardiac muscle disorders, hypertension, strokes, irregular heart rhythms, impotence, reduction in fertility, and increased risk of tuberculosis. Psychologically an individual may be more prone to depression, psychosis, memory loss, violence, and illusions (Khairnar, Wadgave & Khairnar, 2017:1).

Within South Africa, 33.1% of individuals aged over 15 years, reported consuming alcohol. Of those, 48.2% of men and 32.4% of women reported drinking more than five standard drinks of alcohol per day. More than a quarter of men (22.8%), and 6.4% of women were classified as binge drinkers. Binge drinking in the study is defined as more than four drinks for women and more than five drinks for men on one occasion. It was acknowledged that data on alcohol consumption is often under-reported (Vellios & Van Walbeek, 2018:33).

2.4.5 Smoking

Smokers have been found to be more likely than non-smokers to meet the current diagnostic criteria for mental health conditions, including anxiety disorders, mood disorders, and psychosis. The link between cigarette smoking and mental health conditions are complicated and may differ between different mental disorders. The most common conclusion is that individuals diagnosed with a mental health condition, smoke cigarettes with the intention to regulate the symptoms that accompany their disorder. However, there has been no single, decisive explanation as to why people diagnosed with a mental health condition are more likely to smoke than those who have not been diagnosed (Minichino et al., 2013:4791).

A study involving respondents from both Australia and the USA has indicated that individuals who have been diagnosed with a mental illness are more likely to smoke cigarettes than those who have not been diagnosed with a mental illness. In Australia, 36.2% of respondents diagnosed with a mental illness smoked cigarettes, compared to 18.8% of respondents who had not been diagnosed with a mental illness smoking cigarettes. In the USA, 40.1% of respondents diagnosed with a mental illness reported smoking cigarettes, compared with 21.3% of respondents not diagnosed with a mental illness reporting smoking cigarettes (Lawrence, Mitrou & Zubrick, 2009:4).

Although the study with the aforementioned figures is dated, the results have been shown to remain consistent over a number of years. Previous research carried out in 1992 in the USA indicated that 41% of adults with a mental illness were smokers, compared with 22.5% of those without a mental illness. In the UK in 1992, 47% of adults with psychiatric morbidity reported being smokers, in comparison with 29% of those with no psychiatric morbidity. In 1997 in Australia, 41% of adults with a mental disorder were current smokers, in comparison with 21% of adults without a mental disorder smoking. A 2003 survey in New Zealand confirmed 33% of adults with a mental disorder as smoking cigarettes, with 21% of adults with no mental disorder smoking (Lawrence et al., 2009:8). In the USA, from 2009 until 2011, 36.1% of individuals with a mental illness were smokers, in comparison to 21.4% of individuals without a mental illness (National Institute on Drug Abuse, 2020:30). More recent statistics indicate that on average, individuals diagnosed with a mental health condition in the USA are almost twice as likely to smoke cigarettes, with a rate of 44%, than individuals not diagnosed with a mental health condition, which comprise 22% of the population (Minichino et al., 2013:4791). Different mental health diagnoses also have differing likelihoods of a diagnosed individual smoking. For example, those diagnosed with schizophrenia or bipolar disorder are more likely to smoke than those diagnosed with depression in the USA (National Institute on Drug Abuse, 2020:30).

The relevance of the above research findings is that people who smoke are more likely than those who do not smoke to suffer from various physical ailments due to smoking, such as respiratory and cardiac diseases and cancer. In addition, smokers who have been diagnosed with a mental illness are more likely to suffer from adverse health consequences than smokers who have not been diagnosed with a mental illness (Lawrence et al., 2009:8). Cigarette smoking is associated with several adverse physical ailments, including dental disease, cardiovascular disease, several types of cancer, diminished bone health, and respiratory illnesses (Minichino et al., 2013:4791).

Gender is also a factor that is noteworthy with regard to smoking. Statistics from the USA indicate that among daily smokers, women smoke fewer cigarettes per day than men (Allen et al., 2016:1408). In general, women have also consistently been found to use tobacco products at a lower rate than men in the USA (National Institute on Drug Abuse, 2020:28). Within South Africa, the national prevalence of tobacco smoking among adults is 17.6%. Male smoking rates are at 29.2%, with female smoking at 7.3% (Reddy et al., 2015:649).

2.5 Coping with trauma

A coping strategy refers to the efforts that an individual makes in order to reduce, minimise, master, or tolerate stressful events in their lives. Coping strategies can be both psychological and behavioural. People employ a coping strategy in order to overcome or combat stressful events (Yusoff, Low & Yip, 2010:41). There are various measurements and scales that are utilised to ascertain what coping strategy an individual adopts. One such scale is the Coping Orientation to Problems Experienced (COPE) Inventory.

The COPE Inventory is a self-report questionnaire that was developed in order to assess a large range of coping responses. It is currently one of the best validated and widely used measures of coping strategies that researchers employ worldwide (Garcia et al., 2018:1). The COPE Inventory consists of 15 scales, each comprised of four items. Carver, who developed the COPE Inventory, also developed an abbreviated version of it, called the Brief COPE Inventory. The Brief COPE Inventory was developed due to respondents becoming impatient with completing the full instrument (Carver, 1997:92). The Brief COPE Inventory consists of 14 subscales, composed of two items each (Garcia et al., 2018:2). The 28 items found in the Brief COPE Inventory are rated by a four-point Likert scale. Answers range from “I haven’t been doing this at all” (score one) to “I have been doing this a lot” (score four). The higher respondents score, the more frequently they have been using the specific coping strategies (Yusoff et al., 2010:41).

The Brief COPE Inventory may be employed in three different formats in terms of time frame. The first is where respondents answer according to the extent to which they “usually” make use of the methods listed when they are stressed. The second is a time-limited version within which respondents indicate how often they have made use of the methods during a specified period in the past. The third is also a time-limited version in which the respondents answer in accordance with how often they have made use of the coping methods during a period up to the present day (Carver, 1997:95). In the current study, participants were asked how often they had been making use of the coping methods in the past two weeks.

Coping strategies are often divided into two broad coping category styles, such as maladaptive versus adaptive, or problem-focussed versus emotion-focussed coping styles (Ménard & Arter, 2013:39; Mushwana et al., 2019:2). Carver, the developer of the COPE and Brief COPE Inventories, did not specify a standard rule regarding how to apply categorisation, instead leaving it up to the discretion of the user of the scale (Ryan, 2015). The website on which the Brief COPE Inventory is available for download (NovoPsych) splits the scale into approach and avoidance coping, as well as the smaller category of neutral coping. These three categories have therefore been utilised in the current study (Brief COPE, 2018; Herman-Stahl, Stemmler & Petersen, 1994:650). Another acceptable method of scoring the Brief COPE Inventory is to split the items into adaptive and maladaptive coping. Adaptive coping is made up of the items/questions that in the current study are classified as approach and neutral coping. Maladaptive coping encompasses the items/questions that are currently classified as avoidant coping (Meyer, 2001:268; Kasi et al., 2012:2). It is relevant to understand the different types of categorisations in order to be able to compare studies that have used alternate methods of scoring the Brief COPE Inventory.

Approach coping strategies consist of psychological or behavioural responses that are adopted with the intent to change the nature of the stressor being experienced, or to change how the individual thinks about the stressor. In contrast, avoidant coping strategies employ behaviours, such as alcohol use, or mental states, such as withdrawal, to keep an individual from directly addressing the stressful event that they are experiencing. Approach coping strategies are generally considered to be a more productive way to cope with stress, whilst avoidant coping strategies are considered by some to indicate a psychological risk factor for further adverse responses to stress (Al-Dubai et al., 2011:58; Dubow & Rubinlicht, 2011:111). If an individual is able to use approach coping skills, they should be able to efficiently buffer against the effects of trauma and stress, which will assist in maintaining a healthy psychological well-being (Lee et al., 2017:224). The Brief COPE Inventory measures six approach coping strategies, six avoidant coping strategies, and two neutral strategies.

Approach coping includes seeking emotional support, use of informational support, positive reframing, planning, acceptance, and active coping. Seeking emotional support involves individuals attaining compassion, sympathy, and moral support from others around them (Brief COPE, 2018; Yusoff et al., 2010:41). Accessing informational support entails, individuals looking for more advice, information, or help to assist them in coping (Yusoff et al., 2010:41). Positive reframing involves individuals attempting to see their stressful situation in a more positive light

and trying to progress from it or attain a positive outcome (Al-Dubai et al., 2011:58). Planning as a coping strategy comprises thinking about how to handle a stressor, what steps to take, and how best to cope with the problem the individual is facing (Corbin, Farmer & Nolen-Hoekesma, 2013:1914; Yusoff et al., 2010:41). If individuals are using acceptance as a coping strategy, this means that they are accepting of the reality that they are facing and are therefore more likely to be able to change their circumstances (Wilski et al., 2019:609; Yusoff et al., 2010:41). Finally, active coping involves individuals taking active steps in order to attempt to either nullify the stressor they are experiencing, or to reorganise the effects of the stressor (Corbin et al., 2013:1913; Yusoff et al., 2010:41). Individuals who suffer from a mental health condition have been shown to make use of approach coping strategies, although individuals who have more severe mental illnesses, such as schizophrenia, do not make use of approach coping strategies as well as those with less severe mental illness (Holubova et al., 2019:91; Kasi et al., 2012:5; Meyer, 2001:274).

Avoidance coping includes self-distraction, denial, substance use, behavioural disengagement, venting, and self-blame. Self-distraction involves thinking about anything other than one's trauma or engaging in unrelated activities (Russo et al., 2017:8). Denial as a coping strategy entails individuals attempting to reject the reality of the stress they are faced with (Al-Dubai et al., 2011:58). The abuse and misuse of substances can be inclusive of alcohol, tobacco, and drugs, both prescription and illegal. Individuals use substances in order to cope with their trauma (Gielen et al., 2016:468). To disengage behaviourally, involves individuals withdrawing their effort to attain goals, in stressful situations. Venting comprises individuals having a heightened awareness of their own emotional distress, and thereafter discharging or ventilating these feelings (Al-Dubai et al., 2011:58). Self-blame entails individuals placing blame on themselves (Greene, 2018:2). Studies have indicated that individuals with a mental health condition are also likely to utilise avoidant coping strategies (Meyer, 2001:272).

The two neutral strategies are humour and religion (Brief COPE, 2018). Humour may be turned to in order to cope with a stressful event. If the traumatic situation is turned into something more amusing, it is likely that less negative emotions will be connected to the incident. Joking is commonly used to control emotions, and can potentially diffuse stressful and tense situations (Gumani, Fourie & Terre Blanche, 2013b:7). For example, a release of energy can occur through the physical process of laughing (Vivona, 2013:3). Humour has long been linked to death work, where "gallows humour" can often serve an adaptive function by helping individuals deal with the discomfort of such work (Vivona, 2013:4). Police officials have been found to regularly use

humour as a coping method (Vivona, 2013:16). Religious coping refers to an individual engaging in religious practices or beliefs in order to cope with trauma or stress (Aflakseir & Mahdiyar, 2016:118; Mushwana et al., 2019:2). Religion is often used as a source of pious support when individuals experience stressful circumstances (Yusoff et al., 2010:41). Positive mental health has been linked to religious coping styles (Kasi et al., 2012:5; Mushwana et al., 2019:2). Religiosity as a coping strategy has been found to be utilised by many police officials (Mushwana et al., 2019:2). In Chapter 4, the scoring and validation of the Brief COPE Inventory will be discussed in greater detail.

It is important to note that once a trauma has occurred, the individuals' style of coping influences their future vulnerability. Individuals who use self-destructive or avoidant methods of coping are more likely to experience PTSD (Nolen-Hoeksema, 2011:471). Coping functions in order to reduce stress and to assist an individual in adjusting to negative environmental situations. It may act as a buffer between persons and the negative effects that stress may have on their mental health (Violanti et al., 2018:274). Police officials unfortunately often lack adaptive coping strategies, instead relying on avoidant strategies such as not sharing their emotions and bonding with colleagues who have similar experiences by drinking alcohol (Lindsay & Shelley, 2009:91; Ménard & Arter, 2013:49). Maladaptive coping strategies can lead to both health and relationship problems (Arble et al., 2017:2; Mushwana et al., 2019:2).

2.6 Employee Health and Wellness (EHW)

Employee Assistance Programmes (EAPs) originated in the USA, as support programmes that provided assistance to alcohol-addicted employees (Buon & Taylor, 2007:6; Rajin, 2012:1; Thaba, 2018:38). As time went by, EAPs became wide-ranging, providing employees with assistance in various aspects of their lives such as work-related stress, anxiety, marital and family discord, psychological support, chemical dependency (such as alcohol and drugs), financial planning, and health problems, all of which affect the work performance of employees. EAPs have become valuable resources in organisations as their services assist employees to overcome their problems, which in turn make employees more productive in their work environment (Rajin, 2012:1; Thaba, 2018:38).

Broadly, EAPs are programmes that help distressed employees to be recognised, counselled, rehabilitated, and subsequently placed back on the job (Carrel, Elbert & Kuzmits, 1989:471; Rajin, 2012:1). EAPs are additionally useful as they indicate to employees that their employers both support them and care for them (Cascio, 1992:604; Rajin, 2012:2). EAPs are now a legislative

requirement within the South African Public Sector for workplaces (Rajin, 2012:19; Thaba, 2018:38). Officials in the employ of the SAPS have been shown to have demanding work environments (Boshoff & Strydom, 2015:13; Hlengane & Bayat, 2013:86; Jorgensen & Rothmann, 2008:11; Kempen, 2014:38; Mushwana et al., 2019:1; Mofokeng, 2015:39; Sibisi, 2019:20; Steyn, 2009:139). EAPs within the SAPS are offered in-house in order to support employees and to promote their wellness, and were established in 2003, as an intervention for employee wellness, in order to reduce problems that were affecting the work performance of the SAPS employees (Rajin, 2012:2). In SAPS, EAPs are called “Employee Health and Wellness” (EHW).

South Africa is one of many countries that has adopted EAPs, due to the benefits they provide to both employees and employers. EHW in the SAPS is a result of the acknowledgement that the operational nature of providing policing services is demanding and stressful. CSEs deal with traumatic scenes involving extreme violence, and such scenes can have negative consequences on the officials who attend to them. SAPS as an employer has the responsibility to ensure that its employees are healthy, both mentally and physically, in order for the employees to perform their duties to the best of their abilities (Rajin, 2012:3).

The EHW services are offered free of charge to SAPS employees and are used to support distressed employees (Rajin, 2012:8). EHW aims to provide mechanisms for counselling to CSEs, as well as other forms of advice and assistance. Additionally, the EHW aims to provide such support and assistance on a systematic and uniform basis with on-site access to psychological and medical professionals (Rajin, 2012:14).

EHW services for CSEs are necessary, in order to lower absenteeism and to increase employees’ productivity. CSEs who experience work-related and personal problems are referred to consultations with EHW practitioners, who will be able to provide the CSEs with immediate assistance. However, it was shown that many employees of the SAPS are not making use of EHW services, despite having been informed about them and how they could help them (Rajin, 2012:5). Alarming, research evidence points to the fact that SAPS officials tend to perceive SAPS as an unsupportive employer (Rothmann & Jorgensen, 2007:81), and EHW services as ineffective for a variety of reasons (Boshoff & Strydom, 2015:27; Boshoff, Strydom & Botha, 2015:278-279; Elntib & Armstrong, 2014:421; Sibisi, 2019:122-126; Welgemoed, 2012:123-125). In a recent South African qualitative study comparing organisational support services in three trauma-inducing work contexts, namely mining, policing, and emergency medical services, none of the participants in the policing sector felt positive about the support services offered by SAPS. Notably, the participants unanimously denoted that the programmes offered to manage trauma

were inefficient (Jonker, Graupner & Rossouw, 2020:5). Reasons provided for the ineffectiveness of trauma support programmes were that counsellors were unable to relate to their trauma; the in-house programmes offered by EHW were not objective because the counsellors work for SAPS; counselling is rarely offered after a traumatic incident; and when it is offered counsellors are perceived as unskilled, opting to refer officials to medical doctors or psychiatrists to prescribe medication (Jonker et al., 2020:6-7). An example of an EHW service being offered is debriefing.

2.7 Briefing and debriefing

It has been established that stress within the policing sector ought to be taken seriously, as police officials play a critical role in maintaining law and order in society. To fulfil their duties, CSEs need to work effectively, and both stress and trauma have the potential to undermine their efficiency. Police stress may also have a negative effect on their working relationships with the public. Extant research confirms that in order for police officials to perform their duties efficiently, they need to be provided with support services to maintain their psychological well-being (Papazoglou & Tuttle, 2018:1). The costs of police work include behavioural, social, and mental sacrifices, and indicate a need for sustainable intervention (Arble et al., 2017:1; Jonker et al., 2020:8).

Tertiary prevention is most commonly used with police officials, whereby established trauma symptoms and reactions are treated. A tertiary approach, however, means that individuals potentially experience months or years of distress and dysfunction before their trauma is relieved. Secondary prevention is when there is intervention with the trauma survivor soon after exposure, before post-trauma symptoms manifest. An example of secondary prevention is debriefing, which may be offered in an effort to avoid initial trauma symptoms from developing into conditions such as PTSD. Primary prevention encompasses preparing an individual for a traumatic event that has not occurred yet. An example of primary prevention is briefing, whereby officials are forewarned of the nature of the scenes that they will be attending. Primary prevention may assist CSEs in establishing both psychological and professional strategies to cope with trauma that they may experience in their work context. A combination of primary and secondary prevention has been shown to prevent the onset of PTSD symptoms and to lower more general anxiety symptoms (Arble et al., 2017:2; Jonker et al., 2020:12).

The lack of counselling, briefing, and debriefing services available for police officials from the SAPS is thought to be a contributing factor to the levels of trauma that the police continue to experience (Kempen, 2012:6). Both briefing and debriefing have been found to decrease stress in police officials, as they are warned about what they will encounter and are also provided with

an environment within which to express their emotions after the trauma exposure (Elntib & Armstrong, 2014:417; Jonker et al., 2020:12).

Briefing of SAPS members can have a significant impact on how they are able to cope with the scenes to which they are dispatched. Arriving at a traumatic scene without having had time to be briefed about the risk involved and what to expect can raise stress levels. In addition, being confronted with, for example, multiple casualties on scene can be distressing if the police officials are not forewarned about the circumstances of the scene prior to arrival (Elntib & Armstrong, 2014:417). The unpredictability of crime scenes when police officials are not briefed about what they may encounter can be an added source of stress, with psychological disorganisation linked to such a lack of preparedness (Mushwana et al., 2019:4; Young, 2004:23).

There are two types of briefing; operational and psychological, both of which are provided at the same time. Operational briefing encompasses sharing an understanding of the practicalities of the incident, such as relevant strategic risk assessments, threats on scene, number of suspects, and all other intelligence (Elntib & Armstrong, 2014:417). The psychological briefing prepares the CSEs for the emotional impact of the scene that they will be attending, typically confirming information pertaining to the nature of the scene and the victims (Elntib & Armstrong, 2014:418).

Research confirms that police officials feel that the briefing they receive is inadequate, if they are briefed at all. They arrive on scene not feeling mentally prepared for what they will encounter. Practically, briefing is often seen as not being possible due to the rapid nature and frequency of critical incidents, however even a partial briefing is preferable to none at all (Elntib & Armstrong, 2014:421).

It is essential for police officials who have been exposed to trauma to receive effective and adequate support as soon as possible after exposure to a traumatic incident, in order to prevent developing trauma-related stress symptoms (Boshoff & Strydom, 2017:445). Exposure to trauma has been long-associated with psychological difficulties. If stress syndromes experienced after exposure to trauma are not dealt with during the aftermath of exposure, stress and trauma-related psychiatric disorders may develop, such as PTSD (Boshoff & Strydom, 2015:13). One method of assisting police officials to cope with their stress post-scene is to encourage them to take part in debriefing. Debriefing involves allowing persons to tell their stories (Jonker et al., 2020:2). The main aim of debriefing is not to make individuals forget about a traumatic incident that has occurred, but rather to help them look at it and remember it differently (Brooks et al., 2019:2; Nocera & Merritt, 2017:209). The debriefing consists of a meeting with a group of people either

during or after a traumatic event, for example a murder crime scene (Boshoff & Strydom, 2017:445). The purpose of the debriefing meeting is to talk about feelings and reactions, to identify those who may require additional mental health services, and to develop strategies to ease the emotional impact of the traumatic event. Within SAPS, debriefing tends to be a once-off activity, which lacks long-term therapeutic assistance (Boshoff & Strydom, 2017:446).

Police culture may cause CSEs to be cautious in engaging with mental health professionals. A failure to gain initial engagement in, and acceptance of, mental health programmes can obstruct the implementation of such programmes (Arble et al., 2017:3). A study indicated that police officials have shown reluctance to participate in debriefing with counsellors who have not worked as police workers before. Officials have reported that asking for assistance from an “outsider” about the traumatic scenes that they experience, is not productive (Elntib & Armstrong, 2014:421). Police officials may be sceptical of how well a mental health professional can treat them, as they may believe that the professional does not understand the stress that comes with the CSE occupation (Jetelina et al., 2020:8). In keeping with such concerns, it has been found that during therapy sessions officials are less likely to express psychological issues when the therapist is seen as an outsider. Research has found that police officials may sometimes find it easier to discuss their trauma experiences with their fellow officials, rather than with mental health professionals (Anderson & Papazoglou, 2014:185; & Papazoglou & Manzella, 2013:3). A 2017 study in the USA, focussed on police officials and the benefit of mental health interventions by utilising senior officials rather than mental health workers to implement mental health training. Positive feedback and results were noted (Arble et al., 2017:3). A Korean study in 2018 found that consultations with retired police officials are beneficial for current employees in order to foster fellowship and provide supportive relationships (Kang & Lee, 2018:38). In addition, there is a “code of silence” amongst CSEs, whereby they do not share information that could be potentially career-damaging, such as admitting to experiencing psychologically distressing symptoms, to someone who is not seen as part of the police circle (Green, 2016:9; Warren, 2015:42).

Research has highlighted the need for officials who have operational experience, such as commanders, to conduct the debriefings of employees, as opposed to civilian chaplains and psychologists. However, it has also been acknowledged that time constraints on such commanders would mean that debriefing would possibly occur only once per year (Elntib & Armstrong, 2014:423). Annual debriefing is unlikely to be often enough to make a significant psychological impact. Police officials receiving the debriefing have also previously expressed

concern about time-related pressures in relation to both briefing and debriefing (Elntib & Armstrong, 2014:422).

Emotional attachment and social support are also protectors against the feelings of helplessness that trauma can evoke. Providing and restoring social support can be key in assisting CSEs to deal with their trauma (Ménard & Arter, 2013:40; Young, 2004:52). Studies have found that the more support that officials receive from their superiors, the administration, and fellow officials, the less negative impact traumatic events had on them (Clark et al., 2015:944; Young, 2004:53). Officials who have emotional support available after experiencing trauma are more likely to recover faster from the trauma than those who have limited social support (Nolen-Hoeksema, 2011:121).

Offering psychological assistance to police officials who are traumatised with the work that they carry out is important and can in some ways be seen as an obligation that SAPS has, due to the fact that they are exposing the officials to trauma, and therefore have a responsibility to offer them assistance where they are able. Both employment selection and post-employment training may equip police workers to better cope with the traumatic situations that their job entails, however it is still normal for even the most experienced officials to have negative psychological reactions to trauma faced in their workplace (Rajin, 2012:6).

Extreme stress can lead to employee absenteeism. For the period January to December 2019 SAPS reported that 160 857 employees had taken a total of 1 637 737 sick days, costing SAPS an estimate of R2.1 billion. It was not specified if the sick days were for physical or psychological illness (SAPS, 2020b:337).

It is additionally practical for SAPS to provide psychological resources for their police officials, as money is lost through staff replacement, which may be prompted by police workers being traumatised and not being offered any help for their trauma (Moran et al., 2020:1; Robinson, 2000:75; Vaughan et al., 2016:1). Research indicates that it costs more to replace an employee than to provide treatment to an already employed individual (Allen, 2008:3). Replacing an employee involves costs in regard with testing possible replacements, training the replacement, benefits for the replacement, and the knowledge and experience lost from the former employee leaving (O'Connell & Kung, 2007:15). Losing experienced employees is even more costly (Mofokeng, 2015:37). In addition, early retirement may need to be paid to the employee who is leaving. Hence, it is a substantially less expensive endeavour to provide intervention and

treatment to a police official who is suffering physically and/or psychologically from exposure to trauma (Leeds, 2009:4).

Stressed staff who insist on remaining at work may also disrupt their colleagues if they have anger or low morale. Hidden costs to SAPS may come through the personal cost of trauma such as depression, family dysfunction, alcohol or narcotics abuse, and anxiety. Healthy and satisfied employees are more productive in their workplace and remain in their positions for longer, as opposed to their more traumatised and stressed colleagues. It is therefore advisable for SAPS to address the trauma of their employees before it begins to affect not only the police officials, but SAPS as an organisation (Robinson, 2000:75; Valentia, 2019:41). A 2017 study conducted with SAPS members in the North West found that implementing psycho-social therapeutic programmes assisted the members with the trauma that they were experiencing from their work (Boshoff & Strydom, 2017:463).

A common barrier to access debriefing or psychological counselling services is that there is a stigma surrounding officials who pursue psychological help (Brooks et al., 2019:2; Jonker et al., 2020:13; Papazoglou & Tuttle, 2018:2). There are several reasons why police officials are wary to access psychological support. Apart from many officials feeling that the professionals providing psychological services will not understand the work that they do, officials have also reported fearing to be seen as “weak” for requesting counselling and support. Seeking psychological assistance can often incorrectly imply that individuals who do so are cowards who lack the ability to perform their duties (Papazoglou & Tuttle, 2018:1). Debriefing is currently optional in the SAPS and, as such, police officials have shown reluctance to participate as they do not wish to be seen to be in need of help (Rajin, 2012:2; Sunder, 2019:90). Police officials have historically felt that they should be able to handle scenes that they deal with on their own and without assistance (Elntib & Armstrong, 2014:421).

A 2015 study indicated that in the LCRCs in particular, police culture deeply affected the employees. Respondents indicated that they felt the need to adhere to the culture, which valued action over feeling. This subsequently contributed to less frequent use of the debriefing services (Boshoff & Strydom, 2015:27). The study additionally determined that 44% of the respondents were familiar with the trauma intervention programmes presented by EHW in SAPS. Despite such acquaintance, only 28% of participants indicated that they took part in critical incident stress debriefing. A main reason for not taking part was that confidentiality is not always maintained and there were concerns raised that future promotions may be at risk if an officer has a file with EHW (Boshoff & Strydom, 2015:23). In addition, officials mentioned that they prefer to consume alcohol

with their colleagues after work as opposed to attending debriefing, due to the fear of seeming weak in their co-workers' eyes (Boshoff & Strydom, 2015:27).

Although many police employees have shown a tendency to have resilience with regard to their exposure to traumatic scenes, the frequency with which CSEs are exposed to trauma does not allow for a "recovery" period, and as such the resiliency breaks down. Police management should therefore be obliged to ensure that the CSEs in their employ are emotionally, mentally, and physically equipped to handle the scenes with which they must work. Both briefing and debriefing have been found to decrease symptoms of stress-related fatigue and clinical depression, as employees are provided with an opportunity to express their emotions. In addition, briefing and debriefing have been found to be an important tool in both the prevention and the treatment of PTSD (Elntib & Armstrong, 2014:417).

Historically, SAPS has neither been appropriately briefing nor debriefing their members both before and after crime scenes. There appears to be no standard operating procedure nor any formal policy to outline the system of briefing and who is responsible for it. The South African Firearms Control Act, Act 60 of 2000, makes it compulsory for SAPS members to undergo psychological debriefing within 48 hours after experiencing any incident which caused them to either discharge their firearm or to witness a shooting. Not all traumatic scenes that CSEs attend require the use of firearms and as such not all incidents that could cause psychological trauma for CSEs fall under the Act, which enforces debriefing (Elntib & Armstrong, 2014:418).

2.8 Research evidence pertaining to police officials and trauma

Stress is an integral part of police officials' lives, as they encounter stressful situations in their daily work. The stress of the circumstances encountered has a cumulative effect over time. Police officials have been found to have more stress-related complaints than employees in most other professions (Boshoff & Strydom, 2017:445). The purpose of the discussion in the next section is to provide a snapshot of both international and South African research evidence pertaining to police trauma in general. The reason for selecting the studies below for closer scrutiny, is to illustrate interest in the topic of police trauma. In some instances, the researchers used methods that are similar to the ones used in the present study.

2.8.1 International research evidence

The majority of studies concerning the effects of policing on the psychological well-being of police officials are based in Europe and North America. Fewer studies have taken place in developing

parts of the world. Research on the subject is invaluable, as it can be used to develop programmes, support services, and practices to effectively support police officials (Lee et al., 2017:221).

A 2016 retrospective study in the Netherlands involved 967 police officials who had been seeking treatment for trauma-related symptoms between 1995 and 2011. The study was quantitative and 63% of respondents was diagnosed with either PTSD or partial PTSD (Van der Meer et al., 2017:88). The study indicated that the trauma symptoms were linked significantly more often to work-related trauma as opposed to trauma in the private lives of the respondents (Van der Meer et al., 2017:89). Female respondents were more likely to report PTSD symptoms, as were police officials who had reported experiencing the largest variety of traumatic events (Van der Meer et al., 2017:90). Although the study was limited in that the respondents were already seeking help for trauma-related symptoms, and so were likely to receive some sort of diagnosis, it did serve to indicate that those symptoms were related to the work police officials carry out.

Studies in the USA have consistently demonstrated that PTSD and mental illness are significant problems within the policing profession. A quantitative study in 2013 involved 359 police officials (Hartley et al., 2013:243). It was found that 15% of men and 18% of women in the sample population reached the diagnostic cut-off for PTSD (Hartley et al., 2013:245). A further quantitative study of 296 active-duty police officials in the USA found that 12% of the respondents were exhibiting PTSD symptoms consistent with a likely diagnosis, a significantly higher rate than the general population prevalence, which was 4.7% (Soomro & Yanos, 2019:179). A mixed methods study in the USA consisted of 434 police officials. The respondents were asked to indicate if they had ever been diagnosed with a mental illness and 12% reported that they had. A further 26% of the respondents screened positive for self-harm, PTSD, anxiety, depression, or suicidal ideation (Jetelina et al., 2020:7).

A large quantitative study in the UK consisted of 16 857 serving police officials and staff in operational roles (Brewin et al., 2020:1). The vast majority of the respondents (90%) reported experiencing traumatic events, with 98% of those events being work-related. A fifth (20.6%) of the respondents stipulated experiencing post-traumatic stress symptoms, compared to a prevalence rate of 14.2% in the general population (Brewin et al., 2020:4). Two-thirds of respondents (66%) reported a mental health or psychological issue that, in their opinion, was as a direct result of police work (Brewin et al., 2020:3).

A Korean study recognised that police officials are both physically and emotionally stressed by their work. The need for regular psychological tests and intervention was emphasised (Kang & Lee, 2018:33). The study was qualitative and consisted of three police officials who had experience in criminal investigations. Whilst the sample size was small and lacks generalisation, the explorative phenomenological paradigm which is characteristic of qualitative research, offers researchers the opportunity to learn from the experiences of others who are confronted by challenging circumstances (Neubauer, Witkop & Varpio, 2019:90-91). The study confirmed that the more traumatic the participants experienced an event to be, the more likely they were to be diagnosed with PTSD. It was additionally found that the more frequently the officials were exposed to traumatic events, the more depressive episodes they would experience. Their heightened stress levels from repeated exposure to traumatic scenes also contributed to increased diagnoses of PTSD (Kang & Lee, 2018:38). It was concluded that police officials were more likely to experience PTSD symptoms and to be diagnosed with PTSD than the general public, due to their occupational work (Kang & Lee, 2018:50).

A quantitative German study of 843 police officials recognised policing as a particularly stressful occupation, with officials being at a heightened risk for reduced well-being and mental health problems (Wolter et al., 2018:45). The higher the demands of the job, the more emotionally exhausted the police officials were reported to be. Administrative stressors, such as lack of working materials and information, were also found to be associated with emotional exhaustion. Organisational resources such as support, fairness, and shared values had a positive effect on respondents (Wolter et al., 2018:50).

Some international studies have utilised the Brief COPE Inventory with samples of police officials. A quantitative study in Uttar Pradesh, India, recruited 300 police officials who were requested to complete various questionnaires, including the Brief COPE Inventory (Singh et al., 2019:74). The study focussed on how the different ranks of police officials experience and cope with stress, and on the reasons why their experiences might differ. The highest ranking officials were found to make use of more efficient coping strategies, which was attributed to their higher educational and socio-economic background, being in powerful and influential positions, and their access to resources. The second ranking officials were found to have the second best use of adaptive coping methods. This was attributed to lesser demand on their need to cope, as they experienced the lowest levels of stress. The lowest ranking officials were found to have the highest levels of maladaptive coping methods, attributable to their experiencing the highest levels of stress and work overload (Singh et al., 2019:76).

A quantitative study in Greece involved 336 police officials. The Brief Cope Inventory was administered and it was found that problem-focussed coping was the most frequent coping strategy used, with avoidance-focussed coping being the least frequent (Galanis et al., 2019:513). The study, however, did not focus on trauma that police officials experience with regard to the scenes that they attend. The respondents were questioned about what caused them both operational and organisational stress, and attending traumatic scenes was not indicated to be a particularly significant stressor (Galanis et al., 2019:511).

A 2018 study in the USA on the stress and trauma that police officials experience also used the Brief COPE Inventory (Violanti et al., 2018:274). The study was quantitative and involved 342 police officials (Violanti et al., 2018:273). The Brief COPE Inventory results were compared with how the police officials measured on a PTSD scale, and the conclusion was that higher use of approach coping was associated with lower PTSD scores (Violanti et al., 2018:278).

There are numerous scales that may be applied to screen and assess for PTSD or traumatic events and trauma-related symptoms. A non-exhaustive list includes the Clinician Administered PTSD Scale, Davidson Trauma Scale, Distressing Event Questionnaire, Evaluation of Lifetime Stressors, IES-R, Mississippi Scale for Combat-Related PTSD, Penn Inventory for Posttraumatic Stress Disorder, Posttraumatic Diagnostic Scale, PTSD Symptom Scale-Interview, PTSD Symptom Scale: Self-Report Version, Screen for Posttraumatic Stress Symptoms, Structured Interview for PTSD, Trauma Assessment for Adults, Trauma Assessment for Adults Self Report, Trauma History Questionnaire, Trauma Symptom Inventory, and Traumatic Stress Schedule (Substance Abuse and Mental Health Services Administration, 2014b:271). Due to the fact that there are so many options for PTSD screening, it is difficult to find studies conducted either internationally or nationally specifically regarding PTSD within the police services that utilised the IES-R. It is even harder to find studies on police trauma that use both the IES-R and the Brief COPE Inventory.

A quantitative study involving 183 police officials in the USA employed the IES-R in order to measure subjective distress resulting from their exposure to traumatic events (Chopko & Schwartz, 2012:85). The study found that 10% of respondents had scores indicating that their post-traumatic symptoms were of clinical concern and 17% of participants had scores indicating that they likely had PTSD (Chopko & Schwartz, 2012:87). The total number of potentially traumatic events experienced by the police officials and the number of years working as a police official were not associated with post-traumatic distress (Chopko & Schwartz, 2012:90).

2.8.2 South African research evidence

Studies within South Africa regarding the trauma of SAPS members are unfortunately not as prolific as international research interest. The high prevalence of suicide and psychological illnesses within the ranks of SAPS are indicative of the trauma and stress experienced by police officials and highlight the need for national research (Kittur, 2017:12). Although it is not reported upon in any recent SAPS annual reports, research indicates that SAPS members have a suicide rate eleven times more than their civilian counterparts (Van den Heever, 2017:1).

Young conducted an in-depth qualitative study in 2004 regarding the meaning of trauma in the SAPS. The study focussed on which aspects of their working environment the participants found to be the most stressful, traumatic, and difficult to cope with (Young, 2004:6). Employees working in the Special Task Force, the Highway Patrol, and the Crime Combatting Unit were recruited as participants (Young, 2004:108). Five participants were recruited from each unit, with a total of 15 taking part (Young, 2004:110). Participants were asked to write an essay explaining what they do and do not like about their job, and to additionally explain what they think were the causes of the difficulties they experience in the occupational sphere. Participants indicated that they were exposed to traumatic scenes in their line of work, often involving deaths of strangers and of their fellow officials, the latter of which were experienced as particularly traumatic (Young, 2004:136). Participants also noted that proper debriefing was not always provided (Young, 2004:136). Significant scenes of trauma were described and participants explained that they ordinarily felt unable to speak to anyone about such scenes, not even with their spouses, as recounting the experience was too traumatic (Young, 2004:142). Having to shoot, kill, or injure a suspect was also brought forth by several participants as an action that caused them significant trauma (Young, 2004:144). All participants indicated that they felt able to cope with the trauma they encounter (Young, 2004:146). A lack of recognition and support from the government and police management, as well as feelings of insecurity and uncertainty, were highlighted as circumstances in which the participants did not cope well (Young, 2004:148). Organisational stressors recognised were a lack of training and recognition, finding management to be unapproachable and not performing their duties, relationship stressors such as concern about family and friendships, and the adoption of maladaptive coping skills. It was suggested that transformation is needed in the SAPS environment (Young, 2004:165).

In 2012, Koortzen, Oosthuizen and Young conducted another study wherein the same SAPS units as the 2004 Young study were used. The study was also qualitative in nature. Participants were asked to write an essay in which they were to explain what they both like and dislike about their

jobs, and to indicate if there had been any changes in their working environment and, if there were, whether those changes had any effect on them. They were also asked to explain what they thought caused the difficulties they might experience (Koortzen et al., 2012:5). A total of 15 participants took part in the study (Koortzen et al., 2012:6), which found that the police officials encountered traumatic scenes, but that they had relatively low levels of death anxiety (Koortzen et al., 2012:7). The participants also all indicated that organisational stressors have a negative impact on their functioning within the SAPS and their general well-being (Koortzen et al., 2012:8).

Jorgensen and Rothmann published two articles in 2007 and 2008 respectively, focussing on the employees of the North West LCRC. The respondents included CSEs, however they only comprised 8.1% of the sample, with the majority being fingerprint investigators, data typists, administrative employees, and officials in managerial positions. Both articles employed a quantitative approach wherein findings in relation to 111 respondents were reported (Rothmann & Jorgensen, 2007:77; Jorgensen & Rothmann, 2008:1). The 2007 article concluded that the well-being of the respondents was negatively affected by inadequate resources and high job demands. Respondents additionally indicated that they experienced a lack of support from the SAPS as an organisation. The study acknowledged that exposure to scenes of trauma, combined with elevated work demands, resulted in respondents not having sufficient time within which to recover from the trauma, which could be an explanation for the burnout reported (Rothmann & Jorgensen, 2007:81). The 2008 article recognised that the respondents experience additional stressors compared to foot patrol police officials in their daily work, due to the fact that they are required to work with critical crime scenes or material from such scenes (Jorgensen & Rothmann, 2008:2). Many of the respondents were experiencing concerning physical health symptoms such as digestive problems, headaches, backache, and high blood pressure. Psychological health symptoms such as depression, anxiety, feeling restless, alcohol abuse, and prescription medication abuse were also recorded. The study did not definitively link the aforementioned symptoms to the work the respondents were conducting, however the high stress environment they worked in was emphasised to be a possible cause (Jorgensen & Rothmann, 2008:11).

A quantitative study in 2009 involved 217 rural police officials. The study aimed to establish to what extent multiple types of trauma and multiple exposure to trauma are related to the development of PTSD in the sample population (Steyn, 2009:140). Low reports of exposure to potentially traumatic experiences, such as handling or seeing dead bodies, were obtained, although the researcher mentioned believing that the respondents underreported their traumatic experiences (Steyn, 2009:146). Yet, almost 25% of the respondents exhibited symptoms of

PTSD. The study concluded that both multiple types of trauma and multiple exposures to trauma correlate significantly with PTSD symptoms (Steyn, 2009:147).

A quantitative study in 2012 with the Metropolitan Police Services in Gauteng involved 139 police officials (Subramaney et al., 2012:177). Respondents were questioned as to whether they have ever experienced a traumatic event, not only in their occupational sphere, but in their personal lives too. Almost all the respondents (99.3%) indicated that they had experienced at least one traumatic event in their lifetime, with 59.7% denoting that they had experienced more than one. The most common traumatic event experienced was the unexpected death of a loved one (46.8%), followed by experiencing a motor vehicle accident (25.9%) (Subramaney et al., 2012:178). Depressive symptoms were not prevalent among the respondents, however there were relatively high elevations of anxiety reported by members of the sample population, with 64.8% indicating elevated anxiety levels (Subramaney et al., 2012:179).

In a 2014 qualitative study, the aim was to investigate the impact that critical incidents have on metropolitan police officials and to review the effectiveness of briefing and debriefing (Elntib & Armstrong, 2014:418). Participants across South Africa were recruited for the study, with 25 metropolitan police officials taking part in the research. To enhance confidentiality, the researchers did not reveal from which of the then-seven metropolitan divisions the participants hailed. The participants confirmed attending to traumatic scenes in their work, experiencing scenes where a fellow officer had died, scenes with mutilated bodies, and crowd events with poor planning as being the most traumatic (Elntib & Armstrong, 2014:420). The participants indicated that briefing and debriefing processes of the SAPS are not adequate. With regard to briefing, participants indicated that when they arrive at a scene, they have not been prepared for what they will encounter. Participants reported that debriefing is often not attended due to the fact that it is offered by a chaplain and the police officials do not want to speak to someone who does not understand their work (Elntib & Armstrong, 2014:421). A recommendation that emanated from the study was for a new system of briefing and debriefing to be instituted that would suit the needs and characteristics of the different police services within South Africa (Elntib & Armstrong, 2014:423).

In 2019, a longitudinal study was published involving SAPS members. Data was collected on three occasions from three samples of the study population. The first sample was made up of 1 280 new police recruits (Wassermann et al., 2019:100). Data from this sample was collected in July 2006 (Wassermann et al., 2019:101). The second sample consisted of 463 police trainees from the first sample, who were undertaking practical training at different training sites

(Wassermann et al., 2019:100). The data was collected in December 2006, at the end of their theoretical training (Wassermann et al., 2019:101). The third sample was made up of 120 police officials who had then spent two years in the field at different police stations across South Africa. The last sample of 120 respondents had taken part in all three stages of the study and were reported upon in the final paper published from the study (Wassermann et al., 2019:100). The data from the final sample was collected between 2008 and 2010. The purpose of the study was to confirm which coping strategies were adopted most by the police officials, and to determine whether the prevalence of the coping strategies had changed over time (Wassermann et al., 2019:97). The instrument used to ascertain coping strategies was the Way of Coping Questionnaire (WCQ). The results indicated that seeking social support, planned problem-solving, and positive reappraisal were the most used coping strategies. The least utilised coping strategies were escape avoidance, accepting responsibility, and confrontational coping. The coping styles utilised were demonstrated to have changed over time from when the respondents were police trainees up to working in the field (Wassermann et al., 2019:104). The results were linked to officials accepting less responsibility over time, making less use of confrontational coping, and relying more upon planned problem-solving, escape avoidance, and positive reappraisal (Wassermann et al., 2019:97).

A quantitative study in 2019 comprised 104 police officials from the Greater Tzaneen Municipality. The instruments used in the study were the full COPE Inventory and the Police Stress Inventory. The study found that female police officials had significantly higher stress intensity scores. It also found that police officials of Christian faith had lower stress scores (Mushwana et al., 2019:3). Constables and sergeants were shown to use emotion-focussed coping strategies in particular, although problem-focussed coping strategies were shown to be consistent across the respondents, regardless of age, religion, marital status, gender, language, or rank. The respondents did not make use of maladaptive coping strategies such as drinking alcohol or using substances (Mushwana et al., 2019:6).

A 2013 study employed a mixed methods approach, which involved 22 employees of the National Intervention Unit, which is a part of the Special Operations Division of the SAPS. The 22 participants were selected for the study due to indicating that they had experienced repeated exposure to shooting incidents, extreme crowd violence, and “gruesome scenes”, such as murder incidents of a colleague (Van den Heever, 2013:58). The occupational role of the National Intervention Unit is quite dissimilar to CSEs, as members of the unit are deployed in order to render services during actively developing high-risk violent crime situations, such as the execution

of dangerous arrest warrants and cash-in-transit heists (SAPS, [sa]). They are therefore exposed to immediate, objective threats that could result in physical harm, as opposed to the second hand, subjective threats that CSEs are exposed to when working with victims of serious crimes. The study was conducted in order to evaluate the efficacy of the SAPS Multiple Stressor Intervention Programme (MSIP). Several instruments were used in the study, one of which was the IES-R (Van den Heever, 2013:91). The respondents were split into an intervention group, consisting of 13 participants, and a non-intervention group, consisting of nine participants. The groups were split in this way because the nine participants in the non-intervention group had been deployed to other areas of the country and were unable to attend the intervention programme (Van den Heever, 2013:59). Both groups took the tests measuring trauma and the IES-R twice, with the intervention group receiving the MSIP between the tests. The results showed improvements in both the intervention group and the non-intervention group between the tests. It is unknown whether the improvement in the intervention group could be attributed to the intervention programme, due to the concurrent improvement in the non-intervention group. The improvement in the non-intervention group could potentially be attributed to initial increased symptoms due to deployment, then decreasing as participants settled into their deployments (Van den Heever, 2013:92). While there were differences in test results, overall it was concluded that there were no significant differences between the group that received the intervention programme and the group that did not (Van den Heever, 2013:98). Of relevance to the current study, was the elevated mean IES-R score of 39.5 for the entire group, prior to the intervention (Van den Heever, 2019:76-77).

A quantitative study conducted in 2008 recruited 104 SAPS members in the area of Cape Town. Respondents were required to be uniformed SAPS members who had been serving in the SAPS for a minimum of three years. The respondents completed a self-administered questionnaire comprising of two instruments, and socio-demographic questions. One of the instruments used was the Brief Cope Inventory (Paulsen, 2008:36). The study hypothesised that the majority of police officials would adopt avoidance coping strategies as indicated on the Brief Cope Inventory, however the most frequently used coping strategies were problem-focussed, with avoidance coping strategies being the least likely to be employed. Drug and alcohol use were the least used of all coping strategies (Paulsen, 2008:47).

A quantitative study of 36 metropolitan police officials in Ekurhuleni published in 2019 sought to determine whether personality factors were related to post-traumatic stress symptomatology, whether personality factors were predictive of coping strategies, and whether coping moderated the relationship between personality factors and post-traumatic stress symptomatology (Van

Staden, 2019:1). The study acknowledged that police officials are often required to attend traumatic scenes and that such scenes might have a negative effect on them. Within the study PTSD is recognised to be a problem in police work, and the need for understanding factors that increase the risk of PTSD amongst police officials was highlighted (Van Staden, 2019:2). Both the Brief Cope Inventory and the IES-R were used as research instruments (Van Staden, 2019:6). The study however, utilised the IES-R in relation to personality factors, in order to determine if there was a relationship between the IES-R results and the personality factors of the respondents (Van Staden, 2019:9). The average IES-R score for the respondents was 25.85 (Van Staden, 2019:8). The Brief Cope Inventory was also used in comparison to personality factors (Van Staden, 2019:7). Significant relationships were found between personality factors and IES-R scores, as well as personality factors and types of coping. Intrusion on the IES-R was negatively correlated with conscientiousness and positively correlated with neuroticism. Avoidance was also negatively correlated with conscientiousness (Van Staden, 2019:9). With regard to personality factors and coping strategies, both emotion-focussed coping and dysfunctional coping were correlated with neuroticism (Van Staden, 2019:7).

2.9 Research evidence pertaining to CSEs

The previous section attests to the fact that police officials, and the trauma and stress that they experience, are quite widely researched compared to studies that specifically focus on CSEs. Police officials and CSEs are two distinct groups that are confronted by different threats in terms of trauma and stress. Police officials are more likely to face immediate, objective threats that might cause them physical harm, whereas CSEs are faced with second hand, subjective threats in working intimately with victims of serious crimes and the consequences of violence while performing their professional duties. CSEs are required to, amongst others, attend to crimes of assault that are often motivated by aggression and cruelty, and are exposed to both the physical and psychological trauma of victims. Moreover, the bodies to which they are exposed might be decomposed or mutilated, and they are often required to spend hours on scene in the presence of deceased individuals or traumatised victims and families. In addition, they are exposed to hazardous bodily fluids as well as communicable diseases, and whilst they might be physically shielded against these through wearing protective clothing, they are not protected against psychological harm (Fyhn et al., 2016:261). As such, the small body of extant research which focus on CSEs in particular, or on specialist units, are valuable in guiding future research.

2.9.1 International research evidence

International research affirms that CSEs are at higher risk of developing PTSD than ordinary citizens, due to their frequent exposure to traumatic events. Investigators who display signs of distress, after being exposed to crime situations that are extreme, may be diagnosed with PTSD. Although not necessarily exposed directly to life-threatening circumstances, witnessing traumatic criminal incidents can trigger PTSD symptoms (Nho & Kim, 2017:40).

A 2013 study conducted in Korea focussed on forensic science investigators, or CSEs in the South African context, who were confirmed to be exposed to traumatic scenes with greater frequency than the average citizen, and as such are at heightened risk of developing PTSD. The study followed a quantitative approach and a total of 111 respondents were recruited. The study measured death anxiety, personality types, and PTSD symptoms based on the DSM-IV criteria, and identified associations with the respondents' career length and experience (Yang-Sook et al., 2013:137). Forensic investigators reported higher levels of PTSD symptoms as the levels of homicide, robbery, rape, theft, and arson scenes that they had to attend, escalated. Those who had shorter careers exhibited more symptoms of PTSD, as did those with a type A personality. Individuals with type A personalities are said to be goal-oriented, assertive, challenge-seeking, competitive, and thorough in conduct. They may also become hostile and aggressive in uncontrollable situations. Contrarily, personality type B individuals, who tend to be reticent, more relaxed, and less competitive exhibited less PTSD symptoms (Yang-Sook et al., 2013:139).

In a quantitative study of 51 CSEs in the USA, 63% of the respondents indicated that they were subjected to high levels of stress directly related to critical incident trauma. A sizeable proportion of respondents (43%) also indicated that they often suffer from fatigue as a result of their job, and 78% reported at least one regular physical symptom such as headaches, loss of appetite, and difficulty sleeping, related to their work. An additional 52% stated that their workload is too high (Clark et al., 2015:939). The study also ascertained that crime scenes involving homicide and violence were found to be more stressful to the CSEs compared to scenes of arson or burglary (Clark et al., 2015:940). Increased levels of stress were also linked to having too little human resources to attain effective results and receiving low emotional support from superiors (Clark et al., 2015:944).

A quantitative study of 156 Norwegian CSEs confirmed higher levels of health complaints among CSEs compared with civilians, which has negative consequences for both the CSEs and the police organisation (Fyhn et al., 2016:262). In addition, the officials were divided into examiners

who specialise in crimes of person-directed violence, and examiners who are experts in fire, financial, and environmental crimes. The specialist violent CSEs reported more subjective health complaints compared with the examiners who did not work with person-directed crimes of violence (Fyhn et al., 2016:267). A subjective health complaint was defined as a health complaint that cannot be explained by physiological changes. Examples of subjective health complaints reported were gastrointestinal complaints, musculoskeletal pain, neck pain, allergies, pseudoneurological symptoms, and migraines. However, musculoskeletal pain was the most reported health complaint (Fyhn et al., 2016:266).

A quantitative study conducted in the USA with 76 participants CSEs utilised the Brief COPE Inventory. The study reported that the most commonly used coping strategies by the CSEs were active coping, planning, and acceptance (Salinas & Webb, 2018:243). Female CSEs were found to exhibit higher use of emotional support, use of informational support, and positive reframing, in comparison to male CSEs (Salinas & Webb, 2018:244).

2.9.2 The South African context and local CSE research evidence

Before proceeding with a discussion of local research evidence on CSEs, contextualisation of violence in the South African context in comparison with other countries is required. This will be followed by an explanation of the tasks and responsibilities of South African CSEs.

2.9.2.1 Violence within the South African context

Although the work of police officials is internationally recognised as being stressful and often dangerous, South African police officials have to face a higher number of traumatic incidents that are often more violent in nature compared with police officials in other countries, due to the high rate of violent crime in South Africa (Kittur, 2017:2). South Africa is amongst the countries which have the highest levels of violence worldwide, with approximately 35.8 murders per 100 000 people per year, which calculates to an average of 58.4 murders per day (Factsheet: South Africa's...2020). South African rates of child homicide are around twice the global average and the rate of violence between youths is nine times the global average (Brankovic, 2019:2). Between 2004 and 2015, collective violence in communities, fuelled by poor service delivery, corruption and political agendas, rose by 155% in South Africa (Brankovic, 2019:3). Therefore, SAPS officials are required to deal with one of the highest crime rates globally (Gumani et al., 2013a:481).

Each year SAPS releases the crime statistics for the preceding year to the public. Crimes are divided into categories, one of which is contact crimes. Contact crimes are made up of murder, sexual offences, attempted murder, assault with the intent to inflict grievous bodily harm, common assault, common robbery, and robbery with aggravating circumstances. Contact crimes in South Africa rose between the 2013/2014 and 2015/2016 reporting periods. For 2016/2017 and 2017/2018, the number of contact crimes reported decreased slightly, but then increased again between the 2018/2019 and 2019/2020 reporting periods. Notably, contact crimes have increased by 0.7% in the past year (Table 2).

Table 2: South African contact crimes statistics

Time period	Total contact crimes	Numerical difference from previous year	% difference from previous year
2012/2013	608 724	- 7211	- 1.2%
2013/2014	611 574	+ 2850	+ 0.5%
2014/2015	616 973	+ 5399	+ 0.9%
2015/2016	623 223	+ 6250	+ 1.0%
2016/2017	608 321	- 14 902	- 2.4%
2017/2018	601 366	- 6955	- 1.2%
2018/2019	617 210	+ 15 844	+ 2.6%
2019/2020	621 282	+ 4072	+ 0.7%

Source: SAPS, 2020a:5

CSEs would be required, amongst others, to attend the crime scenes that comprise the contact crimes category, many of which involve extreme physical violence. Within the category of contact crimes, murder can arguably be assumed to be one of, if not the most, traumatic crime scenes for CSEs to attend. The murder crime rate in South Africa has been steadily increasing since the 2012/2013 period, thereby exposing the CSEs of the SAPS to increasing numbers of traumatic crime scenes (Table 3).

Table 3: South African murder statistics

Time period	Total murders recorded	Numerical difference from previous year	% difference from previous year
2012/2013	16 213	+ 659	+ 4.1%
2013/2014	17 023	+ 810	+ 4.8%
2014/2015	17 805	+ 782	+ 4.4%
2015/2016	18 673	+ 868	+ 4.6%
2016/2017	19 016	+ 343	+ 1.8%
2017/2018	20 336	+ 1320	+ 6.5%
2018/2019	21 022	+ 686	+ 3.3%
2019/2020	21 325	+ 303	+ 1.4%

Source: SAPS, 2020a:5

From 1 April 2019 to 31 March 2020, a total of 21 325 murders were reported to have taken place in South Africa. The increase from the previous year was 1.4%. In the past eight years the number of murders in South Africa has increased by 31.5% (SAPS, 2020a:5). The rising number of contact crimes and murders means that CSEs are being exposed to more scenes of violence than ever before.

Gauteng in particular has a rising violent crime history. The crime statistics released in March 2020 indicate that in Gauteng contact crimes rose from 174 894 cases in 2018/2019 to 177 737 cases in the 2019/2020 reporting period, illustrating an increase of 1.6%. Data additionally shows that since 2013, the murder rate in Gauteng has been steadily increasing (SAPS, 2020a:13). Reported murders increased by 1.3%, from 4 495 cases in the 2018/2019 period, to 4 555 cases in the 2019/2020 period (SAPS, 2020a:21).

2.9.2.2 Tasks and responsibilities of CSEs

Working for the SAPS requires members to make numerous sacrifices, both in their personal and professional lives, in order to protect the citizens in their communities. They are required to work long hours in shifts, to work away from home for extended periods of time, and to operate under difficult and often unsafe conditions (Rothmann & Jorgensen, 2007:73; Valentia, 2019:47). When CSEs attend to crime scenes they are required to interact with the trauma of victims and oftentimes witness the death of others (Gumani et al., 2013a:481). CSEs are additionally

frequently exposed to smells, sights, and trauma that the majority of the population would rarely encounter. The scenes that CSEs are required to attend are often psychologically, and sometimes physically, damaging or threatening (Vivona, 2013:1). Common incidents that CSEs are required to attend to are physical assaults, murder scenes, domestic violence, and scenes with potentially armed and dangerous criminals (Arble et al., 2017:1).

LCRCs in South Africa operate with the intention of managing criminal records, and applying forensic techniques to recover physical evidence from crime scenes. CSEs are deployed at LCRCs and are exposed to additional stressors that are unique in comparison with foot police officials (Rothmann & Jorgensen, 2007:74). CSEs in SAPS comprise employees who range from the following ranks in ascending order; Constable, Sergeant, Warrant Officer, Lieutenant, Captain, Major, Lieutenant Colonel, and Colonel. The Brigadier heads up the group of CSEs (Rank Structure: SAPS, [sa]).

In order to be employed as a Constable an applicant is required to be a permanent resident in the Republic of South Africa, and to be at least 18 years old, but younger than 30 years. The applicant must be physically and mentally fit, which will be confirmed by a medical practitioner determined by the SAPS. The applicant is required to hold a Senior Certificate (Grade 12) or an equivalent qualification, and to be fluent in English and one other official language (SAPS, 2015b).

Applications for a CSE position of Warrant Officer or above, require qualifications past Grade 12. Candidates are expected to have a three-year NQF 6 qualification, with a major in any of the following: Criminalistics; Criminology; Police Administration; Forensic Investigation/Science; Police Science; Mathematics, Statistics and Applied Mathematics; Criminal Procedure Law; Law of Evidence; or Criminal Law. Alternatively, it is acceptable to hold a three-year NQF 6 qualification in Criminology, Policing, Forensic Investigation, or Natural Science. An additional advantage to the applicant is experience in the field of the post of Warrant Officer (SAPS, 2015b).

The official core responsibilities of a CSE are as follows (SAPS, 2017):

- Attendance of all crimes reported.
- Investigation and maximising the collection and packaging of information at crime scenes.
- Examination of crime scenes with specialised techniques.
- Attendance of crime scenes with the purpose of reconstruction of events.
- Determination of suspect linkages on databases.
- Attendance of crime scenes beyond the South African borders.
- Presentation of evidence in court.

To elaborate on the above, CSEs hold the responsibility of collecting crime scene information, including amongst others, sampling bodily fluids, collecting physical information such as firearm cartridges, taking fingerprints, taking photographs, and compiling photograph albums. All physical information must first be documented before being removed (Omar, 2008:30). Proficient documentation of the crime scene is a time-consuming process. Photography, video recording, audio recording, sketching and notes are the most common methods utilised to permanently record the crime scene. None of the documentation methods is superior to, nor a substitute, for another (Lochner & Zinn, 2015:45). Once the crime scene has been recorded exactly as it was upon arrival, CSEs will proceed to collect the information from the scene for further examination. Physical information includes amongst other things, blood, semen, hair and fibres (Gehl & Plecas, 2016:142). The CSEs are accountable for managing and processing the crime scenes, and for submitting the gathered crime scene information to the relevant sections of FSL for examination as well as assessment, and to the SAPS detective units in preparation for court cases (Rothmann & Jorgensen, 2007:74; SAPS, 2017). Although it is not stipulated in the official core responsibilities of CSEs, many CSEs attend autopsies as they are able to obtain vital information from the autopsies regarding the cause of death of the deceased and the injuries sustained (SAPS, 2014:2).

The importance of crime scene information in criminal investigation cannot be overemphasised. In fact, the courts are partial to physical evidence because they are items that can be seen, examined and interpreted to establish the facts of a case beyond a reasonable doubt (Gehl & Plecas, 2016:34). For this reason, CSEs are tasked to handle and process physical information in such a manner that alterations between the time that it is removed from the crime scene and the time it is received by the FSL, are prevented. The implication is that the physical integrity of information must be maintained by ensuring that it reaches the FSL uncontaminated and undamaged (Van der Walt & Luke, 2011:206). Therefore, all the physical information should be packed, sealed and labelled. As different types of crime scene information require distinctive handling and packaging methods, CSEs carry the responsibility to be well-informed about these methods. The accurate documentation and recording of the gathering, marking, packaging and dispatching of physical information is therefore also a task which rests on CSEs (Prinsloo, 1996:29). As such CSEs play a pivotal role in maintaining the continuity of possession, or the so-called chain of custody, which means the continuous, safe possession of physical information from the moment it is discovered to the presentation thereof as evidence in court (Prinsloo, 1996:29; Saferstein, 2007:15; Van der Walt & Luke, 2011:203). The practical implication of the aforementioned is that every person who handled or examined the evidence must be accounted

for. This infers that a minimum record would show the collector's name, location of the evidence and date of collection, which is the task of CSEs. Similarly, the names of individuals who deliver the evidence to the laboratory, receive it, analyse it, place it in the safe, bring it to court and receive it at court should be recorded (Gehl & Plecas, 2016:111; Van der Walt & Luke, 2011:207).

CSEs are therefore required to physically draw close to the injured or deceased victim and the crime scene information surrounding them, in order to accurately capture the information that will be required for trial (Fyhn et al., 2016:261). In addition, CSEs are often required to testify in court as to what they witnessed at the scene of the crime, as well as provide explanations of any photographs taken. The implication is that CSEs are required to repeatedly examine their work to guarantee that all of the information has been recorded accurately and clearly. Traumatization therefore does not end at the crime scene itself but is perpetuated when reviewing the evidence post-scene and during court trials where CSEs need to relive their experiences (Jorgensen & Rothmann, 2008:2). In addition, the act of taking photographs has been found in literature to cause trauma. Many crime scene photographers resign due to being unable to cope with the nature and the trauma of the photographs that they are required to take (Seely, 2017:8).

Death work is therefore unavoidable for CSEs. As part of their duties, CSEs must attend to scenes involving death, such as fatal motor vehicle accidents and violent crimes (Papazoglou & Tuttle, 2018:5). CSEs may also be exposed to surviving victims of crime or the families of victims when they arrive on a crime scene. In investigating crime, the CSEs are mandated to interrogate the experiences of the victims, which can cause trauma (Papazoglou & Tuttle, 2018:6).

2.9.2.3 South African research evidence pertaining to crime scene examiners

In the South African context, there is a lacuna of research evidence that has focussed on CSEs in particular and the trauma they face.

In 2017, Kittur conducted a mixed methods doctoral study in Industrial Psychology for which 623 CSEs across the province of KwaZulu Natal were recruited (Kittur, 2017:34). The study was rooted in positive psychology, and aimed to determine whether there is a relationship between personality types and resilience among CSEs, whom the researcher acknowledges are exposed to traumatic experiences in their work context on a daily basis (Kittur, 2017:192). In the quantitative phase of the study, the researcher used the Myers Briggs Type Indicator (MBTI) to ascertain personality types, and the Sense of Coherence Scale (SOC) to ascertain levels of resilience among CSEs. In pursuit of the aim to gain greater insight into risk and protective factors, the researcher conducted 26 semi-structured interviews in the qualitative phase of the

study. The objective was to identify risk factors, which lead to negative outcomes for non-resilient CSEs, as well as protective factors, which enable resilient CSEs to manage their traumatic experiences effectively (Kittur, 2017:190). Findings that were of significance for the present study, were that among resilient CSEs, the protective factors were, amongst others, a positive attitude, family and social support, job satisfaction, management support, and being hopeful. Risk factors among non-resilient CSEs included being single, having no family and social support, substance dependency, denialism, not seeking assistance from EHW and/or family and friends, as well as poor financial management. Non-resilient CSEs explained that their reluctance to seek support, could be ascribed to the stigma attached to officials who choose to do so. Believing that they can cope without support, resulted in more sick leave being taken, temporary incapacity leave being applied for, and eventually, medical boarding (Kittur, 2017:261-266).

Boshoff and Strydom conducted a mixed methods study in 2015 regarding the needs of SAPS officials in relation to the trauma and intervention programmes offered. The study population comprised specialist policing units in the North West, including CSEs amongst a number of other units. A self-developed questionnaire was used (Boshoff & Strydom, 2015:14). The respondents were chosen from nine police clusters in the North-West Province, with a total of 323 respondents (Boshoff & Strydom, 2015:16). The findings of the study indicated that the police officials experience stressors outside of their work environment significantly more stressful than within the SAPS. Examples of stressors outside of their work environment were the conflicting expectations of the SAPS as opposed to those of the surrounding community and the criminal justice system, and the offensiveness of the surrounding community towards SAPS members. The respondents also indicated that they were most frequently exposed to scenes of murder, suicide, accidents, and the physical or sexual abuse of women (Boshoff & Strydom, 2015:25). The most common responses to trauma experienced were avoidance of stimuli, re-experience, and hyperarousal. The aforementioned responses resemble symptoms of PTSD. The most common coping methods employed were action-oriented coping styles (Boshoff & Strydom, 2015:26). Respondents indicated that they were aware of SAPS intervention programmes offered, but did not attend as they were concerned that confidentiality would not be upheld, and that records might be kept on file that could jeopardise future promotional opportunities. Respondents also indicated that they did not see a need to attend debriefing (Boshoff & Strydom, 2015:27).

A study conducted in 2015 as part of the Criminology Honours research practical module at the Department of Social Work and Criminology, University of Pretoria, examined the effect of

traumatic crime scenes on crime scene photographers/examiners. The research is as of yet unpublished, however a technical report was submitted to SAPS (Steyn & Klopper, 2015). The study was quantitative in nature and recruited a total of 79 CSEs across the four LCRCs in the Tshwane Municipality (Steyn & Klopper, 2015:3). Respondents were queried regarding demographic variables, tasks and responsibilities, and experiences dealing with their work. Five coping strategies from the COPE Inventory were used, as was the Trauma Screening Questionnaire (TSQ). Just over three-quarters of respondents (76.9%) were male, with 23.1% being female. Most respondents (35.1%) were between the ages of 31-40 years, with the second largest group (33.8%) falling into the age category of 41-50 years. The mean age of respondents was 37.7 years with a standard deviation of 8.3 years (Steyn & Klopper, 2015:4). The majority of respondents (76.9%) were Black African, with 19.2% White, 2.6% Coloured, and 1.3% Indian. Most respondents (53.8%) were married. The vast majority of respondents (84.2%) had at least one child. Just over half of respondents (51.3%) had Grade 12 as their highest level of education (Steyn & Klopper, 2015:4). Almost a quarter of respondents (23.4%) reported having been diagnosed with a chronic health problem, and a fifth of respondents (20.5%) indicated that they had been diagnosed with a mental health condition (Steyn & Klopper, 2015:14). Few respondents (5.4%) reported that they drank alcohol daily, with 21.6% indicating they drank alcohol a few times per week. More than two-fifths of CSEs (43.2%) indicated that they “seldom” drank alcohol, and 29.7% responded that they never drink alcohol. Over a tenth of respondents (12.5%) stipulated that they smoked cigarettes daily (Steyn & Klopper, 2015:5).

A total of 16.2% of respondents indicated that they worked at crime scenes nine or more times per week, with over half of respondents (53.9%) denoting that they worked at such scenes one to two times per week. A third of respondents (29.1%) indicated that they experienced violent crime scenes as very stressful (Steyn & Klopper, 2015:6). Over a third of respondents (36.8%) experienced crime scenes involving foetuses to be very traumatic, with one fifth (21.1%) reporting experiencing them as quite traumatic. Almost three-fifths of respondents (57.1%) denoted that they experienced crime scenes involving children to be very traumatic, with a fifth (22.1%) indicating crime scenes involving children are quite traumatic (Steyn & Klopper, 2015:7). Crime scenes involving adults were experienced to be quite traumatic by 29.9% of respondents, with just under one-third of CSEs (31.2%) reportedly experiencing them as a little traumatic. Over a third of respondents (36.4%) denoted that they experienced crime scenes involving dismembered bodies as very traumatic, with a fifth of CSEs (20.8%) experiencing them as quite traumatic. Crime scenes involving disfigured bodies were experienced to be very traumatic by two-fifths of respondents (41.0%) and quite traumatic by one-fifth of respondents (19.2%). Almost half of the

CSEs (46.2%) indicated that crime scenes involving decomposed bodies were very traumatic, with 16.7% experiencing them as quite traumatic (Steyn & Klopper, 2015:8).

Female respondents were found to experience crime scenes involving fetuses as significantly more traumatic than male respondents (Steyn & Klopper, 2015:14). Three-quarters of CSEs (75%) denoted that they attended autopsies. Exactly half of the respondents (50.0%) who did not attend autopsies, specified that they did not do so due to it not being in their job description. Just over two-fifths of respondents (41.7%) reported that they did not feel comfortable attending autopsies, whilst 8.3% indicated that they do not have time to attend (Steyn & Klopper, 2015:6).

Five coping strategies were selected from the COPE Inventory and three similar questions were asked regarding each strategy. The five coping strategies were substance use, humour, acceptance, denial, and planning. The report did not indicate an average response garnered for each coping strategy, but rather reported on the range for the coping strategy. The majority of respondents (77.2% – 81.0%) did not make use of substances as a coping strategy. Three in five respondents (60.3% – 64.6%) were shown to never utilise humour as a coping strategy (Steyn & Klopper, 2015:11). About half of respondents (43.0% – 54.4%) were shown to often use acceptance as a coping strategy. The majority of CSEs (58.2% – 69.6%) reportedly did not use denial as a coping strategy (Steyn & Klopper, 2015:12). Roughly a quarter of respondents (17.9% – 34.6%) were shown to often utilise planning as a coping strategy (Steyn & Klopper, 2015:13).

The results of the TSQ revealed that many of the CSEs reported experiencing symptoms of PTSD. The majority of CSEs (60.8%) experienced upsetting thoughts. Just over half of respondents (51.9%) additionally reported feeling upset by reminders of traumatic crime scenes, whilst two-fifths (39.2%) indicated feeling jumpy or startled (Steyn & Klopper, 2015:11). Few CSEs (35.5%) indicated that they always or often received briefing information before their arrival at crime scenes, with 47.5% stipulating that they would prefer to receive such information. Almost half of the CSEs (47.5%) denoted that briefing is very useful, whereas few respondents (6.6%) indicated that it is not useful at all (Steyn & Klopper, 2015:10).

Majority of the respondents (61.5%) stated that debriefing was never available. Few respondents (3.3%) indicated that they often use the debriefing services, with 26.7% of respondents denoting that they never take part in debriefing. A fifth of respondents (18.1%) indicated that the debriefing services were of poor quality (Steyn & Klopper, 2015:10). Nevertheless, the majority of CSEs (68.8%) declared that they felt the need to speak to someone about their work, with three-quarters

of the respondents (74.5%) going on to do so. Colleagues appeared to be their preferred port of call when speaking to someone (Steyn & Klopper, 2015:15).

The recommendations of the study were for debriefing to be made available directly after violent crime scenes were processed, and for CSEs who are not as traumatised by violent crime scenes to be dispatched to process such scenes. It was advised that female CSEs should preferably not be involved in the processing of crime scenes involving foetuses, and suspected cases of PTSD were recommended to be referred for proper diagnosis and intervention. Additionally, briefing should be provided to those who prefer to be briefed, and training in effective coping strategies was advised to be available to all CSEs (Steyn & Klopper, 2015:16).

2.10 Conclusion

Research evidence corroborates that a single traumatic incident of an intense nature, and/or traumatic incidents which are experienced frequently, will negatively impact on an individual's psychological and physical health. CSEs represent an occupational group that is exposed to scenes of extreme trauma on a frequent basis. Although trauma and coping in police work in general has received substantial scientific interest, there is a dearth of information on trauma and coping among CSEs in the South African context. With that being said, the current meagre offering of research evidence has raised concerning results regarding both the physical and mental well-being of CSEs. In the South African context, the neglect of the research topic is especially perplexing against the background of the country's soaring violent crime rate. CSEs are not only witnesses to the consequences of brutal violence, but are also tasked to collect crime scene information and record crime scenes through photography of the crime scene and victim in the greatest detail. They spend long hours at scenes of brutal violence where they may also have to deal with distraught family members. Additionally, the compiling of photo albums in preparation for court proceedings, and the involvement of CSEs in court cases necessitate continued interaction with the initial traumatic event. Although it could be argued that CSEs should understand that they will undoubtedly be confronted with such trauma when they choose the profession, it should be acknowledged that their trauma exposure comes at a high price. Many CSEs are resilient enough to cope successfully with their trauma-inducing work contexts, while others for various reasons, are not able to cope in a constructive manner. In the chapter which follows, the theoretical framework which guides insights into the coping strategies of CSEs in the present study, will be interrogated.

Chapter 3: Theoretical framework

3.1 Introduction

Chapter 2 has established that CSEs work in environments that are highly stressful and expose them to trauma. The trauma experienced is not simply left behind when CSEs end their shifts. Rather, CSEs need to cope with the stresses they have encountered, as well as prepare for future trauma they will face when they return to work. The following chapter presents four theoretical perspectives which can be used to enhance understanding of the traumatic context in which CSEs work and the manner in which they cope with the trauma they experience. A theoretical framework acts as the structure and support for a research study, and becomes a conceptual lens through which a researcher analyses and interprets data (Grant & Osanloo, 2014:12). Data garnered can be utilised in order to lend support to, or disprove a specific theoretical perspective, while many studies aim to test aspects of a particular theoretical perspective, rather than the perspective in its entirety (Fouché & De Vos, 2011a:83).

The focus of the study is on the psychological impact of trauma amongst CSEs, and the theoretical framework that will be offered in the present chapter is directed at insights into strategies utilised to cope with trauma exposure. However, it is of elevated importance to acknowledge that humans respond to trauma at a physiological level as well, and that repression of both the physiological and psychological impact of trauma can have devastating consequences. Trauma is said to occur when a person's entire system is unable to process a shock response. At a physiological level, the result is that the person recycles sympathetic and parasympathetic energies, which produce copious amounts of stress-related hormones. The energy lingers and continues to recycle until it is disposed of (Rees & Smith, 2007:270; Roelofs, 2017:2).

The physiological, natural response to threatening experiences is known as the "fight or flight mechanism", which is shared by both humans and animals (Goldstein, 2010:1433; Mobbs et al., 2015:1; Oster et al., 2015:2; Roelofs, 2017:2; Singletary, 2019:10). The mechanism is not a planned one, but rather automatic and progresses through various stages. An example that shall be used is of an antelope that is grazing in the wild. The antelope is initially in a relaxed state and is said to be fully present. If a predator makes its presence known, the antelope will sense danger, which causes it to become alert. If the sense of danger increases, such as if the predator moves closer, the antelope's fight or flight response mechanism will be activated. As its sympathetic nervous system surges, the antelope's metabolism increases and its blood system is flooded with chemicals, which provide the antelope with energy to flee from the predator. If the danger recedes,

the antelope will return to a state of rest and will not be traumatised as a result of the event. However, if the antelope senses further danger, it will move into a second state (Mobbs et al., 2015:3; Rees & Smith, 2007:270).

In the second state, the antelope's parasympathetic nervous system activates, releasing hormones which will cause it to dissociate from its sensations, immobilising the animal. Both the sympathetic and parasympathetic nervous systems are surging within the antelope and the energy cannot be expressed through flight, as the animal is immobilised. Such immobilisation leads to the energy being contained within the antelope's system, in a cyclical state (Mobbs et al., 2015:3; Rees & Smith, 2007:269; Roelofs, 2017:2). If the danger passes, the animal will release the increased hormones and energy from its system through action.

The process works in the same manner for humans. Traumatisation occurs when individuals cannot fully process the cycling energies that compile their physiological response to shock (Rees & Smith, 2007:270). However, humans are not always as successful in processing traumatic experiences as other mammals, due to the complexity of the human nervous system and various conditionings, such as expectations from family and culture. A practical example, is how after a traumatic event, an animal will shake and shiver in an attempt to release the hormonal build-up from the trauma, but human beings are often expected to remain calm and composed, and thus the physiological release is not able to manifest. When humans are unable to engage in such a release, they may become fear-conditioned to anything that they may experience as a similar situation as the one in which the original traumatisation occurred. The human brain is complex and thus fear can be associated with almost anything. Any event that resembles the initial traumatic event can trigger the sense of fear again (Rees & Smith, 2007:270).

One of several reasons trauma victims experience long-term negative effects, is that they have not been able to "release" their bodies from the highly charged state they were in when the traumatic event occurred (Rees & Smith, 2007:271). Victims often feel unable to release the effects of the trauma in the context of the original event, due to safety fears amongst other concerns, yet they also feel unable to do so in the aftermath, as peers often dismiss the incident as insignificant and urge them to not overreact. In the policing context, toughness is traditionally valued and the assumption is that reaching out for help is a sign of "being soft" or incompetent (Perkins, Howell & Shearing, 2020:290). Therefore, the stress of people whose job it is to work at scenes of violence and trauma in various contexts, is often unrecognised due to the popular stereotype that those who arrive to perform professional duties are both resourceful and strong, as opposed to supposedly helpless victims. The expectation is that they are steadfast

professionals who are not at risk of mental harm (Elntib & Armstrong, 2014:417; The Western Cape Department of Community Safety, 2018:60; Yalley & Olutayo, 2020:1).

In their line of work, CSEs are expected to keep their emotions under wraps and to handle the trauma of crime scenes and autopsies without complaint (Henry, 2004:112; Littlewolf, 2020:120). Respondents in research studies have admitted that in the policing context it is difficult to be open about emotions regarding trauma. It has been reported that police officials will view colleagues who speak out about their feelings regarding trauma as being weak. In addition, it is concerning that the expression of such feelings out loud will then be used against individuals by others at a later stage (Perkins et al., 2020:291). In other research, field training officials reported that police workers often experience pressure to pretend that they do not feel distressed about crime scenes as they perceive that other individuals look up to them and they need to guide them through the crisis of the crime. They are expected to be strong and to have the ability to deal with violent crime scenes, without demonstrating any sort of emotional reaction (Henry, 2004:118; Lennie, 2019:185). A culture of hiding distress for the sake of holding up the appearance of professionalism in the CSE environment, can lead to the build-up of stress and trauma on a physical level, which may subsequently lead to unhealthy methods of coping (Kempen, 2012:6).

Additionally, it has been shown that intense trauma results in a flood of neurotransmitters into the brain. Such neurotransmitters are needed for fight or flight, and can in their turn deplete the brain of certain chemicals (Mobbs et al., 2015:3; Roelofs, 2017:2). The persistent loss of chemicals can manifest in symptoms such as fatigue, insomnia, and poor concentration. The more frequently an individual is exposed to traumatic situations, the more such depletion will take place, leading to the aforementioned symptoms, which can in turn lead to maladaptive coping methods (Leeds, 2009:3).

Coping is utilised as a way to manage trauma, and comprises a constantly changing behavioural and cognitive effort used to regulate internal and/or external demands. As such, coping demonstrates itself in how individuals feel, think, and act (Giske & Gjengedal, 2007:88; Yusoff et al., 2010:41). Although a number of theoretical perspectives relating to how individuals cope with trauma at a psychological level have been formulated, the researcher opted for Lazarus and Folkman's model of stress and coping (1984), Agnew's general strain theory (GST) (1992), and terror management theory (TMT), which is based on Ernest Becker's early work and first coined into a cohesive theoretical framework by Greenberg, Solomon and Pyszczynski in 1986. The anxiety buffer disruption theory (ABDT) as stated by Pyszczynski and Kesebir (2011), which is an extension of the TMT, completes the theoretical framework. The chapter concludes with a

summary of the aforementioned models and theoretical perspectives, offering initial expectations regarding the applicability of the theoretical framework to the present study.

3.2 Richard Lazarus and Susan Folkman's model of stress and coping

Richard Lazarus and Susan Folkman's model of stress and coping is one of the most influential and widely used models pertaining to the subject. The model was originally applied within a clinical setting; however, it has been utilised more recently to examine how individuals cope with stressors that are work-related. Stress is defined by Lazarus and Folkman as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984:19). In the model the argument is advanced that cognitive appraisals are composed of both a primary and a secondary appraisal, and reflect the assessment or perception of a stressor that is made by an individual (Adasi et al., 2020:125; Lazarus & Folkman, 1984:31). External conditions, such as life experiences, personal and environmental variables, and the point that an individual is at during their life cycle, are among the factors which have an impact on the appraisal process (Biggs, Brough & Drummond, 2017:352).

Stress is viewed as a person-environment relationship, rather than as a response to a stimulus (Lazarus & Folkman, 1984:21; Berjot & Gillet, 2011:2). Individuals who are faced with situations that are stressful, will categorise the situations through evaluating the meaning or significance to their well-being, and the well-being of the people for whom they care. The meanings emerge from the beliefs, goals, personal resources and values of the individual facing the stressful situation (Lazarus & Folkman, 1984:272). The aforementioned process is known as primary appraisal. Lazarus and Folkman further distinguished among different types of primary appraisal, being benign-positive, stress, and irrelevant (Lazarus & Folkman, 1984:32; Biggs et al., 2017:352).

A benign-positive appraisal refers to an appraisal where the outcome of the encounter is construed as positive. The outcome is seen to either enhance or preserve the well-being of the individual, or promises to do so. A benign-positive appraisal is characterised by emotions of pleasure such as happiness, love, peacefulness, exhilaration, or joy. Stress appraisals consist of harm/loss, threat, and challenge appraisals. A harm/loss appraisal indicates that damage to the person has already been sustained, such as having received a diagnosis of a terminal illness. A threat appraisal concerns losses or harm that have not yet taken place, but are anticipated, such as what a person might experience before an imminent event, such as a health screening test. Harm/loss and threat appraisals are associated with negative emotions (Lazarus & Folkman,

1984:32; Biggs et al., 2017:352). Challenge appraisals are similar to threat appraisals in the sense that a challenge appraisal requires the mobilisation of coping methods for an event that has not yet taken place, but the difference is that challenge appraisals focus on the potential for growth or gain in a stress encounter if sufficient coping resources are available. Challenge appraisals engender emotions such as exhilaration, eagerness, and excitement (Lazarus & Folkman, 1984:33; Biggs et al, 2017:353). When an event does not carry any sort of implication for the well-being of an individual, it falls within the category of irrelevant. There is no investment in any possible outcomes felt by the individual, meaning there is no value, commitment, or need involved. In other words, there is nothing to lose or gain in the transaction (Lazarus & Folkman, 1984:32; Biggs et al., 2017:352). In summary, primary appraisal represents the perception of what will be at stake in a person-situation encounter (Ntoumanis, Edmunds, & Duda, 2009:250).

Secondary appraisal comprises an assessment of an individual's capability, or resources, to deal with the person-situation event or encounter. Practically, the implication is that individuals appraise their ability to facilitate a benefit or mitigate a loss (Lazarus & Folkman, 1984:327; Sharifabad et al., 2020:151). What is important is that coping should be viewed as a process, which is influenced by the appraisal that individuals make of both the demands of the source of their stress and the resources that are available to them that can help them to manage the stress demands (Lazarus & Folkman, 1984:141; Biggs et al., 2017:353). These appraisals occur simultaneously, which means that people determine how to best cope with life events and stressors depending upon their appraisal of the situation at hand. Thus, the appraisal process is the key to coping. Furthermore, coping has an effect on various physical and psychological measures of an individual's well-being (Lazarus & Folkman, 1984:181; Fugate, Kinicki & Prussia., 2005:1). Coping involves behavioural and cognitive efforts that are used to deal with the demands that have been created by the stressful person-environment encounter (Lazarus & Folkman, 1984:141; Ntoumanis et al., 2009:251).

Lazarus revised the original model to include emotions as an additional mediator within the process of coping. Within the revised model it is stated that cognitive appraisals lead to emotional reactions, which subsequently directly influence the choice of coping strategies for which an individual opts (Lazarus, 1999:86; Fugate et al., 2005:2). Anxiety arises when situations are appraised as uncertain and existentially threatening (Lazarus, 1999:96). It also transpires when the relationships that individuals have with their environments are appraised as exceeding their resources in a way that is endangering their wellbeing (Lazarus, 1999:110).

Two broad categories of coping strategies exist, namely problem- and emotion-focussed coping strategies (Lazarus & Folkman, 1984:150). Problem-focussed coping is utilised in order to resolve the stressful encounter, such as using planning, managing priorities, and increasing effort. It is used when individuals evaluate their environments as being amenable to changes (Lazarus & Folkman, 1984:152; Lazarus, 1999:114). Emotion-focussed coping is used to regulate unpleasant emotions that arise during the stressful encounter, such as isolation, wishful thinking, and distancing (Lazarus & Folkman, 1984:150; Lazarus, 1999:114; Biggs et al., 2017:353). While the use of distancing, denial, and avoidance may be beneficial when used for a short period of time in order to reduce stress, such distortion of reality prevents adaptive coping and thus is likely to cause harm if used for extended periods (Lazarus, 1999:112; Giske & Gjengedal, 2007:89).

Lazarus and Folkman did not originally include gender differences in the model, however there have been several studies that focus on the difference between men and women within the framework that Lazarus and Folkman devised. Research indicating that male and female participants make use of different coping strategies when faced with stressful encounters, suggest that the gender differences in coping could be due to men and women appraising the events differently (Kaiseler, Polman & Nicholls, 2013:4). When exposed to the same stressful situations, men and women tend to differ regarding which stimuli they appraise as being stressful, and with regards to how often they appraise stressors (Kaiseler et al., 2013:19). In addition, during primary appraisal it has been found that women are more likely to appraise a stressor more severely than men (Kaiseler et al., 2013:4).

Research has further indicated that men are more likely to adopt problem-focussed coping strategies compared to women, who are more prone to adopting an emotion-focussed approach, which includes interaction with others as part of coping (Cracium, 2013:467; Adasi et al., 2020:126). There are several hypotheses regarding why men and women cope differently. The dispositional hypothesis suggests that men and women possess differing underlying characteristics that result in the utilisation of different coping behaviours. The aforementioned underlying differences can be social or biological, and are inclusive of variation in socialisation, emotional expression, response to stress, and social support seeking (Kaiseler et al., 2013:5). With regard to socialisation, gender differences regarding preferences for particular coping strategies have been further hypothesised to be related to differential reinforcement of specific coping strategies during development and adherence to gender role expectations. As an example, boys are traditionally encouraged to show bravery when faced with challenges, whereas girls are

generally discouraged from coming into contact with stressors and dealing with said stressors directly (Panayiotou, Karekla & Leonidou, 2017:218).

Gender differences are said to be found across both social and situational roles. The situational hypothesis regarding gender differences in coping posits that situations influence coping. Differences in coping are suggested to be likely due to the different stressors that men and women encounter, in addition to the differing roles that men and women occupy within society. The situational hypothesis predicts that a difference in coping between genders will not be present when men and women both experience the same stressor, and do so under conditions which are similar (Kaiseler et al., 2013:5).

3.3 Robert Agnew's general strain theory (GST)

Robert Agnew developed the GST in 1992, which was originally used to describe how individuals may turn to crime when they are experiencing stress (Agnew, 2002:604). He built on the strain theory that was put forth by Robert K Merton in 1938, who posited that those who find themselves in situations of financial strain will commit crime in order to achieve material success, if they do not have access to legitimate means to do so (Merton, 1938:681). In the GST the argument is advanced that individuals who are subject to high levels of strain are more likely to respond to the strain in a deviant manner, than those who are not subjected to strain (Agnew, 1992:60; Ménard & Arter, 2013:41). Conditions or events that are disliked by individuals are referred to as "strain". Strain is seen as a by-product of situations and relations that are negative. Such situations and relations result in frustration and anger in the individual, who subsequently seeks to alleviate the strain (Agnew, 2002:604; Ménard & Arter, 2013:41). Although CSEs are certainly not behaving in a criminal manner that would bring them in conflict with the law, the theory can be useful to explain the manner in which they cope with the stressors they encounter daily within their work environment.

GST has been extended upon three times by Agnew since 1992. The first extension in 2001 added the terms objective strain and subjective strain (Agnew, 2001:321). Objective strains are conditions and events that are disliked by most individuals in a particular group, while subjective strain refers to conditions and events that are disliked by a specific individual. The second extension in 2002 made a distinction between experienced, vicarious, and anticipated strains. Experienced strain refers to strain that individuals directly experience themselves. Vicarious strain occurs when a person that an individual knows or cares about experiences strain, which places strain on the individual who witnesses someone else's strain (Agnew, 2002:605). Anticipated

strain refers to the expectation of people that the current strains that they are experiencing will continue, or that they will experience new strains (Agnew, 2002:613). The second extension of GST additionally focussed on physical victimisation (Agnew, 2002:606). The third extension of GST in 2013 detailed that several factors must be present in order for criminal coping to be likely to occur. Individuals must experience the criminogenic strains listed in GST, they must interpret the strains as unjust and high in magnitude, they additionally must be in circumstances that are conducive to criminal coping, and they should possess a set of characteristics that are conducive to coping in a criminal manner, such as age, coping skills, resources, self-control, economic status, and association with delinquent peers (Agnew, 2013:657).

Agnew additionally described three forms of strain, namely strain as the presentation of negatively valued stimuli, strain as the removal of positively valued stimuli, and strain as the failure to achieve positively valued goals (Agnew, 2002:603). Almost everyone experiences one or more of the three forms of strain. Similar to Lazarus and Folkman's interpretation of the strain appraisal process, Agnew posited that it is the manner in which individuals interpret the source of the strain that influences how they will react to it (Agnew, 2013:666). However, whereas Agnew (2001:359) explains that both adaptive and maladaptive coping strategies may be used in an attempt to reduce strain, Lazarus and Folkman (1984:266) proposed that problem- and emotion-focussed coping are used. In the GST it is suggested that if the strain is interpreted as being uncontrollable, unjust, or too great, it is likely that the individual will feel depressed, angry, and/or frustrated, which may lead to maladaptive methods of coping (Agnew, 2002:615). Agnew also postulated that strain may occur when individuals involved perceive the reward as being inadequate relative to the effort that they have exerted (Agnew, 1992:52).

The GST suggests three different types of adaptations that may be utilised in order for individuals to deal with the strain in their lives in a legitimate way, being cognitive, behavioural, and emotional (Agnew, 1992:66). In terms of cognitive coping strategies, individuals can ignore or minimise the importance of adversity by reducing the significance that they assign to their goals and values, thereby minimising strain experienced from not reaching them. Another cognitive coping strategy is to maximise positive outcomes and minimise negative outcomes. Individuals may minimise the negative outcome by reasoning that it is not as bad as it seems or by lowering their standards, and in doing so, maximise the positive outcomes (Agnew, 1992:67). A final cognitive coping strategy is accepting responsibility for adversity, whereby individuals convince themselves that they deserve the adversity that they are experiencing, which may culminate in adopting more adaptive methods of coping (Agnew, 1992:69).

Behavioural coping strategies consist of two major types. The first is seeking to minimise or eliminate the source of strain. Individuals might seek to escape from negative stimuli, such as not attending school when an adverse school environment is causing strain. Alternatively, an individual might seek out positive stimuli, or positively valued goals in order to minimise or eliminate their strain. The second behavioural coping strategy is satisfying the need for revenge, whereby individuals blame others for their adversity, which in turn creates a desire for revenge (Agnew, 1992:69).

Emotional coping strategies entail acting directly on the negative emotions that stem from adversity. Individuals focus on removing the negative feelings that they have regarding the event, rather than attempting to alter the event itself. Such coping can be achieved through activities such as exercise, relaxation methods, drugs, meditation, or deep-breathing techniques. Emotional coping is particularly likely to be employed when cognitive and behavioural methods are either unavailable or unsuccessful (Agnew, 1992:70).

In 1997 Agnew released a paper with Broidy wherein they applied the GST to explain three reasons for the higher crime rate amongst men (Broidy & Agnew, 1997:275). The first is that men are subject to different strains than women, with strains that men are subject to being more conducive to crime. Women have been found to experience more distress in relation to close relationships, family, and friends, whereas men encounter strain associated with material success, work, finances, interpersonal conflict with peers, and achievements (Broidy & Agnew, 1997:279). The second is that men have a different emotional response to strain, with their responses being more conducive to crime. Both men and women might experience anger as a response to certain types of strain, however the anger of men tends to be accompanied by moral outrage more often than the anger of women, which is more likely to be accompanied by self-deprecating emotions (Broidy & Agnew, 1997:281). The third is that men are more likely to respond to strain or anger with crime. Research evidence supports that men are more likely than women to respond to provocations or strain with aggression (Broidy & Agnew, 1997:285).

Whilst the aforementioned research was carried out by Agnew himself, it is quite dated and does not take into account how today gender roles have changed from over two decades ago. In present times, women and men are not expected to stay within such strict gender dichotomies (Scott & Mikell, 2019:395). However, recent research does lend support to most of the original formulation put forth by Broidy and Agnew, with the only difference being that gender identity is important, in the sense that if someone did not identify as their biological gender, they would experience strain more commonly associated with the opposite gender (Scott & Mikell, 2019:406).

3.4 Terror management theory (TMT)

The origin of TMT is linked to the early work of Ernest Becker, a cultural anthropologist, who published a book titled *The Denial of Death* in 1973 (Becker, 1973). TMT was first coined into a cohesive theoretical framework by Greenberg, Solomon and Pyszczynski in 1986. TMT is an expansive theory, which emphasises that human understanding of inevitable mortality plays an important role in behaviour. A key difference between humans and other organisms is brain size and complexity. The evolution of the human brain has allowed for humans to develop an understanding of their own existence and of the passing of time. Some advantages of such evolution are the ability to anticipate future outcomes, to plan, and overcome environmental challenges. However, higher brain function in humans comes at a cost, with disadvantages being that they are aware of their inevitable death due to their ability to think about their futures and to ponder their existence (Schimel, Hayes, & Sharp, 2019:2).

TMT is therefore based upon the notion that humans, unlike animals, are cognitively aware and have the ability to reflect upon the fact that one day they will cease to exist (Pyszczynski & Kesebir, 2011:3). Humans have a rudimentary, biological predisposition towards self-preservation. Individuals survive daily due to their self-awareness and intelligence. Knowing that one's life may end at any moment for reasons that are impossible to either anticipate or control can cause absolute, paralysing terror. The fear of death has the potential to cripple a person with fear (Maxwell, 2017:22). The majority of people continue with their lives in spite of knowing that they will die in the sense that they have children and conduct their lives in a manner to ensure that they will not be forgotten. Humans typically are able to manage their fear of death, but when the fear of death becomes disruptive, it can cause chaos. In order to function effectively, an individual is required to be able to manage the aforementioned terror through an anxiety-buffer system. Three psychological components combine in order to provide a person with an anxiety-buffer system, being cultural worldviews, self-esteem, and close personal relationships (Pyszczynski & Kesebir, 2011:4; Maxwell, 2017:1), which will be discussed in the next section.

3.4.1 Cultural worldviews

Individuals' cultural worldviews consist of culturally and personally held beliefs as well as their assumptions about the nature of existence. TMT advances that early humans both invented and lent subsequent support to conceptions of reality, known as cultural worldviews, as a means to combat existential fears (Pyszczynski & Kesebir, 2011:4). Individuals' cultural worldviews operate to provide them with a framework of understanding, which assists in making sense of human

existence and in organising their experiences. Questions such as “What am I doing here?”, “Where do I come from?”, and “Where am I going once I die?” arise. Having a cultural worldview, assists individuals in obtaining answers to the aforementioned questions, which provides them with a sense of order, meaning, and stability. A cultural worldview can provide a person with a sense of immortality, whether found through symbolism, such as believing in heaven or paradise, or through societal recognitions, such as the building of statues or receiving prizes (Maxwell, 2017:22).

Religious beliefs, cultural norms, and moral values are important components of cultural worldviews, providing people with purpose, meaning, and structure in their lives. However, there is no possible way to conclusively prove the accuracy of people’s worldviews, which makes them vulnerable. A person’s worldview must therefore be maintained through social consensus. Those who share their worldview, increase the confidence in their views, whereas those who counter them are a threat to their faith. Consequently, people usually enjoy both ideas and individuals who support their worldviews, whilst disliking those individuals who challenge them (Pyszczynski & Kesebir, 2011:4). The construction of a cultural worldview allows a buffer of protection between people and anxiety stemming from death thought awareness, which is also referred to as mortality salience (Maxwell, 2017:17). Once an individual’s anxiety buffer has been undermined, there is nothing in place to provide protection from a feeling of vulnerability in the face of mortality salience (Pyszczynski & Kesebir, 2011:14).

It follows that mortality salience functions as psychological structures that individuals can employ to protect themselves against existential anxiety. Mortality salience fits into the structure of TMT by connecting the conflicting notions that humans have to make sense of in their existence, whereby they want to avoid death, but understand that avoiding death is pointless and impossible. Mortality salience then reminds individuals of the source of their anxiety, and supports a negative reaction towards ideals that threaten their cultural worldview, and a positive reaction towards those that support it. The strengthening of an individual’s cultural worldview ensures the survival of the individual. By maintaining stable conceptions of other people, the social world is made to seem more orderly, predictable, and meaningful, thereby serving a terror management function (Maxwell, 2017:18).

3.4.2 Self-esteem

TMT posits that humans build a cultural reality for themselves with the purpose of providing order and stability within a world that is filled with changeability and death. People’s self-esteem stems

from their ability to live within the cultural reality that they have fashioned through personal belief, and is the second factor that assists in buffering death anxiety. Self-esteem derives from believing in two ideals, namely that individuals' cultural worldviews are valid, and that they are living up to the standards that their specific cultural worldview prescribes. Self-esteem enables a person to be more conscious about their present circumstances, as opposed to individuals who are self-conscious and may have a negative outlook on life thereby dwelling more on thoughts of death. The building of an individual's self-esteem allows for a psychological buffer against the anxiety that is present regarding thoughts about the inevitability of one's own death (Maxwell, 2017:17).

3.4.3 Close personal relationships

The third component of the anxiety buffer is relationships with other people. Young children do not have the cognitive ability to understand the nature of reality and death, or have a concept of self, however their attachments to primary caregivers control fear and distress. Primary attachments, along with those made later in life, such as with close friends and romantic partners, work in combination with individuals' self-esteem and worldviews in order to protect them against anxiety (Pyszczynski & Kesebir, 2011:4).

Since 2010, over 400 studies tested, and found support for the role of cultural worldviews, self-esteem, and attachment relationships in protecting individuals against death anxiety, as per TMT. The studies were conducted across different countries, cultures, and professions, and consistently confirmed that reminding individuals of their own mortality, activates their anxiety-buffer system, thereby increasing their desire to defend their cultural worldview, to attain a higher level of self-esteem, and to sustain and reinforce close relationships in their lives (Pyszczynski & Kesebir, 2011:5).

Studies have found that men and women react differently to mortality salience, with men finding risk more appealing and women experiencing risk as less appealing (Burke, Martens & Faucher, 2010:30). There have also been noted gender differences with regard to group identification and affiliation, which is linked to cultural worldviews. When exposed to mortality salience men were most likely to desire uniqueness, whereas women showed themselves more prone to behave inclusively and to desire affiliation with their group (Walsh & Smith, 2007:103).

3.5 Anxiety buffer disruption theory (ABDT)

The ABDT is an extension of the TMT and was formalised by Pyszczynski and Kesebir (2011). According to ABDT, the anxiety buffer that humans rely on is composed of their cultural worldview,

which provides them with meaning and purpose, their self-esteem, which provides a sense of self-worth, as well as close personal relationships, that provide a buffer against existential anxiety. ABDT posits that trauma can disrupt an individual's anxiety buffer because trauma is often linked to death (Pyszczynski & Kesebir, 2011:7; Maxwell, 2017:33). ABDT is used to provide an explanation for varied reactions to traumatic events. In addition, it expounds upon both the onset and maintenance of PTSD. ABDT postulates that PTSD is a result of an individual's anxiety-buffering mechanisms being disrupted. Anxiety-buffering mechanisms ordinarily provide a person with protection from both general anxiety and death anxiety. Disruption of such mechanisms results in an individual being left without any defence against overwhelming anxiety, which in turn leads to the major PTSD symptoms, namely hyperarousal, avoidance, and re-experiencing. Due to the disruption of their anxiety-buffering mechanisms, individuals who experience PTSD symptoms do not respond to reminders of mortality in the defensive manner as do those who are psychologically healthier (Pyszczynski & Kesebir, 2011:3).

ABDT suggests that when traumatic events confront people with death, thereby challenging their worldviews, it may lead to a disruption of their usual anxiety buffer functioning. Both the onset and maintenance of PTSD are influenced by such disruption. Some people view confrontation with death as a moderately traumatic experience. People in this category find their worldview may be challenged, however they do not develop PTSD. However, those who find death confrontation to be a severely traumatic experience, may find that they experience a complete breakdown of their defence mechanisms, leaving them susceptible to overwhelming terror, which can lead to the diagnosis of PTSD (Pyszczynski & Kesebir, 2011:8).

PTSD is a disorder characterised by intense horror, fear, or helplessness, in response to a traumatic event involving threatened or actual injury or death. The most common events that precipitate PTSD are sexual and physical assault, human or natural disasters, combat trauma, and motor vehicle accidents (Pyszczynski & Kesebir, 2011:8). Symptoms of PTSD include hyperarousal, re-experiencing, and avoidance. Flashbacks, night terrors, intrusive thoughts, amnesia, alcohol and substance abuse, reduced ability to feel emotions, loss of interest, and detachment from others are a few of numerous reactions a person suffering from PTSD may experience. The aforementioned symptoms are almost all related to anxiety. ABDT suggests that the anxiety that is experienced by individuals who have PTSD is linked to their anxiety buffering mechanisms, which should be protecting them against anxiety, having been rendered ineffectual by the trauma they have experienced. ABDT maintains that anxiety buffering mechanisms are essential in their role of keeping incapacitating anxiety at bay. PTSD is thus seen as the result of anxiety buffering

mechanisms being severely disrupted, with the individual being left without defences against anxiety and fear. The collapse of the mechanisms may be associated with either an explicit or implicit realisation that there is nothing, whether it be individuals' worldviews, their self-esteem, or close relationships, that can successfully protect them from their own vulnerability and mortality (Pyszczynski & Kesebir, 2011:9).

From an ABDT perspective, the breakdown of people's relationships with existence corresponds with the collapse of their protective mechanisms, which had, until that point been instrumental in the individual living in existential equability. The end result of such disruption is that the individual's protective anxiety buffering system fails to function in a normal manner, thereby causing the individual to be overwhelmed with anxiety (Pyszczynski & Kesebir, 2011:10).

ABDT further postulates that exposure to trauma may sometimes lead to a person experiencing only temporary strain on their anxiety buffer. However, individuals who develop PTSD, have their anxiety buffer system completely incapacitated. The three components of an individual's anxiety buffering system are, as mentioned before, cultural worldviews, self-esteem, and close personal relationships. ABDT suggests that all three domains may be negatively affected when a person is exposed to trauma. In individuals who develop PTSD, the three domains are markedly affected, with the individual experiencing severe, debilitating problems in each domain as explained in the section which follows (Pyszczynski & Kesebir, 2011:10).

3.5.1 Disrupted faith in one's cultural worldview

Individuals' cultural worldviews serve to assure them that the world in which they live is a caring, meaningful, and civilised place (Pyszczynski & Kesebir, 2011:10). Extreme trauma serves to destroy assumptions regarding one's security and system of meaning. The illusion of indestructibility and invulnerability is shattered. People are not able to integrate traumatic experiences into their existing structures of meaning without difficulty, which causes a powerful psychological crisis. Psychiatrist Robert Jay Lifton, who worked with survivors of the atomic bomb in Hiroshima, detailed that the experience of trauma "involves a vast breakdown of faith in the larger human matrix supporting each individual life, and therefore a loss of faith or trust in the structure of human existence" (Lifton, 1967:256). The premise that exposure to trauma can result in problems within a person's structures of meaning is supported by empirical data (Pyszczynski & Kesebir, 2011:11). Studies have indicated that there are diminished perceptions of meaningfulness, along with reduced belief in the munificence of the world, within groups of victims of different types of trauma, including accident survivors, indirect and direct victims of crime,

combat veterans, survivors of detention and torture in South Africa, and undergraduate students who have suffered the loss of their parents to sudden death (Pyszczynski & Kesebir, 2011:12). The studies that indicate the aforementioned propose that traumatic events are capable of destroying a person's core assumptions about existence. ABDT stipulates that the destroying of an individual's worldview is so distressing because of the important role that one's worldview plays in managing existential fear (Pyszczynski & Kesebir, 2011:12).

The IES-R, which is used in the present study, amongst others, measures disruption in core beliefs of persons who had experienced significant stressful events prior to taking part in research studies. High scores on the subscale measuring how considerably core beliefs had been disrupted, contribute to the higher scores on the IES-R overall. The IES-R measures the major symptom clusters that are linked to PTSD and therefore, ABDT lends credence to the use of the scale (Pyszczynski & Kesebir, 2011:12).

3.5.2 Disruptions in self-esteem

TMT posits that an indispensable component of a person's anxiety-buffering system is a sense of self-worth. As PTSD is associated with a breakdown in the anxiety-buffering system, it is assumed that individuals who suffer from PTSD have a decreased view of their self-worth. Various studies have confirmed that individuals with past, present, or chronic PTSD symptoms have lower levels of self-esteem than individuals without PTSD (Pyszczynski & Kesebir, 2011:13). ABDT posits that a person's self-worth and self-esteem is compromised when the individual suffers from PTSD. In turn, this causes people with PTSD to be even more vulnerable when they are faced with anxiety, as the assumption is that self-worth is a key component of anxiety-buffering mechanisms (Pyszczynski & Kesebir, 2011:13).

3.5.3 Disruptions in close personal relationships

It has long been documented that individuals who suffer from PTSD, experience difficulties in their close relationships. Higher divorce and separation rates, higher levels of domestic violence against loved ones, and more perils in raising children, have all been observed. Symptoms of PTSD include behavioural and/or emotional withdrawal, outbursts of anger, and emotional numbing, all of which are damaging to interpersonal relationships (Pyszczynski & Kesebir, 2011:13). The more people have access to psychological support from individuals with whom they have close relationships, the more likely they are to find that these relationships perform an anxiety-buffering role, which in turn assists in shielding the individual from severe PTSD (Pyszczynski & Kesebir, 2011:14).

The above discussion illustrates that post-traumatic distress and PTSD are linked to disruptions in areas that TMT posits play a vital role in protecting a person from overpowering anxiety. This further lends support to the ABDT in the sense that PTSD involves a disturbance in the operation of anti-anxiety buffering mechanisms for a person (Pyszczynski & Kesebir, 2011:14). The prevailing premise of ABDT is that PTSD occurs when an individual's anxiety-buffering system has been rendered ineffectual due to traumatic experiences. One can therefore conclude that a person suffering under the weight of trauma, would not respond to reminders of their own mortality in the same way that an individual who is psychologically healthy. TMT studies have indicated that individuals usually respond to reminders of death with reactions that serve to enhance features of their anxiety-buffering system (Pyszczynski & Kesebir, 2011:14). If individuals are suffering from PTSD, they may not possess an intact anxiety-buffering mechanism and therefore may prove inadequate in exhibiting such defence responses.

3.5.4 ABDT studies

There have been four major studies regarding ABDT that are relevant to the current study. In three of the studies Pyszczynski was involved, one of the two researchers who originally coined ABDT. The first study centred on survivors of an earthquake in Iran that killed over 1 500 people and forced over 6 700 others to evacuate their homes for a minimum of two months. The potential role of disordered distal defences in relation to PTSD onset was examined. The researchers predicted that if individuals had PTSD which was causally linked to a disturbance in their cultural worldview, those individuals would not defend their cultural worldview when faced with a mortality reminder, such as an earthquake (Abdollahi et al., 2011:331). The respondents comprised students from local universities, all of whom indicated that they had directly experienced and been affected by the earthquake (Abdollahi et al., 2011:332). The results of the study supported the prediction, in that student survivors who displayed higher levels of PTSD symptoms did not defend their cultural worldview, especially in comparison to students with lower levels of PTSD symptoms (Abdollahi et al., 2011:333). A follow up study two years later, aimed to assess the consequences of the disruption of anxiety-buffering systems over an extended period of time. The finding was that respondents who had reported high levels of PTSD in the first study, which was conducted one month after the earthquake, reported more severe PTSD symptoms two years later (Abdollahi et al., 2011:336). Moreover, the finding that those with higher levels of PTSD did not defend their cultural worldview, was confirmed (Abdollahi et al., 2011:337). The aforementioned study on ABDT therefore lent support to the hypothesis that individuals who are traumatised do not have

the same response to death reminders as individuals who are not traumatised (Pyszczyński & Kesebir, 2011:13).

The second study used female Polish survivors of domestic abuse as respondents. The study aimed to test the role of PTSD diagnosis, peritraumatic dissociation, and coping self-efficacy in moderating the disruption of typical responses to reminders of death (Kesebir et al., 2011:824). The survivors with lowered levels of coping self-efficacy, high peritraumatic dissociation, and raised levels of PTSD symptoms did not defend their cultural worldviews in comparison to women who presented with lower symptoms in the face of reminders of mortality salience (Kesebir et al., 2011:832).

The third study focussed on survivors of the civil war in the Ivory Coast. All respondents had been exposed to war, however they differed in the level of exposure they had to the war, and thus in levels of intensity of trauma. The first hypothesis presented was that respondents who showed high levels of PTSD symptoms, would not show suppression of death-related thoughts in response to mortality salience (Chatard et al., 2012:49). The results indicated that respondents who scored high on PTSD symptoms, had elevated death thoughts in comparison to respondents who had lower levels of PTSD symptoms (Chatard et al., 2012:50). The second hypothesis predicted that there would be a correlation between PTSD symptoms and thoughts of death, in that respondents who were at high risk of developing PTSD would be likely to display higher levels of PTSD symptomatology when confronted with thoughts regarding their mortality (Chatard et al., 2012:49). The finding was that the respondents who lived in areas with high exposure to the war in the Ivory Coast and who were resultantly at higher risk of developing PTSD, reported both elevated PTSD symptom levels and severity of symptoms, after they were asked multiple questions about the odds of being killed during the civil war (Chatard et al., 2012:52).

The fourth study explored whether a mortality reminder was likely to increase thoughts of death amongst university students in the USA who had been exposed to trauma (Edmondson et al., 2011:363). Results indicated that only students who were diagnosed with moderate to severe PTSD showed an increase in death thoughts following mortality reminders. These students were also less likely to defend their cultural worldviews in comparison to students with lower symptoms of PTSD (Edmondson et al., 2011:370). The aforementioned studies have therefore served to validate the ABDT.

3.6 Summary

Four sets of theoretical perspectives have been discussed, namely the model of stress and coping, GST, TMT, and ABDT. The common theme that runs throughout the four perspectives is that there are similar external factors, such as life experiences and personal dynamics, which influence the manner in which individuals react to stress and the coping strategy they adopt. All four perspectives are applicable to the CSE work context. What should be noted is that the stress and trauma CSEs are exposed to on a daily basis, are not comparable to what most humans would encounter in their everyday lives. CSEs are faced with notions of mortality every day. They gather crime scene information and record details at murder scenes where they are required to come into close contact with deceased persons and hazardous fluids. Although they wear protective clothing to guard themselves against physical health and safety hazards, no protective gear can nullify the psychological consequences they experience. Even if they do not attend death scenes during every shift, they are required to compile reports and photo albums of death scenes they have attended on previous shifts. Constant engagement with scenes of death and violence, is a reminder of their impending deaths and, as per TMT, can cause fear and anxiety if not dealt with appropriately.

When CSEs attend their first crime scene, they are faced with needing to evaluate the stressor they are encountering, and to establish their capacity to, and method in which, they will deal with it. In general, coping strategies can be divided into two broad categories, whereby an individual either copes with a stressor in a healthy, adaptive manner, or in an unhealthy, maladaptive manner. With each subsequent scene that CSEs attend, they need to re-evaluate the stressors around them as well as their coping strategies. During the evaluation process, they form a plan of action regarding how they could possibly resolve or deal with the trauma they are facing. Once a CSE has established a coping strategy, there is no guarantee that the strategy will be a solution to the trauma, nor is there any surety that if the strategy initially works, it will continue to do so indefinitely. Therefore, the evaluation of CSEs' needs in terms of coping and their response thereto, is a dynamic process which requires constant evolution and adaptation.

Some CSEs may thus be required to change their coping strategy over time in order to avoid the development of PTSD. Other CSEs may establish an initial coping strategy that serves them well throughout their employment without further issues. CSEs who have a solid worldview founded upon, amongst others, religious beliefs, cultural norms, and moral values; good self-esteem; and/or close personal relationships (e.g. meaningful family interaction), may be able to cope with the trauma they face, and the ever-present reminder of mortality, in an adaptive manner. In

addition, individuals who have been working as CSEs for extended periods are likely to develop coping strategies over time that assist them with their experiences, as opposed to CSEs who have had short term exposure to traumatic scenes and autopsies, and who may start off with maladaptive coping strategies. In summary, the four perspectives will be useful to shed light on the coping strategies of Southern Gauteng CSEs who are exposed to trauma on a frequent basis.

Chapter 4: Research methods

4.1 Introduction

The research question the study aimed to answer was as follows: What are the trauma levels and coping strategies of Southern Gauteng CSEs who are exposed to traumatic crime scenes and autopsies? The literature review illuminated the fact that, although trauma and coping strategies among police officials in general have received widespread international and local research attention, the topic had prior to the present study not received substantial interest within the South African context. Scientific research is considered an indispensable tool to discover truths about the world, to produce knowledge, explore new theories, and carry out their authentication (Coryn, 2006:124; Queirós, Faria & Almeida, 2017:370). Judicious research is characterised as systematic, objective, logical, empirical, inquisitive, creative, critical, replicable, and ethical (Balakumar, Inamdar & Jagadeesh, 2012:130; Çaparlar & Dönmez, 2016:212; Kothari, 2004:37; Lach, 2014:88). Hence, choosing appropriate research methods to employ for a study is key to the successful execution thereof. Research methods must be selected prior to data collection, and each method that was chosen should be justified. Therefore, it can be stated that methodology is of great significance to research, as it guides the course of the scientific enquiry. In pursuit of the aim of producing judicious research, the present chapter delineates the research methods utilised in the study. A discussion of the research paradigm, relevant approach, purpose, type of research, and research design is furnished. In addition, the methods, encompassing the sampling strategy, the data gathering instrument, and data analysis process are documented. The chapter concludes with explanations of the measurement quality, pilot study, ethical considerations, and limitations of the study, as well as challenges that were experienced.

4.2 Research paradigm and approach

Stating the research paradigm of study is important, because it provides a framework or structure within which to approach research (Neuman, 2014:60). Positivism was the most appropriate research paradigm. Positivism is historically associated with Auguste Comte, a French philosopher, who posited that observation and reasoning should be used to understand behaviour, and that knowledge is based upon sense experience (Sacks, 2017:2). Within a positivistic paradigm, belief is limited to what can be resolutely established through reason (Cohen, Manion & Morrison, 2007:9), and the formation of knowledge is conducted through observation and measurement (Bhattacharjee, 2012:18).

Positivism is a paradigm that has the intention of applying the model of research employed in the natural sciences, to social research (Sacks, 2017:2). Therefore, it can be stated that positivism operates according to the belief that both the methods and procedures of the natural sciences are suitable to apply to the social sciences. Examples of such procedures are the study of relationships and subsequent tests of causality. Some have viewed the application of positivistic methods to humans as impractical (Houghton, 2011:1). However, positivism rejects this stance, because the paradigm advances the notion that there is an objective reality that is in existence outside of an individual's personal experience. The objective reality is rooted in incontrovertible and demonstrable mechanisms and laws that are able to reveal cause-and-effect relationships (Majeed, 2020:122). The implication is that positivism seeks to measure the abstract ideas of social relationships with exact measurements generally associated with the natural sciences. Scientific knowledge and conclusions are drawn strictly through the gathering of substantiated facts (De Vos et al., 2011:6). Thus, the positivistic paradigm aided viewing the levels of trauma experienced by Southern Gauteng CSEs and their coping strategies, through an objective and organised lens using numerical data.

It follows that positivism is linked to the procurement of evidence, utilising numerical and statistical data, which in turn is associated with quantitative research (Babbie & Mouton, 2003:22; Majeed, 2020:119). The aim and objectives formulated for the present study dictated the adoption of a quantitative approach. The reasoning was that the measure to which CSEs experience trauma in their work context, as well as the coping strategies they adopt, were to be pursued as the aim of the study. More specifically, the researcher was interested to determine the profile of Southern Gauteng CSEs; to establish the scope of their tasks and responsibilities; to ascertain their trauma levels in relation to traumatic crime scenes and autopsies; to identify the specific coping strategies they use; to determine their context-specific experiences of job-related stress and trauma; and to ascertain the measure to which they experience contentedness within their workplace and their views on both briefing and debriefing. Concepts such as “measure”, “scope”, “levels”, and “significant associations” are typically linked to the quantitative research approach. Quantitative research records observations as numeric data and aids objective analysis of the observations (Privitera, 2019:19). The quantitative approach was therefore appropriate to pursue questions regarding relationships amongst variables which are measurable. It is a well-documented fact that the quantitative approach seeks to establish, validate, or confirm relationships (Atmowardoyo, 2018:197; Fouché & Delport, 2011:63).

Further, as there were a total of 103 CSEs who participated in the study, a quantitative approach was the most apposite as there was a need for data to be tabulated and analysed in order to identify patterns and key observations (Mujis, 2011:1). The quantitative approach characteristically obtains information from numerous individuals, thereby often making it possible to make generalisations. Quantitative research is routinely executed through survey research, such as structured interviews or questionnaires, in order to generate statistical data (Queirós et al., 2017:370). In summary, scientific facts are the central concern when utilising a quantitative approach and are obtained through rigorous, independent testing (Davies & Francis, 2018:96).

4.3 Research purpose

When selecting a research purpose, the researcher has to consider previous studies of a similar nature, as well as the aim and objectives of their own research. The study was conducted in order to obtain information about the trauma levels of Southern Gauteng CSEs who attend traumatic crime scenes and autopsies, as well as the strategies they employ to cope with the trauma. The research was of a descriptive nature, as it was not the first of its kind. Numerous studies have highlighted the trauma of police officials in general, and some research has focussed on CSE trauma specifically. In other words, a researcher who adopts a descriptive purpose starts their research with a subject that has already been well-defined and established, conducting the study to describe the subject more accurately, as opposed to exploratory research which aims to establish base facts (Atmowardoyo, 2018:198; Fouché & De Vos, 2011b:96).

Descriptive research is used by a researcher to describe specific details that are relevant to the topic under investigation (Atmowardoyo, 2018:198) and within the quantitative approach, descriptive analyses aim to identify patterns in data to answer questions about who, what, where, and to what extent (Loeb et al., 2017:1). The details that were pertinent to the present study were to determine the profile of Southern Gauteng CSEs; to establish the scope of their tasks and responsibilities; to ascertain their trauma levels in relation to traumatic crime scenes and autopsies; to identify the specific coping strategies they use; to determine their context-specific experiences of job-related stress and trauma; and to ascertain the measure to which they experience contentedness within their workplace and their views on both briefing and debriefing.

4.4 Type of research

Research is categorised into two broad types, namely basic and applied research (Bentley, Gulbrandsen & Kyvik, 2015:690; Glassom, Scharler & Macdonald, 2019:1-3; Schauz, 2014:274-275). The type of research that was employed in the study was basic research, also often referred

to as pure or fundamental research (Calvert, 2006:202). Basic research expands the body of knowledge pertaining to the research topic and is based upon the notion of creating, assisting, or advancing existing information (Neuman, 2014:26). The study fits into the basic research type as the researcher's aim was to gather information, advance understanding, and to make recommendations; not to provide a direct intervention to the SAPS, which is characteristic of applied research (Gulbrandsen & Kyvik, 2010:344).

Basic research is employed with the intention of understanding the nature of behaviour. Theoretical issues, most typically linked to the mechanisms and processes of behaviour, are addressed through basic research. The goal of basic research is to build upon existing theory, as opposed to practical application of the outcome of the research (Ackigit, Hanley & Serrano-Valerde, 2012:1; Privitera, 2019:18). However, what is learned through using basic research can at a later stage be utilised as a basis for further applied research (Privitera, 2019:19). Indeed, without the expansion of information and filling of gaps in knowledge attained through basic research, application can hardly be accomplished (Glassom et al., 2019:1-3). The current study, for example, has the potential to create an ideal point of departure to improve briefing and debriefing services for CSEs who experience trauma.

4.5 Research design

The research design for a study is the plan or blueprint for the research, and serves as the bridge between the research question and the research methods adopted for the study (Kaushik & Walsh, 2019:2). Not surprisingly, the research design is often characterised as the glue which holds the research process together (Odoh & Chinedum, 2014:17). Accordingly, the design assists the researcher by indicating what steps should be taken to obtain the necessary data in order to accomplish the aim of the study, in the present study being to determine the trauma levels and coping strategies of Southern Gauteng CSEs who are exposed to traumatic crime scenes and autopsies (Fouché, Delport & De Vos, 2011:143). Therefore, it follows that the research question and research aim are the points of departure to develop the research design (Wahyuni, 2012:72). The objectives formulated for the study made it apparent that a survey would be the optimal research design to attain the aim of the study. Surveys are the most prevalent way of gathering quantitative data in the social sciences and have evolved within the positivist paradigm (Odoh & Chinedum, 2014:18; Ponto, 2015:168). Additionally, survey research was considered the most suitable design because it is congruent with the descriptive purpose of the study and it typically involves the utilisation of structured questionnaires wherein standardised questions are asked to all the respondents in the sample.

With large-scale research it is extremely rare to be able to collect data from the entire study population, as it is both a time-consuming and costly exercise. Therefore, a survey design is intended to gather data from, or about, a subset of the study population (Ponto, 2015:168). Ideally a sample that is representative of the wider population ought to be surveyed, in order for the researcher to be able to draw conclusions about the population from who the data was collected (Davies & Francis, 2018:18). Quantitative surveys measure variables and test the effects of variables by making use of statistical methods (Bhattacharjee, 2012:39). Utilising the method within a quantitative research approach practically means that the researcher poses several questions to willing respondents and then summarises their responses into percentages, frequencies, counts, and/or other more sophisticated statistical methods (Leedy & Ormrod, 2015:159). The survey design provided the researcher with a means to detect traits, trends, associations, as well as opinions, from which inferences about Southern Gauteng CSEs' trauma levels and coping strategies could be drawn. Therefore, survey research is beneficial for measuring unobservable data such as traits (e.g. trauma levels), opinions (e.g. toward briefing and debriefing services offered by SAPS), behaviours (e.g. coping strategies), or factual information (e.g. marital status, age and gender) (Bhattacharjee, 2012:73).

More specifically, a cross-sectional survey was deemed the most appropriate design. Surveys that are cross-sectional allow the researcher to describe a single entity in its entirety within a specific time frame (Dantzker & Hunter, 2012:85). A cross-sectional survey design was countenanced because it is less demanding in its design requirements and consequently provided the researcher with some flexibility to conduct the research effectively. Furthermore, the design is well-known for easing the analysis process (Leedy & Ormrod, 2015:159). A cross-sectional survey is also a fast and inexpensive method to reach a relatively large sample of respondents (Leedy & Ormrod, 2015:158; Wang & Cheng, 2020:S66-S67). Added advantages are that the data gathering process is not as labour intensive as longitudinal designs and the anonymity of respondents can be readily guaranteed (Leedy & Ormrod, 2015:158). The researcher's decision to adopt a cross-sectional survey design was further swayed by the fact that the design is practical when the population is not too large and is concentrated in a certain geographical area (Roberts, 2012:17). Embracing the design was therefore deemed sensible, because the entire population consisted of 296 CSEs and the geographical area was delimited to the eight LCRCs in the Southern Gauteng region. Other benefits of a descriptive cross-sectional survey design are that respondents are afforded the opportunity to complete questionnaires, which are often used in cross-sectional surveys, at their own pace, and it is easier to replicate the study later (Nardi,

2018:16). Lastly, the cross-sectional survey design allowed the researcher to garner extensive information from respondents using only one instrument (Davies & Francis, 2018:99).

Weaknesses of cross-sectional descriptive surveys include that they are not able to measure incidence, assess change over time, or determine causal relationships (Wang & Cheng, 2020:S67). However, the present study did not require results to satisfy the aforementioned weaknesses. The other disadvantages of quantitative descriptive cross-sectional surveys, when using questionnaires specifically, include possible misunderstandings of the questions due to language barriers and varying literacy levels, given that the researcher is not necessarily present to explain everything in person (Wang & Cheng, 2020:S67). Additionally, there may be a low return rate and respondents may overlook, or purposefully choose to skip questions in questionnaires (Nardi, 2018:16). What is of elevated importance is that the researcher can control the listed disadvantages through careful questionnaire design and implementation of measures to maximise response rates. It is for the above-stated reasons that the cross-sectional survey design proved to be the best choice for the present study.

4.6 Research methods

The discussion which follows provides an overview of the methods used in the study, with specific reference to the study population and sampling strategy, the data collection method and instrument, and the data analysis process and presentation.

4.6.1 Study population and sampling

A sample can be described in the most simplistic manner as a portion or a subset of the study population (Etikan et al., 2016:1; Wang & Cheng, 2020:S67). The primary purpose of sampling is to procure information from the selected respondents which describes characteristics of the larger study population (Leedy & Ormrod, 2015:105; Ponto, 2015:169). The study population in the present study was 296 members of the SAPS who worked as CSEs at the eight LCRCs in the Southern Gauteng region in 2019.

A number of sampling designs may be more or less appropriate in different situations, and for varying research questions. A researcher has to choose between two broad categories of sampling designs, namely probability sampling and non-probability sampling (Leedy & Ormrod, 2015:177). It is of the utmost importance to choose the design category based on the type, nature, and purpose of the study (Etikan et al., 2016:1; Ponto, 2015:169). Consequently, the researcher originally planned to use stratified random sampling, which is a probability sampling design

whereby the study population was to be divided into two strata, which were mutually exclusive. The strata chosen were that of age and gender, with the population being divided into male and female CSEs, as well as below and above the age of 40 years as per the eight LCRCs. Stratified random sampling ensures that different groups within the study population, such as male and female CSEs, as well as different ages per LCRC, receive appropriate and proportionate representation in the sample selected (Strydom, 2011:230). The sampling process was judged feasible because the researcher had obtained a list of CSEs working at each of the LCRCs (sampling framework). Simple random sampling within the strata was employed to select respondents per LCRC, whereby potential respondents were assigned a unique number and every second member of the study population was selected to be provided with a questionnaire, until the required sample size had been reached (Strydom, 2011:228). A minimum of 40% coverage of each LCRC, and according to the gender and age of the CSEs, was the sample size goal. The size of a sample used in research is important, as it determines whether the sample is representative of the study population, and if the results may be generalised to the study population (Sekaran, 2003:293). The questionnaires were delivered to the LCRCs, each with an envelope in which to return a respondent's completed questionnaire to a deposit box on site. Regrettably, many of the selected respondents declined participation in the study.

It therefore became apparent that a different sampling strategy had to be adopted. Hence, the researcher opted for convenience sampling, which is a non-probability sampling design. The result of this choice was that the researcher had to sacrifice the generalisability of the results. Convenience sampling, which is also known as haphazard or accidental sampling, is used to sample the population according to practical criteria such as their availability at a given time, accessibility, geographic location, and willingness to participate in a study (Elfil & Negida, 2017:2; Etikan et al., 2016:1). The practical inclusion criteria for potential respondents who were finally applied to the current study were respondents of any gender and age who worked at the eight LCRCs in Southern Gauteng; they had to work actively at crime scenes and/or attend autopsies in their roles as CSEs; they had to be able to complete a self-administered questionnaire in English; and they had to be willing to participate in the study. Potential respondents were excluded from the study if they did not work at the eight Southern Gauteng LCRCs; did not work actively at the time of data gathering at crime scenes and/or attend autopsies; could not complete a self-administered questionnaire in English; or were not willing to participate in the study. A main argument that is advanced when convenience sampling is applied in descriptive quantitative cross-sectional survey designs is that members of the group being sampled should be more or less homogenous and that there should resultantly be little to no difference in the obtained

research results, had the sample been random (Etikan et al., 2016:2). The researcher does not claim that the study population is completely homogeneous on account of the fact that CSEs, amongst others, are male and female, are of different ages, and have been working as CSEs for a varying number of years. It is however, argued that the respondents comprised of CSEs who work at LCRCs in Southern Gauteng and that they therefore at least experienced a similar work environment.

On 14 November 2018, Colonel Rababalela, the internal guide appointed by the SAPS Research Unit for this study, provided the researcher with a list of contact details for the managers of the eight LCRCs involved in the study. By 20 November 2018 all managers of each of the eight LCRCs had been contacted telephonically by the researcher to explain the research, and the need for a detailed list of the CSEs working at each LCRC. Email communication was sent out to each manager on the same date, again explaining the research, attaching the documents of approval from SAPS to conduct the research, and requesting complete lists of the CSEs employed at each LCRC. By 29 March 2019 all eight LCRCs had provided a full list of their CSEs. A total of 296 CSEs were found to be employed across the relevant LCRCs. The researcher still aimed to obtain 40% sample coverage, and therefore the goal sample size was 118 CSEs. Questionnaires were delivered to the managers of LCRCs, along with blank envelopes into which to submit the completed questionnaires into boxes placed at each LCRC. Follow-up visits were made to fetch the submitted questionnaires and to hand over further blank copies for additional qualifying respondents, after it became apparent that the planned sampling strategy explained above had to be aborted.

Table 4 indicates the number of questionnaires that were received from each LCRC, demonstrating the population of CSEs at each of the LCRCs. The table also indicates numerically how many individuals of each gender participated in the research at each LCRC, as well as the sample coverage of each LCRC in percentages. Sample coverage per LCRC ranged between as low as 25% at the Springs LCRC and as high as 46% at the Vereeniging LCRC. The total sample coverage was 35% with proportionally more female CSEs (36% of the total female CSEs) choosing to participate than male CSEs (34% of the total male CSEs).

Table 4: Study population per LCRC and sample coverage according to gender

	Population			Sample			Sample coverage		
Area	Male	Female	Total	Male	Female	Total	Male	Female	Total
Sandton	21	6	27	7	4	11	33.3%	66.7%	40.7%
Kempton Park	19	3	22	6	1	7	31.6%	33.3%	31.8%
Germiston	26	14	40	8	7	15	30.8%	50.0%	37.5%
Vereeniging	32	7	39	13	5	18	40.6%	71.4%	46.2%
Springs	39	20	59	10	5	15	25.6%	25.0%	25.4%
Johannesburg Central	30	4	34	10	0	10	33.3%	0.0%	29.4%
Protea Glen	23	7	30	8	2	10	34.8%	28.6%	33.3%
Krugersdorp	37	8	45	14	3	17	37.8%	37.5%	37.8%
Total	227	69	296	76	27	103	33.5%	39.1%	34.8%

4.6.2 Data gathering method and instrument

In order to collect the data, the researcher visited the eight LCRCs in the Southern Gauteng region. The initial handout of the questionnaires was arranged with each LCRC for the week of 13 – 17 May 2019. It was impractical for the researcher to explain the research in person to each CSE who chose to participate in the study, as the CSEs engage in shift work and so were not all present at one time. As a first step, the researcher met in person with the managers of seven LCRCs, and in one instance, with a delegated person of one LCRC, at which time the research was explained again, and the questionnaires were handed over. The researcher indicated that, after the new sampling strategy was adopted, specific respondents had not been chosen to take part in the study and requested that the managers and/or delegated person of the LCRC hand out the questionnaires at their own discretion to CSEs who were willing to take part in the study. After the initial in-person meeting with most of the LCRC managers, some of them delegated the task of distributing the questionnaires to someone else at the LCRC. The contact number of the researcher was provided on each informed consent information leaflet in case the respondents had further queries.

The respondents were given the questionnaire to complete in private and individually. They were requested to return the questionnaires in an unmarked envelope, that was provided to them, at their earliest convenience and to submit them into boxes strategically placed at each LCRC. Follow-up visits were made to the LCRCs to collect the completed questionnaires and to provide additional blank copies if the manager, or person assigned the task of distributing the

questionnaires, indicated that they had run out and that there were additional CSEs who might be willing to participate. Additional follow-up visits and the provision of further blank questionnaires continued over the course of two months until the study population pool had been saturated by the end of July 2019 and the researcher was unable to receive back any additional completed questionnaires.

Questionnaires may be self-administered or administered by a researcher. They may also be administered individually or in a group, and routinely contain a series of items/questions that reflect the aim and objectives of the study (Ponto, 2015:170). A self-administered questionnaire is a set of questions that are presented to the respondent that is either paper-based or in electronic format, which they must complete (Leedy & Ormrod, 2015:160; Ponto, 2015:170). The data gathering instrument for the present study was a paper-based and hand-delivered self-administered structured questionnaire. The basic objective of a questionnaire is to obtain both opinions and facts about a particular phenomenon. The questionnaire is given to individuals who are informed about the specific phenomenon being studied. Questionnaires generally collect data that can be broadly categorised into three groups, namely “attributes”, which include demographic information such as age, gender, and marital status; “behaviour”, which includes questions that ask “what”, “when” and “how often”; and “opinions, beliefs, or attitudes”, which aim to observe a respondent’s point of view (Davies & Francis, 2018:98). In the present study, the CSEs who attend traumatic crime scenes and autopsies are clearly the most qualified individuals to provide information about the trauma they experience in the CSE work context and the coping strategies they employ.

The researcher opted for structured paper-based self-administered questionnaires, because it allowed respondents to complete them within their own time as they were collected at a later stage. Response rates can be potentially raised or lowered with the use of hand-delivered paper-based questionnaires. A raised response rate may be due to respondents not being pressured to complete the questionnaire at a time that is inconvenient to them, and therefore they may be more likely to participate. On the other hand, lowered response rates may be attributed to respondents losing the questionnaire or forgetting about it, as they receive it to complete in their own time (Delport & Roestenburg, 2011:188; Leedy & Ormrod, 2015:160). The researcher endeavoured to ameliorate a low response rate through regular follow-up visits to the LCRCs and availing herself to deliver blank questionnaires as and when required.

The above discussion alludes to the fact that careful construction of the questionnaire is of great importance when a researcher opts to use structured self-administered questionnaires (Coetzee,

2017:88). A single false step may result in the researcher being unable to interpret the data. Leedy and Ormrod (2015:166-170) offer the following practical guidelines for expedient questionnaire construction, of which the researcher remained cognisant:

- The questionnaire was kept as short as possible, requiring the respondents to furnish only the information that was necessary to attain the aim and objectives of the study.
- The respondents' task was made simple and concrete by providing lucid instructions (e.g. skipping specific questions and moving on to a specified question number when a question was not relevant to the specific respondent).
- Questions were formulated carefully and unambiguously to avoid confusion, misunderstanding, and misinterpretation. Regardless, the researcher provided her contact details on the informed consent information leaflet wherein respondents were encouraged to contact the researcher if they required any clarification.
- The researcher was careful not to word questions in a manner which would provide clues to respondents about more desirable responses and avoided questions which made implicit assumptions about the research population.
- The coding of the responses was planned prior to data collection by, for example, attaching numerical values to non-numerical variables, which assisted greatly during the data analysis process.
- A limited number of questions wherein respondents were requested to furnish additional information if they felt comfortable to do so, provided respondents the opportunity to be honest and open, thus acquiring some insight into respondents' specialised knowledge on the topic under investigation.
- A pilot test of the questionnaire provided the researcher with invaluable insights which were incorporated into the questionnaire. The pilot testing is discussed in-depth later in the present chapter.
- The majority closed-ended questions, which took the form of Likert scale questions, facilitated easy recording, processing and analysis. The most important limitations of closed-ended questions, namely that they hamper richness of detail and may result in bias if relevant categories are omitted as responses, were ameliorated by the input received during the pilot study, and by encouraging respondents to provide additional information for specific questions. The questions that were not part of the two standardised scales were developed after an extensive review of the literature and questions were added after the pilot study.

The different sections of the questionnaire (see Appendix A) are illustrated in Table 5 below.

Table 5: Sections and types of questions in the measurement instrument

Section	Title	Types of questions
A	Biographical and background information	Age, gender, population group, marital status, number of dependent children, highest qualification, area grown up in, economic status of the family grown up in, current economic status, health diagnoses, religiosity, frequency of substance use, amount of meaningful time spent with family, length of employment.
B	Tasks and responsibilities	Frequency of different types of crime scenes attended, frequency of different types of autopsies attended, responsibilities regarding the taking of photographs and compiling of photo albums, transportation to crime scenes.
C	Experiences and dealing with work context	IES-R and Brief Cope Inventory, how stressful crime scenes are experienced as, if and why night scenes are stressful, if and why informal settlement scenes are stressful, stress prior to, during, and after crime scenes, stress about photographs and photo albums, how traumatic specific types of crime scenes are, how traumatic specific types of autopsies are, threats and actions of bystanders or relatives, work satisfaction.
D	Briefing and debriefing	Views regarding, and uptake of, briefing and debriefing services.

At this point, a more detailed discussion of the two standardised scales, the Brief Cope Inventory and the IES-R, is pertinent. The developers of both scales encourage their use and are widely available in the public domain for research purposes. The Brief Cope Inventory is the abbreviated version of the COPE Inventory, which was developed by Carver, Scheier and Weintraub in 1989 as a way to assess the different ways in which people respond to stress. The brief scale was created at a later stage in part due to the fact that the full inventory has 60 questions, as opposed

to 28 in the shortened version, as respondents were becoming impatient responding to the full instrument. As suggested by the name, the Brief COPE Inventory measures a respondent's coping strategies and was thus deemed appropriate for the study (Carver, 1997:92). The components of the inventory were explained in-depth in Chapter 2 of the research report as it supplemented the literature review. Although the scale was created over 20 years ago, it is still widely employed in research to measure coping (Garcia et al., 2018:1; Ryan, 2015; Stukalin, Lethebe & Temple, 2019:e743; Yusoff et al., 2010:41).

The IES-R is a 22-item self-report measure used for the assessment of subjective distress caused to a respondent by traumatic events. The scale contains items/questions that are directly related to the symptoms of PTSD. Respondents rate the degree of distress that they have experienced in the past seven days, ranging from a score of 0 for "not at all" to a score of 4 for "extremely". Although not used to diagnose PTSD in respondents, the IES-R is able to give an indication as to the possibility of a respondent being formally diagnosed with PTSD. The total score that the IES-R provides ranges from 0 to 88. Those who score 33 or above are at risk of being diagnosed with PTSD (Impact of Event..., 2018). The IES-R is therefore useful as a screening tool for PTSD. The IES-R, published in 1997, utilises the PTSD diagnostic criteria specified in the DSM-IV, published in 1994, and the DSM-IV-TR, published in 2000, as the PTSD requirements did not change between the two DSM editions (McCabe, 2019:1). The DSM-V was published in 2013 and there were changes made to the criteria for a PTSD diagnosis. The IES-R, however, is still seen as a relevant tool to use as it does measure symptoms of PTSD that are in the DSM-V.

Researchers have acknowledged the updated DSM-V criteria, but have concurred that the basic structure of PTSD is still measured reliably with the IES-R (Bienvenu, Needham & Hopkins, 2013:1974; Hosey et al., 2019:362; Komachi & Kamibeppu, 2019:2; Krafona & Appiah-Boateng, 2017:83; Kragh et al., 2019:6; Malinauskienė & Bernotaitė, 2016:186; Murphy et al., 2017:4; Pranal et al., 2017:4; Stukalin et al., 2019:e743; Sveen, Bondjers & Willebrand, 2015:2). In addition, the IES-R is not employed to provide a diagnosis but rather to indicate a need for further testing. The components of the IES-R were explained in Chapter 2 of the research report because it augmented the literature review.

The researcher considered other instruments before choosing to utilise the IES-R. The PCL-5 uses the DSM-V in order to assess if PTSD symptoms are present in a respondent, however the PCL-5 has not been validated when utilised to assess patient symptoms over different time frames other than the past month. The present study specifically endeavoured to measure PTSD symptoms experienced in the past week by CSEs, and as such the PCL-5 was not as appropriate

to use as the IES-R, despite being based on the latest version of the DSM (PTSD Checklist for...,2019). Moreover, recent research has seen a resurgence in the use of the IES-R, and seems to be favoured over the PCL-5. In particular, the COVID-19 pandemic has been a traumatic experience for individuals worldwide and studies have been conducted on PTSD related to the pandemic using the IES-R (Chew et al., 2020:560; Forte et al., 2020:2; Galanis et al., 2020:5; Vanaken et al., 2020:6; Varshney et al., 2020:3). The continued validity and significance of the IES-R is therefore well established.

In addition, the IES-R was favoured in the study over scales that measure PTSD directly, such as the PCL-5, as the IES-R measures trauma with regard to specific events, as opposed to how much trauma a person experiences overall in their life. The focus of the study is the trauma that CSEs experience within their professional roles, and as such a scale that was to measure their occupational trauma directly was more sensible. In addition, the IES-R is most useful in measuring recent trauma, not remote trauma, and one of the inclusion criteria for participation in the study was for the respondents to be CSEs who are currently actively working at crime scenes and/or attending autopsies (McCabe, 2019:1).

Both the Brief Cope Inventory and the IES-R have validity due to the fact that both instruments ask the same questions in differing ways, in order to ensure accurate, consistent answers. Cronbach's alpha was used in order to ensure reliability. The researcher reports on measurement quality later in the present chapter.

4.6.3 Data analysis and presentation

Data analysis entails the coding, reduction, and presentation of information in tables, figures or discussion (Creswell, 2013:180). The purpose of data analysis is to convert the gathered data into a form that allows for the research problem to be studied and tested, and for conclusions to be drawn from the data (Bhattacharjee, 2012:119; Leedy & Ormrod, 2015:99-100). Quantitative data analysis does not automatically provide a researcher with answers to their research question, but rather needs to be interpreted to draw conclusions (Fouché & Bartley, 2011:249).

Prior to analysis, the data collected in the study was coded and computerised. The coding was necessary as the programme that was used to analyse the data required it to be presented in numerical form (Fouché & Bartley, 2011:253). Possible answers in the research questionnaire were assigned numerical codes, an example of which is "yes" being coded as "1" and "no" coded as "2". Each questionnaire had empty blocks on the right-hand side of each page, within which the researcher wrote down the selected answers in their coded forms. The code was

subsequently manually entered by hand into Microsoft Excel. Data entry errors were detected and removed, through the researcher entering the codes of each questionnaire twice in order to ensure that no entries were incorrect.

The codes from Excel were subsequently imported into a programme used for data analysis, namely the Statistical Package for Social Sciences programme (SPSS) (IBM Corp, 2017). The most popularly used statistical package for the social sciences, the SPSS, uses statistical formulae to carry out computations (Bhattacharjee, 2012:120; Greasley, 2008:20). Statistical analysis of the data followed. Missing data, whereby respondents skipped certain questions, were taken into account while analysing the final data. The data was subsequently presented in table format and figures. Pie charts, bar graphs, and percentage calculations were used to draw attention to distinctive and significant results, and are presented in Chapter 5.

Bivariate analysis was utilised to explore the relationship between variables, as opposed to merely examining the distributions and frequency of one variable alone. Classifying subjects in relation to two separate variables at the same time, with the intent of determining the degree of association between the two variables, is called cross-tabulation (Deb & Sarkar, 2016:25; White, 2004:182). Bivariate analysis allowed for testing the relationships between the respondents' answers to certain questions, and gender as well as chronic health and mental conditions (Fouché & Bartley, 2011:266).

The Kolmogorov-Smirnov and Shapiro-Wilk tests were employed to determine the distribution of the data (Aslam, 2020:914; Ghasemi & Zahediasl, 2012:486). In both instances, the p value was smaller than 0.05, indicating that the data was not normally distributed. This was further confirmed by a visual inspection of histograms with normality curves. Therefore, both the tests and the visual inspection confirmed that non-parametric procedures were required to be followed. Non-parametric tests are also known as distribution-free tests, due to the fact that they do not assume that the data involved follows a specific distribution. They are therefore required when data is not normally distributed (Choosing Between a...,2015). The Mann Whitney U test was utilised on each question where the answers were found to be statistically relevant ($p < 0.5$) (Nachar, 2008:13; White, 2004:182). With the Mann Whitney U test, cross-tabulations were used, comparing the answers provided by the CSEs to their gender, and diagnosed chronic health and mental health conditions. The effect size of the selected questions was also reported on, whereby $r = -0.1$ was indicative of a small effect size, $r = -0.3$ indicated a medium effect size, and $r = -0.5$ confirmed a large effect size; and r was calculated by dividing z by the square root of n (Coetzee, 2017:94).

4.7 Measurement quality

The accuracy, efficacy, and veracity of measurement is considered one of the most salient characteristics of judicious quantitative research (Mohajan, 2017:58). The validity and reliability of the measurement instrument used in a study will determine the extent to which a researcher can reasonably learn something about the problem under investigation (Leedy & Ormrod, 2015:114). Therefore, both validity and reliability should be demonstrated in a research report, and it is important to understand that they are two separate entities (Babbie, Wagner & Zaino., 2019:15; Kassam-Adams, Marsac & Winston, 2015:8). Validity is in reference to the extent to which the empirical measure (the questionnaire in the present study) reflects accurately the variable that it was designed to measure (Mohajan, 2017:58). Therefore, if an indicator is said to be valid, it is shown to measure the concept that it is intended to measure (Babbie et al., 2019:13; Leedy & Ormrod, 2015:114). Validity of a measurement instrument can be demonstrated in various forms depending on the context of the study. In the present study the researcher is able to demonstrate face validity, content validity, and criterion validity.

Face validity refers to whether an instrument appears at face value to measure the variable that it claims to measure. Although face validity, which is also called surface validity or appearance validity, is said to be the least scientific characterisation of validity, it plays an important role as respondents in a study may resist measurements that do not appear to be relevant (Content validity, [sa]:4; Delport & Roestenburg, 2011:174; Leedy & Ormrod, 2015:115; Mohajan, 2017:75). The researcher was interested to determine the profile of Southern Gauteng CSEs; to establish the scope of their tasks and responsibilities; to ascertain their trauma levels in relation to traumatic crime scenes and autopsies; to identify the specific coping strategies they use; to determine their context-specific experiences of job-related stress and trauma; and to ascertain the measure to which they experience contentedness within their workplace and their views on both briefing and debriefing. To this end the researcher made sure that the different sections of the questionnaire were aligned with the objectives of the study and that the questions were pertinent to attain the objectives. In addition, the questionnaire was submitted for an informed opinion to experts in the fields of research methodology and the CSE context. The feedback was that the questionnaire at face value did appear to measure what it was intended to measure. Content validity centres around the sampling adequacy of the content (topics or items) of an instrument (Content validity, [sa]:3; Mohajan, 2017:73) In other words, the researcher has to determine whether the instrument contains an adequate sample of items representing the topic under investigation, and whether the instrument indeed measures the specific topic (Delport & Roestenburg, 2011:173; Leedy &

Ormrod, 2015:115). The researcher ensured that all questions in the questionnaire were formulated to reveal the trauma levels and coping strategies of Southern Gauteng CSEs who are exposed to traumatic crime scenes and autopsies. In addition, the data were found to reveal the latter. Lastly, the researcher utilised widely used and validated scales (the Brief COPE Inventory and IES-R) to measure trauma levels and coping strategies, which is referred to as criterion validity (Leedy & Ormrod, 2015:115; Mohajan, 2017:73).

If a measurement instrument provides the same values in repeated, sequential observations of a given case, provided that no variables have changed, it is said to be reliable (Babbie et al., 2019:14; Leedy & Ormrod, 2015:117; Mohajan, 2017:68). Cronbach's alpha testing is used in relation to reliability. The alpha was developed in order to provide a measure of the internal consistency of a scale or test. It is expressed as a number between 0 and 1. The extent to which all of the items in a test measure the same construct or concept is the internal consistency. It is important to determine internal consistency after a test is employed for the purposes of research (Tavakol & Dennick, 2011:53).

In order for a measurement instrument to be deemed internally consistent, an alpha level of 0.70 or higher is required (Mohajan, 2017:59; Taber, 2018:1278). The results of the Cronbach's alpha testing are illustrated in Table 6 below. The internal reliability of all of the scales in the study were found to be high, except questions 13 – 16, which dealt with the substances that the CSEs used. The alpha score for the latter was well below 0.7.

Table 6: Cronbach's alpha coefficients

Questions/items	Valid	Excluded	Number of items	Alpha coefficient
13 – 16: substances used	94	9	4	.356
20 – 21: How often attend crime scenes	103	0	3	.879
23 – 31: How often attend different types of scenes	88	15	9	.877
35 – 42: How often attend different types of autopsies	51	52	8	.899
Intrusion subscale	99	4	8	.957
Avoidance subscale	99	4	8	.914
Hyperarousal subscale	99	4	6	.916
46 – 67: IES-R	93	10	22	.974
68 – 95: Brief Cope Inventory	95	8	08	.942

The reliability and validity of the measurement instrument, and ultimately the study, was further augmented by making use of a pilot study, which will be discussed next.

4.8 Pilot study

A pilot study is, in effect, the main study executed on a smaller scale and affords the researcher the opportunity to streamline the research and to become aware of any errors and/or omissions before the main study is carried out (Cheng et al., 2010:5). Respondents in the pilot study may bring confusing or ambiguous questions to the attention of the researcher, who can then rectify them for use in the main study (Leedy & Ormrod, 2015:117). It can thus be stated that a pilot study functions almost like a risk mitigation strategy to minimise the odds that the main study may fail (Fraser et al., 2018:261).

An important aspect of a pilot study is that the researcher must ensure that the sample of individuals used therein is representative of the study population that will be used in the main study (Cheng et al., 2010:5). The pilot study for the research took place at the Lyttleton LCRC in Gauteng. Lyttleton was chosen as it is in the Gauteng area (City of Tshwane Municipality), and as such the CSEs working at the LCRC would be exposed to similar scenes as their colleagues in the Southern Gauteng LCRCs utilised as the study population. However, as the Lyttleton LCRC is not within the Southern Gauteng area, the pilot study was not using any CSEs who may potentially have been chosen to participate in the present study. This is of great importance, as participating in the pilot study could influence later responses in the main study.

A total of six CSEs were involved in the pilot study, to whom exactly the same inclusion and exclusion criteria stipulated for the main study were applied, except the location. Further, although participation in the research did not require respondents to attend both crime scenes and autopsies, it was requested that the CSEs who volunteered to participate in the pilot study attend both for optimal feedback on both the crime scene and autopsy questions. Four male and two female CSEs participated in the pilot study, because both men and women work as CSEs across South Africa, albeit with males being in the majority.

The pilot study conducted at the Lyttleton LCRC provided invaluable information which enhanced the validity and reliability of the final questionnaire that was used in the main study. The six CSEs involved all provided verbal feedback after completing the questionnaires. All six members communicated that they felt strongly that the in-house debriefing and psychological services being offered by SAPS are inadequate, specifically due to the fact that the professionals who offer the service have no insight into the CSE context and therefore do not understand the trauma they face. Consequently, the researcher added questions to the questionnaire that directly addressed whether the Southern Gauteng CSEs agreed with the pilot study respondents.

Further, the CSEs brought to the researcher's attention that, in addition to taking photographs of traumatic crime scenes, the compiling of photo albums of the scenes at a future time, re-traumatises them. Neither of these had been addressed in the pilot study questionnaire and subsequently questions were added to cover this aspect. Additional stress was reported to be felt when family members of perpetrators or victims were still present at crime scenes when the CSEs were working. The CSEs also communicated that their stress levels are raised when working scenes at night versus during the day, and working scenes in informal settlements as opposed to more organised urban areas. Questions regarding all the aforementioned aspects were added to the final questionnaire, along with specific reasons as to why the CSEs found nocturnal and informal settlement scenes more distressing (e.g. getting lost more easily). The fact that CSEs are rarely in possession of marked SAPS vehicles, and that this increases their stress, was also raised and added to the final questionnaire. Moreover, muti murder was added to the types of scenes and autopsies attended. Although the CSEs emphasised that they do not attend scenes of muti murder often, they denoted that when they did, they found them to be some of the most traumatic scenes to attend.

Despite the aforementioned omissions in the questionnaire, the pilot study CSEs indicated that the questions that had been submitted to them were lucid, instructions were clear, and that they would have been able to answer them competently without the researcher being present. The confirmation was important because the researcher had decided that respondents in the main study would be afforded the opportunity to complete the questionnaires at their own pace. The CSEs additionally verified that the informed consent information leaflet provided them with all of the information that they needed in order to feel comfortable about participating in the pilot study. No questions were identified as irrelevant.

4.9 Ethical considerations

Ethics in research with humans is considered so important that researchers are implored to dissect the impact of what, and how, they propose to conduct the research during the planning phase of their study (Leedy & Ormrod, 2015:120). Research ethics alludes to the duty of researchers to conduct responsible and moral research (Akaranga & Makau, 2016:1). Responsible research dictates that scientific investigations should be practised with integrity. Ethics in the context of research refers to standards that are to be adopted by those conducting research and are often mandatory in specific disciplines, while in others they are guidelines only (Davies & Francis, 2018:28). Nevertheless, cogent research ethics is demonstrated when a

researcher conforms to such standards (Bhattacharjee, 2012:137; Fleming & Zegwaard, 2018:209). Accordingly, the ethical aspects pertinent to the present study are discussed below.

4.9.1 Voluntary participation in the study

Voluntary participation in a study requires respondents to give their consent to take part in research without coercion. Individuals must feel able to decline participation without any negative consequences (Goldstein et al., 2018:6; Leedy & Ormrod, 2015:121). Voluntary participation in the present study is demonstrated by the fact that the researcher had to be flexible to adapt her planned sampling design and resultantly had to sacrifice the generalisability of the findings. It is evident that the respondents, who were initially selected through a probability sampling design, felt free to decline the invitation to participate. Many sealed, but blank questionnaires were deposited in the collection boxes. As it turned out, voluntary participation played a critical role in the study and the researcher is convinced that no respondent felt coerced to take part in the research. As such, being able to prove voluntary participation enhances the validity of a study (Westmarland, 2011:144). Voluntary participation is facilitated by providing to potential respondents all the information they need to make an informed decision about their participation in the study, which will be discussed next.

4.9.2 Informed consent

Informed consent is a crucial component to any study in which human respondents are involved (Akaranga & Makau, 2016:6-7; Fleming & Zegwaard, 2018:210; Willig, 2013:26). Informed consent encompasses respondents being wholly informed about their participation in the study. This includes being provided with information about possible consequences of their participation (Davies & Francis, 2018:28). It is the right of every potential respondent to make an informed decision concerning their participation. Informed consent is characteristically obtained through using an informed consent information leaflet and slip, which the respondent signs prior to the research commencing. The leaflet provides all the necessary information for the respondents to be able to make their decisions (Privitera, 2019:65).

Informed consent in the study entailed the provision of an information leaflet and consent slip to all potential respondents, which detailed the title, origin, research purpose, procedures, as well as risks and benefits for respondents who were willing to take part in the study (see Appendix B). In addition, they were notified about the dissemination of the research results and that their data would be stored securely in a safe at the Department of Social Work and Criminology, University of Pretoria for a minimum period of 15 years. The data storage was tied to the fact that the

research was ethically approved by the Research Ethics Committee of the Faculty of Humanities, University of Pretoria (see Appendix C). The managers of the LCRCs were also provided with the permission letter to conduct the research, which was obtained from the SAPS Divisional Commissioner: Research (see Appendix D).

The fact that participating in the study was exclusively the CSE's choice was emphasised, as well as the right of all respondents to withdraw from the study at any time. Respondents must be allowed to end their involvement in a study at any time, even if they have provided informed consent (Akaranga & Makau, 2016:2). The CSEs were not required to provide notice about their withdrawal, nor an explanation for it, and there were no penalties for withdrawing. Blank questionnaires submitted back into the deposit boxes signified such withdrawals. Therefore, the process of informed consent is an exercise of autonomy on the part of potential respondents, whereby the person choosing to take part in the research has done so without being coerced, manipulated, or persuaded in any way (Leedy & Ormrod, 2015:121).

The first part of the informed consent information leaflet provided to the CSEs contained all of the information required for the CSE to make an informed decision about their participation in the study. The second part of the leaflet included statements that provided detailed explanations regarding the information provided to the CSEs. The CSEs put ticks next to each statement to signify that they had read and understood the information (Perez et al., 2017:23). No identifying information was required on the questionnaire, which means that anonymity was also guaranteed in the informed consent information leaflet.

4.9.3 Anonymity

Guaranteeing anonymity in the study was of elevated importance (Leedy & Ormrod, 2015:123). CSEs were assured that it would be impossible to trace their completed questionnaires back to them specifically. Self-administered, paper-based questionnaires are one of the only data collection methods that ensures complete anonymity (Fleming & Zegwaard, 2018:211; Mathers, Fox & Hunn, 2009:32). Some questions included in the questionnaire may have led to admissions of guilt of using illegal substances as coping methods, which could lead to prosecution. If the CSEs did not have assurance of complete anonymity, they may possibly have been less likely to answer questions with absolute honesty.

Therefore, in order to ensure anonymity, respondents in the study were not required to sign their names to indicate informed consent; instead, they were requested to tick a box, indicating that they were providing informed consent. The aforementioned strategy was adopted so that neither

names or signatures, nor handwriting could be recognised (Salkind, 2008:264). In addition, respondents were requested to seal their completed questionnaires in a blank envelope before submitting it into strategically placed deposit boxes. None of the seals on the envelopes returned had been broken, signalling that anonymity had not been compromised. Lastly, respondents were guaranteed that only the researcher and her supervisors would have access to the information provided. Therefore, privacy was also guaranteed over and above the fact that specific questionnaires could not be traced back to the respondents who had completed them (Akaranga & Makau, 2016:6; Fleming & Zegwaard, 2018:211; Leedy & Ormrod, 2015:123; Mathers et al., 2009:19).

4.9.4 Avoidance of harm

It is imperative for the researcher to not make use of any procedures that could cause harm to the respondents involved in the study (Fleming & Zegwaard, 2018:211). Harm could take the form of physical, psychological, social, economic, and/or legal harm (Akaranga & Makau, 2016:6). The researcher should additionally employ the least stressful research method possible (Louw & Louw, 2012:39). The CSEs involved in the study were informed of the potential risks and benefits of the research. It may have been psychologically distressing for respondents to recall the traumatic scenes that they had attended in their line of work when providing answers to the questions. All respondents in the study were provided with a list of relevant support services, as well as the contact details of the researcher, in the event that they experienced any discomfort during or after their participation in the study.

In particular, the EHW within the SAPS, which is a legislative requirement within the South African Public Sector for workplaces (Rajin, 2012:19; Thaba, 2018:38), was approached for assistance and was aware that CSEs may require support as a result of their participation in the study (see Appendix E). The EHW services are offered free of charge to SAPS employees and are used to support those who are distressed (Rajin, 2012:8). The EHW aims to provide mechanisms for counselling to CSEs, as well as other forms of advice and assistance. Additionally, the EHW aims to provide such support and assistance on a systematic and uniform basis. In particular, the EHW offers employees on-site access to psychological and medical professionals (Rajin, 2012:2). As such, they were a useful and much-needed tool to assist the CSEs with any potential harm that may have arisen from the study.

4.10 Limitations of the study and challenges experienced

Despite the fact that the methods used in the present study were deemed appropriate to attain the aim and objectives of the study, the methods employed were not flawless. Although the quantitative research approach held numerous advantages, an important shortfall of the study is the lack of in-depth personal information, which can be gleaned only from a qualitative research approach. The high premium placed on numerical and statistical data when adopting a quantitative approach comes at the expense of rich information, which can shed light on feelings, emotions, motivations, and personal experience (Babbie & Mouton, 2003:22; Majeed, 2020:119). The basic research type implies that the findings have no direct practical application in terms of solving a problem (Bentley et al., 2015:690; Glassom et al., 2019:1-3; Schauz, 2014:274-275). However, the researcher does argue that the findings can serve as a foundation for policy development in the future. The descriptive purpose of the study merely describes the problem, which means that explanatory value is lost. For example, based on the findings, the researcher will not be able to offer insights into why some CSEs are more resilient to cope with traumatic crime scenes and autopsies than others. Furthermore, the descriptive purpose reveals associations, but fails to address causality, which means that specific factors which directly cause traumatisation in the CSE context cannot be isolated. The cross-sectional design adopted results in the fact that trends and change over time cannot be measured in the future (Atmowardoyo, 2018:198; Fouché & De Vos, 2011b:96).

Using a self-administered structured questionnaire presents a number of inherent limitations, including misunderstanding of questions, incomplete questionnaires that have to be discarded, and questions being skipped. Notwithstanding the fact that the researcher provided her contact information if clarification was required, no-one contacted her. The number of questionnaires that were incomplete (see discussion below for details) bears testimony to this well-documented limitation of self-administered questionnaires (Leedy & Ormrod, 2015:166-170; Nardi, 2018:16; Wang & Cheng, 2020:S67). Furthermore, the fact that a researcher may omit certain categories as possible answers to questions in a structured questionnaire, also featured in the study (Davies & Francis, 2018:98; Leedy & Ormrod, 2015:166-170). The provision of spaces in the questionnaire to furnish additional information somewhat ameliorated this limitation, but similar responses from respondents in the additional comment sections testify to the fact that specific response categories could have been added to the questionnaire (e.g. lack of equipment and the workload of CSEs which add to their stress levels). More details about omitted categories are provided in Chapter 5.

The study was delimited geographically to LCRCs in the Southern Gauteng region and should in the future be extended to other locations to allow for comparisons. The fact that a non-probability sampling design, in particular convenience sampling, had to be employed culminates in the fact that the results cannot be generalised to the CSE population (Elfil & Negida, 2017:2; Etikan et al., 2016:1). The failure to attain 40% coverage of the Southern Gauteng CSE population further compounds the non-generalisation problem. Additionally, the fact that certain LCRCs were over-represented and others poorly represented in the sample, means that the results may be biased. The selection bias is further amplified by the researcher having little insight into the reasons why some CSEs chose to participate and others not.

In addition to the limitations conceded to above, the researcher encountered several difficulties during the data collection phase of the study. A significant challenge arose with regard to the cooperation received from one of the LCRC managers in particular. He showed resistance to the research from the onset, by refusing to provide the names and details of the CSEs who worked at the specific LCRC. No amount of documentary evidence, emails, or telephone calls could persuade him that SAPS had given permission for the research to be conducted. After careful consideration, the researcher contacted her SAPS internal guide for assistance. Subsequent to the intervention by the internal guide, the manager provided the list of CSEs required for the sampling process to proceed. The researcher scheduled an appointment to deliver the questionnaires to the same manager; yet again he was not willing to assist with the distribution of the questionnaires. In fact, he declined to meet with the researcher. Consequently, the secretary at the LCRC kindly provided the researcher with the shift times of the CSEs. The researcher returned to the LCRC at different shift times in order to personally distribute the questionnaires to the CSEs who were willing to participate in the study. The researcher was required to return to the specific LCRC a total of twelve times, at varying hours, in order to reach as many of the CSEs as possible and to compensate for the unanswered questionnaires that were returned. This was a significantly larger number of visits than were needed to be made to the other LCRCs, each of which was visited two to three times. This significantly raised both the costs and time spent on gathering the data from the LCRC in question.

The researcher set out with the intent to collect a proportionate sample from the CSEs at each LCRC according to gender and age. However, it quickly became apparent that some of the CSEs and LCRCs were going to be more cooperative than others. The sampling design was consequently soon changed to convenience sampling. The CSEs at the Vereeniging and Sandton LCRCs were most forthcoming, producing more than the 40% coverage that was the sample size

goal. The CSEs at the Springs and Johannesburg Central LCRCs were less forthcoming, with the poorest participation across the study population. The Springs LCRC was the largest of the LCRCs, yet yielded the least number of completed questionnaires proportional to its size. The contact person at the Springs LCRC was in fact the most helpful and cooperative contact person across all the LCRCs. He went above and beyond what could be reasonably expected, staying after hours to assist the researcher and providing detailed explanations to CSEs to recruit them as respondents. He was very apologetic about not being able to assist more. The reason he cited for the poor response rate was a commonly-cited concern heard across all the LCRCs, namely that the questionnaires were being distributed close to the time of year that annual leave was expiring. Indeed, many CSEs were already on leave. In terms of gender, some LCRCs were “over-sampled”, such as the female CSEs at Sandton and Vereeniging, in an attempt to make up for LCRCs where no women could be recruited at all, such as Johannesburg Central.

In addition to the above-mentioned challenges, there were two reasons for removing seven questionnaires from the data set. The first reason was that four respondents indicated that they do not attend crime scenes or autopsies of any type at all. Three of the respondents were from the Germiston LCRC and one from Krugersdorp. The respondent from Krugersdorp indicated on his questionnaire that he was exempt from attending crime scenes and autopsies due to an official diagnosis of PTSD. The three Germiston CSEs did not elaborate on their reasons. However, the researcher contacted the manager of the Germiston LCRC, who indicated that they do have CSEs who do not attend crime scenes or autopsies due to past trauma that they had experienced. It was not made clear what exact work the CSEs who are exempt from attending scenes and autopsies carry out. The four questionnaires had to be removed from the data set, as one of the inclusion criteria for the study was that CSEs had to be actively attending crime scenes and/or autopsies.

Three additional questionnaires were removed from the data set due to having so many unanswered questions that the questionnaires did not provide enough usable data. The three questionnaires that were discarded each had several pages with incomplete responses. As the questionnaires were completely anonymous and could not be traced back to the CSEs who had completed them, it was impossible to return the incomplete questionnaires to the relevant CSEs for completion. Sixty-nine out of 103 of the questionnaires were not fully completed. However, the majority had only one or two questions that had been left out, and the questions that were left unanswered were inconsistent across the 69, in terms of which question number was not

answered. As such the loss of data from the 69 was not enough to exclude them completely and the overall loss of data did not have an effect on the study findings.

A limitation of the 2015 Honours study was the small sample size, resulting in data that could not be generalised. This limitation was something that was meant to be addressed in the current study. Unfortunately, by the end of July 2019 the researcher found that the LCRCs had been fully saturated for further participation. Follow-ups were made with each LCRC, with the contact persons informing the researcher that they had asked all available CSEs to participate and had reached the limit of willing respondents. Due to the fact that participation in the study was entirely voluntary, there was no way for the researcher to increase the number of respondents.

4.11 Summary

The purpose of Chapter 4 has been to demonstrate the research methods that were employed in the study. The study comprised a quantitative research approach within the positivist paradigm. Basic research was selected with a descriptive purpose. A cross-sectional survey design using convenience sampling was chosen, with self-administered questionnaires distributed to the respondents. The data was coded and analysed using SPSS. Validity and reliability were demonstrated, the pilot study was explained, and the ethical considerations were presented. Lastly, the limitations of the study were appraised and the challenges that were experienced while conducting the study were elucidated. The next chapter presents the research findings in the format of graphs and tables, and draws attention to results that are statistically significant.

Chapter 5: Empirical results

5.1 Introduction

Chapter 5 comprises the empirical findings of the study. Data garnered from the 103 respondents who took part in the study¹ is presented visually in the form of tables and graphs. The data for the study was collected through the distribution of self-administered questionnaires amongst the CSEs who work in all eight LCRCs in Southern Gauteng. The results obtained provide information about the respondents' biographical details and backgrounds in order to gauge their profile; an overview of the scope of the tasks and responsibilities of Southern Gauteng CSEs; their self-reported trauma levels in relation to working at traumatic crime scenes and attending autopsies, as well as the coping strategies they adopt; their context-specific experiences of job-related stress and trauma; the measure to which they feel contentedness within their workplace; and their views about both briefing and debriefing.

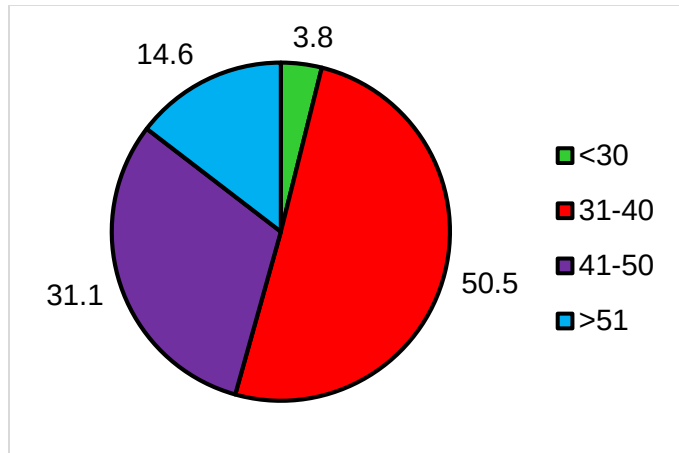
5.2 The profile of the respondents

In the section below, the biographical and background information of the respondents is presented in order to sketch the profile of the Southern Gauteng CSEs who participated in the study, including their age, gender, population group, marital status, number of dependent children, educational level, the area in which they grew up, past and present economic status, chronic health and mental health conditions, religiosity, substance use, meaningful time spent with family members, as well as the total number of years they had been working for SAPS in general, and as CSEs specifically.

Half of the respondents were between the ages of 31 and 40 years ($n=52$; 50.5%) (Figure 1), with a mean age of 41.0 years and a standard deviation of 6.9 years.

¹ The total study sample comprised 103 respondents, however there were several questions that not all 103 respondents answered. The calculated percentages reflect the number of responses garnered for each question. Incomplete data is indicated where applicable.

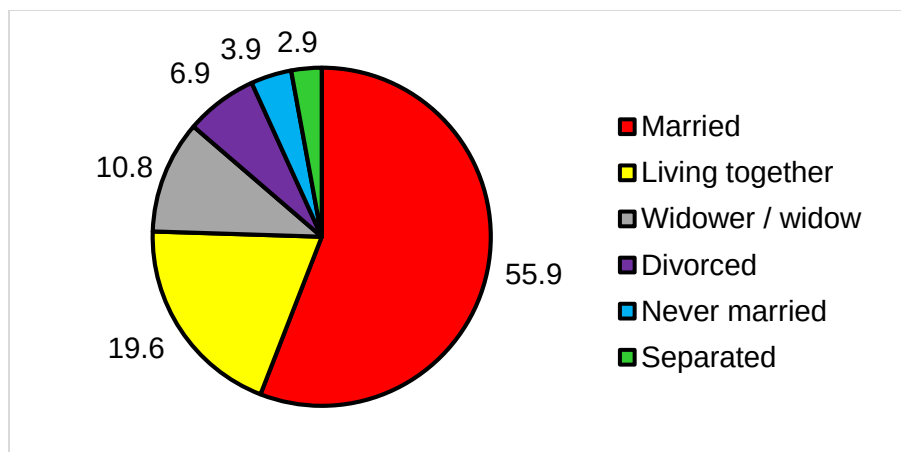
Figure 1: Age of respondents (%)



Nearly three quarters of the respondents were male (n=76; 73.8%), with just over a quarter (n=27; 26.2%) being female. The majority of respondents were Black African (n=84; 81.6%), with White respondents comprising the next largest group (n=16; 15.5%). Two respondents (n=2; 1.9%) were Coloured and one respondent (n=1; 1.0%) was Indian/Asian.

The majority of respondents were married (n=57; 55.9%), and close to one in five (n=20; 19.6%) were living together as married partners. One out of ten (n=11; 10.8%) were widowed and three respondents (2.9%) were separated. Four respondents (3.9%) indicated that they have never married and seven respondents (6.9%) were divorced (Figure 2)².

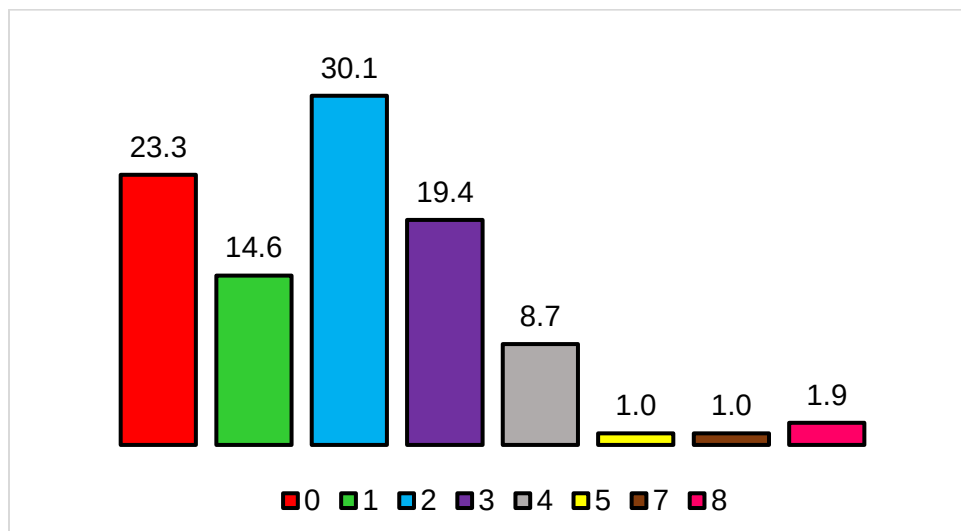
Figure 2: Marital status of respondents (%)



² Data missing in 1 of 103 cases (1.0% of sample).

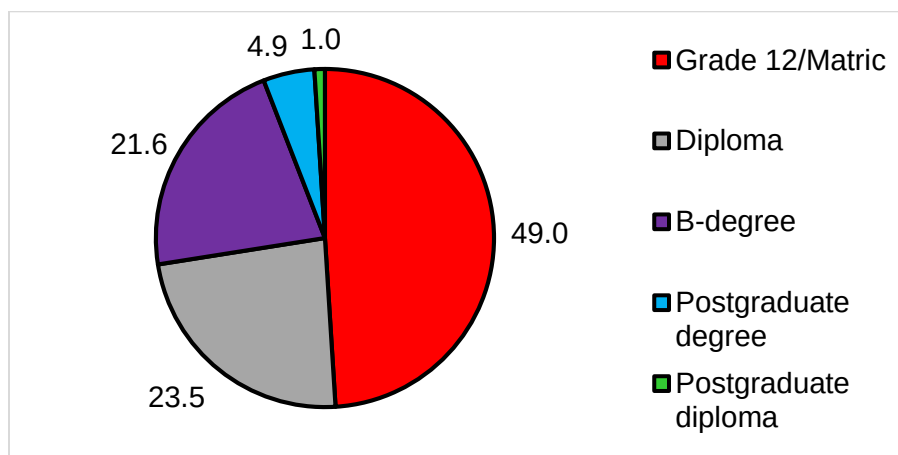
More than three quarters of respondents (n=79; 76.7%) signified that they had dependent children, with nearly a quarter of respondents (n=24; 23.3%) indicating that they had no dependent children. Three in ten of respondents (n=31; 30.1%) had two dependent children (Figure 3).

Figure 3: Respondents' number of dependent children (%)



Nearly half of respondents (n=50; 49.0%) completed Grade 12, while almost a quarter (n=24; 23.5%) had obtained a diploma (Figure 4)³.

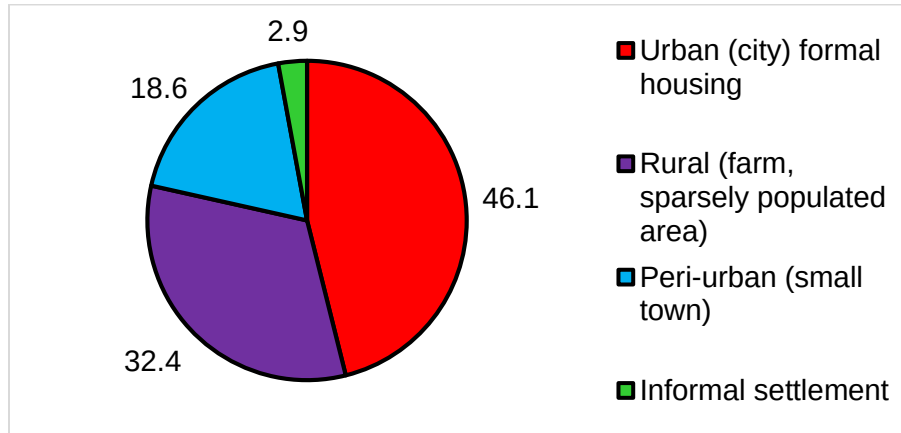
Figure 4: Highest qualification of respondents (%)



³ Data missing in 1 of 103 cases (1.0% of sample).

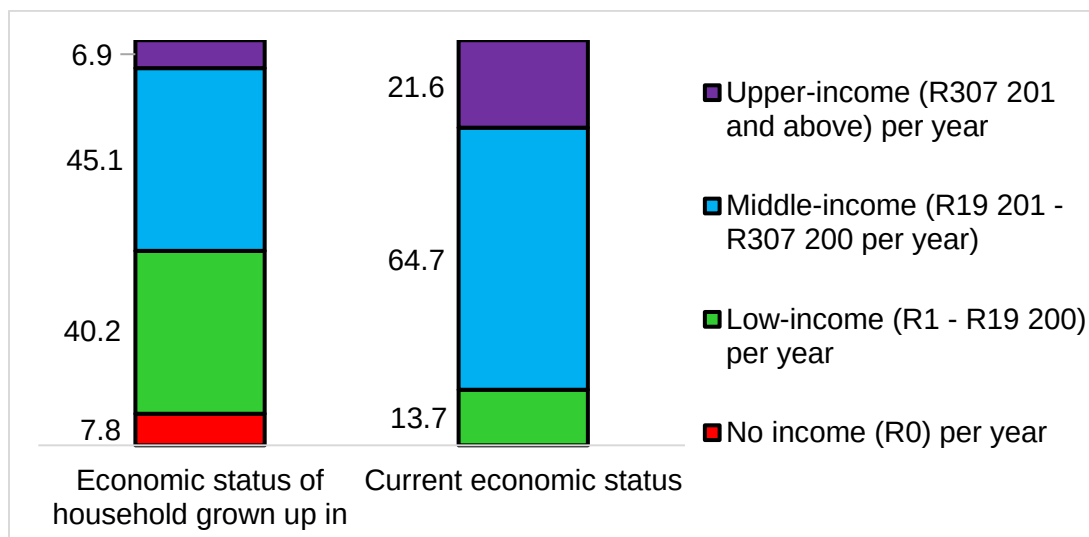
Forty-seven of the respondents (46.1%) grew up in an urban (city) area and almost a third of respondents (n=33; 32.4%) grew up in a rural (farm/sparsely populated) area (Figure 5)⁴.

Figure 5: Area in which respondents grew up in (%)



Forty-six respondents (45.1%) grew up in a middle-income household and 41 respondents (40.2%) grew up in a low-income household. Eight respondents (7.8%) indicated that they grew up in a household with no income⁵. Nearly two thirds of respondents (n=66; 64.7%) reported currently living in a middle-income household, with 14 respondents (13.7%) currently living in a low-income household (Figure 6)⁶.

Figure 6: Previous and current economic status (%)



⁴ Data missing in 1 of 103 cases (1.0% of sample).

⁵ Data missing in 1 of 103 cases (1.0% of sample).

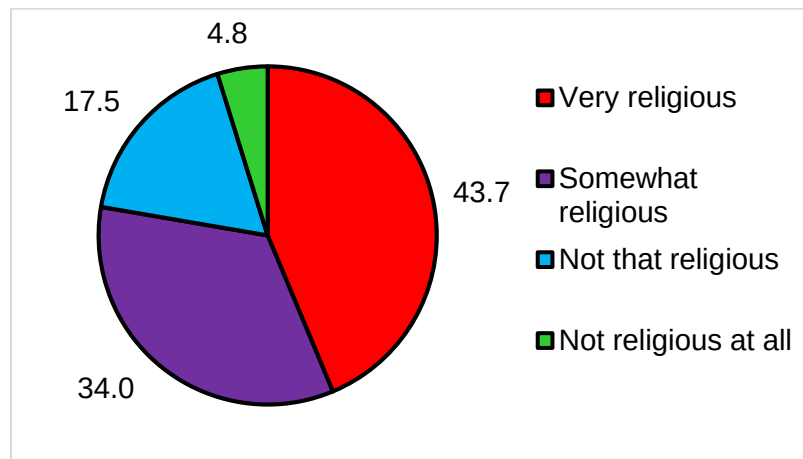
⁶ Data missing in 1 of 103 cases (1.0% of sample).

One out of four respondents (n=25; 24.3%) had been diagnosed with a chronic health condition and one out of five (n=22; 21.4%) had been diagnosed with a mental health condition.

There was a significant relationship between diagnosis of a mental health condition and diagnosis of a chronic health condition. Of respondents diagnosed with a mental health condition (n=22; 21.4%), two fifths (n=9; 40.9%) were also diagnosed with a chronic health condition ($p=0.041$; $r=-0.2$).

In terms of religiosity, 45 respondents (43.7%) indicated that they were “very religious”, with slightly more than a third (n=35; 34.0%) denoting that they were “somewhat religious” (Figure 7).

Figure 7: Respondents’ religiosity (%)



It is worthwhile to note that, although not statistically significant ($p=0.055$), more female (n=17; 63.0%) than male (n=28; 36.8%) respondents signified that they were “very religious”.

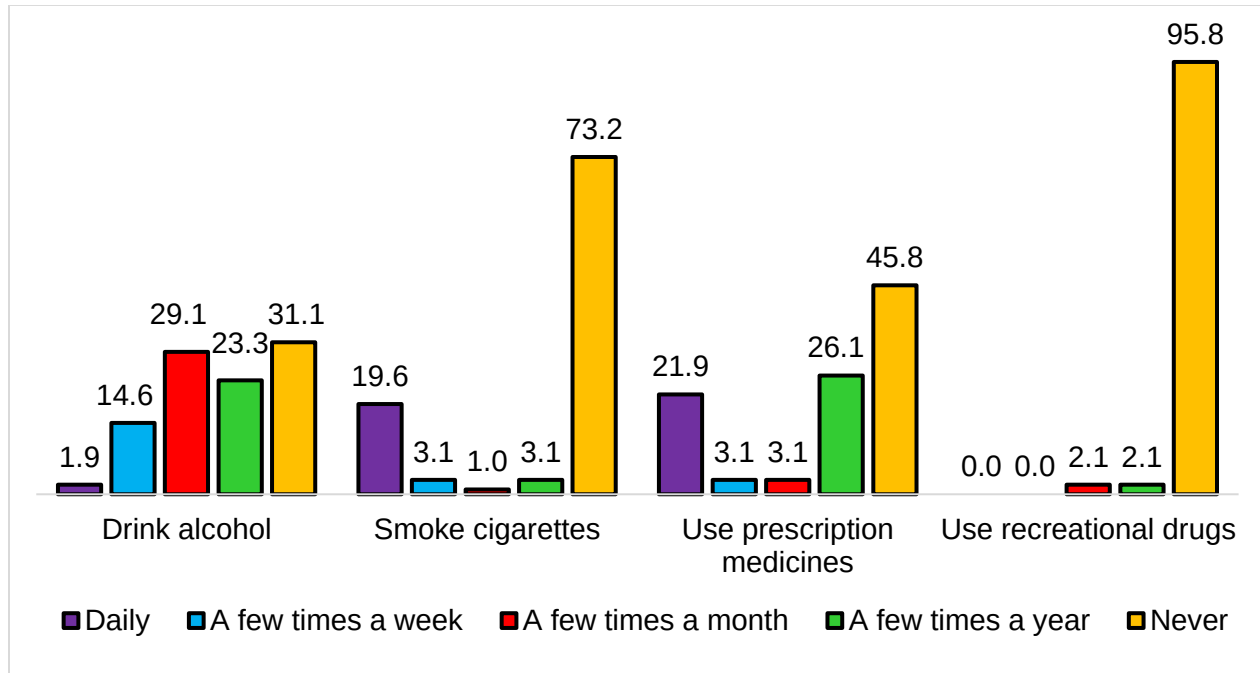
The greater proportion of respondents (n=71; 73.2%) indicated that they “never” smoke cigarettes. One in five respondents (n=19; 19.6%) indicated that they smoke cigarettes “daily”⁷. Additionally, 44 respondents (45.8%) “never” use prescription medication⁸. The majority of respondents (n=91; 95.8%) stipulated that they “never” use recreational drugs. Just under one third of respondents (n=32; 31.1%) specified that they “never” drink alcohol, with 30 respondents (29.1%) reporting that they drink alcohol “a few times a month” and 15 respondents (14.6%) indicating that they drink alcohol “a few times a week”⁹ (Figure 8).

⁷ Data missing in 6 of 103 cases (5.8% of sample).

⁸ Data missing in 7 of 103 cases (6.8% of sample).

⁹ Data missing in 8 of 103 cases (7.8% of sample).

Figure 8: Respondents' substance use (%)



Male respondents ($n=24$; 33.3%)¹⁰ were significantly more likely to smoke compared to female respondents ($n=2$; 8.0%)¹¹ ($p=0.019$; $r=-0.2$).

Respondents diagnosed with a mental health condition ($n=22$; 21.4%) were significantly more likely to report smoking cigarettes “daily” ($n=8$; 36.4%) in comparison to respondents who had not been diagnosed with a mental health condition ($n=11$; 14.7%)¹² ($p=0.018$; $r=-0.2$).

There was a significant association found between taking medication daily and diagnosis of chronic health conditions. Of respondents who took medication “daily” ($n=21$; 21.9%)¹³, the majority ($n=17$; 81.0%) had been diagnosed with a chronic health condition ($p=0.000$; $r=-0.6$). Similarly, of the respondents who had been diagnosed with a mental health condition ($n=22$; 22.9%), more than a third indicated that they took medication “daily” ($n=8$; 36.4 %) ($p=0.006$; $r=-0.3$).

¹⁰ Data missing in 4 of 76 cases (5.3% of sample).

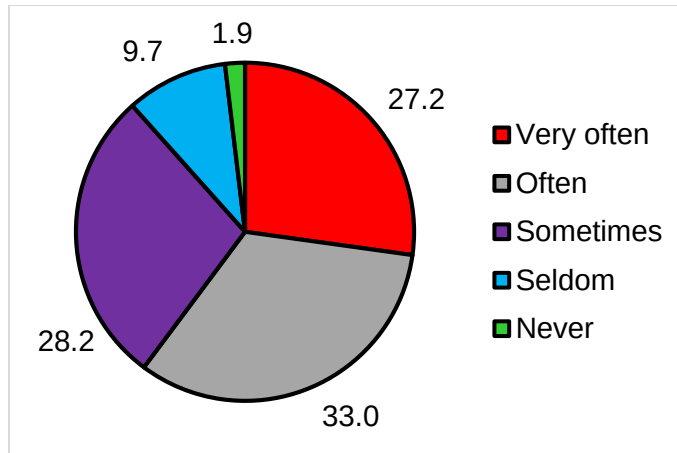
¹¹ Data missing in 2 of 27 cases (7.4% of sample).

¹² Data missing in 6 of 81 cases (7.4% of sample).

¹³ Data missing in 7 of 103 cases (6.8% of sample).

A third of respondents (n=34; 33.0%) spent meaningful time with their families “often” and over a quarter of respondents (n=28; 27.2%) spent meaningful time with their families “very often”. Two respondents (1.9%) signified “never” spending meaningful time with their families (Figure 9).

Figure 9: Meaningful time spent with family (%)



The average number of years respondents worked for SAPS was 16.7 years (standard deviation of 8.0 years) and the average number of years working as a CSE was 12.0 years (standard deviation of 6.6 years).

The number of years respondents had been working for SAPS showed a significant relationship with having been diagnosed with a chronic health condition ($p=0.000$; $r=-0.4$). Respondents who had been working for SAPS for 26 to 36 years (n=13; 52.0%) were more likely to have been diagnosed with a chronic health condition than respondents who had been working for SAPS for 5 to 15 years (n=8; 32.0%) and 16-25 years (n=4; 16.0%) (Table 7).

Table 7: Number of years working for SAPS and having been diagnosed with a chronic health condition

Years working	Diagnosed with chronic health condition	
	n	%
5 – 15	8	32.0
16 – 25	4	16.0
26 – 36	13	52.0
Total	25	100.0

Number of years working as a CSE has also been found to positively correlate with having been diagnosed with a chronic health condition ($p=0.000$; $r=-0.4$). Respondents who had been working as a CSE for 12 to 21 years ($n=11$; 44.0%) were more likely to have been diagnosed with a chronic health condition than respondents who had been working as a CSE for 2 to 11 years ($n=7$; 32.0%) and 22-32 years ($n=7$; 32.0%) (Table 8).

Table 8: Number of years working as a CSE and having been diagnosed with a chronic health condition

	Diagnosed with chronic health condition	
Years working	n	%
2 – 11	7	28.0
12 – 21	11	44.0
22 – 32	7	28.0
Total	25	100.0

The number of years respondents had been working as a CSE was additionally found to positively correlate with having been diagnosed with a mental health condition ($p=0.001$; $r=-0.3$). Respondents who had been working as a CSE for 2 to 11 years ($n=10$; 45.5%) were more likely to have been diagnosed with a mental health condition than respondents who had been working as a CSE for 12 to 21 years ($n=7$; 31.8%) and 22-32 years ($n=5$; 22.7%) (Table 9).

Table 9: Number of years working as a CSE and having been diagnosed with a mental health condition

	Diagnosed with mental health condition	
Years working	n	%
2 – 11	10	45.5
12 – 21	7	31.8
22 – 32	5	22.7
Total	22	100.0

5.3 Tasks and responsibilities of Southern Gauteng CSEs

Respondents were questioned about the tasks and responsibilities attached to their work context. To garner information about the aforementioned, in the section which follows, findings are presented that speak to the frequency with which CSEs work at specific types of crime scenes, the frequency with which CSEs attend autopsies for specific categories of deceased as well as reasons why some do not attend autopsies, the taking of crime scene photographs and the compiling of photo albums as part of a CSE's daily tasks and responsibilities.

Table 10 shows that slightly more than three in seven respondents (n=46; 44.7%) worked at crime scenes nine or more times per week, with almost a fifth (n=18; 17.5%) working at crime scenes three to four times per week. More than a quarter of respondents (n=29; 28.2%) worked at crime scenes where someone had died three to four times per week, with almost a fifth of respondents (n=18; 17.5%) working at crime scenes where someone had died, nine or more times per week. A fifth of respondents (n=20; 19.4%) worked at scenes involving violent death three to four times per week, followed by an almost equal number of respondents (n=18; 17.5%) working at scenes involving violent death one to two times per month. Almost a third of respondents (n=33; 32.0%) work at scenes involving deceased fetuses once every few months, with just under a quarter of respondents (n=24; 23.3%) working at deceased fetus scenes one to two times per month. Scenes involving deceased children are worked at by 39 CSEs (37.9%) once every few months. Just over a tenth of CSEs (n=11; 10.7%) work at scenes with deceased children three to four times per month, with just under a tenth of CSEs (n=10; 9.7%) working at such scenes five to six times per month. Almost half of the respondents (n=49; 49.0%) work at scenes involving disfigured bodies once every few months¹⁴. Over a tenth of CSEs (n=12; 11.7%) work at scenes at which bystanders or relatives are on scene nine or more times per week. A fifth of CSEs (n=21; 20.4%) work at such scenes once every few months, with 17 CSEs (16.5%) reportedly working at scenes with bystanders or relatives on scene three to four times per week.

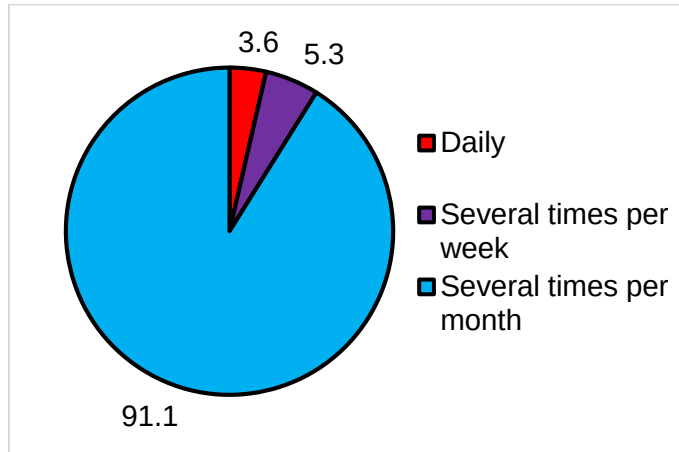
¹⁴ Data missing in 3 of 103 cases (2.9% of sample).

Table 10: How often respondents work at specific types of crime scenes

	Never		Once every few months		1-2 times per month		3-4 times per month		5-6 times per month		1-2 times per week		3-4 times per week		5-6 times per week		7-8 times per week		9+ times per week		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Crime scenes in general	1	1.0	6	5.8	6	5.8	11	10.7	3	2.9	4	3.9	18	17.5	4	3.9	4	3.9	46	44.7	103	100.0
Scenes where someone has died	2	1.9	9	8.7	9	8.7	9	8.7	5	4.9	8	7.8	29	28.2	8	7.8	6	5.8	18	17.5	103	100.0
Scenes where someone has died violently	3	2.9	11	10.7	18	17.5	8	7.8	4	3.9	13	12.6	20	19.4	8	7.8	4	3.9	14	13.6	103	100.0
Deceased fetuses	9	8.7	33	32.0	24	23.3	15	14.6	7	6.8	5	4.9	2	1.9	2	1.9	2	1.9	4	3.9	103	100.0
Deceased children	5	4.9	39	37.9	24	23.3	11	10.7	10	9.7	5	4.9	2	1.9	2	1.9	1	1.0	4	3.9	103	100.0
Deceased adults	4	3.9	8	7.8	16	15.5	13	12.6	11	10.7	10	9.7	21	20.4	3	2.9	5	4.9	12	11.7	103	100.0
Dismembered bodies	11	11.2	44	44.9	23	23.5	6	6.1	2	2.0	7	7.1	4	4.1	1	1.0	0	0.0	0	0.0	98	100.0
Disfigured bodies	10	10.0	49	49.0	20	20.0	6	6.0	2	2.0	6	6.0	5	5.0	1	1.0	0	0.0	1	1.0	100	100.0
Decomposed bodies	6	6.2	49	50.5	16	16.5	9	9.3	4	4.1	6	6.2	4	4.1	1	1.0	1	1.0	1	1.0	97	100.0
Muti murder victims	37	36.3	48	47.1	10	9.8	2	2.0	3	2.9	1	1.0	1	1.0	0	0.0	0	0.0	0	0.0	102	100.0
Victims are alive and on scene	22	21.6	32	31.4	10	9.8	6	5.9	2	2.0	5	4.9	7	6.9	5	4.9	2	2.0	11	10.8	102	100.0
Bystanders or relatives are on scene	2	1.9	21	20.4	12	11.7	13	12.6	5	4.9	11	10.7	17	16.5	5	4.9	5	4.9	12	11.7	103	100.0

More than half of respondents (n=56; 54.4%) attended autopsies, with the vast majority of them (n=51; 91.1%) attending autopsies several times per month (Figure 10).

Figure 10: How often respondents attend autopsies (%)



Forty-seven of the respondents (45.6%) denoted that they did not attend autopsies. The main reason why 21 of the respondents (45.7%) did not attend autopsies was that it was not in their job description, while two out of five respondents (n=18; 39.1%) felt uncomfortable attending autopsies. Seven CSEs (15.2%) indicated that they do not have time to attend autopsies¹⁵.

Table 11 illuminates the frequency at which respondents attended autopsies for specific categories of deceased. Nearly half of the respondents (n=26; 49.1%) attended autopsies where the victim suffered a violent death once every few months. Almost a quarter of respondents (n=12; 22.6%) attended autopsies where the victim suffered a violent death one to two times per month¹⁶. Half of respondents (n=27; 50.9%) attended autopsies of adults once every few months. Equal numbers of respondents (n=2; 3.8%) attended autopsies of adults one to two times per week, five to six times per week, seven to eight times per week, and nine or more times per week¹⁷.

¹⁵ Data missing in 1 of 47 cases (2.1% of sample).

¹⁶ Data missing in 3 of 56 cases (5.4% of sample).

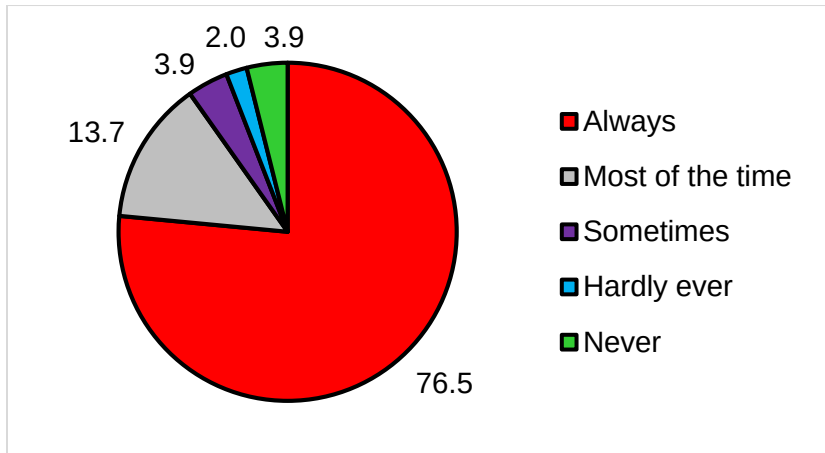
¹⁷ Data missing in 3 of 56 cases (5.4% of sample).

Table 11: How often respondents attend autopsies for specific categories of deceased

	Never		Once every few months		1-2 times per month		3-4 times per month		5-6 times per month		1-2 times per week		3-4 times per week		5-6 times per week		7-8 times per week		9+ times per week		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Autopsies where victim died violently	2	3.8	26	49.1	12	22.6	2	3.8	1	1.9	1	1.9	3	5.7	3	5.7	2	3.8	1	1.9	53	100.0
Deceased fetuses	32	59.3	11	20.4	2	3.7	7	13.0	2	3.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	54	100.0
Deceased children	21	39.6	16	30.2	6	11.3	7	13.2	0	0.0	1	1.9	1	1.9	0	0.0	0	0.0	1	1.9	53	100.0
Deceased adults	0	0.0	27	50.9	8	15.1	1	1.9	4	7.5	2	3.8	5	9.4	2	3.8	2	3.8	2	3.8	53	100.0
Dismembered bodies	24	44.4	19	35.2	5	9.3	2	3.7	1	1.9	0	0.0	1	1.9	1	1.9	0	0.0	1	1.9	54	100.0
Disfigured bodies	24	45.3	20	37.7	4	7.5	2	3.8	1	1.9	0	0.0	0	0.0	1	1.9	0	0.0	1	1.9	53	100.0
Decomposed bodies	23	43.4	21	39.6	2	3.8	3	5.7	3	5.7	0	0.0	0	0.0	1	1.9	0	0.0	0	0.0	53	100.0
Muti murder victims	30	55.6	20	37.0	2	3.7	1	1.9	0	0.0	0	0.0	1	1.9	0	0.0	0	0.0	0	0.0	54	100.0

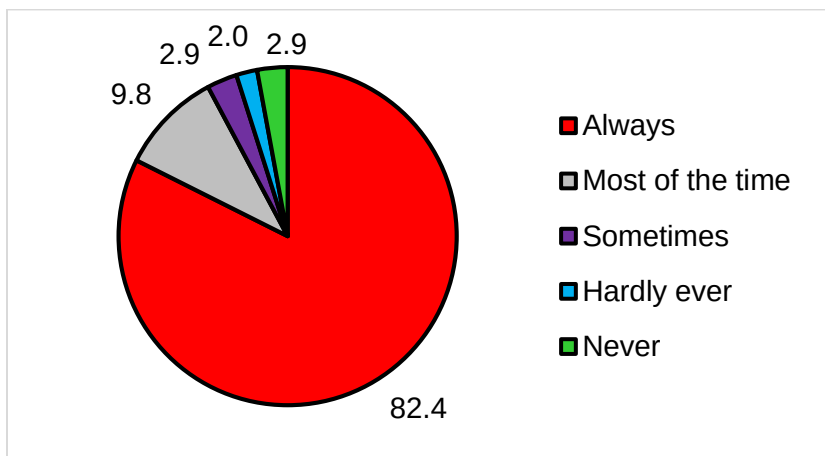
More than three-quarters of respondents (n=78; 76.5%) were required to take photographs of crime scenes “always”, whilst few respondents (n=4; 3.9%) indicated that they were “never” required to take photographs of crime scenes (Figure 11)¹⁸.

Figure 11: How often respondents are required to take photographs of crime scenes (%)



The greater proportion of respondents (n=84; 82.4%) were “always” required to compile photo albums of crime scenes, whilst few respondents (n=3; 2.9%) indicated that they were “never” required to compile photo albums of crime scenes (Figure 12)¹⁹.

Figure 12: How often respondents are required to compile photo albums of crime scenes (%)



¹⁸ Data missing in 1 of 103 cases (1.0% of sample).

¹⁹ Data missing in 1 of 103 cases (1.0% of sample).

5.4 Trauma levels and coping strategies

Information was provided to ascertain the trauma levels of the respondents in relation to working at traumatic crime scenes and attending autopsies. In addition, respondents answered questions aimed at discovering the coping strategies they adopt to deal with their work context. The findings are presented in the section below.

5.4.1 Trauma levels

The IES-R data provides insight into the self-reported PTSD symptoms experienced by the respondents. The items/questions measured by the IES-R correspond directly with the DSM-IV symptoms of PTSD and is therefore a useful tool to measure the potential a respondent has for being diagnosed with PTSD.

Although in the questionnaire completed by respondents, the options for the IES-R items/questions were labelled 1 (not at all) to 5 (extremely), the IES-R when calculated uses the numbers 0 (not at all) to 4 (extremely). The researcher therefore, when scoring the data, assigned each answer the correct number according to the IES-R scoring instructions. As there are 22 items/questions, respondents can be scored from 0 up to 88 to determine their total IES-R score.

The IES-R scores of the respondents were calculated. It should be noted that only 93 respondents had their total IES-R scores calculated due to the fact that ten respondents did not answer every item/question. The total score of an individual would be incomplete if even one item/question was not answered and therefore only those who answered all items/questions were included.

If a respondent scores between 0 and 23 there is no cause for concern for PTSD. A score of 24 to 32 means there is reason for clinical concern, with individuals scoring in this bracket who do not have clinically diagnosable PTSD, being categorised as having partial PTSD or at least PTSD symptoms. A score of 33 to 38 indicates a probable diagnosis of PTSD. Respondents who score 39 or more are in a state where their PTSD symptoms are severe enough to suppress immune system functioning.

Just under half of respondents (n=43; 46.2%) fall into the 0 to 23 scoring bracket, with few respondents (n=3; 3.2%) falling into the 33 to 38 bracket. Over a third of respondents (n=34; 36.6%) fell into the 39 plus scoring bracket (Table 12)²⁰. The mean score of participants was 30.4.

²⁰ Data missing in 10 of 103 cases (9.7% of sample).

Table 12: IES-R scores per respondent

Total IES-R score	n	%
0 – 23	43	46.2
24 – 32	13	14.0
33 – 38	3	3.2
39+	34	36.6
Total	93	100.0

The IES-R consists of three subscales, namely the intrusion subscale, the avoidance subscale, and the hyperarousal subscale. The intrusion and avoidance subscales are measured by eight items/questions each, while the hyperarousal subscale consists of 6 items/questions. The intrusion subscale of the IES-R comprises measurements regarding reminders of the trauma affecting individuals, how the trauma has affected their sleep, and intrusive thoughts and feelings. The avoidance subscale consists of measurements concerning individuals attempting to not think or speak of their trauma, and feeling as if the traumatic event had not happened. Lastly, the hyperarousal subscale encapsulates measurements regarding individuals experiencing physical and emotional reactions to their trauma. Findings regarding the three subscales are presented in the next section. The collective results of the participants are reported upon as opposed to individual scores and therefore the total for the subscales below has returned to 103 with missing data indicated in footnotes.

The scores were divided into three categories, namely low, medium, and high. For the intrusion and avoidant subscales, the low category consisted of scores from 0 to 10. The medium category consisted of scores from 11 to 21. The high category consisted of scores from 22 to 32. For the hyperarousal subscale, the low category consisted of scores from 0 to 7. The medium category was scores of 8 to 15 and the high category consisted of scores between 16 and 24.

Over a quarter of respondents (n=26; 26.3%) experience a medium amount of intrusive symptoms, with under a fifth of respondents (n=18; 18.2%) experiencing a high amount of intrusive symptoms²¹. Over a third of CSEs (n=35; 35.4%) experience a medium amount of avoidant symptoms²². Just under a third of respondents (n=32; 32.3%) experience a medium amount of hyperarousal symptoms²³ (Table 13).

²¹ Data missing in 4 of 103 cases (3.9% of sample).

²² Data missing in 4 of 103 cases (3.9% of sample).

²³ Data missing in 4 of 103 cases (3.9% of sample).

Table 13: IES-R subscale scores

	Score categories							
	Low		Medium		High		Total	
Subscale	n	%	n	%	n	%	n	%
Intrusion	55	55.5	26	26.3	18	18.2	99	100.0
Avoidance	47	47.5	35	35.3	17	17.2	99	100.0
Hyperarousal	52	52.5	32	32.3	15	15.2	99	100.0

Table 14: Significant associations for mental health with the IES-R subscales

Subscale	Low				Medium				High				Total				<i>p</i>	<i>r</i>
	MH		NMH		MH		NMH		MH		NMH		MH		NMH			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Intrusion	7	33.3	48	61.5	8	38.1	18	23.1	6	28.6	12	15.4	21	100.0	78	100.0	0.007	-0.3
Avoidance	5	22.7	42	54.5	14	63.6	21	27.3	3	13.7	14	18.2	22	100.0	77	100.0	0.014	-0.2
Hyperarousal	5	22.7	47	61.0	11	50.0	21	27.3	6	27.3	9	11.7	22	100.0	77	100.0	0.001	-0.3

Respondents who had not been diagnosed with a mental health condition were most likely to score between 0 to 10 (low) on the intrusion subscale ($n=48$; 61.5%)²⁴. Respondents who had been diagnosed with a mental health condition were most likely to score between 11 to 21 (medium) on the intrusion subscale ($n=8$; 38.1%)²⁵ ($p=0.007$; $r=-0.3$).

The respondents who had not been diagnosed with a mental health condition were most likely to score between 0 to 10 (low) on the avoidance subscale ($n=42$; 54.5%)²⁶. Respondents who had been diagnosed with a mental health condition, were most likely to score between 11 to 21 (medium) on the avoidance subscale ($n=14$; 63.6%) ($p=0.014$; $r=-0.2$).

Respondents who had not been diagnosed with a mental health condition were most likely to score between 0 to 7 (low) on the hyperarousal subscale ($n=47$; 61.0%)²⁷. Respondents who had been diagnosed with a mental health condition were most likely to score between 8 to 15 (medium) on the hyperarousal subscale ($n=11$; 50.0%) ($p=0.001$; $r=-0.3$) (Table 14).

²⁴ Data missing in 3 of 81 cases (3.7% of sample).

²⁵ Data missing in 1 of 22 cases (4.5% of sample).

²⁶ Data missing in 4 of 81 cases (4.9% of sample).

²⁷ Data missing in 4 of 81 cases (4.9% of sample).

Choosing “moderately” gives a respondent a score of two per response. If an individual were to answer “moderately” to all 22 IES-R items/questions, their final score would be 44, placing them in the category of 39 plus, which points to PTSD symptoms severe enough to suppress immune system functioning. Therefore, although the word “moderately” does not seem to indicate cause for concern, respondents indicating moderately and above for IES-R items/questions are notable.

On the intrusion subscale, over half of respondents (n=52; 51.0%) responded with “moderately” to “extremely” in regard to “any reminder brought back feelings about it”²⁸. Forty-seven CSEs (45.6%) indicated “moderately” to “extremely” in response to whether “other things keep making me think about it”. On the avoidance subscale, over half of respondents (n=52; 51.5%) indicated “moderately” to “extremely” in response to “I tried not to think about it”²⁹. Forty-nine respondents (47.6%) answered “moderately” to “extremely” with regard to “being aware of having lots of feelings” about their trauma, but “not dealing with it”. On the hyperarousal subscale, over a third of respondents (n=38; 36.9%) responded with “moderately” to “extremely” in response to “I was jumpy and easily startled”. Just under a third of respondents (n=31; 30.1%) indicated “moderately” to “extremely” with regard to “reminders of it caused physical reactions”.

Over half of respondents (n=56; 54.9%) indicated “not at all” regarding “feeling as if it hadn’t happened or wasn’t real”³⁰. A quarter of respondents (n=25; 24.3%) signified “quite a bit” in response to “pictures kept popping into my mind”. Almost a fifth of respondents (n=19; 18.4%) denoted feeling watchful and on guard “extremely”. Almost a fifth of participants (n=20; 19.4%) indicated that they tried not to talk about it “a little bit” (Table 15).

²⁸ Data missing in 1 of 103 cases (1.0% of sample).

²⁹ Data missing in 2 of 103 cases (1.9% of sample).

³⁰ Data missing in 1 of 103 cases (1.0% of sample).

Table 15: IES-R data

Subscale	Items/questions	Not at all		A little bit		Moderately		Quite a bit		Extremely		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
Intrusion	Any reminder brought back feelings about it	24	23.5	26	25.5	20	19.6	14	13.7	18	17.6	102	100.0
	I had trouble staying asleep	45	44.1	24	23.5	7	6.9	13	12.7	13	12.7	102	100.0
	Other things kept making me think about it	28	27.2	28	27.2	19	18.4	14	13.6	14	13.6	103	100.0
	I thought about it when I didn't mean to	29	28.2	32	31.1	17	16.5	17	16.5	8	7.8	103	100.0
	Pictures about it popped into my mind	29	28.2	27	26.2	10	9.7	25	24.3	12	11.7	103	100.0
	I acted or felt like I was back at that time	47	46.1	22	21.6	10	9.8	16	15.7	7	6.9	102	100.0
	I had waves of strong feelings about it	41	41.0	20	20.0	18	18.0	16	16.0	5	5.0	100	100.0
	I had dreams about it	52	50.5	24	23.3	6	5.8	13	12.6	8	7.8	103	100.0
Avoidance	I avoided getting upset when I thought about it or was reminded of it	37	35.9	21	20.4	19	18.4	15	14.6	11	10.7	103	100.0
	I felt it hadn't happened or wasn't real	56	54.9	17	16.7	6	5.9	14	13.7	9	8.8	102	100.0
	I stayed away from reminders of it	39	37.9	23	22.3	18	17.5	10	9.7	13	12.6	103	100.0
	I tried not to think about it	29	28.7	20	19.8	18	17.8	16	15.8	18	17.8	101	100.0
	I was aware I had a lot of feelings about it, but I didn't deal with them	36	35.0	18	17.5	15	14.6	17	16.5	17	16.5	103	100.0
	My feelings about it were kind of numb	38	36.9	20	19.4	16	15.5	15	14.6	14	13.6	103	100.0
	I tried to remove it from my memory	34	33.3	19	18.6	12	11.8	20	19.6	17	16.7	102	100.0
	I tried not to talk about it	37	35.9	20	19.4	12	11.7	18	17.5	16	15.5	103	100.0
Hyperarousal	I felt irritable and angry	34	33.3	23	22.5	11	10.8	18	17.6	16	15.7	102	100.0
	I was jumpy and easily startled	42	40.8	23	22.3	17	16.5	12	11.7	9	8.7	103	100.0
	I had trouble falling asleep	47	46.1	24	23.5	9	8.8	13	12.7	9	8.8	102	100.0
	I had trouble concentrating	41	41.0	22	22.0	11	11.0	15	15.0	11	11.0	100	100.0
	Reminders of it caused physical reactions	54	52.4	18	17.5	13	12.6	7	6.8	11	10.7	103	100.0
	I felt watchful and on-guard	41	39.8	22	21.4	9	8.7	12	11.7	19	18.4	103	100.0

Table 16: Significant statistical associations within the intrusion subscale items/questions for mental health

Items/questions	Not at all				A little bit				Moderately				Quite a bit				Extremely				<i>p</i>	<i>r</i>
	MH		NMH		MH		NMH		MH		NMH		MH		NMH		MH		NMH			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Any reminder brought back feelings about it	2	9.1	22	27.5	3	13.6	23	28.7	5	22.7	15	18.8	7	31.8	7	8.8	5	22.7	13	16.3	0.048	-0.2
Other things kept making me think about it	2	9.1	26	32.1	5	22.7	23	28.4	5	22.7	14	17.3	8	36.4	6	7.4	2	9.1	12	14.8	0.020	-0.2
I thought about it when I didn't mean to	1	4.5	28	34.6	8	36.4	24	29.6	5	22.7	12	14.8	6	27.3	11	13.6	2	9.1	6	7.4	0.011	-0.3
Pictures about it popped into my mind	2	9.1	27	33.3	4	18.2	23	28.4	2	9.1	8	9.9	10	45.5	15	18.5	4	18.2	8	9.9	0.003	-0.3
I had waves of strong feelings about it	4	19.0	37	46.8	6	28.6	14	17.7	3	14.3	15	19.0	8	38.1	8	10.1	0	0.0	5	6.3	0.031	-0.2
I had dreams about it	4	18.2	48	59.3	8	36.4	16	19.8	2	9.1	4	4.9	6	27.3	7	8.6	2	9.1	6	7.4	0.001	-0.3

Table 17: Significant statistical associations within the avoidance subscale items/questions for mental health

Items/questions	Not at all				A little bit				Moderately				Quite a bit				Extremely				<i>p</i>	<i>r</i>
	MH		NMH		MH		NMH		MH		NMH		MH		NMH		MH		NMH			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
I tried not to think about it	2	9.1	27	34.2	6	27.3	14	17.7	4	18.2	14	17.7	4	18.2	12	15.2	6	27.3	12	15.2	0.047	-0.2
I was aware I had a lot of feelings about it, but I didn't deal with them	3	13.6	33	40.7	5	22.7	13	16.0	4	18.2	11	13.6	3	13.6	14	17.3	7	31.8	10	12.3	0.018	-0.2
I tried to remove it from my memory	2	9.1	32	40.0	2	9.1	17	21.3	4	18.2	8	10.0	6	27.3	14	17.5	8	36.4	9	11.3	0.000	-0.4
I tried not to talk about it	1	4.5	36	44.4	5	22.7	15	18.5	5	22.7	7	8.6	3	13.6	15	18.5	8	36.4	8	9.9	0.000	-0.4

Table 18: Significant statistical associations within the hyperarousal subscale items/questions for mental health

Items/questions	Not at all				A little bit				Moderately				Quite a bit				Extremely				<i>p</i>	<i>r</i>
	MH		NMH		MH		NMH		MH		NMH		MH		NMH		MH		NMH			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
I felt irritable and angry	2	9.1	32	40.0	4	18.2	19	23.8	2	9.1	9	11.3	7	31.8	11	13.8	7	31.8	9	11.3	0.000	-0.3
I was jumpy and easily startled	3	13.6	39	48.1	7	31.8	16	19.8	6	27.3	11	13.6	3	13.6	9	11.1	3	13.6	6	7.4	0.010	-0.3
I had trouble concentrating	3	13.6	38	48.7	7	31.8	15	19.2	4	18.2	7	9.0	3	13.6	12	15.4	5	22.7	6	7.7	0.006	-0.3
Reminders of it caused physical reactions	5	22.7	49	60.5	5	22.7	13	16.0	4	18.2	9	11.1	3	13.6	4	4.9	5	22.7	6	7.4	0.001	-0.3
I felt watchful and on-guard	2	9.1	39	48.1	7	31.8	15	18.5	2	9.1	7	8.6	6	27.3	6	7.4	5	22.7	14	17.3	0.004	-0.3

Within the intrusion subscale, a significant association was identified for gender on one item/question. Male respondents were more likely to answer that they had been distressed by intrusive thoughts “not at all/a little bit” ($n=49$; 64.5%) than female respondents ($n=12$; 44.4%) ($p=0.044$; $r=-0.2$). The listed significant statistical associations for diagnosed mental health conditions seen below were identified within the intrusion subscale (Table 16):

- The 22 respondents diagnosed with a mental health condition were more likely to answer “quite a bit/extremely” to “any reminder brought back feelings about it” ($n=12$; 54.5%) than the 80 respondents who were not diagnosed with a mental health condition ($n=20$; 25.0%)³¹ ($p=0.008$; $r=-0.3$).
- Respondents diagnosed with a mental health condition were also more likely to report experiencing “other things kept making me think about it” “quite a bit/extremely” ($n=10$; 45.5%) than respondents not diagnosed with a mental health condition ($n=18$; 22.2%) ($p=0.020$; $r=-0.2$).
- Respondents who had been diagnosed with a mental health condition were additionally more likely to report “I thought about it when I didn’t mean to” “quite a bit/extremely” ($n=8$; 36.4%) than respondents who had not been diagnosed with a mental health condition ($n=17$; 21.0%) ($p=0.011$; $r=-0.3$).
- Respondents diagnosed with a mental health condition also were more likely to answer “quite a bit/extremely” to the intrusion subscale item “pictures about it popped into my mind” ($n=14$; 63.6%) than respondents not diagnosed with a mental health condition ($n=23$; 28.4%) ($p=0.003$; $r=-0.3$).
- Respondents who had been diagnosed with a mental health condition were further more likely to answer “quite a bit/extremely” in response to how often “I had waves of strong feelings about it” ($n=8$; 38.1%)³² than respondents not diagnosed with a mental health condition ($n=13$; 16.5%)³³ ($p=0.031$; $r=-0.2$).
- Respondents diagnosed with a mental health condition were similarly more likely to report being bothered by experiencing dreams about their trauma “quite a bit/extremely” ($n=8$; 36.4%) than respondents who had not been diagnosed with a mental health condition ($n=13$; 16.0%) ($p=0.001$; $r=-0.3$).

³¹ Data missing in 1 of 81 cases (1.2% of sample).

³² Data missing in 1 of 22 cases (4.5% of sample).

³³ Data missing in 2 of 81 cases (2.5% of sample).

Within the avoidance subscale the significant statistical associations with diagnosed mental health conditions were identified, as listed below (Table 17):

- The 22 respondents diagnosed with a mental health condition were found to be more likely to answer “quite a bit/extremely” to “I tried not to think about it” (n=10; 45.5%) than respondents who were not diagnosed with a mental health condition (n=24; 30.4%)³⁴ ($p=0.047$; $r=-0.2$).
- Respondents diagnosed with a mental health condition were also more likely to answer “quite a bit/extremely” to “I was aware that I still had a lot of feelings about it, but didn’t want to deal with them” (n=10; 45.5%) than respondents who had not been diagnosed with a mental health condition (n=24; 29.6%) ($p=0.018$; $r=-0.2$).
- Respondents who were diagnosed with a mental health condition were additionally more likely to answer “quite a bit/extremely” in response to “I tried to remove it from my memory” (n=14; 63.6%) than respondents who were not diagnosed with a mental health condition (n=23; 28.8%)³⁵ ($p=0.000$; $r=-0.4$).
- Respondents diagnosed with a mental health condition were further more likely to report “quite a bit/extremely” in response to “I tried not to talk about it” (n=11; 50.0%) than respondents who were not diagnosed with a mental health condition (n=23; 28.4%) ($p=0.000$; $r=-0.4$).

Similar to the intrusion and avoidance subscales, the hyperarousal subscale revealed significant statistical associations with mental health, listed below (Table 18):

- The 22 respondents who had been diagnosed with a mental health condition were more likely to report being bothered by feeling irritable and angry “quite a bit/extremely” (n=14; 63.6%) than those who had not been diagnosed with a mental health condition (n=20; 25.0%)³⁶ ($p=0.000$; $r=-0.3$).
- Diagnosed respondents were also more likely to report experiencing “I was jumpy and easily startled” “quite a bit/extremely” (n=6; 27.3%) than respondents who had not been diagnosed with a mental health condition (n=15; 18.5%) ($p=0.010$; $r=-0.3$).
- Respondents diagnosed with a mental health condition were additionally more likely to answer “quite a bit/extremely” to “I had trouble concentrating” (n=8; 36.4%) than

³⁴ Data missing in 2 of 81 cases (2.5% of sample).

³⁵ Data missing in 1 of 81 cases (1.2% of sample).

³⁶ Data missing in 1 of 81 cases (1.2% of sample).

respondents who had not been diagnosed with a mental health condition³⁷ (n=18; 23.1%) ($p=0.006$; $r=-0.3$).

- In response to “reminders of it caused me to have physical reactions”, respondents diagnosed with a mental health condition were more likely to answer “quite a bit/extremely” (n=8; 36.4%) than respondents not diagnosed with a mental health condition (n=10; 12.3%) ($p=0.001$; $r=-0.3$).
- Respondents diagnosed with a mental health condition were further more likely to respond with “quite a bit/extremely” (n=11; 50.0%) to “I felt watchful and on-guard” than respondents not diagnosed with a mental health condition (n=20; 24.7%) ($p=0.004$; $r=-0.3$).

5.4.2 Coping strategies

The Brief COPE Inventory was utilised, which measures coping according to three types, namely avoidance, approach, and neutral. Each coping type has several subscales, with the avoidance coping type having six subscales, the approach coping type also having six subscales, and the neutral coping type comprising two subscales. Each subscale then has two items/questions to measure the subscale. Each item/question is scored from 1 (not at all) to 4 (frequently), therefore an individual scores from 1 to 4 on each item/question. Per subscale an individual will score from 2 to 8, as each subscale is comprised of two items/questions. Scores for the avoidance and approach subscales range from 12 to 48, as both coping types comprise six subscales (or 12 items/questions). The neutral coping type scores from 2 to 16, as it comprises two subscales (or 4 items/questions). The below are broad findings, followed by a section that identifies statistical significances confirmed with the Brief COPE Inventory.

There is no one way to score the Brief COPE scale. Carver, the developer of the scale, has indicated that it is at the discretion of the user of the scale as to how the scale is categorised and scored. As stated, an individual’s score within the approach and coping subscales range from 12 to 48 and within the neutral subscale ranges from 2 to 16.

The scores were divided into three categories, namely low, medium, and high. For avoidant and approach coping, the low category consisted of scores from 12 to 23. The medium category consisted of scores from 24 to 35. The high category consisted of scores from 36 to 48. For neutral coping, the low category consisted of scores from 4 to 7. The medium category comprised scores of 8 to 11 and the high category consisted of scores from 12 to 16. Individuals were identified as

³⁷ Data missing in 3 of 81 cases (3.7% of sample).

making use of specific coping style, if they scored either in the medium or the high category. Those who scored in the low category were identified as not making use of a specific coping style.

The majority of respondents (n=64; 64.0%) do not make use of avoidant coping strategies, with just over a third of respondents (n=36; 36.0%) making use of avoidant coping strategies³⁸. Just over half of respondents (n=50; 51.0%) do not make use of approach coping strategies, with just under half of respondents (n=48; 49.0%) making use of approach coping strategies³⁹. Three-fifths of respondents (n=62; 60.2%) make use of neutral coping strategies, with two-fifths of respondents (n=41; 39.8%) not making use of neutral coping strategies (Table 19).

Table 19: Coping scores per subscale in the Brief COPE Inventory

	Score categories							
	Low		Medium		High		Total	
Coping type	n	%	n	%	n	%	n	%
Avoidance	64	65.0	31	31.0	5	5.0	100	100.0
Approach	50	51.0	36	36.7	12	12.3	98	100.0
Neutral	41	39.8	42	40.8	20	19.4	103	100.0

Under a third of respondents (n=31; 30.1%) scored a 2 on self-distraction, with just over a fifth of respondents (n=22; 21.4%) scoring a 5. The majority of respondents (n=61; 59.2) scored 2 on denial. Just under half of respondents (n=51; 49.5%) scored 2 on behavioural disengagement. Over a fifth of respondents (n=22; 21.8%) scored 5 on venting⁴⁰. No respondents (n=0; 0.0%) scored either a 7 or an 8 on emotional support⁴¹. Half of the respondents (n=51; 50.0%) scored 2 on use of informational support⁴². Under a fifth (n=18; 17.6%) of respondents scored 8 on acceptance⁴³. Almost a third of CSEs (n=33; 32.0%) scored 2 on humour.

Acceptance was the most used coping strategy, with a mean score of 5.1. Self-distraction was the second most utilised coping strategy, with a mean score of 4.5. Lastly, planning, humour, and religion were all the third most used strategy, with a score of 4.3. (Table 20).

³⁸ Data missing in 3 of 103 cases (2.9% of sample).

³⁹ Data missing in 5 of 103 cases (4.9% of sample).

⁴⁰ Data missing in 2 of 103 cases (1.9% of sample).

⁴¹ Data missing in 1 of 103 cases (1.0% of sample).

⁴² Data missing in 1 of 103 cases (1.0% of sample).

⁴³ Data missing in 1 of 103 cases (1.0% of sample).

Table 20: Brief COPE Inventory subscales scored with mean data

Coping type	Subscale	M	Score														Total	
			2		3		4		5		6		7		8			
			n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Avoidant	Self-distraction	4.5	31	30.1	4	3.9	14	13.6	22	21.4	15	14.6	7	6.8	10	9.7	103	100.0
	Denial	3.2	61	59.2	8	7.8	10	9.7	13	12.6	7	6.8	0	0.0	4	3.9	103	100.0
	Behavioural disengagement	3.3	51	49.5	12	11.7	14	13.6	16	15.5	6	5.8	2	1.9	2	1.9	103	100.0
	Venting	3.9	39	38.6	10	9.9	11	10.9	22	21.8	9	8.9	4	4.0	6	5.9	101	100.0
	Self-blame	3.0	62	60.8	8	7.8	9	8.8	17	16.7	3	2.9	1	1.0	2	2.0	102	100.0
	Substance use	3.1	62	60.2	8	7.8	16	15.5	2	1.9	9	8.7	1	1.0	5	4.9	103	100.0
Approach	Emotional support	3.2	44	43.1	19	18.6	19	18.6	15	14.7	5	4.9	0	0.0	0	0.0	102	100.0
	Use of informational support	3.5	51	50.0	11	10.8	15	14.7	8	7.8	7	6.9	3	2.9	7	6.9	102	100.0
	Positive framing	3.9	42	41.6	8	7.9	11	10.9	15	14.9	14	13.9	4	4.0	7	6.9	101	100.0
	Active coping	4.0	34	33.0	15	14.6	13	12.6	15	14.6	12	11.7	5	4.9	9	8.7	103	100.0
	Acceptance	5.1	22	21.6	7	6.9	6	5.9	18	17.6	19	18.6	12	11.8	18	17.6	102	100.0
	Planning	4.3	32	31.4	5	4.9	20	19.6	20	19.6	10	9.8	5	4.9	10	9.8	102	100.0
Neutral	Humour	4.3	33	32.0	12	11.7	18	17.5	10	9.7	9	8.7	5	4.9	16	15.5	103	100.0
	Religion	4.3	36	35.0	8	7.8	17	16.5	10	9.7	9	8.7	9	8.7	14	13.6	103	100.0

Within the avoidance coping style, the self-distraction subscale reflects that nearly two out of five respondents (n=39; 37.9%) reported not turning to work or other activities to take their mind off their work. Also within the self-distraction subscale, a similar proportion of respondents (n=40; 38.8%) reported not performing activities to think less about their work, such as going to the movies, watching television, reading, daydreaming, or shopping. Within the venting subscale for the avoidance coping style, just over half of respondents (n=52; 50.5%) indicated that they have not been talking to express their unpleasant feelings. Within the approach coping style, the active coping subscale reveals that just under a fifth of respondents (n=20; 19.4%) reported that they are doing something about their situation “a medium amount”. Within use of informational support as indicative of using approach coping, over half of CSEs (n=54; 52.4%) indicated that they had not been getting advice or help about what to do. In terms of the planning subscale for approach coping, just under a fifth of respondents (n=19; 18.6%) reported that they are frequently trying to have a strategy for what to do⁴⁴. Within the neutral coping type, the religion subscale illustrates that just under a fifth of CSEs (n=20; 19.4%) indicated that they frequently pray or meditate. Within the humour subscale for neutral coping, two-fifths of respondents (n=42; 40.8%) reported that they do not make fun of their situation (Table 21).

⁴⁴ Data missing in 1 of 103 cases (1.0% of sample).

Table 21: Brief COPE Inventory scored per subscale

Coping type	Subscale	Item/question	Not at all		Not often		A medium amount		Frequently		Total	
			n	%	n	%	n	%	n	%	n	%
Avoidant	Self-distraction	Turning to work or other activities	39	37.9	18	17.5	25	24.3	21	20.4	103	100.0
		Doing something to think about it less	40	38.8	23	22.3	21	20.4	19	18.4	103	100.0
	Denial	I've been saying "this isn't real"	70	68.0	12	11.7	10	9.7	11	10.7	103	100.0
		Been refusing to believe it happened	71	68.9	18	17.5	6	5.8	8	7.8	103	100.0
	Behavioural disengagement	Been giving up trying to deal with it	62	60.2	20	19.4	15	14.6	6	5.8	103	100.0
		Been giving up the attempt to cope	62	60.2	23	22.3	11	10.7	7	6.8	103	100.0
	Venting	Talking to let unpleasant feelings out	52	50.5	23	22.3	17	16.5	11	10.7	103	100.0
		Been expressing negative feelings	46	45.5	22	21.8	19	18.8	14	13.9	101	100.0
	Self-blame	I've been criticising myself	69	67.0	15	14.6	13	12.6	6	5.8	103	100.0
		I've been blaming myself	73	71.6	15	14.7	10	9.8	4	3.9	102	100.0
Approach	Emotional support	Using alcohol/drugs to feel better	67	65.0	18	17.5	12	11.7	6	5.8	103	100.0
		Using alcohol/drugs to get through it	69	67.0	17	16.5	11	10.7	6	5.8	103	100.0
	Use of informational support	Getting emotional support from others	57	55.9	29	28.4	9	8.8	7	6.9	102	100.0
		Getting comfort and understanding	56	54.4	25	24.3	13	12.6	9	8.7	103	100.0
	Positive framing	Getting help and advice from others	66	64.7	13	12.7	14	13.7	9	8.8	102	100.0
		Getting advice or help about what to do	54	52.4	24	23.3	15	14.6	10	9.7	103	100.0
	Active coping	Been trying to see it in a positive light	54	52.4	14	13.6	19	18.4	16	15.5	103	100.0
		Been looking for something good in it	49	48.5	18	17.8	24	23.8	10	9.9	101	100.0
	Acceptance	Doing something about the situation	40	38.8	25	24.3	20	19.4	18	17.5	103	100.0
		Taking action to make situation better	53	51.5	19	18.4	18	17.5	13	12.6	103	100.0
	Planning	Accepting the reality of what happened	32	31.4	17	16.7	25	24.5	28	27.5	102	100.0
		I've been learning to live with it	29	28.2	13	12.6	28	27.2	33	32.0	103	100.0
	Humour	Trying to have a strategy for what to do	46	45.1	17	16.7	20	19.6	19	18.6	102	100.0
		Been thinking about what steps to take	38	36.9	28	27.2	22	21.4	15	14.6	103	100.0
Neutral	Religion	I've been making jokes about it	40	38.8	24	23.3	16	15.5	23	22.3	103	100.0
		I've been making fun of the situation	42	40.8	29	28.2	15	14.6	17	16.5	103	100.0
	Religion	Finding comfort in religion	44	42.7	22	21.4	14	13.6	23	22.3	103	100.0
		I've been praying or meditating	42	40.8	24	23.3	17	16.5	20	19.4	103	100.0

Table 22: Significant gender differences featured on items of the Brief COPE Inventory

Coping type	Item/question	Not at all				Not often				A medium amount				Frequently				Total				<i>p</i>	<i>r</i>
		Male		Female		Male		Female		Male		Female		Male		Female		Male		Female			
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Avoidant	Turning to work or other activities	33	43.4	6	22.2	13	17.1	5	18.5	17	22.4	8	29.6	13	17.1	8	29.6	76	100	27	100	0.040	-0.2
	Been giving up trying to deal with it	51	67.1	11	40.7	12	15.8	8	29.6	10	13.2	5	18.5	3	3.9	3	11.1	76	100	27	100	0.019	-0.2
	Been refusing to believe it happened	56	73.7	15	55.6	13	17.1	5	18.5	3	3.9	3	11.1	4	5.3	4	14.8	76	100	27	100	0.049	-0.2
	Been giving up the attempt to cope	53	69.7	9	33.3	13	17.1	10	37.0	6	7.9	5	18.5	4	5.3	3	11.1	76	100	27	100	0.001	-0.3
	Doing something to think about it less	34	44.7	6	22.2	16	21.1	7	25.9	14	18.4	7	25.9	12	15.8	7	25.9	76	100	27	100	0.042	-0.2
Approach	Getting comfort and understanding	47	61.8	9	33.3	16	21.1	9	33.3	8	10.5	5	18.5	5	6.6	4	14.8	76	100	27	100	0.010	-0.3
	Getting advice or help about what to do	45	59.2	9	33.3	16	21.1	8	29.6	8	10.5	7	25.9	7	9.2	3	11.1	76	100	27	100	0.025	-0.2
Neutral	I've been making jokes about it	35	46.1	5	18.5	16	21.1	8	29.6	10	13.2	6	22.2	15	19.7	8	29.6	76	100	27	100	0.023	-0.2

Significant statistical associations with both gender and diagnosed mental health conditions were identified for the coping styles and will be highlighted next.

5.4.3. Significant statistical associations in coping styles for gender

Within the avoidant coping style, the following significant statistical associations were identified for gender (Table 22):

- Female respondents were more likely to turn to work or other activities “frequently” ($n=8$; 29.6%) compared to male respondents ($n=13$; 17.1%) ($p=0.040$; $r=-0.2$)
- Of the respondents who indicated “not at all” with regard to giving up trying to deal with their stress and trauma ($n=62$; 60.2%), the majority were men ($n=51$; 82.3%), with women making up the minority ($n=11$; 17.7%) ($p=0.019$; $r=-0.2$).
- Male respondents reported being more likely to “not at all” engage in “refusing to believe that it has happened” ($n=56$; 73.7%), compared to female respondents ($n=15$; 55.6%). ($p=0.049$; $r=-0.2$)
- Of the respondents who indicated that they do “not at all” experience giving up on attempts to cope ($n=62$; 60.2%), the majority were men ($n=53$; 85.5%), with women making up the minority ($n=9$; 14.5%) ($p=0.001$; $r=-0.3$).
- Of the respondents who indicated that they do “not at all” engage in “doing something to think about it less” ($n=40$; 38.8%), the majority were men ($n=34$; 85.0%), with women making up the minority ($n=6$; 15.0%) ($p=0.042$; $r=-0.2$).

Statistical associations for gender in the approach coping style were as follows (Table 22):

- Of the respondents who indicated that they were “not at all” receiving any type of comfort and understanding from other individuals ($n=56$; 54.4%), the majority were men ($n=47$; 83.9%), with women making up the minority ($n=9$; 16.1%) ($p=0.010$; $r=-0.3$).
- Of the respondents who indicated that they do “not at all” get advice or help from other people about what to do ($n=54$; 52.4%), the majority were men ($n=45$; 83.3%), with women making up the minority ($n=9$; 16.7%) ($p=0.025$; $r=-0.2$).

In terms of neutral coping, the following significant statistical associations were identified for gender (Table 22):

- Of the respondents who indicated that they do “not at all” make jokes about their circumstances ($n=40$; 38.8%), the majority were men ($n=35$; 87.5%), with women making up the minority ($n=5$; 12.5%) ($p=0.023$; $r=-0.2$).

Table 23: Significant mental health associations on items in the Brief COPE Inventory

Coping type	Item/question	Not at all		Not often		A medium amount		Frequently		Total		<i>p</i>	<i>r</i>
		n	%	n	%	n	%	n	%	n	%		
Avoidant	Turning to work or other activities	3	13.6	5	22.7	7	31.8	7	31.8	22	100.0	0.012	-0.2
	Doing something to think about it less	5	22.7	4	18.2	7	31.8	6	27.3	22	100.0	0.037	-0.2
	Been expressing negative feelings	5	23.8	5	23.8	6	28.6	5	23.8	21	100.0	0.015	-0.2
Approach	Concentrating on doing something about the situation	4	18.2	5	22.7	6	27.3	7	31.8	22	100.0	0.008	-0.3
	Taking action to make the situation better	4	18.2	10	45.5	4	18.2	4	18.2	22	100.0	0.007	-0.3
	Try to come up with a strategy about what to do	6	28.6	3	14.3	4	19.0	8	38.1	21	100.0	0.021	-0.2
	Been thinking hard about what steps to take	3	13.6	7	31.8	6	27.3	6	27.3	22	100.0	0.007	-0.3

5.4.4 Significant statistical associations in coping styles for diagnosed mental health conditions

In the avoidant coping style, significant statistical associations for diagnosed mental health conditions were as follows (Table 23):

- Of respondents who had been diagnosed with a mental health condition, the greater proportion turn to work or other activities to “take their mind off things” either “a medium amount” (n=7; 31.8%) or “frequently” (n=7; 31.8%) ($p=0.012$; $r=-0.2$).
- Respondents who had been diagnosed with a mental health condition were most likely to report that they “do something to think about it less” “a medium amount” (n=7; 31.8%) ($p=0.037$; $r=-0.2$).
- Of the respondents who had been diagnosed with a mental health condition, more than a quarter (n=6; 28.6%) indicated that they have been expressing their negative feelings “a medium amount” ($p=0.015$; $r=-0.2$)⁴⁵.

Significant statistical associations identified in the approach coping style for diagnosed mental health conditions were as follows (Table 23):

- Respondents who had been diagnosed with a mental health condition were most likely to report that they were “frequently” concentrating their efforts on doing something about the situation they are in (n=7; 31.8%) ($p=0.008$; $r=-0.3$).
- Of respondents who had been diagnosed with a mental health condition, the greater proportion indicated that they do “not often” take action in an attempt to improve their situation (n=10; 45.5%) ($p=0.007$; $r=-0.3$).
- Respondents who had been diagnosed with a mental health condition were most likely to select that they “frequently”, “try to come up with a strategy about what to do” (n=8; 38.1%) ($p=0.021$; $r=-0.2$)⁴⁶.
- Respondents who had been diagnosed with a mental health condition were most likely to report that they do “not often” think hard about what steps to take (n=7; 31.8%) ($p=0.007$; $r=-0.3$).

⁴⁵ Data missing in 1 of 22 cases (4.5% of sample).

⁴⁶ Data missing in 1 of 22 cases (4.5% of sample).

Additionally, there were significant statistical associations between total scores on the Brief COPE Inventory and having been diagnosed with a mental health condition. The significant statistical associations were as follows:

- Respondents who had been diagnosed with a mental health condition were most likely to score 5 on self-distraction on the Brief COPE Inventory (n=6; 27.3%). Respondents who had not been diagnosed with a mental health condition were most likely to score 2 on self-distraction on the Brief COPE Inventory (n=30; 37.0%) ($p=0.008$; $r=-0.3$).
- Respondents who had been diagnosed with a mental health condition were also most likely to score 5 on active coping on the Brief COPE Inventory (n=5; 22.7%). Respondents who had not been diagnosed with a mental health condition were most likely to score 2 on active coping on the Brief COPE Inventory (n=31; 38.3%) ($p=0.005$; $r=-0.3$).
- Respondents who had been diagnosed with a mental health condition were most likely to score 8 on planning on the Brief COPE Inventory (n=5; 23.8%)⁴⁷. Respondents who had not been diagnosed with a mental health condition were most likely to score 2 on planning on the Brief COPE Inventory (n=29; 35.8%) ($p=0.007$; $r=-0.3$).
- In summary, respondents who had been diagnosed with a mental health condition were most likely to score between 24-35 (medium) on overall approach coping on the Brief COPE Inventory (n=11; 55.0%)⁴⁸. Respondents who had not been diagnosed with a mental health condition were most likely to score between 12-23 (low) on overall approach coping on the Brief COPE Inventory (n=45; 57.7%)⁴⁹ ($p=0.007$; $r=-0.3$).

5.5 Context-specific experiences of stress and trauma

In the next section findings are presented to shed light on the respondents' experiences of stress and trauma in specific contexts. In particular, findings will be presented pertaining to stress levels experienced while working at crime scenes in general as opposed to working at violent crime scenes; attending crimes scenes at night compared to crime scenes during the day; working at crime scenes in informal settlements juxtaposed with crime scenes in urban areas; stress levels on route to, while working at a crime scene, and after completion of their tasks and responsibilities at a crime scene; and stress experienced when arriving in marked versus unmarked SAPS vehicles at crime scenes. In addition, findings will be presented which focus on the measure to

⁴⁷ Data missing in 1 of 22 cases (4.5% of sample).

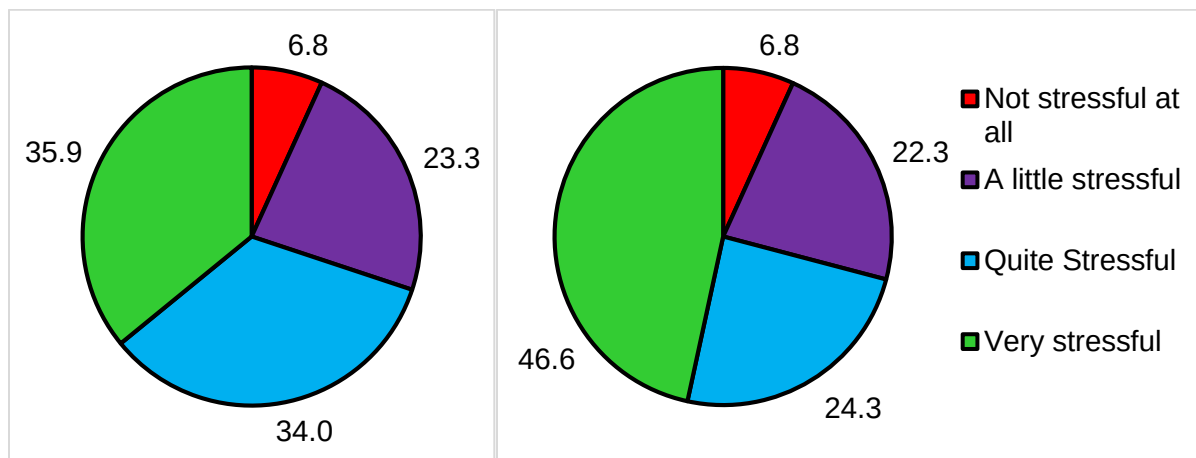
⁴⁸ Data missing in 2 of 22 cases (9.1% of sample).

⁴⁹ Data missing in 3 of 81 cases (3.7% of sample).

which respondents experience trauma while taking photographs and compiling photo albums; working at specific types of crime scenes; attending autopsies for specific types of deceased; and the measure to which respondents have felt threatened while working at crime scenes.

Just over a third of respondents (n=37; 35.9%) reported experiencing working at crime scenes in general to be “very stressful”. Almost half of respondents (n=48; 46.6%) denoted that they experienced working at violent crime scenes as “very stressful” (Figure 13).

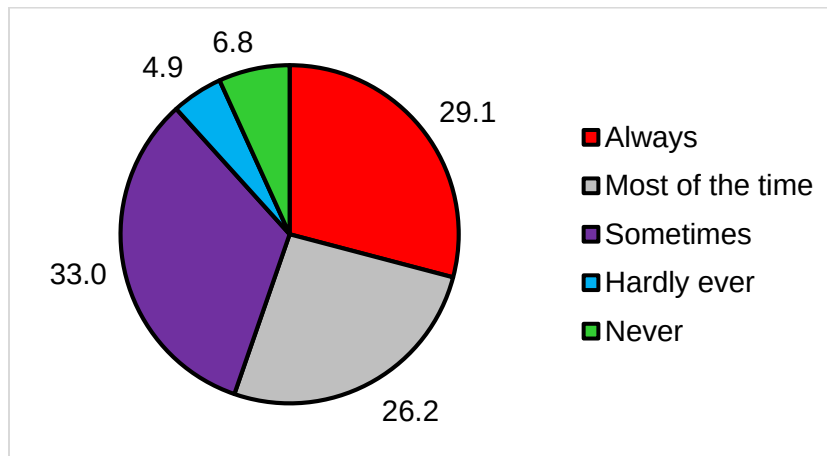
Figure 13: Respondents’ stress regarding working at crime scenes in general (left) and respondents’ stress regarding working at violent crime scenes (right) (%)



Of the 27 female respondents, the greatest proportion reported that they find working at violent crime scenes “very stressful” (n=16; 59.3%). A smaller proportion of male respondents reported that they experience working at violent crime scenes as “very stressful” (n=32; 42.1%) ($p=0.049$; $r=-0.2$). Of the 22 respondents who had been diagnosed with a mental health condition, the greater portion experience working at crime scenes in general as “very stressful” (n=12; 54.5%). Less than a third of the respondents who had not been diagnosed with a mental health condition (n=25; 30.9%) indicated working at crime scenes as “very stressful” ($p=0.036$; $r=-0.2$). Three fifths of respondents (n=14; 63.6%) who had been diagnosed with a mental health condition experienced working at violent crime scenes as “very stressful”, in comparison to two fifths of respondents (n=34; 42.0%) who had not been diagnosed with a mental health condition ($p=0.038$; $r=-0.2$).

A third of respondents (n=34; 33.0%) reported experiencing working at crime scenes at night as “sometimes” being more stressful than working at crime scenes during the day. Overall, 96 respondents (93.2%) indicated that working night crime scenes is more stressful than day crime scenes to a degree more than “never” (Figure 14).

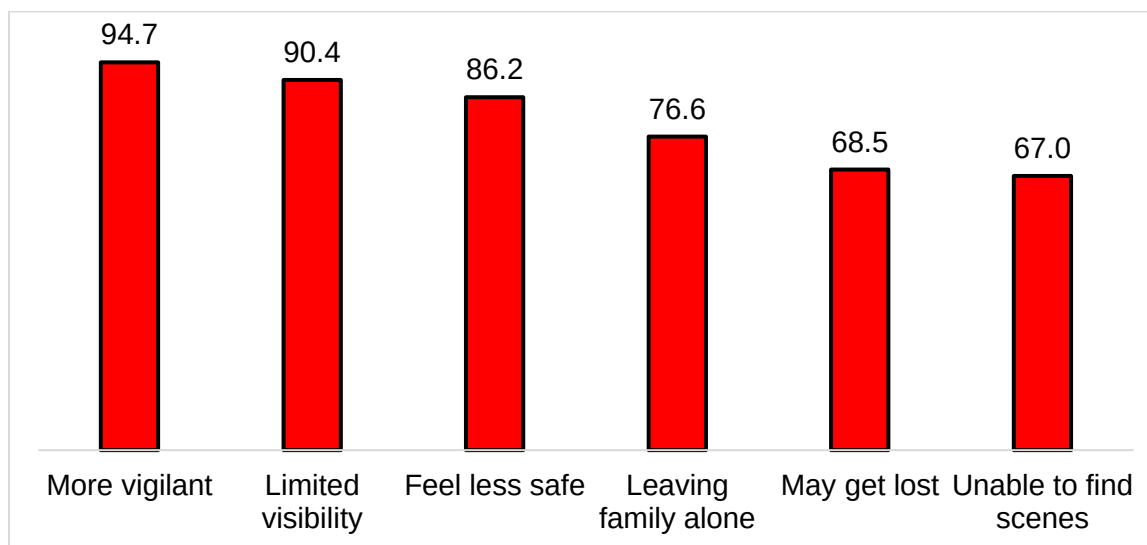
Figure 14: Whether respondents find working night crime scenes more stressful than day crime scenes (%)



Female respondents were more likely to report experiencing working at night more stressful than during the day “always” (n=12; 44.4%), than male respondents (n=18; 23.7%) ($p=0.007$; $r=-0.3$).

The greater proportion of respondents (n=85; 90.4%) indicated that limited visibility at night crime scenes influenced their stress levels⁵⁰. The greater proportion of respondents (n=89; 94.7%) also indicated that a feeling of needing to be more vigilant at night-time crime scenes influenced their stress levels⁵¹ (Figure 15).

Figure 15: Factors influencing stress at night crime scenes (% yes)



⁵⁰ Data missing in 2 of 96 cases (2.1% of sample).

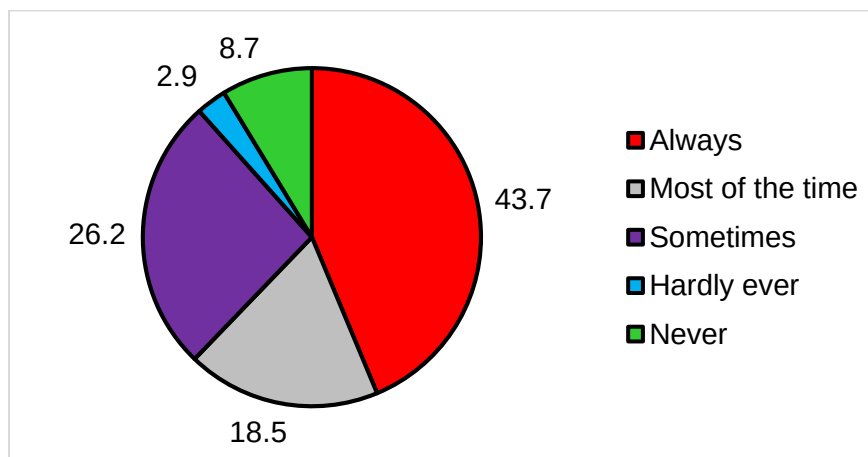
⁵¹ Data missing in 2 of 96 cases (2.1% of sample).

Respondents were given space on the questionnaire to identify additional factors that make them feel stressed at night scenes. Four indicated fearing being hijacked or attacked at night. Three respondents also indicated that as women they particularly fear for their safety and sometimes need to bring their children with them to scenes if they live alone, which causes additional stress. Lack of proper equipment and vehicles that are not reliable and may break down was also mentioned by three respondents.

Overall, 96 respondents indicated that working at night is more stressful than during the day “to some degree”. Of the 7 respondents who indicated “never”, all were male. Of respondents who indicated that getting lost is a stress factor with crime scenes at night ($n=92$), female respondents ($n=24$; 88.9%) were more likely to find night crime scenes stressful due to the fear of getting lost compared to their male counterparts ($n=39$; 60.0%)⁵² ($p=0.007$; $r=-0.3$).

Slightly more than two in five respondents ($n=45$; 43.7%) reported experiencing working at crime scenes in informal settlements as “always” being more stressful than working at crime scenes in urban areas. Overall, 94 participants (91.3%) indicated that working at crime scenes in informal settlements is stressful to a degree more than “never” (Figure 16).

Figure 16: Whether respondents find working informal settlements crime scenes more stressful than urban area crime scenes (%)

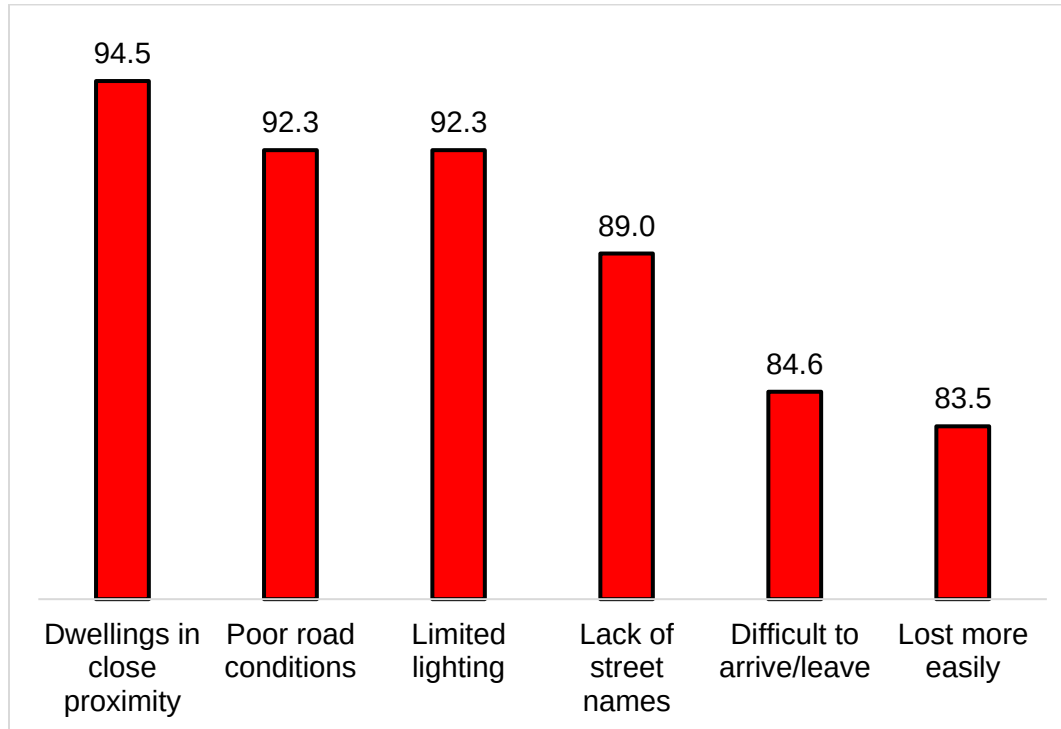


The greater proportion of respondents indicated that they experience the close-set dwellings in informal settlements as stressful due to hiding places for perpetrators being present between

⁵² Data missing in 4 of 96 cases (4.2% of sample).

them (n=86; 94.5%)⁵³. Limited lighting (n=84; 92.3%)⁵⁴ and poor road conditions (n=84; 92.3%)⁵⁵ were also experienced to be factors that particularly influenced stress levels (Figure 17).

Figure 17: Factors influencing stress at informal settlement crime scenes (% yes)



In the space provided on the questionnaire for respondents to identify additional factors that make CSEs feel more stressed in informal settlements, three respondents indicated that they think that a lot of criminals live in informal settlements, which makes them feel more stressed. Two respondents also mentioned that the likelihood of mob justice adds to their stress, as does the possibility of residents tampering with scenes. Six respondents also indicated that they feel less safe within informal settlements overall.

On their way to a crime scene, slightly less than half of respondents (n=47; 46.1%) reported feeling “a little stressed”⁵⁶. At a crime scene, almost two fifths of respondents (n=39; 37.9%) reported feeling “a little stressed”. After leaving the crime scene, more than a third of respondents (n=37; 35.9%) again reported feeling “a little stressed”. The number of respondents who experienced feeling “very stressed” remained fairly stable between on the way to the crime scene

⁵³ Data missing in 3 of 94 cases (3.2% of sample).

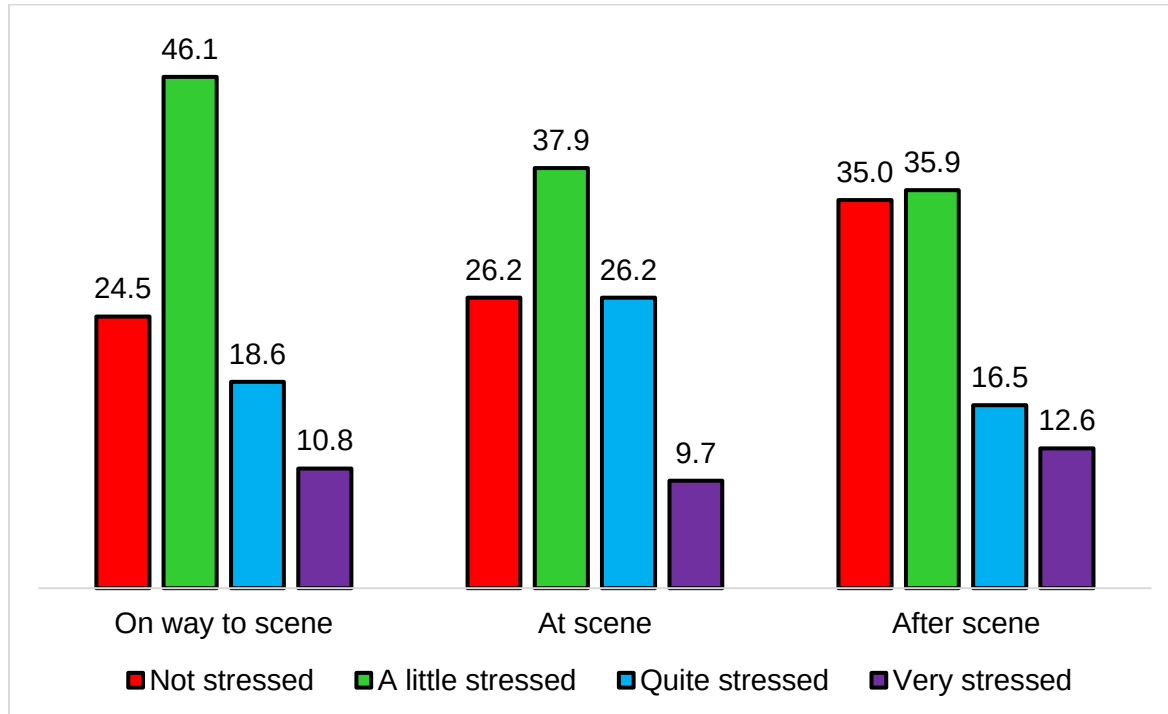
⁵⁴ Data missing in 3 of 94 cases (3.2% of sample).

⁵⁵ Data missing in 3 of 94 cases (3.2% of sample).

⁵⁶ Data missing in 1 of 103 cases (1.0% of sample).

(n=11; 10.8%), while working at a crime scene (n=10; 9.7%) and after finishing work at a crime scene (n=13; 12.6%) (Figure 18).

Figure 18: Levels of stress on the way to, at, and after crime scenes (%)

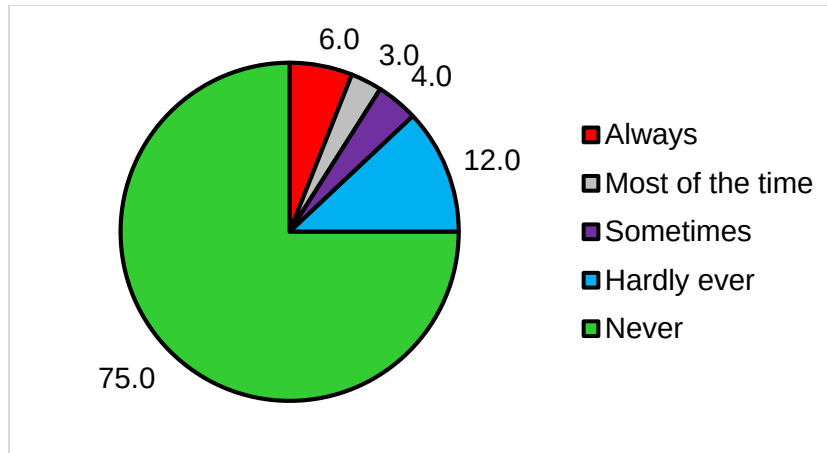


Respondents who had been diagnosed with a mental health condition were more likely to report feeling “quite stressed” (n=6; 27.3%) on their way to scenes than respondents who had not been diagnosed with a mental health condition (n=13; 16.3%)⁵⁷ ($p=0.038$; $r=-0.2$). Additionally, respondents who had been diagnosed with a mental health condition were more likely to report feeling “quite stressed” (n=10; 45.5%) while working at a crime scene than respondents who had not been diagnosed with a mental health condition (n=17; 21.0%) ($p=0.030$; $r=-0.2$). Male respondents were more likely to indicate that they do not feel stressed at all while working at a crime scene (n=24; 31.6%) in comparison to female respondents (n=3; 11.1%) ($p=0.034$; $r=-0.2$).

⁵⁷ Data missing in 1 of 81 cases (1.2% of sample).

Three quarters of respondents (n=75; 75.0%) “never” arrived on scene in marked SAPS vehicles. Few respondents (n=6; 6.0%) reported that they “always” arrived on scene in a marked SAPS vehicle (Figure 19)⁵⁸.

Figure 19: How often respondents arrive on scene in a marked SAPS vehicle (%)



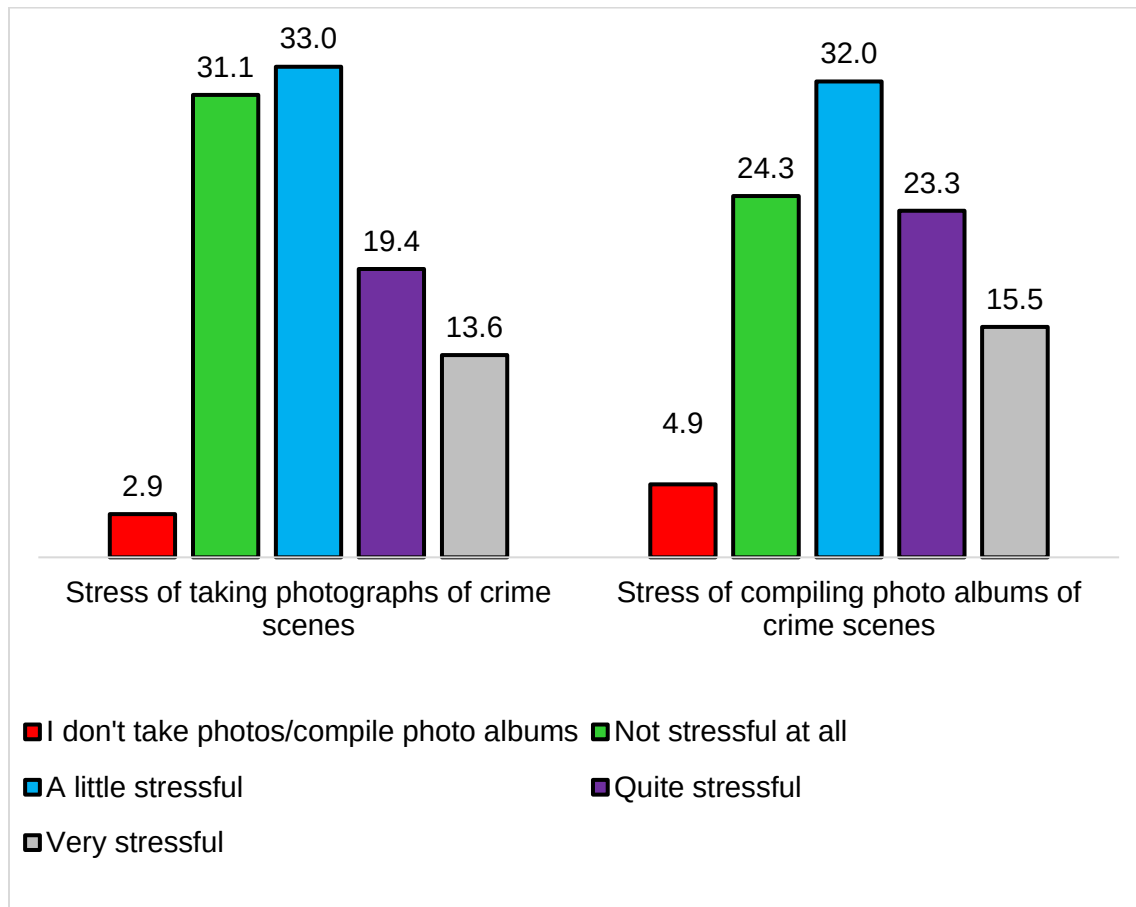
The majority of respondents (n=73; 73.7%) reported that they do not experience less stress if they arrived on the scene of a crime in a marked SAPS vehicle⁵⁹.

A third of respondents (n=34; 33.0%) indicated that they found taking photographs of crime scenes “a little stressful”, with just under a third of respondents (n=33; 32.0%) indicating that they experienced compiling photo albums of crime scenes “a little stressful”. Fewer respondents (n=14; 13.6%) experienced taking photographs of crime scenes as “very stressful”, in comparison to marginally more respondents (n=16; 15.5%) who found compiling photo albums of crime scenes as “very stressful” (Figure 20).

⁵⁸ Data missing in 3 of 103 cases (2.9% of sample).

⁵⁹ Data missing in 4 of 103 cases (3.9% of sample).

Figure 20: Respondents' stress levels regarding taking photos and compiling photo albums (%)



Female respondents were more likely to report experiencing compiling photo albums as “quite stressful” ($n=9$; 33.3%), than male respondents ($n=15$; 19.7%) ($p=0.014$; $r=-0.2$).

Just over a third of respondents ($n=37$; 35.9%) reported experiencing violent crime scenes involving deceased fetuses to be “very traumatic”. Three out of five respondents ($n=62$; 60.8%) experienced violent crime scenes involving deceased children to be “very traumatic”⁶⁰. Two in five respondents ($n=42$; 41.2%) found violent crime scenes involving disfigured bodies to be “very traumatic”⁶¹. A quarter of respondents ($n=26$; 25.5%) reported experiencing scenes where bystanders or relatives of a victim or perpetrator are on the scene as “very traumatic”⁶² (Table 24).

⁶⁰ Data missing in 1 of 103 cases (1.0% of sample).

⁶¹ Data missing in 1 of 103 cases (1.0% of sample).

⁶² Data missing in 1 of 103 cases (1.0% of sample).

Table 24: How traumatic the following scenes are experienced as

Types of scenes	Not traumatic		A little traumatic		Quite traumatic		Very traumatic		Total	
	n	%	n	%	n	%	n	%	n	%
Foetuses	17	16.5	29	28.2	20	19.4	37	35.9	103	100.0
Children	6	5.9	14	13.7	20	19.6	62	60.8	102	100.0
Adults	12	11.9	36	35.6	33	32.7	20	19.8	101	100.0
Dismembered bodies	11	10.9	27	26.7	24	23.8	39	38.6	101	100.0
Disfigured bodies	11	10.8	23	22.5	26	25.5	42	41.2	102	100.0
Decomposed bodies	10	9.8	18	17.6	20	19.6	54	52.9	102	100.0
Muti murder	12	11.9	19	18.8	29	28.7	41	40.6	101	100.0
Alive victims	21	21.2	22	22.2	23	23.2	33	33.3	99	100.0
Bystanders/relatives on scene	18	17.6	24	23.5	34	33.3	26	25.5	102	100.0

Table 25: Significant gender differences regarding how traumatic the following scenes are experienced as

Types of scenes	Not traumatic				A little traumatic				Quite traumatic				Very traumatic				Total				<i>p</i>	<i>r</i>
	Male		Female		Male		Female		Male		Female		Male		Female		Male		Female			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Foetuses	15	19.7	2	7.4	22	28.9	7	25.9	17	22.4	3	11.1	22	28.9	15	55.6	76	100.0	27	100.0	0.027	-0.2
Children	5	6.7	1	3.7	12	16.0	2	7.4	18	24.0	2	7.4	40	53.3	22	81.5	75	100.0	27	100.0	0.018	-0.2
Disfigured bodies	10	13.3	1	3.7	19	25.3	4	14.8	19	25.3	7	25.9	27	36.0	15	55.6	75	100.0	27	100.0	0.036	-0.2
Bystanders/relatives on scene	16	21.1	2	7.7	19	25.0	5	19.2	27	35.5	7	26.9	14	18.4	12	46.2	76	100.0	26	100.0	0.010	-0.3

Female respondents reported finding crime scenes involving fetuses “very traumatic” ($n=15$; 55.6%) in larger proportions than male respondents ($n=22$; 28.9%) ($p=0.027$; $r=-0.2$). Female respondents ($n=22$; 81.5%) were additionally more likely than male respondents ($n=40$; 53.3%)⁶³ ($p=0.018$; $r=-0.2$) to experience crime scenes involving children as “very traumatic”. Female respondents ($n=15$; 55.6%) were also more likely to find disfigured bodies “very traumatic” compared to than male respondents ($n=27$; 36.0%)⁶⁴ ($p=0.036$; $r=-0.2$). Male respondents ($n=14$; 18.4%) were less likely to experience crime scenes where bystanders or relatives of a victim or perpetrator are on the scene of the crime as “very traumatic” than female respondents ($n=12$; 46.2%)⁶⁵ ($p=0.010$; $r=-0.3$) (Table 25).

Fifty-six CSEs indicated that they attend autopsies. More than a third of these respondents ($n=18$; 36.7%) reported experiencing autopsies for a deceased fetus to be “very traumatic”⁶⁶. Over half of respondents ($n=27$; 54.0%) experienced autopsies for deceased children to be “very traumatic”⁶⁷. Almost half of respondents ($n=22$; 44.9%) experienced autopsies for decomposed bodies to be “very traumatic”⁶⁸. Two out of five respondents ($n=20$; 40.0%) experienced autopsies where the deceased died in a violent manner to be “very traumatic”⁶⁹ (Table 26).

Table 26: How traumatic the following autopsies are experienced as:

Types of autopsies	Not traumatic		A little traumatic		Quite traumatic		Very traumatic		Total	
	n	%	n	%	n	%	n	%	n	%
Foetuses	8	16.3	13	26.5	10	20.4	18	36.7	49	100
Children	6	12.0	8	16.0	9	18.0	27	54.0	50	100
Adults	8	16.0	16	32.0	14	28.0	12	24.0	50	100
Dismembered bodies	7	14.0	13	26.0	13	26.0	17	34.0	50	100
Disfigured bodies	6	12.0	12	24.0	14	28.0	18	36.0	50	100
Decomposed bodies	6	12.2	10	20.4	11	22.4	22	44.9	49	100
Violent deaths	6	12.0	10	20.0	14	28.0	20	40.0	50	100
Muti murder	8	16.0	9	18.0	16	32.0	17	34.0	50	100

⁶³ Data missing in 1 of 76 cases (1.3% of sample).

⁶⁴ Data missing in 1 of 76 cases (1.3% of sample).

⁶⁵ Data missing in 1 of 27 cases (3.7% of sample).

⁶⁶ Data missing in 7 of 56 cases (12.5% of sample).

⁶⁷ Data missing in 6 of 56 cases (10.7% of sample).

⁶⁸ Data missing in 7 of 56 cases (12.5% of sample).

⁶⁹ Data missing in 6 of 56 cases (10.7% of sample).

When asked if they have ever been threatened by a bystander, relative, or perpetrator at a crime scene, just over half of respondents (n=51; 51.0%) confirmed that they had been, with just under half of respondents (n=49; 49.0%) stating that they had not been⁷⁰. Respondents who had been diagnosed with a mental health condition were more likely to indicate that they had been threatened by a bystander, relative of a victim, or a perpetrator who was on the scene of the crime (n=16; 72.7%) than respondents who had not been diagnosed with a mental health condition (n=35; 44.9%)⁷¹ ($p=0.022$; $r=-0.2$).

Just under a fifth of respondents (n=19; 18.8%) indicated that they had been physically assaulted by a bystander, relative, or perpetrator at a crime scene⁷². Of the respondents who indicated that they have been physically assaulted by a bystander, relative or perpetrator (n=19; 18.8%), the vast majority were male (n=18; 94.7%)⁷³, with the minority being female (n=1; 5.3%)⁷⁴ ($p=0.024$; $r=-0.2$). Respondents who had been diagnosed with a mental health condition (n=8; 36.4%) were more likely to indicate that they have been physically assaulted by a bystander or relative of a victim or a perpetrator who was on the scene of the crime than respondents who had not been diagnosed with a mental health condition (n=11; 13.9%)⁷⁵ ($p=0.018$; $r=-0.2$).

5.6 Contentedness within their workplace and views about briefing as well as debriefing

The findings in the section which follows illuminate the respondents' overall sense of contentedness within their workplace by focussing on whether they would recommend working as a CSE to others, if they have ever thought of resigning, and their overall levels of work satisfaction. The section concludes with the findings regarding the respondents' views about both briefing and debriefing by highlighting their need to speak to someone about their work, to whom they speak, their rating of the training they had received to cope with the challenges of their work context, and their views about receiving briefing before their arrival at a crime scene and their uptake of debriefing services within SAPS, as well as privately.

Almost half of respondents (n=48; 47.1%) reported that they would "maybe" recommend working as a CSE, whereas almost a fifth of respondents (n=20; 19.6%) reported that they would "never" recommend working as a CSE. A third of respondents (n=34; 33.3%) indicated that they would

⁷⁰ Data missing in 3 of 103 cases (2.9% of sample).

⁷¹ Data missing in 3 of 81 cases (3.7% of sample).

⁷² Data missing in 2 of 103 cases (1.9% of sample).

⁷³ Data missing in 1 of 76 cases (1.3% of sample).

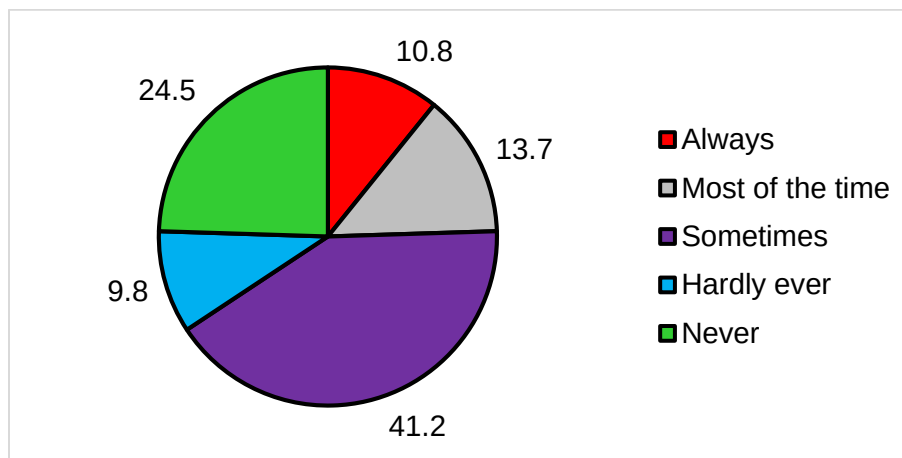
⁷⁴ Data missing in 1 of 27 cases (3.7% of sample).

⁷⁵ Data missing in 2 of 81 cases (2.5% of sample).

“definitely” recommend working as a CSE⁷⁶. Respondents who had not been diagnosed with a mental health condition were more likely to “definitely” recommend working as a CSE (n=30; 37.5%)⁷⁷ in comparison to respondents who had been diagnosed with a mental health condition (n=4; 18.2%) ($p=0.021$; $r=-0.2$).

Roughly two out of five respondents (n=42; 41.2%) reported “sometimes” thinking of resigning from their work as a CSE. A tenth of respondents (n=11; 10.8%) reported “always” thinking of resigning (Figure 21)⁷⁸.

Figure 21: Whether respondents have thought of resigning (%)



Of the respondents who reported “never” thinking of resigning from their work as a CSE (n=25; 24.5%), the vast majority were respondents who had not been diagnosed with a mental health condition (n=24; 96.0%)⁷⁹ ($p=0.014$; $r=-0.2$).

A third of respondents (n=35; 34.3%) reported having “good” work satisfaction. Few respondents (n=5; 4.9%) reported having “very poor” work satisfaction⁸⁰ (Figure 22).

⁷⁶ Data missing in 1 of 103 cases (1.0% of sample).

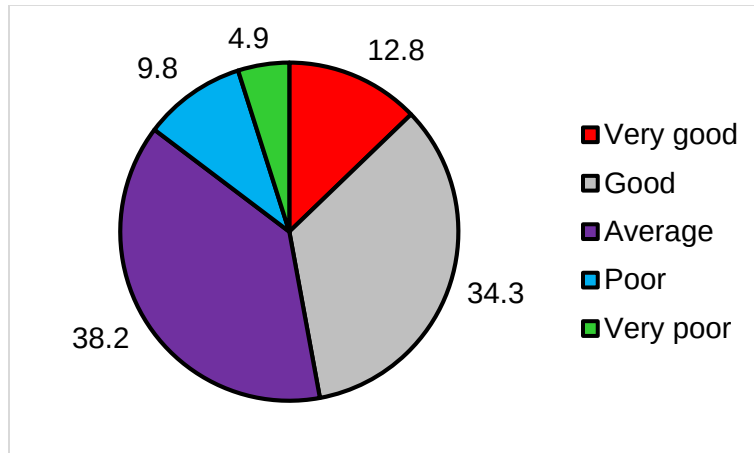
⁷⁷ Data missing in 1 of 81 cases (1.2% of sample).

⁷⁸ Data missing in 1 of 103 cases (1.0% of sample).

⁷⁹ Data missing in 1 of 81 cases (1.2% of sample).

⁸⁰ Data missing in 1 of 103 cases (1.0% of sample).

Figure 22: Work satisfaction of respondents (%)

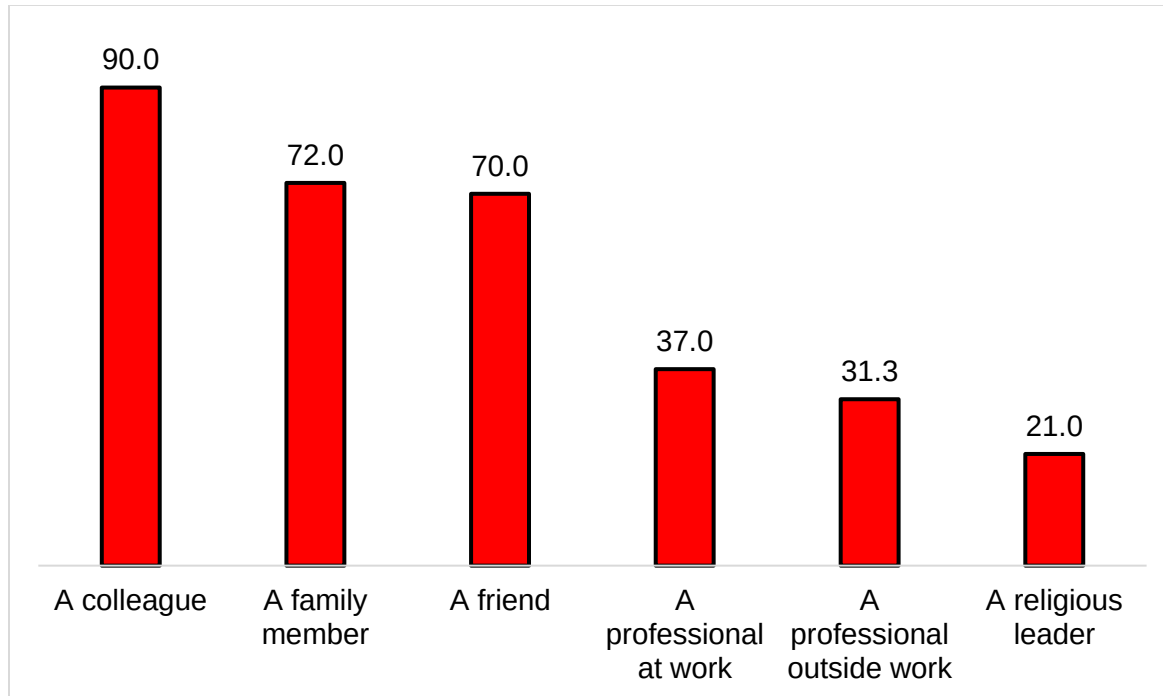


Of respondents who indicated that they have “very good” work satisfaction ($n=13$; 12.8%), the vast majority ($n=12$; 92.3%) had not been diagnosed with a mental health condition ($p=0.038$; $r=-0.2$)⁸¹.

The vast majority of respondents ($n=100$; 97.1%) stated that they had felt the need to speak to someone because of their work experiences, with the majority of respondents ($n=99$; 99.0%) specifying that they had acted upon this need and had spoken to someone. A significant portion of respondents ($n=90$; 90.0%) indicated having spoken to a colleague about their work experiences, with the least number of respondents ($n=21$; 21.0%) reporting that they had spoken to a religious leader (Figure 23). One respondent indicated in the space provided for elaboration in the questionnaire that they have spoken to a sangoma (traditional health practitioner).

⁸¹ Data missing in 1 of 81 cases (1.2% of sample).

Figure 23: People respondents have spoken to about their work experiences (% yes)



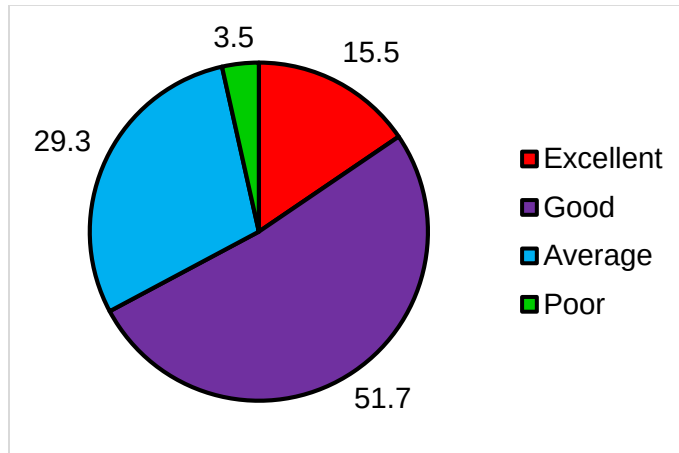
Respondents who had been diagnosed with a mental health condition were more likely to state that they had spoken to a professional outside the work context ($n=18$; 81.8%) than respondents who had not been diagnosed with a mental health condition ($n=13$; 16.9%)⁸² ($p=0.000$; $r=-0.6$).

Over half of respondents ($n=58$; 56.9%) indicated that they had received some sort of training or skills development from SAPS to cope with the challenges of their work context⁸³. More than half of the respondents who had received training ($n=30$; 51.7%) denoted that the training they had received was “good”. Roughly three in ten respondents ($n=17$; 29.3%) indicated that the training they had received was “average” (Figure 24).

⁸² Data missing in 4 of 81 cases (4.9% of sample).

⁸³ Data missing in 1 of 103 cases (1.0% of sample).

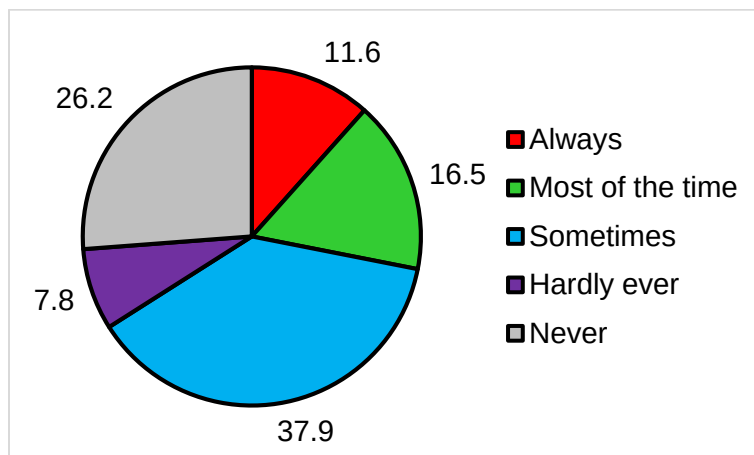
Figure 24: Respondents' rating of SAPS training received (%)



Of the respondents who had not received training, the majority (n=36; 83.7%) indicated that they would like to⁸⁴.

Marginally more than a quarter of respondents (n=27; 26.2%) reported that they are “never” briefed prior to arrival at crime scenes. Just over a tenth of respondents (n=12; 11.6%) indicated that they are “always” briefed before their arrival at crime scenes (Figure 25).

Figure 25: How often respondents are briefed before arrival at crime scenes (%)



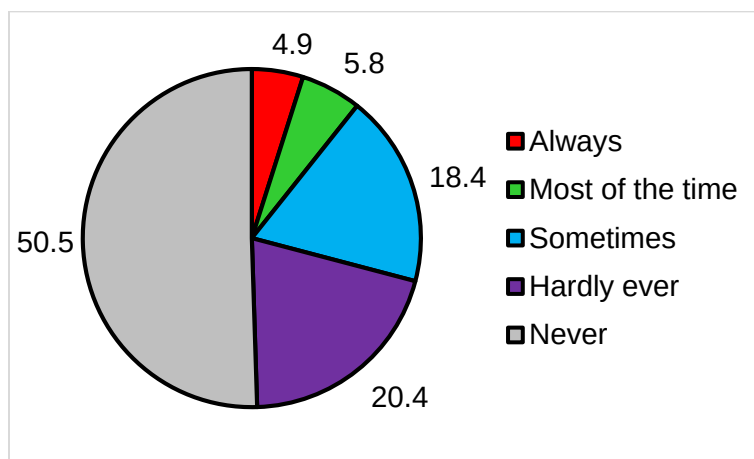
The majority of respondents (n=90; 87.4%) indicated that they would prefer to be briefed prior to arriving at crime scenes, with very few respondents (n=4; 3.9%) indicating that they would not want to be briefed before arriving at crime scenes. Almost a tenth of respondents (n=9; 8.7%) were uncertain regarding if they would want to be briefed before arriving at a scene. Over half of

⁸⁴ Data missing in 2 of 45 cases (4.4% of sample).

respondents (n=52; 51.5%) denoted that briefing prior to arriving at a crime scene is “very useful” to deal emotionally with the scene. No respondents (n=0; 0.0%) indicated that briefing is not useful⁸⁵.

A significant proportion of respondents (n=92; 89.3%) confirmed that they are aware that SAPS offers a debriefing service. Half of respondents (n=52; 50.5%) indicated that emotional debriefing is “never” available to them after concluding their tasks at a crime scene. A fifth of respondents (n=21; 20.4%) signified that debriefing is “hardly ever” available to them after concluding their tasks at a crime scene (Figure 26).

Figure 26: Availability of emotional debriefing after concluding tasks at crime scenes (%)



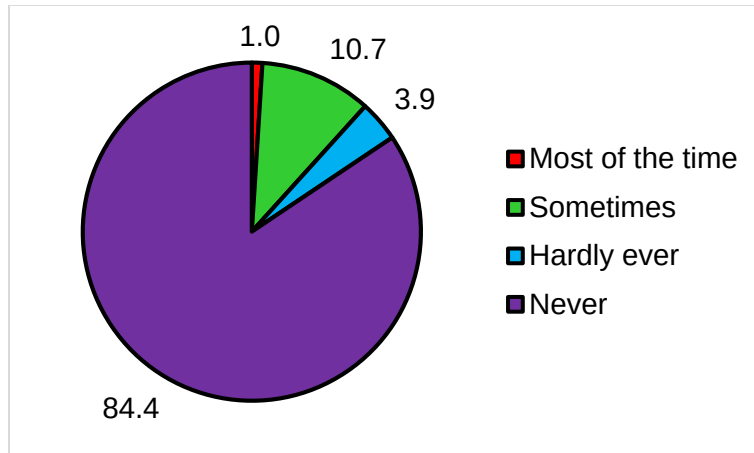
Respondents who had been diagnosed with a mental health condition were more likely to indicate that emotional debriefing is “never” available after concluding their work at crime scenes (n=16; 72.7%) than those who had not been diagnosed with a mental health condition (n=36; 44.4%) ($p=0.009$; $r=-0.3$).

Three out of five respondents (n=62; 60.8%) specified that they would be willing to use emotional debriefing⁸⁶. The majority of respondents (n=87; 84.4%) reported that they never make use of the SAPS debriefing services. No respondents (n=0; 0.0%) indicated that they always make use of the debriefing services (Figure 27).

⁸⁵ Data missing in 2 of 103 cases (1.9% of sample).

⁸⁶ Data missing in 1 of 103 cases (1.0% of sample).

Figure 27: How often respondents make use of the debriefing services (%)



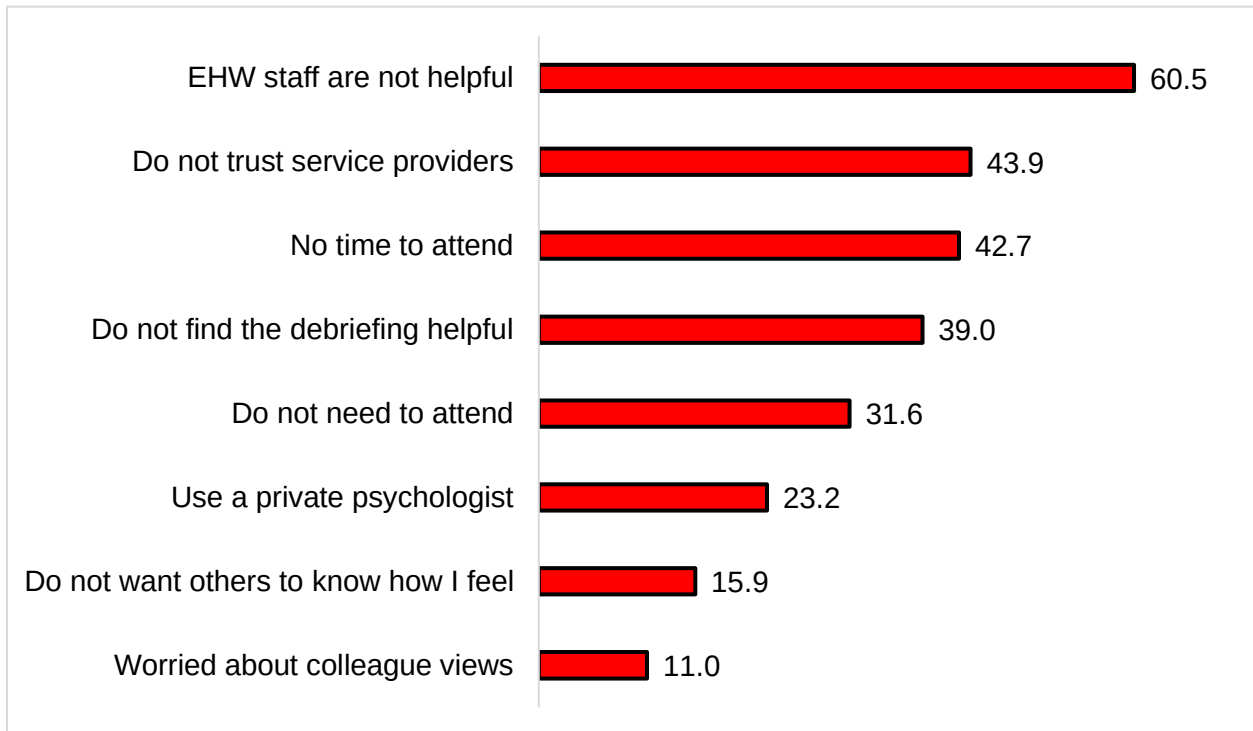
Of the 16 respondents who do make use of the SAPS debriefing services, more than two in five (n=7; 43.8%) denoted that the debriefing services provided are of an “average” quality. No respondents (n=0; 0.0%) indicated that the debriefing services provided are of an “excellent” quality.

Numerous factors affect respondents not making use of the SAPS debriefing services. Three out of five respondents (n=49; 60.5%) indicated that debriefing offered by EHW was not helpful due to the staff providing the debriefing not having had any experience in a CSE role⁸⁷. The factor that seemed to affect respondents’ choice to make use of the debriefing services the least was worrying about what their colleagues would think of them for attending debriefing (n=9; 11.0%)⁸⁸ (Figure 28).

⁸⁷ Data missing in 6 of 87 cases (6.9% of sample).

⁸⁸ Data missing in 5 of 87 cases (5.7% of sample).

Figure 28: Factors that affect respondents not using SAPS debriefing services (%)



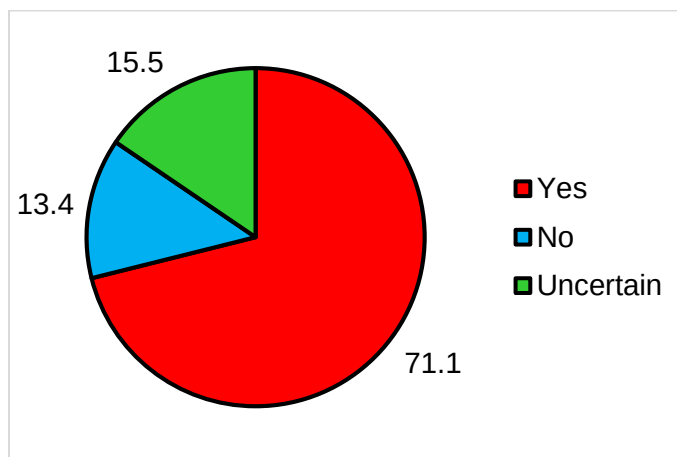
In the space provided in the questionnaire where respondents were asked to elaborate on more reasons if they felt comfortable to do so, five respondents indicated that the debriefing is not always available when needed. Two respondents indicated that when EHW professionals are available, the CSEs are sometimes required to attend scenes and so cannot attend a consultation. Two respondents stated that they do not attend because nothing in their job description will change, they will still need to attend traumatic scenes, therefore they do not see the point in attending debriefing. The verbatim responses of the aforementioned respondents were: “I view it as a waste of time because I am still going to attend to many cases and I can’t keep requesting debriefing every day, I must just deal with it or learn to forget” and “I feel it’s useless to attend because I will still go attend to crime scenes and nothing will change the nature of my work”. Over and above the fact that the inexperience of EWH professionals in regard to the work CSEs perform was stated as an option in the questionnaire, four respondents reiterated this particular reason by furnishing it as a reason in the space provided.

Female respondents were more likely to report that not finding debriefing helpful had an effect on their decision to not use the debriefing services ($n=13$; 59.1%)⁸⁹ than male respondents ($n=19$; 31.7%)⁹⁰ ($p=0.025$; $r=-0.2$).

Respondents who had been diagnosed with a mental health condition were more likely to state that they do not use the debriefing services because debriefing by EHW staff is not helpful as the consultants do not understand the realities of their job ($n=17$; 85.0%)⁹¹, than respondents who had not been diagnosed with a mental health condition ($n=32$; 52.5%)⁹² ($p=0.010$; $r=-0.3$). Respondents who had been diagnosed with a mental health condition were also more likely to indicate that their lack of use of the debriefing services is influenced by their use of a private psychologist ($n=13$; 65.0%)⁹³ than respondents who had not been diagnosed with a mental health condition ($n=6$; 9.7%)⁹⁴ ($p=0.000$; $r=-0.6$).

The greater proportion of respondents ($n=69$; 71.1%) denoted that they would be willing to attend debriefing if it was run by a person who had professional experience with the CSE role and crime scenes. A further tenth of respondents ($n=13$; 13.4%) indicated that they would not be willing to attend debriefing run by a person with CSE experience⁹⁵ (Figure 29).

Figure 29: Respondents' willingness to attend debriefing run by people with CSE work experience (%)



⁸⁹ Data missing in 5 of 27 cases (18.5% of sample).

⁹⁰ Data missing in 16 of 76 cases (21.1% of sample).

⁹¹ Data missing in 2 of 22 cases (9.1% of sample).

⁹² Data missing in 20 of 81 cases (24.7% of sample).

⁹³ Data missing in 2 of 22 cases (9.1% of sample).

⁹⁴ Data missing in 19 of 81 cases (23.5% of sample).

⁹⁵ Data missing in 6 of 103 cases (5.8% of sample).

At the end of the questionnaire the CSEs were provided with a blank page and informed that, if they felt comfortable to do so, they could provide information of which they would want the researcher to be aware. One respondent indicated that his main source of stress is the lack of resources, particularly vehicles, equipment, and staff shortages. He elaborated that long hours and staff shortages affect the quality of work produced. He expressed the opinion that their “leaders want results and want targets to be met over the well-being” of the CSEs. Another respondent echoed the lack of equipment adding to his stress, more specifically lack of SD cards for the cameras, which are used as memory on which to store photograph files, and gloves. He emphasised that CSEs are expected to perform their duties despite not being equipped to do so. Two more respondents also indicated that the high workload causes them stress, with CSEs being assigned more cases per day than they are able to realistically process. One of the respondents highlighted that victims had to wait for longer periods of time due to high caseloads, which also causes additional stress.

One respondent provided a detailed response outlining how he has been affected by his work as a CSE. He stated that he has been experiencing extreme marital problems since entering the professional role. He attributes this to a particular scene that he attended where there was a body of a badly decomposed woman. There were “maggots and worms” in her genital region which has put strain on his marriage as he said he has been unable to erase the image from his mind. He also stated that his marriage is suffering as he has lost all interest in “everything” in his life. He also emphasised that he experiences a lack of suitable resources, including a lack of uniforms being provided and being given vehicles that are in poor condition. He also highlighted a lack of support from management as being a stressor experienced, and mentioned inexperienced officials with a lack of knowledge about the CSE role being promoted to management positions as being an additional stress factor.

5.7 Conclusion

In pursuit of the aim of the study, the findings furnished in the preceding chapter provide the reader with an overview of the respondents’ profile, the scope of the tasks and responsibilities of Southern Gauteng CSEs, their self-reported trauma levels in relation to working at traumatic crime scenes and attending autopsies, as well as the coping strategies they adopt, their context-specific experiences of job-related stress and trauma, the measure to which they feel contentedness within their workplace, and their views about both briefing and debriefing. In the concluding chapter (Chapter 6), the data will be interpreted with reference to the literature review and the theoretical framework.

Chapter 6: Discussion and recommendations

6.1 Introduction

The attention in the present chapter is directed at answering the research question which was formulated for the study, which was stated as follows: What are the trauma levels and coping strategies of Southern Gauteng CSEs who are exposed to traumatic crime scenes and autopsies? The positivistic paradigm aided in viewing the levels of trauma experienced by Southern Gauteng CSEs and their coping strategies, through an objective and organised lens. Positivism is linked to the procurement of evidence, using numerical and statistical data, which is in turn associated with a quantitative research approach. The purpose of the study was descriptive and the research type was basic. The research design was a survey, in particular a cross-sectional survey. Through convenience sampling, 103 respondents were recruited to take part in the study across the eight LCRCs in Southern Gauteng. The data gathering instrument was a structured self-administered questionnaire.

In pursuit of the aim of the study, several objectives were stated, namely to determine the profile of Southern Gauteng CSEs; to establish the scope of their tasks and responsibilities; to ascertain their trauma levels in relation to traumatic crime scenes and autopsies; to identify the specific coping strategies they use; to determine their context-specific experiences of job-related stress and trauma; and to ascertain the measure to which they experience contentedness within their workplace and their views on both briefing and debriefing. The chapter is organised according to the aforementioned objectives. The empirical data presented in Chapter 5 will be discussed more deliberately in relation to both national and international extant research, whilst the theoretical perspectives focussed on coping will be applied where relevant. The chapter concludes with recommendations for the direction of future research enquiries and suggestions pertaining to policy and practice.

6.2 Profile of Southern Gauteng crime scene examiners

Section A of the questionnaire, which centred on background information and socio-demographic characteristics, assisted in compiling a profile of the CSEs in Southern Gauteng who participated in the study. Worldwide, men have been shown to be overrepresented in the profession of policing (Bikos, 2016:2; Bull et al., 2020:1; Kim et al., 2016:168; Simpson & Croft, 2020:1), and the profile of the Southern Gauteng CSE population reflects this. In 2019, when the data was gathered, 51.2% of the population of South Africa was estimated to be women, with men representing 48.8%

of the total population⁹⁶ (Statistics South Africa, 2019). The entire CSE population of Southern Gauteng comprised 227 men (76.7%) and 69 women (23.3%), thus confirming that the CSE environment is also a male-dominated profession. In the present study, the respondents comprised 76 men (73.8%) and 27 women (26.2%). The aforementioned reflects that women in the present study were marginally over-representative of the Southern Gauteng female CSE population. Correspondingly, in the 2015 Honours study, 76.9% of the respondents were male and 23.1% female, thus illustrating that women CSEs are slightly better represented in the present study (Steyn & Klopper, 2015:4).

In 2019, the population of South Africa was estimated to consist of 80.7% Black Africans, and 8.8% Coloureds⁹⁷. Whites comprised 7.9% of the population and Indians/Asians 2.6% (Statistics South Africa, 2019). Recent estimates from an official source, which specify the racial composition of Gauteng in particular, are not available. The number of Black African respondents being 81.6% in the current study, therefore closely matches the estimated 80.7% Black Africans represented in the South African population. Indian/Asian CSEs comprised 1.0% of the respondents, and is therefore also closely representative of the 2.6% of the country's Indian/Asian population. The remainder of the respondents who took part in the current study, did not accurately reflect the race demographics of South Africa. Only 1.9% of respondents indicated that they are Coloured, and therefore they are under-represented compared with the 8.8% Coloureds in the national population. Likewise, with 15.5% of the respondents indicating that they are White, they are overrepresented in the study compared with the 7.9% of Whites in the national population. The overrepresentation of Whites compared to the national population, was also noted in the 2015 Honours study, with 19.2% of the respondents indicating that they are White. Further, marginally fewer Black Africans (79.6%.) participated in the 2015 Honours study, whilst a comparable number of Indian/Asian respondents (1.3%) took part. Whilst Coloured CSEs (2.6%) were slightly better represented in the 2015 Honours study compared with the current study (1.9%), they were still under-representative of the 8.8% of Coloureds in the South African population (Steyn & Klopper, 2015:4).

Half of the respondents (50.5%) in the present study were between the ages of 31 to 40 years, with 31.1% between the ages of 41 to 50 years. The mean age of respondents was 41.0, with a

⁹⁶ Please note that the figures cited are derived from reports on population estimates released bi-annually by Statistics South Africa. The 2011 census statistics are not being utilized due to being dated.

⁹⁷ The term "Coloured" was utilised in the study as it is an official racial categorisation used in South Africa and refers to individuals of mixed-race origin (Race and ethnicity...2015). Whilst it is seen by some to be a derogatory categorisation, it is one that is officially used by the government.

standard deviation of 6.9 years. In the 2015 Honours study, the largest proportion of respondents also fell between the ages of 31 to 40 years, however they comprised 35.1% of the total number of respondents. In consonance with the present study, the second largest group of respondents in the 2015 Honours study fell into the category of 41 to 50 years (33.8%) (Steyn & Klopper, 2015:4). The mean age of respondents in the 2015 Honours study was 37.7, with a standard deviation of 8.3 years, thus reflecting that the average age of respondents in the current study was slightly higher compared with the 2015 Honours study.

The majority of respondents (55.9%) in the present study indicated that they were married, whilst a fifth (19.6%) lived together as married partners. The profile of respondents in the 2015 Honours study was comparable, with 53.8% of the Tshwane CSEs indicating that they were married (Steyn & Klopper, 2015:4). More than three-quarters of the respondents (76.7%) in the current study indicated that they have children who are dependent on them, with almost a third (30.1%) signifying that the number of dependent children is two. In the 2015 study among Tshwane CSEs, more respondents (84.2%) indicated that they had dependent children (Steyn & Klopper, 2015:4). A third of the CSEs (33.0%) in the present study indicated that they often spend meaningful time with their families, with over a quarter (27.2%) doing so very often. In the 2015 study, 31.2% of Tshwane CSEs stated that they very often spend meaningful time with family members and almost two-fifths (39.0%) did so often (Steyn & Klopper, 2015:9). These findings indicate that a substantial proportion of respondents have a potential social support system that they might be able to lean on in order to cope with the trauma experienced in their occupational roles. The implication of aforementioned deduction will be discussed in greater detail under briefing and debriefing.

More than half of the respondents (51.0%) in the current study indicated that their highest level of education is Grade 12. A similar proportion of respondents (51.3%) in the 2015 Honours study denoted that Grade 12 was their highest qualification (Steyn & Klopper, 2015:4). The majority of respondents (46.1%) grew up in an urban area, and almost a third (32.4%) grew up in a rural area. While less than half (45.1%) of the respondents grew up in a middle-income household, almost two-thirds (64.7%) indicated that they currently live in a middle-income household. The increase in middle-income households among respondents from childhood to adulthood is indicative of upward mobility potentially due their occupational status. Of concern is that 13.7% of respondents denoted that they presently find themselves in a low-income group. The aforementioned concern is echoed by Kittur (2017:246), who found that financial crisis was a

common risk factor that impacts negatively on the trauma experiences of lower ranking, non-resilient CSEs.

Notably, almost a quarter of respondents (24.3%) indicated that they have been diagnosed with a chronic health problem. In the 2015 Honours study, a similar proportion of Tshwane CSEs (23.4%) indicated having been diagnosed with a chronic health problem (Steyn & Klopper, 2015:14). Due to ethical reasons, respondents were not asked to specify with which type of chronic health problem they have been diagnosed with, however the most common chronic illnesses experienced by South Africans have been established through data collected by medical schemes. Police officials as public servants are members of such medical aid schemes. Although it is acknowledged that dependent-child membership of medical aid schemes significantly skews the prevalence of chronic illnesses in the general population of medical aid members, the data provides an indication of the most prevalent chronic illnesses. Hypertension is the most common chronic illness experienced by 9% of all members of medical aid schemes, while hyperlipidaemia (high cholesterol) affects 4.1%, type 2 diabetes 3.1%, HIV/AIDS 2.5%, and asthma 1.6% (Council for Medical Schemes, 2019:21).

The average number of years that respondents had been working for SAPS was 16.7 years, whilst the average number of years working as a CSE was 12.0 years. The finding indicates that CSEs are likely to have joined SAPS in alternative roles, and then transferred to the role of a CSE at a later stage in their SAPS careers. A significant statistical association was found between having been diagnosed with a chronic health problem and the number of years respondents had been working for SAPS ($r=-0.4$). Those who had been working for SAPS for 26 to 36 years, had a higher probability of being diagnosed with a chronic health problem (52.0%) than those who had been working for SAPS for 5 to 15 years (32.0%) or 16 to 25 years (16.0%). It could logically be argued that respondents who had been working for SAPS for 26 to 36 years, are older, and that chronic health problems, such as hypertension, diabetes, high cholesterol, and pulmonary disease, increase with age amongst the general South African population (Statistics South Africa, 2016:264). However, a significant statistical association between having been diagnosed with a chronic health condition and number of years working as a CSE in particular, was also identified ($r=-0.4$). Those who had been working as a CSE for 12 to 21 years had a higher probability of being diagnosed with a chronic health problem (44.0%) than those who had been working as CSEs for 2 to 11 years (28.0%) or 22 to 32 years (28.0%). The anomaly of respondents who have been working as CSEs for 12 to 21 years, having a higher probability of being diagnosed with a chronic health condition, than those who have been working as CSEs for 22 to 32 years, cannot

be explained by the fact that chronic health conditions increase with age. What is worth mentioning is that studies note concerning levels of physical ailments, such as digestive problems, headaches, backaches, high blood pressure, circulatory diseases, loss of appetite; and tachycardia (a fast heart rate), are experienced by workers in trauma-inducing work contexts (Andersen et al., 2015:2; Andersen & Papazoglou, 2014:185; Ashley & Cross, 2004:26; Clark et al., 2015:939; Huddleston et. al, 2007:200; Jorgensen & Rothmann, 2008:11; Norris et al., 2003:654; Schnurr & Green, 2004:18; Warren, 2015:24).

Slightly more than a fifth of respondents (21.4%) in the present study have been diagnosed with a mental health condition. The 2015 study mirrored this with 20.5% of Tshwane CSEs who reported diagnosed mental health conditions (Steyn & Klopper, 2015:14). Similar to chronic health conditions, respondents were not requested to specify with which mental health condition they have been diagnosed. Within South Africa, the lifetime prevalence for a mental disorder is calculated at 30.3% for any disorder. Prevalence of two or more disorders is calculated at 11.2%, and three or more lifetime disorders are experienced by 3.5% of the population. The most commonly experienced mental disorders are anxiety disorders, which afflict 15.8% of individuals, substance use disorders are experienced by 13.3% of individuals, and mood disorders are experienced by 9.8% of people (Herman et al., 2009:341). Therefore, it can be stated that the respondents in the present study have a lower rate of self-reported diagnosed mental health conditions than the general South African population.

Similar to diagnosed chronic health conditions, the number of years working as a CSE was found to be significantly statistically associated to diagnosis of a mental health condition ($r=-0.3$). Respondents who had been working as CSEs for 2 to 11 years, were most likely to be diagnosed with a mental health condition (45.5%), in comparison with those working as CSEs for 12 to 21 years (31.8%) or 22 to 32 years (22.7%). The profession of policing has been extensively linked to adverse mental health outcomes (Åkerblom et al., 2017:257; Andersen & Papazoglou, 2014:185; Ashley & Cross, 2004:25; Huddleston et. al, 2007:200; Jorgensen & Rothmann, 2008:11; Steyn, 2009:139; Surgenor et al., 2020:2; Wills, 2013:3). Although CSEs were not asked to specify their mental health condition, the finding is in line with research evidence that has found trauma to be higher in police officials with shorter careers, with some studies noting that the attendance of a first traumatic crime scene remains imprinted in the memories of police officials and CSEs (Green, 2016:29; Henry, 2004:111 Kang & Lee, 2018:42; Yang-Sook et al., 2003:139). Further, desensitisation over the course of a long career in police work, whereby repeatedly performing psychologically distressing tasks can in fact decrease anxiety, has also been

confirmed in research (Henry, 2004:23; Papazoglou & Manzella, 2013:2). However, it should be noted that findings in this respect have been inconsistent, with some studies finding that career length does not affect stress levels at all (Manzella & Papazoglou, 2014:105; Oh & Lim, 2006:102), while other studies have found that the longer an individual works in a CSE-type context, the more likely they are to be stressed (Allen, 2005:16-17; Boshoff & Strydom, 2015:26; Nolen-Hoeksema, 2011:471; Van der Meer et al., 2017:87; Violanti et al., 2018:277).

A further significant statistical association was that, of the respondents who have been diagnosed with a mental health problem, two-fifths (40.9%) have also been diagnosed with a chronic health problem ($r=-0.2$). A systemic review of research evidence confirms comorbidity between mental disorders and chronic health conditions such as diabetes, obesity, cancer, heart disease, and pulmonary diseases (Daré et al., 2019:9). Moreover, significant statistical associations were identified regarding CSEs taking medication daily and being diagnosed with a chronic health problem. More than a fifth of CSEs (21.9%) indicated that they take medication daily. Of that number, the vast majority (81.0%) indicated that they have been diagnosed with a chronic health condition ($r=-0.6$). Further, of the respondents who specified that they have been diagnosed with a mental health problem, more than a third (36.4%) also indicated that they take medication daily ($r=-0.3$). Significant statistical associations between chronic health as well as mental health conditions, and the taking of medication daily, is not surprising, due to the fact that people with chronic health and mental conditions would logically potentially need to take medication to treat their diagnosed conditions.

Almost all the respondents in the current study (95.2%) indicated that they are involved in religion to some extent, ranging from being “very religious” to “not that religious”, with only 4.8% indicating that they are “not religious at all”. Almost two-thirds of women (63.0%) indicated being “very religious”, in comparison with just more than one-third of men (36.8%). Congruent with the TMT, one of the theoretical perspectives chosen for the present study, an individual’s cultural worldview provides a framework of understanding, which assists a person with organising their experiences and making sense of human existence (Maxwell, 2017:22). Religious beliefs are a component of individuals’ cultural worldviews and might provide them with meaning, purpose, and structure in their lives (Pyszczynski & Kesebir, 2011:4). Mortality salience refers to the awareness that death is inevitable, and CSEs are reminded of this inescapable reality on almost a daily basis (Boshoff & Strydom, 2015:25). Religion may allow protection against the anxiety that stems from mortality salience (Maxwell, 2017:17).

In summary, the majority of the respondents were Black African males, who have life partners and dependent children, mostly grew up in urban areas, find themselves currently in the middle-income group, are between the ages of 31-40 years old, are religious to at least some degree, and have been working at SAPS for 16.7 years, and as a CSE for 12.0 years.

The Cronbach's alpha calculations for the study were generally strong, with findings that most of the scales and questions used, were internally consistent. The only scale that was found to be internally inconsistent, was the scale employed to ascertain substance use. For a measurement to be deemed internally consistent, an alpha level of 0.70 or higher is required (Mohajan, 2017:59; Taber, 2018:1278). The substance use scale delivered a Cronbach's alpha score of 0.356, which is well below the required level for internal consistency. The researcher holds the view that the questions regarding substance use were clear in terms of the frequency with which substances are used. Therefore, it is not apparent why the alpha score is low. A possible explanation could be that, although all 103 respondents answered the question related to alcohol use, six CSEs did not respond to the question about cigarettes, seven did not respond to the question about prescribed medication, and eight did not respond to the question about recreational drug use. The missing responses potentially indicate a reluctance to provide information truthfully. Additionally, although anonymity was guaranteed, respondents potentially might not have been willing to provide information that might have legal consequences, such as recreational drug use. Moreover, research evidence confirms that substance use is often underreported in self-report studies (Johnson, 2014:8; Murphy et al., 2010:496; Vellios & Van Walbeek, 2018:33).

Regardless, the vast majority of CSEs (95.8%) indicated that they never use recreational drugs, while 45.8% indicated that they never make use of prescription medication. Almost three-quarters of the respondents (73.2%) indicated that they never smoke cigarettes, with more than a quarter of respondents (26.8%) indicating that they do smoke cigarettes, ranging from daily to only a few times a year. Within the general South African population, 17.6% of adults smoke tobacco (Reddy et al., 2015:649). Of the respondents who said that they smoke, men (33.3%) were significantly more likely to indicate daily smoking than women (8.0%) ($r=-0.2$). Research evidence attests that women tend to smoke fewer cigarettes than men (Allen et al., 2016:1408). Within South Africa, prevalence of smoking in general for men is 29.2%, while prevalence for women is 7.3% (Reddy et al., 2015:649). It is therefore, apparent that the CSEs in the present study smoke more than the general South African population. Additionally, CSEs who indicated that they have been diagnosed with a mental health condition were significantly more likely to indicate that they smoke daily (36.4%), in comparison with CSEs who indicated that they have not been diagnosed with a

mental health condition (14.7%) ($r=-0.2$). Research evidence consistently indicates that individuals who have been diagnosed with a mental health condition, are more likely to smoke cigarettes than individuals who have not been diagnosed with a mental health condition (Lawrence et al., 2009:4-8; Minichino et al., 2013:4791; National Institute on Drug Abuse, 2020:30).

Few CSEs (1.9%) indicated that they consume alcohol daily. Almost one-third of respondents (29.1%) indicated that they consume alcohol a few times per month, and 14.6% indicated that they consume alcohol a few times per week. Almost a quarter of respondents (23.3%) indicated that they consume alcohol a few times per year, with almost one-third of respondents (31.1%) indicating that they never consume alcohol. In the 2015 Honours study, 5.4% of Tshwane CSEs confirmed drinking alcohol daily, with 21.6% drinking alcohol a few times per week. Under half of respondents (43.2%) indicated that they “seldom” drink, with 29.7% of respondents indicating that they never drink alcohol (Steyn & Klopper, 2015:5). The aforementioned illustrate that more respondents in the 2015 study among Tshwane CSEs confirmed drinking alcohol, and more frequently as well, than the Southern Gauteng CSEs in the current study. The findings of the present study are not consistent with research evidence, which indicates that police officials tend to report high alcohol usage (Green, 2016:28; Papazoglou & Manzella, 2013:2; Pietrzak et al., 2012:837). The culture of policing has been shown to encourage alcohol consumption, which has been cited by police officials as a coping method and used in order to “fit in” (Boshoff & Strydom, 2015:27; Lindsay & Shelley, 2009:91; Ménard & Arter, 2013:49). Within the South African context, Vellios and Van Walbeek (2018:33) caution that alcohol use is often underreported in self-report studies, but indicate that 2.8% of men and 6.4% of women, are classified as binge drinkers. Binge drinking in the study is defined as more than four drinks for women and more than five drinks for men on one occasion. The researcher acknowledges that respondents were not asked how much alcohol they consume when they drink. Therefore, the possibility exists that the respondents may consume excessive amounts of alcohol, but not frequently.

6.3 Tasks and responsibilities of CSEs

The tasks and responsibilities of the CSEs were established through questions in Section B of the questionnaire. LCRCs in South Africa, where CSEs are employed, function with the intent to apply forensic techniques to recover physical information from crime scenes and manage criminal records (Rothmann & Jorgensen, 2007:74).

The official core responsibilities of a CSE are as follows (SAPS, 2017):

- Attendance of all crimes reported.
- Investigation and maximising the collection and packaging of information at crime scenes.
- Examination of crime scenes with specialised techniques.
- Attendance of crime scenes with the purpose of reconstruction of events.
- Investigation of suspect linkages on databases.
- Attendance of crime scenes beyond the South African borders.
- Presentation of evidence in court.

The aforementioned implies that CSEs are required to collect all relevant information from a crime scene, which is inclusive of, but not limited to, collecting physical information, sampling bodily fluids, taking fingerprints, taking photographs, and compiling photograph albums (Omar, 2008:30).

Nearly all the respondents (99.0%) indicated that they attend crime scenes in general, with only one respondent (1.0%) denoting attendance of autopsies only. A total of 44.7% of the CSEs indicated that they attend crime scenes in general nine or more times per week. In the 2015 study, 16.2% of Tshwane CSEs indicated that they attend crime scenes nine or more times per week, which is notably different to the current study (Steyn & Klopper, 2015:6). Furthermore, in the current study, 28.2% of CSEs confirmed that they attend scenes where a person has died, three to four times per week, with 17.5% attending such scenes nine or more times per week. Violent death scenes are most often attended three to four times per week (19.4%). In the 2015 study, more than half of Tshwane CSEs (53.9%) attended violent crime scenes one to two times per week (Steyn & Klopper, 2015:6). Due to the 2015 study not providing an option for attending scenes less than one to two times per week, the lower numbers unfortunately cannot be compared. An explanation can possibly be found for the difference in frequent attendance of crime scenes, and violent crime scenes in particular in the current study juxtaposed with the 2015 study, by comparing murder rates for Tshwane and Johannesburg. Tshwane statistics have indicated a murder rate of 17 per 100 000 of the population compared with Johannesburg, which has recorded 31 per 100 000 (Urban Safety Reference Group, 2019:58). The current study among Southern Gauteng CSEs was therefore conducted in a general area with almost double the murder rate than the 2015 study among Tshwane CSEs.

The respondents in the current study indicated that they do not attend scenes with deceased fetuses often, with the majority (32.0%) attending only once every few months, and the second

largest proportion (23.3%) attending such scenes one to two times per month. A similar pattern emerged for attendance of scenes involving deceased children, with 37.9% of CSEs attending such scenes once every few months, and 23.3% attending scenes involving deceased children one to two times per month. Scenes involving deceased adults were the most commonly experienced death scenes, with a fifth of CSEs (20.4%) signifying that they attend such scenes three to four times per week. Scenes involving dismembered, disfigured, and decomposed bodies were attended less often overall, but a similar pattern for the three types of scenes was noted. Scenes involving dismembered bodies were attended once every few months by 44.9% of CSEs, and one to two times per month by 23.5% of the respondents. Scenes involving disfigured bodies were attended once every few months by almost half of CSEs (49.0%), and one to two times per month by a fifth of respondents (20.0%). Lastly, scenes involving decomposed bodies were attended once every few months by 50.5% of the CSEs, and one to two times per month by 16.5% of the respondents. Scenes involving muti murder were the type of scene most infrequently attended, with 36.3% of CSEs indicating that they never attend muti murder scenes, and 47.1% of respondents denoting that they attend such scenes once every few months. Three in ten respondents (31.4%) indicated that they attend scenes where victims are alive and on scene, only once every few months. A fifth of respondents (20.4%) reported that they attend scenes where bystanders or relatives are on scene once every few months, with 16.5% indicating that they attend such scenes three to four times per week.

Of the 103 respondents, more than half (54.4%) signified that they attend autopsies. Of the CSEs who attend autopsies, the majority (91.1%) attend several autopsies per month. The 47 respondents who indicated that they do not attend autopsies, provided reasons for not doing so. The most common reason stated by 45.7% of the respondents was that attendance of autopsies is not in their job description, whilst two-fifths of respondents (39.1%) do not feel comfortable attending autopsies. Not having time to attend autopsies was stated by 15.2% of the respondents. Conversely, three-quarters of respondents (76.9%) in the 2015 study among Tshwane CSEs, indicated that they attended autopsies, with 83.9% attending autopsies a few times per month. Half of the respondents (50.0%) who indicated that they did not attend autopsies, stated that such attendance is not in their job description, whilst 41.7% specified that they did not feel comfortable attending, and 8.3% indicated that they did not have the time to attend autopsies (Steyn & Klopper, 2015:6).

In the current study, nearly half of the CSEs (49.1) who attend autopsies for a victim who died violently, do so once every few months. Three-fifths of CSEs (59.3%) indicated that they never

attend autopsies for deceased fetuses. Autopsies involving deceased children are never attended by 39.6% of the CSEs, whilst 30.2% attend autopsies for children once every few months. All the CSEs (100%) who attend autopsies, attend the procedure for adults, with half (50.9%) stipulating they attend adult autopsies once every few months. Attendance of autopsies for dismembered, disfigured, and decomposed bodies revealed a similar pattern of responses. Less than half of CSEs (44.4%) never attend autopsies for dismembered bodies, with 35.2% indicating they attend these autopsies once every few months. In line with the attendance of autopsies for dismembered bodies, 45.3% of respondents indicated that they never attend autopsies for disfigured bodies, whilst 37.7% of CSEs reported that they attend autopsies for disfigured bodies only once every few months. Similarly, 43.4% of CSEs never attend autopsies for decomposed bodies, with 39.6% attending autopsies for decomposed bodies once every few months. More than half of the respondents (55.6%) stated that they never attend autopsies of victims of muti murder, with 37.0% reporting that they attend these autopsies once every few months.

Three-quarters of the CSEs (76.5%) indicated that they are “always” required to take photographs of the crime scenes which they attend. Only 3.9% indicated that they are never required to take photographs. In the 2015 Honours study, 84.8% of respondents were required to take photographs of crime scenes, although the frequency of photography was not requested (Steyn & Klopper, 2015:6). In the current study, four in five respondents (82.4%) indicated that they are “always” required to compile photo albums of crime scenes, with only 2.9% indicating that they are never required to do so. The latter question was not included in the 2015 study among Tshwane CSEs.

In summary, the majority of Southern Gauteng CSEs attend a variety of crime scenes as often as nine or more times per week. They are frequently required to both take photographs of the scenes, and compile photo albums. Further, over half of the CSEs also attend autopsies for various types of deceased with varying regularity, with such procedures on adults being attended by most of the respondents at least once every few months.

6.4 Trauma levels of crime scene examiners in relation to traumatic crime scenes and autopsies

Police officials have been found to carry out some of the most stressful work worldwide due to the trauma that they are exposed to (Purba & Demou, 2019:1; Warren, 2015:45). Whilst other professions such as correctional officials and bank tellers may be exposed to trauma, incidents

tend to be confined to one type and transpire with less frequency compared with the trauma exposure of police officials (Brooks et al., 2019:2; Huddleston et al., 2007:199). CSEs in South Africa in particular are exposed to a high number of traumatic incidents due to the high violent crime rate (Kittur, 2017:2). South Africa has one of the highest levels of violence worldwide, with the murder rate at 35.8 murders per 100 000 people per year, or 58.4 murders per day (Factsheet: South Africa's...2020). The number of contact crimes, which include murder, sexual offences, attempted murder, assault with the intent to inflict grievous bodily harm, common assault, common robbery, and robbery with aggravating circumstances, have increased by 0.7% in the past year (SAPS, 2020a:5). CSEs are therefore required to attend scenes of violence and trauma at higher rates than ever before. Gauteng in particular has a rising violent crime problem, with a 1.6% increase in contact crimes in the past year (SAPS, 2020a:13). When exposed to trauma, individuals are at risk of developing psychiatric trauma and symptoms, although such development is not a foregone outcome (Allen, 2005:23; O'Donnell et al., 2017:209). Various psychiatric disorders are linked to trauma, including mood, anxiety, substance use, and adjustment disorders, as well as PTSD (Ashley & Cross, 2004:25; Green, 2016:1; O'Donnell, 2017:209; Subramaney et al., 2012:176). The development of a psychiatric disorder is related to the level of risk that an individual experiences, which is dependent on their vulnerability, as well as the severity and frequency of the trauma (Allen, 2005:23; O'Donnell et al., 2017:209).

The SASHS has found that PTSD amongst the general South African population has a prevalence of 11.1% (Atwoli et al., 2013:1; Shisana et al., 2014:280). The circumstances required for a PTSD diagnosis seem to be omnipresent in CSE work. First, individuals need to have been exposed to a traumatic event where they experienced, witnessed, or were confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others. Second, the individual need to have a response involving intense fear, helplessness, or horror (DSM-IV, 1994). CSEs are exposed often to death and serious injury due to the very nature of their work, and a natural response may involve fear, helplessness, or horror (Boshoff & Strydom, 2015:25; Clark et al., 2015:940; Da Silva et al., 2014:7; Fyhn et al., 2016:262; Kittur, 2017:261-266; Nho & Kim, 2017:40; Steyn & Klopper, 2015:6; Yang-Sook et al., 2013:139).

The three categories of PTSD symptoms, namely intrusion, avoidance, and hyperarousal, were measured in subscales using the IES-R. Respondents were presented various difficulties associated with each PTSD symptom category and had to respond how often they experienced those difficulties over the past seven days in direct relation to their work as CSEs.

For intrusion, the traumatic event is persistently re-experienced in one or more of the following ways: recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions; recurrent distressing dreams of the event; acting or feeling as if the traumatic event were recurring; intense psychological distress at exposure to cues that symbolise or resemble an aspect of the traumatic event; and physiological reactivity on exposure to cues that symbolise or resemble an aspect of the traumatic event. Prior research has indicated that police workers experience many of the listed intrusion symptoms (Andersen et al., 2015:1). In the current study, nearly a fifth of respondents (18.2%) were found to experience a high amount of intrusive symptoms, with a quarter of respondents (26.3%) experiencing a medium amount. Respondents who had not been diagnosed with a mental health condition were found to be most likely to score low on the intrusion subscale (61.5%), whilst CSEs who had been diagnosed with a mental health condition were found to be most likely to score medium on the intrusion subscale (38.1%) ($r=-0.3$).

Within the intrusion subscale, a third of respondents (28.2%) indicated that they are not at all bothered by pictures about it popping into their minds. In the 2015 study among Tshwane CSEs, more respondents (39.2%) reported this (Steyn & Klopper, 2015:11). A tenth of respondents (9.8%) in the current study indicated that they experience acting or feeling as if they were back at that time “moderately”, whilst under half of respondents (46.1%) denoted that they are not bothered by this symptom at all. In the 2015 study, more Tshwane CSEs (64.6%) indicated that they do not feel this way (Steyn & Klopper, 2015:11). In the current study, a tenth of respondents (12.6%) indicated that they have dreams about it “quite a bit”, whilst half of respondents (50.5%) indicated that they are not bothered by this symptom at all. In comparison, more Tshwane CSEs (67.1%) indicated that they do not experience dreams about crime scenes (Steyn & Klopper, 2015:11).

Significant statistical associations were found within the intrusion subscale. Male respondents were found to be more likely to indicate that they had been distressed by intrusive thoughts “not at all/a little bit” (64.5%) than female respondents (44.4%) ($r=-0.2$). CSEs diagnosed with a mental health condition were more likely to indicate that they were distressed or bothered “quite a bit/extremely” in relation to “any reminders brought back feelings about it” (54.5%) than respondents who had not been diagnosed with a mental health condition (25.0%) ($r=-0.3$). In addition, respondents diagnosed with a mental health condition were also more likely to denote experiencing “other things kept making me think about it” “quite a bit/extremely” (45.5%) in comparison with respondents who had not been diagnosed with a mental health condition (22.2%)

($r=-0.2$). Respondents who had been diagnosed with a mental health condition were additionally more likely to report “quite a bit/extremely” in response to “I thought about it when I didn’t mean to” (36.4%) than respondents who had not been diagnosed with a mental health condition (21.0%) ($r=-0.3$). Moreover, CSEs diagnosed with a mental health condition were also more likely to respond with “quite a bit/extremely” in relation to “pictures about it popped into my mind” (63.6%) than respondents who had not been diagnosed with a mental health condition (28.4%) ($r=-0.3$). Furthermore, respondents diagnosed with a mental health condition were more likely to respond with “quite a bit/extremely” in relation to “I had waves of strong feelings about it” (38.1%) than respondents not diagnosed with a mental health conditions (16.5%) ($r=-0.2$). The final significant statistical association found in the intrusion subscale was that individuals who had been diagnosed with a mental health condition were more likely to report being bothered by experiencing dreams about their trauma “quite a bit/extremely” (36.4%) than CSEs who had not been diagnosed with a mental health condition (16.0%) ($r=-0.3$).

For avoidance, persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness is required, as indicated by three or more of the following: efforts to avoid thoughts, feelings, or conversations associated with the trauma; efforts to avoid activities, places, or people that arouse recollections of the trauma; inability to recall an important aspect of the trauma; markedly diminished interest or participation in significant activities; feelings of detachment or estrangement from others; restricted range of affect; and sense of a foreshortened future. Persistent avoidance of stimuli has been documented in the South African policing context (Boshoff & Strydom, 2015:26). In the current study, a total of 17.2% of respondents experienced a high amount of avoidance symptoms, with over a third (35.4%) experiencing a medium amount. CSEs who had not been diagnosed with a mental health condition were most likely to score low on the avoidance subscale (54.5%), whilst respondents who had been diagnosed with a mental health condition were found to be most likely to score medium on the avoidance subscale (63.6%) ($r=-0.2$). Almost a fifth of respondents (17.8%) indicated that they were “extremely” bothered by the difficulty of “I tried not to think about it”. A fifth of respondents (19.4%) denoted that they were bothered by their feelings being numb “a little bit”, and a further fifth (19.6%) indicated that they try to remove incidents from their memory “quite a bit”.

Significant statistical associations were found for mental health within the avoidance subscale too. CSEs who had been diagnosed with a mental health condition were more likely to answer “quite a bit/extremely” in relation to “I tried not to think about it” (45.5%) than respondents who had not been diagnosed with a mental health condition (30.4%) ($r=-0.2$). Respondents who had

been diagnosed with a mental health condition were also more likely to indicate “quite a bit/extremely” in regard to “I was aware that I still had a lot of feelings about it, but didn’t want to deal with them” (45.5%) in comparison with respondents who had not been diagnosed with a mental health condition (29.6%) ($r=-0.4$). Additionally, respondents who had been diagnosed with a mental health condition were more likely to answer “quite a bit/extremely” in response to “I tried to remove it from my memory” (63.6%) than respondents who had not been diagnosed with a mental health condition (28.8%) ($r=-0.4$). The last significant statistical association in the avoidance subscale is that CSEs diagnosed with a mental health condition were more likely to respond with “quite a bit/extremely” in relation to “I tried not to talk about it” (50.0%) than respondents who had not been diagnosed with a mental health condition (28.4%) ($r=-0.4$).

For hyperarousal, two or more of the following needs to be a persistent symptom: difficulty falling or staying asleep; irritability or outbursts of anger; difficulty concentrating; hypervigilance; exaggerated startle response. Hyperarousal symptoms have also been documented in police officials (Makgale, 2014:1). In the present study, a total of 15.2% of CSEs experienced a high amount of hyperarousal symptoms, with a third (32.3%) of respondents experiencing a medium amount. Respondents who had not been diagnosed with a mental health condition were most likely to score low on the hyperarousal subscale (61.0%), whilst CSEs who had been diagnosed with a mental health condition were most likely to score medium on the hyperarousal subscale (50.0%) ($r=-0.3$). Under one fifth of respondents (17.6%) indicated that they felt irritable and angry “quite a bit”, whilst one third of respondents (33.3%) answered “not at all”. In the 2015 study, more Tshwane CSEs (58.2%) indicated they do not experience feeling irritable and angry (Steyn & Kloppe, 2015:11). A tenth of respondents (11.0%) in the current study indicated “extremely” in response to “I had trouble concentrating”. Two fifths of CSEs (41.0%) indicated that they do not experience this at all. In the 2015 study, more Tshwane CSEs (60.8%) denoted that they did not experience difficulties concentrating. In the current study, a tenth of respondents (10.7%) indicated being extremely bothered by reminders causing physical reactions, although over half of respondents (52.4%) denoted not experiencing the symptom at all. In comparison, more Tshwane CSEs (67.1%) in the 2015 study, confirmed that they do not experience bodily reactions to reminders (Steyn & Kloppe, 2015:11).

Significant statistical associations with mental health were also found in the hyperarousal subscale. Respondents who had been diagnosed with a mental health condition were more likely to report being bothered by feeling irritable and angry “quite a bit/extremely” (63.6%) than respondents who had not been diagnosed with a mental health conditions (25.0%)

($r=-0.3$). CSEs who had been diagnosed with a mental health condition were more likely to report experiencing “I was jumpy and easily startled” “quite a bit/extremely” (27.3%) than respondents who had not been diagnosed with a mental health condition (18.5%) ($r=-0.3$). Respondents who had been diagnosed with a mental health condition were also more likely to respond with “quite a bit/extremely” to “I had trouble concentrating” (36.4%) than CSEs who had not been diagnosed with a mental health condition (23.1%) ($r=-0.3$). Furthermore, CSEs who had been diagnosed with a mental health condition were more likely to respond with “quite a bit/extremely” in regard to “reminders of it caused me to have physical reactions” (36.4%) than respondents who had not been diagnosed with a mental health condition (12.3%) ($r=-0.3$). The final significant statistical association within the hyperarousal subscale is that respondents who have been diagnosed with a mental health condition were more likely to respond to “I felt watchful and on-guard” with “quite a bit/extremely” (50.0%) than respondents who had not been diagnosed with a mental health condition (24.7%) ($r=-0.3$).

It is noteworthy that the Tshwane CSEs in the 2015 study overall reported feeling less bothered by symptomology associated with intrusion, avoidance, and hyperarousal. The researcher holds the view that a possible explanation for higher overall PTSD symptomology among Southern Gauteng CSEs on the intrusion, avoidance, and hyperarousal subscales, may be linked to the murder rate in Tshwane being almost 50% lower than the geographical area within the present study was conducted (Urban Safety Reference Group, 2019:58). Research evidence confirms a correlation between amount of trauma and subsequent stress. Named the “dose-response relationship”, the higher the “dose” of trauma to which an individual is exposed, the more potentially damaging its effects are. The greater a stressor, the higher the likelihood that the person experiencing the stressor will develop PTSD. However, the “dosage” of trauma can refer to both how traumatic each event in itself is, and the frequency of exposures to traumatic events (Allen, 2005:16-17). In the preceding discussion it is further noticeable that significant statistical associations were identified between mental health and all three subscales (i.e. intrusion, avoidance, and hyperarousal). Southern Gauteng CSEs who had not been diagnosed with a mental health condition were discovered on all three subscales to be most likely to score low, whilst those who had been diagnosed with a mental health condition were most likely to score medium. Additionally, many items/questions within the three subscales were found to have significant statistical associations with mental health. On those items/questions that were found to be statistically significant, respondents diagnosed with a mental health condition were always more likely to select “quite a bit/extremely” than CSEs not diagnosed with a mental health condition. The aforementioned associations are supported in research evidence. PTSD has been

shown to have high comorbidity with other mental health conditions, such as depression and anxiety disorders (Van der Meer et al., 2017:87). Due to ethical reasons the CSEs were not required to disclose with which mental health condition they have been diagnosed. However, it is clear that Southern Gauteng CSEs diagnosed with a mental health condition are more likely to experience symptoms of PTSD.

The last criterion for PTSD diagnosis is that the disturbance should cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. Police officials have been shown to be clinically impaired in their occupational functioning, evidenced by the amount of sick leave, incapacity leave, and medical boarding approved by SAPS (Sunder, 2019:22). SAPS has released statistics confirming that in 2019 a total of 160 857 employees took 1 637 737 sick days, which cost an estimate of R2.1 billion (SAPS, 2020b:337). Additionally, the number of sick days taken increased from 2018 (1 526 449 days) to 2019 (1 637 737) (SAPS, 2020b:339). Although it was neither specified which days were for physical ill health and which for psychological illness, nor the causative factor for the ill health, experiencing trauma has been linked to both physical and psychological ailments (Andersen & Papazoglou, 2014:185; Ashley & Cross, 2004:24; Huddleston et. al, 2007:200; Manzella & Papazoglou, 2014:105; Norris et al., 2003:654; Sibisi, 2019:20; Sunder, 2019:17; Wills, 2013:3; Wolter et al., 2018:45). SAPS has also confirmed that in the year 2019, 2 886 police officials applied for short term temporary incapacity leave, with 594 members applying for long term incapacity leave. A total of 2 204 cases of incapacity leave were approved, 797 of which were psychologically motivated (SAPS, 2020b:339). In addition, there are numerous examples of SAPS members being granted permanent disability leave in direct relation to PTSD, which indicates the devastating consequences that experiencing trauma may have on SAPS members (Adams v PSCBC, 2015; Du Plessis v PSCBC and Others, 2015; Eicker v PSCBC and Others, 2018; Liebenberg v Mbekwa and Others, 2014; S v Minister of SAPS, 2017; Spies v National Commissioner of SAPS and Others, 2008).

The total scores for the IES-R were calculated for each respondent who completed all the IES-R items/questions. A respondent scores between 0 to 88 on the IES-R. A total score between 0 to 23 indicates that a person is at no risk of receiving a PTSD diagnosis, whilst a score of 24 to 32 denotes that there is reason for clinical concern, with respondents in this bracket not having clinically diagnosable PTSD, but being categorised as having partial PTSD or at least PTSD symptoms. A score of 33 to 38 indicates a probable diagnosis of PTSD, with scores of 39 or more signifying that the individual is in a state where PTSD symptoms are severe enough to

suppress immune system functioning. In the current study, just under half of respondents (46.2%) fall into the 0 to 23 scoring bracket, indicating no cause for concern. A total of 14.0% of CSEs fall into the 24 to 32 bracket, with only 3.2% scoring in the 33 to 38 bracket. Of grave concern is that over a third of CSEs (36.6%) fall into the 39 plus bracket, indicating that a diagnosis of PTSD is probable, but that their symptoms are severe enough to suppress immune system functioning. The estimates of probable PTSD among the Southern Gauteng CSEs who took part in the study, is far above the average prevalence of PTSD amongst the general South African population, which is 11.1% (Atwoli et al., 2013:1; Shisana et al., 2014:280).

Moreover, the average IES-R scores calculated for the respondents in the present study are higher than what was found in international policing studies. For example, a study of police officials in the USA that employed the IES-R found that 10% of respondents had scores indicating PTSD of clinical concern, with only 17% having scores signifying a probability of receiving a PTSD diagnosis (Chopko & Swartz, 2012:87). An explanation for this difference could be that South African CSEs are required to attend traumatic scenes at a greater frequency in comparison with the USA. The murder rate for South Africa in 2017 was 28.6 homicides per 100 000 people, whilst the murder rate in the USA in 2017 was significantly lower at 6.1 per 100 000 (Roser & Ritchie, 2019).

A local study conducted in Ekurhuleni with metropolitan police officials also utilised the IES-R. The average score for the 36 respondents was 25.9 (Van Staden, 2019:8). The average IES-R score of CSEs in the current study was higher, being calculated as 30.4. A possible explanation could be that metropolitan police are not exposed to traumatic crime scenes in a similar manner compared with CSEs. CSEs are required to physically draw close to the injured or deceased victim and the crime scene information surrounding them, in order to accurately capture the information that will be required for trial (Fyhn et al., 2016:261). In addition, CSEs are often required to testify in court as to what they witnessed at the scene of the crime, as well as provide explanations of any photographs taken. Therefore, as opposed to the fleeting exposure of metropolitan police officials to traumatic crime scenes, CSEs are required to repeatedly examine their work to guarantee that all the information has been recorded accurately and clearly. Traumatisation therefore does not end at the crime scene itself but is perpetuated when reviewing the evidence post-scene and during court trials where they have to recount their experiences (Jorgensen & Rothmann, 2008:2). In contrast, a local study of 22 employees of the SAPS National Intervention Unit, had an average IES-R score of 39.5 (Van den Heever, 2019:76-77), which is higher than the finding in the current study. A possible explanation for the much

higher average IES-R score among members of the National Intervention Unit is that their role is quite dissimilar to CSEs. Members of this unit are deployed to render services during developing high-risk violent crime situations, such as cash-in-transit heists and the execution of dangerous arrest warrants (SAPS, [sa]). They are exposed to situations where they face immediate, objective threats that might cause them physical harm, whereas CSEs are faced with second hand, subjective threats in working intimately with victims of serious crimes and the consequences of violence while performing their professional duties (Fyhn et al., 2016:261).

6.5 Coping strategies utilised by crime scene examiners

Coping strategies are psychological and behavioural efforts that an individual makes in order to reduce, minimise, master, or tolerate stressful events (Yusoff et al., 2010:41). In the study, the Brief COPE Inventory was utilised to measure coping in CSEs. Coping was divided into avoidant coping strategies, approach coping strategies, and neutral coping strategies.

6.5.1 Avoidant coping strategies

Avoidant coping strategies are often used by individuals in order to avoid addressing the stressful event that they have experienced. As such, avoidant coping strategies may be considered to be a potential psychological risk factor for additional adverse responses to stress and trauma (Al-Dubai et al., 2011:58; Dubow & Rubinlicht, 2011:111). In the Brief COPE Inventory, avoidant coping strategies consist of self-distraction, denial, behavioural disengagement, venting, self-blame, and substance use. The majority of respondents (64.0%) were found to not make use of avoidant coping strategies, with just over a third of CSEs (36.0%) utilising this coping style. As individuals who make use of such strategies have been found to be more likely to experience PTSD (Nolen-Hoeksema, 2011:471), it is encouraging to note that the majority of CSEs do not make use of avoidant coping strategies. Maladaptive coping strategies have also been linked to both relationship and health difficulties (Arble et al., 2017:2; Mushwana et al., 2019:2). Despite the study indicating that overall avoidant coping strategies were not used often, the second most used single coping strategy in the whole scale was self-distraction, which is an avoidant reaction to trauma, with a mean score of 4.5.

In the current study, 66.0% of participants indicated that they never make use of alcohol/drugs as a coping strategy. In the 2015 study, 77.2% – 81.0% of Tshwane CSEs indicated that they never make use of substances as a coping strategy (Steyn & Klopper, 2015:11). Both studies indicate that substance use is not common, which is inconsistent with what research evidence suggests. A number of studies confirm that alcohol use in particular is common amongst police workers

(Ballenger et al., 2011:27; Green, 2016:28; Ménard & Arter, 2013:38; Ménard & Arter, 2014:308; Papazoglou & Manzella, 2013:2; Pietrzak et al., 2012:837; Weir, et al., 2012:73). However, the findings of the current, and 2015 study, are not unique, with two local studies which concur that South African police officials report low rates of alcohol and narcotics use (Mushwana et al., 2019:6; Paulsen, 2008:47).

In the current study, 68.5% of respondents indicated that they never use denial as a coping strategy. The 2015 study among Tshwane CSEs revealed a similar range of respondents (58.2% – 69.6%) not making use of denial as a coping strategy (Steyn & Klopper, 2015:12).

Significant statistical associations were found within avoidant coping with regard to gender. Female respondents were found to be more likely to turn to work or other activities “frequently” (29.6%) compared to male respondents (17.1%) ($r=-0.2$). Of the respondents who indicated “not at all” in relation to giving up trying to deal with their stress and trauma, the majority were men (82.3%), with women making up the minority (17.7%) ($r=-0.2$). Male respondents were also more likely to “not at all” engage in “refusing to believe that it has happened” (73.7%) in comparison to female respondents (55.6%) ($r=-0.2$). In addition, male respondents were more likely to indicate “not at all” to giving up on attempts to cope (85.5%) than women (14.5%) ($r=-0.3$). Lastly, the male CSEs were most likely to indicate “not at all” in relation to “doing something to think about it less” (85.0%) than female CSEs (15.0%) ($r=-0.2$). These significant statistical associations indicate that women were more likely than men to engage in avoidant coping strategies. This finding is congruent with several studies, which have noted that women have historically been found to utilise avoidant coping styles more than men. In contrast, men are more likely to employ problem-focussed coping strategies, which consist of active coping and planning (Matud, 2004:1408; Olff et al., 2007:196; Van der Meer et al., 2017:87).

Significant statistical associations were also identified in regard to diagnosed mental health conditions and avoidant coping strategies. Of the CSEs who have been diagnosed with mental health conditions, the greater proportion indicated that they turn to work or other activities to take their mind off things either “a medium amount” (31.8%) or “frequently” (31.8%) ($r=-0.2$). Respondents who had been diagnosed with mental health conditions were additionally most likely to report that they “do something to think about it less” “a medium amount” (31.8%) ($r=-0.2$). Lastly, of the CSEs who have been diagnosed with a mental health condition, more than a quarter (28.6%) denoted that they have been expressing their negative feelings “a medium amount” ($r=-0.2$). These significant statistical associations indicate that individuals with diagnosed mental health conditions were likely to engage in avoidant coping strategies.

There were additionally significant statistical associations found on total scores on the Brief COPE Inventory. Respondents who have been diagnosed with mental health conditions were most likely to score 5 on self-distraction (27.3%), whereas respondents who had not been diagnosed with a mental health condition were more likely to score 2 on self-distraction (37.0%) ($r=-0.3$). This indicates that CSEs with mental health conditions are more likely to engage in this form of avoidant coping. Studies have shown that individuals with mental health conditions are likely to use avoidant coping strategies (Meyer, 2001:272).

6.5.2 Approach coping strategies

Approach coping strategies consist of behavioural or psychological responses to stress that are adopted with the intention of changing how individuals think about a stressor, or to change the nature of the stressor being experienced. Approach coping strategies are seen to be a more productive method of coping with stress in comparison with avoidant coping strategies (Al-Dubai et al., 2011:58; Dubow & Rubinlicht, 2011:111). In the Brief COPE Inventory, approach coping strategies consist of accessing emotional support, use of informational support, positive framing, active coping, acceptance, and planning. The respondents in the present study were split almost equally in regard to making use of approach coping strategies, with 51.0% of respondents not utilising approach coping strategies, and 49.0% of respondents making use of approach coping strategies. It is concerning that just over half of respondents do not make use of approach coping strategies, as previous research has linked approach coping strategies to lower incidences of PTSD in police officials (Violanti et al., 2018:278). Unfortunately, police workers have previously been found to be lacking in adaptive coping strategies (Lindsay & Shelley, 2009:91; Ménard & Arter, 2013:49).

Of the total Brief COPE Inventory scores, acceptance was the most used coping strategy, with a mean score of 5.1. In particular, planning was the third most used coping strategy, with a mean score of 4.3, while active coping was the fourth most employed coping strategy, with a mean score of 4.0. These findings echo a study conducted in the USA amongst CSEs where the most commonly used coping strategies were acceptance, planning, and active coping (Salinas & Webb, 2018:243). The only dissimilar results were that in the current study self-distraction was the second most utilised coping strategy, with a mean score of 4.5.

Within the current study, 29.7% of respondents were found to frequently make use of acceptance as a coping strategy, while 43.0% – 54.4% of Tshwane CSEs in the 2015 study used acceptance as a coping style often (Steyn & Kloppe, 2015:12). Therefore, although acceptance was the most

used coping strategy in the current study, Southern Gauteng CSEs used it less often than Tshwane CSEs in the 2015 study. Similar findings are apparent for planning. Within the current study, 16.5% of respondents indicated that they frequently make use of planning as a coping strategy. In the 2015 study, planning was often made use of by 17.9% – 34.6% of individuals (Steyn & Klopper, 2015:13). Therefore, although planning was the third most used coping strategy in the current study, the frequency of Southern Gauteng CSEs who often or frequently made use of planning as a coping strategy, was well below the results for the Tshwane CSEs in the 2015 study.

Of respondents who indicated that they were “not at all” receiving any type of comfort and understanding from other individuals, women were in the minority (16.7%), with men making up the majority (83.9%) ($r=-0.3$). Of the CSEs who indicated that they do “not at all” get advice or help about what to do, the majority were men (83.3%), with women making up the minority (16.7%) ($r=-0.2$). These findings are consistent with research evidence, which indicates that women rely more on, and seek social support, than men (Eisenbarth, 2019:157). In addition, receiving comfort and understanding from other individuals, resorts under the emotional support subscale of approach coping, whilst receiving advice or help about what to do, is categorised under the use of informational support subscale. A study conducted with CSEs in the USA that used the Brief COPE Inventory, found that female respondents exhibited higher usage of emotional and informational support as subtypes within approach coping, thus mirroring the findings of the current study (Salinas & Webb, 2018:244).

Significant statistical associations were also found in relation to diagnosed mental health conditions and approach coping. CSEs who have been diagnosed with mental health conditions were most likely to report that they were “frequently” concentrating their efforts on doing something about the situation they are in (31.8%) ($r=-0.3$). Furthermore, respondents who have been diagnosed with mental health conditions were most likely to indicate that they do “not often” take action in an attempt to improve their situation (45.5%) ($r=-0.3$). Additionally, CSEs diagnosed with mental health conditions were most likely to “frequently” “try to come up with a strategy about what to do” (38.1%) ($r=-0.2$). Lastly, respondents who had been diagnosed with mental health conditions were most likely to report that they do “not often” think about what steps to take (31.8%) ($r=-0.3$).

Moreover, respondents who have been diagnosed with mental health conditions were most likely to score 5 for active coping (22.7%), whilst individuals who have not been diagnosed with mental health conditions were most likely to score 2 for active coping (38.3%) ($r=-0.3$). Further, CSEs

who have been diagnosed with mental health conditions were most likely to score 8 for planning (23.8%), whilst respondents who have not been diagnosed with mental health conditions were most likely to score 2 for planning (35.8%) ($r=-0.3$). Overall, CSEs who have been diagnosed with mental health conditions were most likely to score medium on overall approach coping (55.0%), whilst respondents who have not been diagnosed with mental health conditions were most likely to score low overall on approach coping (57.7%) ($r=-0.3$).

All of the above significant statistical associations lead to the deduction that CSEs who have been diagnosed with mental health conditions were versed in making use of approach coping strategies. Broadly, the deduction is in line with research evidence which confirms that individuals diagnosed with mental illnesses are partial to making use of approach coping strategies. For example, a study conducted in Pakistan with respondents who were diagnosed with anxiety or depression, found that respondents were likely to make use of adaptive coping strategies (Kasi et al., 2012:5). However, extant research also highlights that those with more severe mental illnesses, such as schizophrenia, do not utilise approach coping strategies (Holubova et al., 2019:91; Meyer, 2001:274). For ethical reasons, the CSEs in the present study were not required to specify with which mental health conditions they have been diagnosed. Therefore, it is unknown whether the significant statistical association between adaptive coping and diagnosed mental health conditions, is similar to research evidence which found that individuals with less severe mental health conditions partake in adaptive coping more frequently than individuals with more severe mental health conditions. A further difficulty in judging the alignment of the present study's findings with research evidence, is that approach coping strategies may otherwise be labelled adaptive coping strategies, depending on how a researcher scores the Brief COPE Inventory (Meyer, 2001:268; Kasi et al., 2012:2).

6.5.3 Neutral coping strategies

Neutral coping strategies consist of humour and religion. Three-fifths of the respondents (60.2%) were found to make use of neutral coping strategies. Just under a quarter of respondents (22.3%) indicated that they find comfort in religion frequently. A local study confirms that religiosity is used as a coping strategy by police officials, with religious police workers presenting with lower stress scores (Mushwana et al., 2019:2-3). Positive mental health has also been linked to religious coping styles (Kasi et al., 2012:5; Mushwana et al., 2019:2). Religiosity was not included as an item/question in the COPE scale used in the 2015 study among Tshwane CSEs.

Humour may be turned to as a coping strategy. The implication is that, if individuals can find ways to make traumatic situations seem more amusing, they may have less negative emotions towards the event (Gumani et al., 2013b:7). Police officials have been found to utilise humour as a coping strategy often (Vivona, 2013:16). Of the CSEs who indicated that they do “not at all” make jokes about their circumstances, men were the majority (87.5%), with women making up the minority (12.5%) ($r=-0.2$). Research has shown that men use humour more than women, and as such, this result was unexpected (Eisenbarth, 2019:158).

Both humour and religion were the third most utilised coping strategy, as both scored 4.3 on average. In the 2015 study, three in five Tshwane CSEs (60.3% – 64.6%) indicated that they never make use of humour as a coping strategy (Steyn & Klopper, 2015:11). Within the current study, 39.8% of Southern Gauteng CSEs indicated that they do not at all make use of humour as a coping strategy, which is well below the responses of the 2015 study. Humour in relation to death work can tend to be specific to the group of police officials involved, whereby jokes are made with one another. If the same sense of humour is not shared by the group, jokes would be less common (Vivona, 2013:17-18). The CSEs in both the 2015 and the current study, were not questioned about the group views with regard to humour, but it is possible that the Tshwane CSEs as a group did not approve of humour as a coping strategy, therefore it was utilised less.

6.6 Context-specific experiences of job-related stress and trauma

Overall, CSEs indicated that working at violent crime scenes was more stressful than working at crime scenes in general, with 46.6% of CSEs indicating that they find violent crime scenes very stressful, and 35.9% of CSEs experiencing crime scenes in general as very stressful. Past research confirms that CSEs experience violent or person-directed crime scenes to be more stressful than crime scenes in general (Clark et al., 2015:940; Fyhn et al., 2016:267). In contrast, only 29.1% of Tshwane CSEs indicated that they found violent crime scenes to be very stressful (Steyn & Klopper, 2015:6). As explained before, the geographical area within which the present study was conducted has a murder rate almost double that of the City of Tshwane. In fact, within South Africa, Tshwane had the lowest murder rate of all metropolitans in South Africa for the year 2017/2018 (Urban Safety Reference Group, 2019:23). Therefore, the researcher holds the view that a possible explanation for Tshwane CSEs not finding violent crime scenes as stressful as Southern Gauteng CSEs, may be due to the fact they were not attending violent crime scenes as often as the CSEs in the current study. Stress and trauma are cumulative, in that the more frequently an individual is exposed to trauma, the higher their stress levels and symptoms of trauma might be (Boshoff & Strydom, 2015:26; Boshoff & Strydom, 2017:445; Manzella &

Papazoglou, 2014:105). Therefore, CSEs who visit violent crime scenes more often might be more stressed by the scenes themselves. In the current study, female CSEs reported working at violent crime scenes as very stressful in higher numbers (59.3%) than male respondents (42.1%) ($r=-0.2$).

There is a distinct lack of research comparing male and female police officials with regard to the trauma they experience. What little research there is shows inconsistent findings. The reasons for inconsistent findings have been hypothesised to be due to research taking place when the policing sector was more male-dominated, female police officials being treated differently to male police officials, male and female police officials being exposed to different stressful events, and research not focussing specifically on gender differences (Van der Meer et al., 2017:87). A study conducted in the Greater Tzaneen Municipality in 2019 found that female police officials had significantly higher stress intensity scores (Mushwana et al., 2019:3).

Significant statistical associations were found between diagnosed mental health conditions and how stressful specific types of crime scenes were experienced. Individuals who have been diagnosed with mental health conditions were more likely to experience working at crime scenes in general as very stressful (54.5%) in comparison to CSEs who have not been diagnosed with mental health conditions (30.9%) ($r=-0.2$). Additionally, respondents who have been diagnosed with mental health conditions were more likely to experience violent crime scenes as very stressful (63.6%) than those who have not been diagnosed with mental health conditions (42.0%) ($r=-0.2$). These findings are consistent with extant research evidence, which indicates that if an individual has already been experiencing mental health problems before being exposed to trauma, they are more likely to react adversely to the trauma exposure (Nolen-Hoeksema, 2011:121).

The majority of respondents (93.2%) indicated that working at night crime scenes is more stressful than working at crime scenes during the day. Female CSEs were more likely to report experiencing night-time crime scenes more stressful than day-time crime scenes “always” (44.4%) than male respondents (23.7%) ($r=-0.3$). Female respondents were also more likely to denote that getting lost is a stress factor with night crime scenes (88.9%) in comparison to male CSEs (60.0%) ($r=-0.3$). Prior research confirms that female police officials find nocturnal crime scenes particularly stressful (Kgalema, 2002:8).

The greater proportion of respondents indicated that certain factors raised their stress levels when working at crime scenes at night. Whilst all six factors listed in the questionnaire attracted the attention of majority of the respondents, two factors stood out as particularly important. The vast

majority of respondents (90.4%) indicated that limited visibility at night crime scenes elevated their stress levels. The finding is consistent with research which indicates that poor lighting is a source of stress for police officials (Kumar & Kamalanabhan, 2014:85). An even greater majority of respondents (94.7%) indicated that they felt they had to be more vigilant at night-time crime scenes, which increased their levels. Support for this finding is demonstrated in extant research evidence which highlights that night-time crime scenes are more stressful due to feeling the need to be guarded or protected by other colleagues (Kgalema, 2002:8).

The CSEs were provided with free space within which to identify any additional factors that cause them to feel stressed at night scenes. Four respondents denoted that they fear being attacked or hijacked, whilst three respondents confirmed that as women they feel particularly fearful for their safety. Sometimes they need to bring their children to scenes with them, which causes additional stress. Three respondents additionally highlighted that a lack of vehicles and proper equipment increases their stress at night scenes.

The vast majority of respondents (91.3%) indicated that working at crime scenes in informal settlements is stressful. The greater proportion of respondents indicated that specific factors raised their stress levels when working at crime scenes in informal settlements. As with night-time scenes, all six listed factors were acknowledged by majority of the respondents indicating that each factor played a role in elevating their stress levels. The factor that seemed to be the most significant was the close-set dwellings in informal settlements, which creates hiding places for perpetrators, with 94.5% of respondents selecting this option. Limited lighting (92.3%) and poor road conditions (92.3%) were the next most stressful factors in informal settlements.

Almost half of respondents (46.1%) indicated that they feel a little stressed on their way to a crime scene, with approximately one in five (18.6%) feeling very stressed. In the 2015 study in Tshwane, 34.2% of CSEs indicated feeling a little stressed on the way to crime scenes, with one in ten respondents (8.9%) denoting that they feel very stressed (Steyn & Klopper, 2015:7). In the current study, almost two in five respondents (37.9%) reported feeling a little stressed while working at a crime scene, with approximately one in ten CSEs (9.7%) feeling very stressed. In the 2015 study, 47.4% of Tshwane CSEs indicated feeling a little stressed while working at crime scenes, with 12.8% feeling very stressed (Steyn & Klopper, 2015:7). In the current study, over a third of respondents (35.9%) indicated feeling a little stressed after finishing working at a crime scene, with 12.6% denoting that they feel very stressed after finishing working at a crime scene. In the 2015 study, 32.1% of CSEs indicated feeling a little stressed after finishing working at a crime scene, with 16.7% feeling very stressed (Steyn & Klopper, 2015:7). In the current study it can

therefore been seen that the number of individuals who have reported feeling very stressed remained fairly stable between on the way to the crime scene, at the crime scene, and after working at the crime scene. Respondents who reported feeling a little stressed decreased in numbers between, on the way to the crime scene up to after working at the crime scene. Oftentimes stress might be heightened before reaching a crime scene in anticipation or expectation of being confronted with a traumatic experience (Henry, 2004:23; Papazoglou & Manzella, 2013:2).

Significant statistical associations were identified for the abovementioned questions. CSEs who have been diagnosed with mental health conditions were found to be more likely to report feeling quite stressed (27.3%) on their way to a crime scene than individuals who have not been diagnosed with mental health conditions (16.3%) ($r=-0.2$). In addition, respondents who have been diagnosed with mental health conditions were more likely to report feeling quite stressed (45.5%) while working at a crime scene, in comparison to respondents who have not been diagnosed with mental health conditions (21.0%) ($r=-0.2$). These findings are congruent with research evidence which highlights that individuals who are already experiencing mental health problems before being exposed to trauma, react adversely to trauma exposure (Nolen-Hoeksema, 2011:121). There was also a significant statistical association with gender, whereby male respondents were more likely to indicate that they do not feel stressed at all while working at a crime scene (31.6%) in comparison to female respondents (11.1%) ($r=-0.2$).

Three-quarters of the CSEs (75.0%) denoted that they never arrive on scene in marked SAPS vehicles, with very few respondents (6.0%) indicated that they always arrive on scene in marked SAPS vehicles. A quarter of respondents (26.3%) confirmed that they feel less stressed if they arrive on scene in a marked SAPS vehicle.

A fifth of respondents (19.4%) indicated that they find taking photographs of crime scenes quite stressful, with 13.6% denoting that it is very stressful. A quarter of respondents (23.3%) reported that they find compiling photo albums to be quite stressful, with 15.5% indicating that compiling photo albums is very stressful. These figures indicate that compiling photo albums seems to be experienced as marginally more stressful than taking photographs. Traumatization has been shown to not end with working at crime scenes. Rather, because CSEs are required to repeatedly examine their work in order to ensure that all the relevant information has been recorded clearly and accurately, their trauma continues (Jorgensen & Rothmann, 2008:2). Research confirms that crime scene photographers experience trauma due to the photographs they are required to take (Seely, 2017:8). A significant statistical association with gender was found, whereby female CSEs

were more likely to report experiencing the compilation of photo albums as “quite stressful” (33.3%) more than male respondents (19.7%) ($r=-0.2$).

The respondents received questions about how traumatic they found the different types of crime scenes they are required to attend. The 2015 study in Tshwane included some of the same types of scenes, and the reported figures were consistently found to be similar with the figures in the current study. Over a third of respondents in the current study (35.9%) indicated that they found crime scenes involving foetuses to be very traumatic, with a fifth (19.4%) experiencing them as quite traumatic. In the 2015 study, also over a third of Tshwane CSEs (36.8%) experienced crime scenes involving foetuses to be very traumatic, with a fifth (21.1%) denoting that they are experienced as quite traumatic (Steyn & Klopper, 2015:7). Three-fifths of CSEs (60.8%) in the current study experienced crime scenes involving children to be very traumatic, with one-fifth (19.6%) denoting that they are quite traumatic. In the 2015 study almost three-fifths (57.1%) of the Tshwane CSEs indicated experiencing crime scenes with children to be very traumatic, with one-fifth (22.1%) denoting that they were quite traumatic (Steyn & Klopper, 2015:7). A third of CSEs (32.7%) in the current study experienced crime scenes involving adults to be quite traumatic, with just over a third (35.6%) reporting that they are a little traumatic. In the 2015 study, 29.9% of CSEs indicated that crime scenes involving adults were quite traumatic, with just under one-third of CSEs (31.2%) reportedly experiencing them to be a little traumatic (Steyn & Klopper, 2015:8). In the current study, almost two-fifths of respondents (38.6%) experienced crime scenes with dismembered bodies to be very traumatic and under a quarter (23.8%) experienced these scenes as quite traumatic. Over a third of the CSEs from Tshwane (36.4%) denoted that crime scenes with dismembered bodies were very traumatic, with a fifth of respondents (20.8%) experiencing them as quite traumatic. In the current study just over two-fifths of respondents (41.2%) experienced scenes with disfigured bodies to be very traumatic, with a quarter of CSEs (25.5%) reportedly experiencing them as quite traumatic. In the 2015 study, two-fifths of Tshwane CSEs (41.0%) indicated that crime scenes involving disfigured bodies are very traumatic, with one-fifth of respondents (19.2%) experiencing them as quite traumatic (Steyn & Klopper, 2015:8). In the current study, over half of respondents (52.9%) experienced scenes with decomposed bodies to be very traumatic, with a fifth of CSEs (19.6%) denoting them as quite traumatic. In the 2015 study, almost half of the Tshwane CSEs (46.2%) indicated that scenes involving decomposed bodies are very traumatic, with 16.7% experiencing them as quite traumatic (Steyn & Klopper, 2015:8). The findings in the current study that closely resemble the findings in the 2015 study is encouraging, as it further provides proof the validity of the type of crime scene scale used.

There were three additional questions in the current study regarding how traumatic specific types of scenes are experienced to be. Scenes involving muti murder were reported to be very traumatic by two-fifths of respondents (40.6%) and quite traumatic by under a third of CSEs (28.7%). One third of CSEs (33.3%) experienced scenes where there were victims who are still alive as very traumatic, with under a quarter (23.2%) denoting that they are quite traumatic. Lastly, a third of respondents (33.3%) experienced scenes where bystanders or relatives of a victim or perpetrator are on the scene as quite traumatic, with a quarter of CSEs (25.5%) experiencing them as very traumatic.

Significant statistical associations were found between gender and certain types of crime scenes. Female CSEs were more likely to report experiencing crime scenes involving fetuses as very traumatic (55.6%) in comparison to male CSEs (28.9%) ($r=-0.2$). Female CSEs were additionally more likely to experience crime scenes involving children as very traumatic (81.5%) in comparison to male CSEs (53.3%) ($r=-0.2$). Scenes involving disfigured bodies were also found to be very traumatic by more female respondents (55.6%) than male respondents (36.0%) ($r=-0.2$). Lastly, female respondents were more likely to experience crime scenes where bystanders or relatives of a victim or perpetrator were on the scene as very traumatic (46.2%) in comparison to male respondents (18.4%) ($r=-0.3$). In the 2015 study, female CSEs also experienced crime scenes involving fetuses significantly more traumatic than male CSEs (Steyn & Klopper, 2015:14). Crime scenes involving children have been commonly identified as particularly traumatic (Arble et al., 2017:3; Green, 2016:35; Henry, 2004:23), as have scenes involving mutilated victims (Elntib & Armstrong, 2014:420). In addition, prior research has indicated that female police officials experience greater distress and trauma in regard to crime scenes involving children, in comparison to male police officials (Gumani, 2017:435; Tehrani, 2016:406).

Of the CSEs who indicated that they attend autopsies, more than a third of respondents (36.7%) denoted that they experienced autopsies for a fetus to be very traumatic. Over half of the CSEs (54.0%) also indicated that autopsies for children are very traumatic. A third of respondents (32.0%) indicated that autopsies for adults are a little traumatic, whilst two-fifths of respondents (40.0%) experienced autopsies for an individual who has died in a violent manner to be very traumatic. Whilst most literature focuses on the trauma experienced by police officials in relation to crime scenes that they attend, there is research evidence that confirms that attendance of autopsies can also evoke trauma in individuals (Åkerblom et al., 2017:257; Ashley & Cross, 2004:25; Huddleston et. al, 2007:204; Jorgensen & Rothmann, 2008:11).

Over half of respondents (51.0%) indicated that they have been threatened by a bystander or a relative of a victim or perpetrator who was on the scene of the crime. A significant statistical association was found whereby CSEs who have been diagnosed with mental health conditions were more likely to denote that they have been threatened (72.7%) than respondents who have not been diagnosed with mental health conditions (44.9%) ($r=-0.2$).

A fifth of respondents (18.8%) reported that they have been physically assaulted by a bystander or relative of a victim or perpetrator who was on the scene of the crime. Significant statistical associations were also found for this question. Male CSEs were more likely to indicate that they had been physically assaulted (94.7%) than female respondents (5.3%). Extant evidence indicates that men are more likely to be involved in physical fights, and incidences of violence, than women (Fulu et al., 2013:60). Additionally, respondents who have been diagnosed with mental health conditions were more likely to report that they have been physically assaulted (36.4%) than respondents who have not been diagnosed with mental health conditions (13.9%) ($r=-0.2$). Research confirms that individuals who have mental health conditions are quite likely to be involved in physical fights (Burns et al., 2015:57). It is unclear whether the CSEs diagnosed with mental health conditions were more likely to have been both threatened and/or physically assaulted due to their mental health condition, or whether they have developed a mental health condition in part due to being physically assaulted.

6.7 Contentedness in the workplace

In order to gauge Southern Gauteng CSEs' overall sense of contentedness within their workplace, they were asked whether they would recommend working as a CSE to others, if they have ever thought of resigning, and what their overall levels of work satisfaction were. One-third of respondents (33.3%) indicated that they would "definitely" recommend CSE work, which is encouraging. Yet, it is noteworthy that almost half of the respondents (47.1%) indicated that they were not sure, and a fifth of respondents (19.6%) were confident that they would never recommend working as a CSE. A significant statistical association was found between respondents diagnosed with mental health conditions and recommending CSE work, in that respondents who had not been diagnosed with a mental health problem (37.5%) were more likely to "definitely" recommend working as a CSE in comparison with respondents who had been diagnosed with a mental health problem (18.2%) ($r=-0.2$).

Poor staff retention through resignation of employees is a matter of concern for SAPS, and as such, sustainable strategies to retain the services of police officials, are flagged as a research

priority area requiring attention (SAPS, 2016:16). The loss of trained police officials, particularly in specialised units, is not cost-effective and ought to be avoided. Replacing employees, costs more than assisting them with the resources they need before they reach a point at which they choose to resign (Moran et al., 2020:1; Robinson, 2000:75; Vaughan et al., 2016:1). For police officials, such assistance may be the provision of psychological support services (Allen, 2008:3). To replace an employee incurs costs related to testing potential replacements, training, and benefits, not to mention the skill and knowledge that are lost with an experienced employee leaving (O'Connell & Kung, 2007:15). In the current study, two-fifths of respondents (41.2%) indicated that they sometimes think of resigning, with a tenth of respondents (10.8%) reporting that they always think of resigning. Only a quarter of respondents (24.5%) specified that they never think of resigning, which implies that a concerning proportion of Southern Gauteng CSEs have at least considered resignation as an option. A significant statistical association was found between mental health and thoughts of resigning, whereby the majority of respondents (96.0%) who indicated that they never think of resigning had not been diagnosed with a mental health condition ($r=-0.2$).

Research confirms that employees who are satisfied, are more productive in their workplace and remain in their positions for longer periods of time (Robinson, 2000:75; Valentia, 2019:41). In addition, job satisfaction within the CSE environment has been identified as a protective factor that allows resilient CSEs to manage the trauma that they experience effectively (Kittur, 2017:190). A third of respondents (34.3%) indicated that they have “good” work satisfaction, whilst few respondents (4.9%) reported experiencing “poor” work satisfaction. The largest group of respondents (38.2%) denoted that their work satisfaction is “average”. A significant statistical association was found between mental health and work satisfaction, whereby the majority of respondents who indicated that they have “very good” work satisfaction indicated that they had not been diagnosed with a mental health problem (92.3%) ($r=-0.2$).

Whilst the current study did not pose questions to CSEs about lack of resources in their work context and how it impacts on their overall levels of contentedness, respondents were requested to provide additional information on a blank page in the questionnaire, if they felt comfortable to do so. One respondent indicated that the main source of his stress is a lack of resources, particularly mentioning equipment, vehicles, and staff shortages. A second respondent specifically highlighted lack of SD cards for the cameras and gloves. A third respondent mentioned vehicles being in poor condition and uniforms not being provided. An additional two respondents highlighted their workload, citing that too many cases are being assigned to each

CSE, which indicates a lack of human resources. Two South African studies confirm that police officials feel that a lack of resources in their work context has a detrimental effect on their work and well-being. An Eastern Cape study found that lack of resources negatively affected the quality of police work and contributed to burnout (Hlengane & Bayat, 2013:86). Further, a study across South Africa's nine provinces among detectives, indicated that 92.9% of respondents held the view that the lack of human and physical resources, hampered their performances (Mofokeng, 2015:39).

6.8 Crime scene examiners' views on briefing and debriefing

The availability of support structures has been found to be of elevated importance in assisting police officials to deal with the trauma they face (Ménard & Arter, 2013:40; Young, 2004:52). Moreover, research evidence attests that the more support an official receives from their colleagues, superiors, and the organisation, the better their outcomes are in terms of the negative impact of traumatic events (Clark et al., 2015:944; Kittur, 2017:261; Young, 2004:53). The vast majority of respondents (97.1%) in the current study stated that they have felt the need to speak to someone because of their work, with 99.0% of those respondents following through by speaking to someone. In the 2015 study among Tshwane CSEs, fewer respondents (68.8%) indicated that they have felt the need to speak to someone about their work with even fewer (74.5%) acting on the need by actually doing so (Steyn & Klopper, 2015:9). In the current study, a significant proportion of the Southern Gauteng CSEs (90.0%) specified that they have spoken to their colleagues about their work, whilst only 35.8% of Tshwane CSEs in the 2015 study indicated that they spoke to colleagues (Steyn & Klopper, 2015:9). Noteworthy, nearly three-quarters of the CSEs (72.0%) in the current study denoted that they have spoken to a family member about their work, with only 18.9% of Tshwane CSEs choosing to do so in the 2015 study (Steyn & Klopper, 2015:9). The reason a much higher proportion of Southern Gauteng CSEs choose to talk to family members about their work compared with Tshwane CSEs, is difficult to find. The respondents in the two studies had similar profiles in terms of being married and reported spending time with family members in comparable frequencies. Nevertheless, research findings confirm that having a social support network can ameliorate the deleterious impact of exposure to repeated trauma (Kittur, 2017:261; Ménard & Arter, 2013:40; Mushwana et al., 2019:2; Papazoglou & Manzella, 2013:2; Singh & Nayak, 2015:748; Young, 2004:8). Additional support for the finding is demonstrated in the TMT, one of the theoretical perspectives chosen for the study, wherein the argument is advanced that close personal relationships may serve to protect an individual against anxiety (Pyszczynski & Kesebir, 2011:4).

Moreover, just under a third of respondents (31.3%) in the current study indicated they have spoken to a professional outside of work, with roughly one in ten of Tshwane CSEs (11.3%) indicating the same in the 2015 study (Steyn & Klopper, 2015:9). Overall, the dissimilar proportions of respondents, between the present study and the 2015 study in Tshwane, in terms of who they speak to about their work, is interesting. The possibility exists that higher trauma levels observed among Southern Gauteng CSEs might necessitate them to seek out support systems more so than Tshwane CSEs. Respondents who indicated that they had been diagnosed with a mental health condition were more likely to denote that they had spoken to a professional outside of the work context (81.8%) than respondents who had not been diagnosed with a mental health condition (16.9%) ($r=-0.6$). The explanation of the latter finding seems quite logical as individuals who have been diagnosed with mental health conditions would have had to at least consult a medical doctor, most often a psychiatrist, to receive a diagnosis in the first place. Further, as pharmacological intervention remains the backbone in the general management of diagnosed mental health conditions, the CSEs would have to consult professionals to receive medications (Matlala et al., 2018:49).

Over half of respondents (56.9%) indicated that they have received training or skills development from SAPS to assist them to cope with their work, and over half of those respondents (51.7%) indicated that the training received was of a good quality. A third of respondents (29.3%) indicated that the training was average, with few respondents (3.5%) indicating it was poor. In the 2015 study, fewer respondents (29.1%) indicated that they had received training to assist them to cope emotionally with their work. Of those, 65.2% of Tshwane CSEs indicated that the training was very helpful/helpful, with 13.0% indicating it was not helpful at all. In the present study, of respondents who had not received training, four in five (83.7%) indicated that they would like to receive training. Similar numbers were recorded in the 2015 study, with 78.6% of Tshwane CSEs indicating they would like to receive training (Steyn & Klopper, 2015:10).

In order for police officials to effectively perform their professional duties, they require support services to assist in maintaining their psychological well-being (Papazoglou & Tuttle, 2018:1). The relevant interventions can be accessed at two levels. Primary prevention involves preparing individuals for a traumatic event that has not occurred yet. In the policing context, briefing is an example of primary prevention. Briefing involves police officials being forewarned of the nature of the scene they are about to attend (Arble et al., 2017:2; Jonker et al., 2020:12). Briefing may assist police workers by allowing them to psychologically prepare themselves for what they might encounter at a traumatic scene. In the absence of knowing what they will encounter, or having an

understanding of the potential risks involved, their levels of stress might become elevated (Elntib & Armstrong, 2014:417). Although briefing has been viewed as impractical, due to the frequency and rapidity of critical events, research has confirmed that even partial briefing is preferable to no briefing (Elntib & Armstrong, 2014:421).

Over a quarter of respondents (26.2%) indicated that they are never briefed about the nature of a scene before they arrive. A mere one in ten of respondents (11.6%) indicated that they are always briefed. In contrast, 22.8% of Tshwane CSEs in the 2015 study indicated that briefing is always carried out, whilst a similar proportion (21.5%) indicated it is never carried out. The vast majority of CSEs in the current study (87.4%) indicated that they want to be briefed before arriving at a scene, with few (3.9%) indicating that they do not want to be briefed. Over half of respondents (51.5%) indicated that briefing is very useful to assist them to “deal emotionally with the scene”. No respondents (0.0%) indicated that they did not find briefing useful. In the 2015 study, almost half of respondents (47.5%) indicated that briefing is very useful, with 6.6% indicating that it is not useful at all. In the present study, the mismatch between the large proportion of CSEs who expressed the need for briefing services, and the actual availability of these services is noted.

Secondary prevention refers to interventions that occur with trauma survivors soon after their exposure to trauma, before post-trauma symptoms become apparent (Arble et al., 2017:2; Jonker et al., 2020:12). Prompt, adequate, and effective support after exposure to trauma is essential for police officials (Boshoff & Strydom, 2017:445). If the symptoms of stress that are experienced after exposure to trauma are not dealt with, an individual is at risk for developing stress and trauma-related psychiatric disorders, such as PTSD (Boshoff & Strydom, 2015:13). An example of an intervention at secondary level is debriefing, which is indented to provide individuals the space to tell their stories (Jonker et al., 2020:2). Debriefing serves the purpose of talking about reactions and feelings, and to identify individuals who might require further mental health services or interventions. Effective debriefing services also empower those who have been exposed to traumatic events, with strategies to ease the emotional impact the event (Boshoff & Strydom, 2017:446).

The majority of CSEs (89.3%) in the present study indicated that they are aware that the SAPS offer debriefing services. A 2015 local study conducted in the North West Province, which included CSEs as respondents, also found that many of the respondents were familiar with the trauma programmes offered by SAPS, although in fewer numbers (44%) (Boshoff & Strydom, 2015:27). In the current study, half of respondents (50.5%) denoted that debriefing is never available to them after completing work at crime scenes. Few respondents (4.9%) indicated that

debriefing is always available. Respondents who had been diagnosed with a mental health condition were more likely to indicate that emotional debriefing is never available to them (72.7%) than CSEs who had not been diagnosed with a mental health condition (44.4%) ($r=-0.3$). Significantly, debriefing has been found to decrease symptoms of clinical depression and stress-related fatigue, as well as being important in both the prevention and treatment of PTSD (Elntib & Armstrong, 2014:417). It is possible that those CSEs with diagnosed mental health conditions are already particularly vulnerable, and therefore were more likely to note that debriefing is never available to them. The 2015 study among Tshwane CSEs found that 61.5% of respondents indicated that debriefing is never available to them, whilst 10.3% of respondents indicated that it is always available (Steyn & Klopper, 2015:10). Although the proportions in the current study are slightly different from the 2015 study, it is noted with concern that both studies highlight that the majority of respondents are not being offered debriefing services. However, three-fifths of respondents in the current study (60.8%) indicated that they would be willing to make use of SAPS debriefing services, with a tenth of CSEs (11.8%) denoting that they would not be willing.

At the same time, the majority of CSEs (84.4%) confirmed that they never use the SAPS debriefing services. A telling finding is that no respondents (0.0%) indicated that they always use debriefing services, with few respondents (1.0%) denoting that they use the debriefing services most of the time. The study conducted in the North West Province revealed similar low rates, with 28% of respondents indicating that they accessed debriefing services (Boshoff & Strydom, 2015:23). In the 2015 Honours study, over a quarter of respondents (26.7%) indicated that they never use the debriefing services. Few respondents (3.3%) indicated that they often use them, with the majority (36.7%) indicating that they sometimes use the debriefing services. These numbers are dissimilar to the current study, which has a much higher number of respondents not making use of the debriefing services at all. In the current study, of the few respondents who use the debriefing services of the SAPS, a fifth indicated that the debriefing services are of a poor quality (18.8%). No respondents (0.0%) denoted that the debriefing services are “excellent”. Similarly, in the 2015 study in Tshwane, 18.1% of respondents indicated that the debriefing services are of a poor quality (Steyn & Klopper, 2015:10). Debriefing is currently optional in the SAPS, which might account for the low uptake of debriefing services even when they are available free of charge (Rajin, 2012:2; Sunder, 2019:90).

Research evidence reveals that there are numerous reasons why police officials are reluctant to engage with the services of mental health professionals. Reasons include that they are reluctant to admit they are experiencing negative psychological symptoms and they are concerned about

what their colleagues will think of them (Boshoff & Strydom, 2015:27; Brooks et al., 2019:2; Jonker et al., 2020:13; Papazoglou & Tuttle, 2018:2). Accessing psychological support services in policing contexts is also often stigmatised, whereby individuals who seek assistance are perceived as “weak” or unable to perform their duties (Papazoglou & Tuttle, 2018:1). Additionally, police officials are concerned about confidentiality being breached when they access in-house support services in particular (Boshoff & Strydom, 2015:23). From a more practical standpoint, officials often mention that they do not have the time to take part in debriefing (Elntib & Armstrong, 2014:422). Another reason confirmed in research is that officials do not want to engage with mental health professionals who have not worked in their trauma-inducing contexts. They tend to be sceptical that “outsiders” with no experience of their work environment would be in a position to assist them with the trauma they experience (Elntib & Armstrong, 2014:421; Jetelina et al., 2020:8). Research evidence further suggests that police workers prefer to debrief with their colleagues as opposed to mental health professionals (Anderson & Papazoglou, 2014:185; & Manzella, 2013:3). A study in the USA noted that police workers provided positive feedback when senior police officials are used for debriefing and mental health training (Arble et al., 2017:3). Likewise, a study in Korea found that using retired police officials for debriefing purposes is effective in fostering a sense of fellowship and building supportive relationships (Kang & Lee, 2018:38).

A finding in the present study which seems to contradict extant research, was that a small proportion of CSEs (11.0%) cited being worried that their colleagues will think less of them, as a reason for not attending debriefing. The remainder of the reasons stated for not attending debriefing were congruent with the aforementioned existing evidence. Almost half of respondents (42.7%) indicated that they did not have the time to attend debriefing, whilst two-fifths (39.0%) signified that they did not find the debriefing helpful. Three-fifths of respondents (60.5%) indicated that the debriefing offered by EHW staff was not helpful because the staff did not understand the realities of their daily job experiences. Noteworthy, is that 71.1% of the respondents specified that they would definitely be willing to attend debriefing if it was offered by persons with practical CSE work experience. Female respondents were more likely to indicate that not finding debriefing helpful had an effect on their decision to not participate in debriefing (59.1%) compared with male respondents (31.7%) ($r=-0.2$). CSEs who have been diagnosed with a mental health condition were found to be significantly more likely to indicate that debriefing services offered by EHW staff were not helpful due to them not understanding the CSE experience (85.0%) than respondents who had not been diagnosed with a mental health condition (52.5%) ($r=-0.3$). Respondents who had been diagnosed with mental health conditions were also more likely to state that their use of

a private psychologist has an effect on their decision to not use the debriefing services (65.0%) than CSEs who had not been diagnosed with a mental health condition (9.7%) ($r=-0.6$).

6.9 Theoretical application

Four sets of theoretical perspectives were discussed in Chapter 3, namely the model of stress and coping, GST, TMT, and ABDT. A common theme was confirmed to run through all four perspectives, namely that similar external factors, such as personal dynamics, have an influence on the manner in which individuals react to stress and the subsequent coping strategy they will utilise. All four theoretical perspectives are applicable to the CSE work context.

It has been extensively demonstrated that CSEs are exposed to extreme stress and trauma in the context of their work (Arble et al., 2017:3; Henry, 2004:9; Kittur, 2017:15; Mwelase, 2018:1; Nho & Kim, 2017:40; Yang-Sook et al., 2013:139). In addition, the experiences they are exposed to meet the definition of a traumatic event, as they are events that fall outside of the everyday experience of an individual. In addition, they are events that would be distressing to almost anyone (O'Donnell et al., 2017:209; Topcu, Koroğlu & Gençöz, 2018:68; Van Wijk, 2006:77). CSEs are required to be in close contact with deceased individuals and hazardous fluids whilst they gather information from crime scenes and record the details of murder scenes. Whilst they might not be in attendance of traumatic death scenes every day, they are additionally expected to compile photo albums and reports pertaining to death scenes attended to on previous shifts (Jorgensen & Rothmann, 2008:2; Omar, 2008:30; Prinsloo, 1996:29; Rothmann & Jorgensen, 2007:74; SAPS, 2017; Van der Walt & Luke, 2011:206). They are therefore constantly engaged with scenes of violence and death.

6.9.1 Lazarus and Folkman's model of stress and coping

Lazarus and Folkman's model of stress and coping has been utilised recently to examine how individuals cope with work-related stressors, although it was originally applied within clinical settings. Stress is defined as being "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984:19). Trauma has been shown to oftentimes begin with anxiety and panic reactions, which in turn might lead to feelings of being out of control or overwhelmed (Ashley & Cross, 2004:26; Salinas & Webb, 2018:239). A person is said to make cognitive appraisals of traumatic events, namely a primary and a secondary appraisal (Adasi et al., 2020:125; Lazarus & Folkman, 1984:31).

In primary appraisal, individuals categorise stressful situations through evaluating the meaning or significance of events in relation to their personal well-being and the well-being of those for whom they care. These meanings emerge from the personal resources, beliefs, values, and goals of individuals (Lazarus & Folkman, 1984:272). There are several types of primary appraisal, but the most applicable to the context of the study is threat appraisal, which concerns harm or losses that have not yet occurred, but are anticipated (Lazarus & Folkman, 1984:32; Biggs et al., 2017:352). CSEs have been shown to experience threat appraisals as demonstrated by the fact that almost half of the Southern Gauteng CSEs (46.1%) indicated that they feel a little stressed on their way to crime scenes, and approximately one in five (18.6%) denoted that they feel very stressed on their way to crime scenes. However, reports of feeling a little stressed decreased between being on route to crime scenes through to having concluded their work at crime scenes, indicating that the appraisal is a threat appraisal. Stress levels of CSEs may be elevated before reaching crime scenes due to the expectation or anticipation of being confronted with trauma (Henry, 2004:23; Papazoglou & Manzella, 2013:2). For Southern Gauteng CSEs diagnosed with mental health conditions, stress levels on route to crime scenes have been demonstrated to hold a significant statistical association ($r=-0.2$).

Secondary appraisal comprises individuals' assessment of their resources or capability to deal with the event or encounter. The implication is that they appraise their ability to facilitate a benefit or mitigate a loss (Lazarus & Folkman, 1984:327; Sharifabad et al., 2020:151). In the current study, several CSEs indicated that they lack the tangible resources that assist them to carry out their work, which causes additional stress. Resources that were identified as being in short supply were equipment, vehicles, human resources, SD cards for cameras, gloves, and uniforms. Two South African studies confirm that police officials often mention that a lack of resources in their work context has a detrimental effect on both their well-being and the quality of their work (Hlengane & Bayat, 2013:86; Mofokeng, 2015:39). In addition, 42.7% of Southern Gauteng CSEs indicated that they have not received any training or skills development from SAPS, which would equip them to cope with their work. Of those who received training, 18.7% indicated that the training was average or poor.

Lazarus and Folkman identified two broad categories of coping strategies, namely problem- and emotion-focussed coping (Lazarus & Folkman, 1984:150). Planning is an example of problem-focussed coping and was the third most utilised coping strategy indicated by Southern Gauteng CSEs, with a mean score of 4.3 and 16.5% of respondents indicating that they frequently make use of this coping strategy. Denial was identified as a coping strategy that prevents adaptive

coping, but was utilised infrequently by CSEs in the present study, with 68.5% indicating that they never use denial as a coping strategy.

In subsequent studies it was noted that, although Lazarus and Folkman did not include gender differences in their model, there are differences between the ways men and women cope with stressful events (Kaiseler et al., 2013:4). In the current study, women CSEs were found to be more likely than men to engage in avoidant coping strategies ($r=-0.2$ to -0.3). These findings are consistent with several studies (Matud, 2004:1408; Olf et al., 2007:196; Van der Meer et al., 2017:87). In addition, women were found to seek social support more than men ($r=-0.2$ to -0.3), which echoes the findings of an international study that indicated that female respondents exhibit higher usage of subtypes within approach coping (Salinas & Webb, 2018:244). Women were also found to utilise humour more often than men ($r=-0.2$).

6.9.2 Robert Agnew's general strain theory (GST)

As per GST, conditions or events that are disliked by individuals are referred to as "strain". Strain is seen as a by-product of relations and situations that are negative (Agnew, 2002:604; Ménard & Arter, 2013:41). Agnew described objective and subjective strains, both to which CSEs are subjected. Objective strains are events and conditions that are disliked by most individuals in a group, and is evidenced by the numerous types of crime scenes and autopsies, that caused large percentages of Southern Gauteng CSEs distress. Subjective strains are events and conditions disliked by specific individuals, and are evident in the individual feedback provided by each CSE on what experiences they found most traumatic and stressful.

An extension of Agnew's GST identifies experienced, vicarious, and anticipated strains. Experienced strains are those that are directly experienced by individuals, which similar to subjective strains, are evident in the individual feedback provided by Southern Gauteng CSEs on their stress and trauma. Vicarious strains occur when a person that an individual knows or cares about experiences strain, which then places further strain on that individual due to witnessing another person's strain (Agnew, 2002:605). CSEs are required to come into contact with families at crime scenes that might be openly grieving or visibly agitated (Henry, 2004:25). In the current study, Southern Gauteng CSEs indicated that they have attended scenes where bystanders or relatives are on scene, and a third of respondents (33.3%) specified that they found such scenes to be quite traumatic. A further quarter of respondents (25.5%) denoted that they found these scenes very traumatic. Female CSEs in particular were most likely to experience these types of

scenes as very traumatic ($r=-0.3$). Anticipated strains are similar to the threat appraisal discussed in Lazarus and Folkman's model.

6.9.3 Terror management theory (TMT)

CSEs are faced with not only the violent death of others, but their own mortality, as they often face life-threatening circumstances which might require them to utilise physical or deadly force in order to save their own lives (Arble et al., 2017:3; Henry, 2004:9; Kittur, 2017:15; Mwelase, 2018:1). According to TMT, mortality salience, which is the understanding that death is inevitable, might leave individuals feeling paralysing terror (Maxwell, 2017:22). In order for individuals to function effectively in their everyday life, they need to be able to manage their fear through the use of an anxiety-buffer system. Three psychological components combine in order to provide an individual with an anxiety-buffer system, namely cultural world views, self-esteem, and close personal relationships (Pyszczynski & Kesebir, 2011:4; Maxwell, 2017:1). Of specific relevance to the focus of the present study are cultural worldviews and close personal relationships.

An individual's cultural worldview includes aspects of religiosity. The majority of Southern Gauteng CSEs (95.2%) indicated that they are involved in religion to some extent, ranging from being "very religious" to "not that religious", with only 4.8% indicating that they are "not religious at all". Religious beliefs have the potential to provide an individual with structure, meaning, and purpose in their lives (Pyszczynski & Kesebir, 2011:4). Religion additionally may provide protection against the anxiety that stems from mortality salience (Maxwell, 2017:17).

The other relevant component of an anxiety buffer system is close relationships with other people. Having a support structure in place has been found to assist police officials to deal with the trauma they face (Ménard & Arter, 2013:40; Young, 2004:52). In addition, receiving support from their organisation, superiors, and colleagues lead to better outcomes when police officials are negatively affected by traumatic events (Clark et al., 2015:944; Kittur, 2017:261; Young, 2004:53). Most of the Southern Gauteng CSEs (97.1%) indicated that they have felt the need to speak to someone because of their work. An additional 99.0% of those CSEs then followed through and spoke to someone. Distinctly, the majority of Southern Gauteng CSEs (90.0%) specified that they spoke to their colleagues about their work, with a further 72.0% speaking to family members. More than half of respondents (55.9%) indicated that they were married, with a fifth of CSEs (19.6%) living together as married partners. A further 76.7% of respondents have children who are dependent on them. A third of CSEs (33.0%) also indicated that they spend meaningful time with their families often, with a further quarter (27.2%) doing so very often. These figures seem to

demonstrate that the CSEs have close personal relationships on which they can rely. Over 400 studies have confirmed that the abovementioned components assist in protecting individuals against death anxiety (Pyszczynski & Kesebir, 2011:5).

6.9.4 Anxiety buffer disruption theory (ABDT)

ABDT is an extension of TMT. It is utilised to provide an explanation for various reactions to traumatic events and expounds upon the onset and maintenance of PTSD. PTSD is said to be a result of an individual's anxiety-buffering mechanisms being disrupted, which evokes overwhelming anxiety, which in turn leads to the major symptoms of PTSD, namely hyperarousal, avoidance, and re-experiencing (Pyszczynski & Kesebir, 2011:3).

Those who are confronted with death and experience it to be a traumatic experience, may experience a breakdown in their defence mechanisms, which leaves them susceptible to a diagnosis of PTSD resulting from overwhelming terror. Research evidence has noted that CSEs are confronted not only with death often, but with traumatic death (Arble et al., 2017:3; Henry, 2004:9; Kittur, 2017:15; Mwelase, 2018:1).

Hyperarousal symptoms have been documented in police officials (Makgale, 2014:1). In the present study, a third of Southern Gauteng CSEs (32.3%) reported experiencing a medium amount of hyperarousal symptoms, with a further 15.2% experiencing a high amount of hyperarousal symptoms. Significant statistical associations were found with mental health, whereby respondents who have been diagnosed with mental health conditions were more likely to score higher on the hyperarousal subscale of the IES-R than respondents who have not been diagnosed with mental health conditions ($r=-0.3$).

In the current study, almost a fifth of respondents (17.2%) experienced a high amount of avoidance symptoms, with over a third (35.4%) experiencing a medium amount. CSEs who have been diagnosed with mental health conditions were found to score higher on the IES-R avoidance subscale than respondents who have not been diagnosed with mental health conditions ($r=-0.2$).

Re-experiencing (or intrusive symptoms) were found to be experienced by almost a fifth of Southern Gauteng CSEs (18.2%). A further quarter of respondents (26.3%) experienced a medium amount of intrusive symptoms. Significant statistical associations were found, whereby CSEs who have been diagnosed with mental health conditions were particularly likely to experience intrusive symptoms as opposed to those who have not been diagnosed with mental

health conditions ($r=-0.3$). Male respondents were additionally found to be more likely to indicate that they had been distressed by intrusive thoughts (64.5%) than female CSEs (44.4%) ($r=-0.2$).

Slightly less than half of Southern Gauteng CSEs (46.2%) were demonstrated to have no cause for concern regarding probable PTSD diagnosis. A total of 14.0% of CSEs presented with scores that indicated reason for clinical concern, whilst a further 3.2% fell into the scoring bracket where a diagnosis of PTSD is probable. Disquietingly, over a third of Southern Gauteng CSEs (36.6%) presented in the scoring bracket where not only a diagnosis of PTSD is probable, but their symptoms are severe enough to suppress immune system functioning. ABDT advances that these indications of PTSD, are related to the breakdown of CSEs' protective mechanisms (Pyszczyński & Kesebir, 2011:10).

One of the components of police officials' anxiety buffer system, namely close personal relationships, is strongly supported by research evidence. It has been demonstrated that due to the erratic hours associated with police work, police workers experience a decrease in social support from friends and family, because they are missing opportunities to spend time with them on important holidays, such as Christmas (Ménard & Arter, 2013:38). Additionally, marital problems have been documented to be a common occurrence among police officials. Coping with trauma can consume much of a person's physical and mental energy, leaving them incapable of directing additional resources and energy into their close personal relationships (Kang & Lee, 2018:44). There is also the potential for a breakdown in communication between romantic partners due to police workers not wanting to bring home the negativity and trauma they experience at work, as well as being unable to compromise the confidentiality of ongoing cases (Kang & Lee, 2018:44; Mushwana et al., 2019:1). Moreover, there is a high divorce rate amongst police officials, as well as an elevated risk of family suicides or murders (Kempen, 2012:6; Mushwana et al., 2019:1-2). Elevated levels of domestic violence are also linked to police officials (Baron, 2018:136; Stinson & Liederbach, 2013:12). The aforementioned factors could lead to a breakdown in close personal relationships, as per ABDT.

6.10 Future research and recommendations for practice and policy development

The study reviewed extant insights and produced new evidence about the trauma levels experienced by CSEs and the coping strategies they adopt. However, the researcher concedes that additional research is needed, and identifies in the discussion below the unanswered questions and remaining knowledge gaps:

- Although the study sheds light on the trauma levels and coping strategies of CSEs, the findings can neither be generalised to CSEs in general in the South African context, nor to Southern Gauteng CSEs for that matter. A recommendation that stems from this observation, is that future research should deliver on sampling strategies which allow for the generalisation of findings to the study population.
- Despite the previous recommendation, it should also be acknowledged that the positivist scientific rigour of a quantitative approach, and the accompanying emphasis on numerical and statistical data, comes at the expense of gathering rich and in-depth information. Hence, the researcher also suggests research which adopts a phenomenological qualitative approach to explore the feelings, emotions, motivations, and personal experiences of CSEs with reference to trauma and coping strategies.
- Future research should also delve deeper into various factors which may impact on the resilience of CSEs to cope with the trauma they experience, including career length, gender, constructive social support networks, and religiosity.
- The researcher further suggests comparative research which juxtaposes CSEs who work in geographical areas that have high violent crime rates, where they are exposed to traumatic crime scenes frequently, to CSEs who work in areas with lower violent crime rates where they are exposed to traumatic crime scenes less often.
- Moreover, the cumulative impact of frequent exposure to traumatic crime scenes, as opposed to the impact of a single traumatic incident which triggers trauma symptoms, requires further scientific scrutiny.
- The researcher also believes that in future research, typical organisational stressors which impact on stress levels, for example lack of equipment, workload, and the pressure that is associated with shift work in general, should be isolated from the trauma that originates from death work as such.
- Additionally, CSEs who experience antecedent problems in their personal lives, which impact on their trauma experiences and coping strategies should in future be investigated, in comparison with CSEs who develop such problems as a consequence of the stress and trauma they experience in the workplace.
- It is further recommended that gender differences in trauma experiences and coping strategies in the CSE context be the exclusive focus of future research endeavours.
- The myriad of significant statistical associations demonstrated for CSEs with diagnosed mental health conditions, leads the researcher to the conclusion that future research should delve deeper into this problem by focussing on the types of mental health

diagnoses and trauma experiences in the CSE context. As such, the researcher did not ask CSEs to divulge what their mental health diagnoses were.

- A last recommendation for future research stems from the finding that, despite the well-intended efforts of the SAPS EHW support services, CSEs do not perceive the available support services as helpful. Hence, the researcher suggests in-depth research to ascertain the needs of CSEs in terms of briefing and debriefing, which appear quite unique compared with other trauma-inducing work contexts.

Although there is academic disagreement about the sensibility of offering recommendations for policy and practice when research is basic, there are alternate views which champion the furnishing of recommendations that are theoretically sound and practically grounded in the findings of a basic research study (Robinson et al., 2013:292). However, of elevated importance when recommendations are offered as part of a basic study, is that recommendations should not be sweeping statements which are not supported by the research evidence. Renkl (2013:319) insists that even though some recommendations may be proven in future research to have been oversimplified or even erroneous, recommendations are intrinsically important to advance academic discourse in the topic under investigation. Cognisant of the aforementioned the following recommendations are offered:

- CSEs who indicated that they have been diagnosed with mental health conditions, have pushed themselves forward as being particularly vulnerable throughout the data analysis process. Alarming frequent significant statistical associations highlight that they are at risk to experience poor outcomes in their work context. Therefore, it is recommended that particular attention be paid to implementing strategies to support CSEs with diagnosed mental health conditions.
- CSEs have been demonstrated to experience unique trauma exposure challenges, whereby not every crime scene they attend is uniform or causes traumatising in the same way. Further, the findings confirm that re-traumatisation occurs through the compilation of photo albums, certain types of crime scenes are experienced as more stressful and traumatic, and frequency of exposure to traumatic crime scenes has an impact on the well-being of CSEs. Accordingly, uniquely designed approaches to trauma support are recommended for CSEs. These approaches should not have a blanket approach towards trauma support in SAPS, because it will not be optimal in recognising the unique needs of CSEs. For example, attendance of crime scenes at night was highlighted as being particularly stressful by a significant proportion of the respondents,

and so it is recommended that debriefing be made available in a way that will accommodate this finding.

- Psychological interventions such as debriefing should potentially be made mandatory, however it is recommended that before this occurs it should first be established how debriefing can be made more helpful and appealing to CSEs. In other words, interventions should be informed by CSEs' needs. Findings in the present study suggest that CSEs would be more willing to attend debriefing, and find it more effective, if the sessions were offered by individuals with CSE work experience. For example, the possibility should be explored of using retired staff who are familiar with the CSE role to facilitate psychological interventions.
- As the findings suggest that female CSEs experience crime scenes involving fetuses or children as particularly traumatic, it is recommended that they are prioritised as in need of special support interventions following attendance of such scenes.

6.11 Conclusion

Although police trauma and coping strategies have received substantial international and national research attention, there has been a distinct lacuna in research focussing on CSEs in the South African context, which the study has aimed to address. The study followed a quantitative, descriptive survey design in which convenience sampling was employed. In pursuit of the aim and objectives of the study, 103 self-administered questionnaires were completed by CSEs employed at all eight of the LCRCs in Southern Gauteng, which were used to garner univariate and bivariate data. The Mann-Whitney *U* test uncovered varying relationships, differences, and similarities between variables measured in the questionnaire.

In conjunction with the vast body of existing research evidence focussed on police official trauma in general, the survey findings highlight the unique trauma experiences of CSEs in the South African context. The profile of the respondents confirm that the CSE environment is dominated by men, with male CSEs outnumbering female CSEs by approximately 3:1. Southern Gauteng CSEs attend violent crime scenes with alarming frequency, but autopsies less regularly. The high violent crime rate in the Southern Gauteng geographical area likely contributes to the frequency with which CSEs are required to attend violent crime scenes. Therefore, CSEs are exposed often to death and serious injury due to the very nature of their work, and a natural response may involve fear, helplessness, or horror. It was not surprising to discover that a sizeable number of Southern Gauteng CSEs present with concerning levels of Post-traumatic Stress Disorder (PTSD) symptomology.

Additionally, significant proportions of CSEs are routinely required to both take photographs of crime scenes and compile photo albums. They are required to physically draw close to the injured or deceased victims and the crime scene information surrounding them, in order to accurately capture the information that will be required for trial. This means that traumatising does not end at the crime scene when their work is concluded. Rather, the trauma experience is perpetuated when reviewing the evidence post-scene and during court trials where they have to recount the details of crime scenes.

The coping strategy adopted by majority of respondents was acceptance. Although attended less frequently, crime scenes involving fetuses and deceased children are experienced as very distressing by all CSEs, but significantly more so by female CSEs. A large proportion of CSEs are hesitant to access debriefing services, for numerous reasons, despite feeling the need to talk to someone about their work. It is noteworthy that colleagues are the preferred port of call when CSEs speak to someone about their work.

The trauma experienced by CSEs is unique compared with other policing units. Therefore, it is recommended that trauma interventions should be responsive to their needs. Lastly, the CSEs who have been diagnosed with mental health conditions seem to be at significant risk, and thus it is recommended that they should receive special attention in future interventions.

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QUESTIONNAIRE FOR POLICE CRIME SCENE EXAMINERS

- We would like you to please complete the questionnaire as honestly as possible, so please **do not write your name or any other information which could identify you on the questionnaire.**
- Clearly indicate your answer with an X or complete the relevant block. Please do not write in the "for office use only" blocks.
- Please use the black pen provided.

Section A: Biographical and background information

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1	Age:		years	
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2	Sex:	Male	1	Female	2	
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3	Population group:	Black African	1	Indian/Asian	2	
		Coloured	3	White	4	
		Other	5			

4	Marital status:	Married	1	Widower/widow	4	
		Living together like married partners	2	Separated	5	
		Never married	3	Divorced	6	

5	Number of dependent children:	
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6	Highest qualification:	Grade 12/Matric	1	
		Diploma	2	
		B-degree (eg. BA, Btech)	3	
		Postgraduate diploma	4	
		Postgraduate degree	5	

7	Type of area mainly grown up in:	Urban (city) formal housing	1	
		Peri-urban (small town)	2	
		Rural (farm, sparsely populated area)	3	
		Informal settlement	4	

8	Economic status of the family you have grown up in (before tax):	No income (R0) per year	1	
		Low income (R1 - 19 200) per year	2	
		Middle income (R19 201 - R307 200) per year	3	
		Upper income (R307 201 and above) per year	4	

9	Your current economic status (before tax)	Low income (R1 - 19 200) per year	1	
		Middle income (R19 201 - R307 200) per year	2	
		Upper income (R307 201 and above) per year	3	

10	Have you ever been diagnosed with a chronic (long term) health problem (for example high blood pressure, cholesterol or diabetes)?	Yes	1	
		No	2	

11	Have you ever been diagnosed with a mental health problem (for example depression, anxiety, or stress)?	Yes	1	
		No	2	

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12	How religious are you (regardless of your religious beliefs)?	Very religious	1
		Somewhat religious	2
		Not that religious	3
		Not religious at all	4

How often do you:		Daily	A few times a week	A few times a month	A few times a year	Never
13	Drink alcohol?	1	2	3	4	5
14	Smoke cigarettes?	1	2	3	4	5
15	Use prescription medication?	1	2	3	4	5
16	Use recreational drugs?	1	2	3	4	5

17	How often do you spend meaningful time with your family?	Very often	1
		Often	2
		Sometimes	3
		Seldom	4
		Never	5
		Not applicable	6

18	How many years have you been working at SAPS?	years
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19	How many years have you been working as a crime scene examiner?	years
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Section B: Tasks and responsibilities

		never	once every few months	1 - 2 times per month	3 - 4 times per month	5 - 6 times per month	1 - 2 times per week	3 - 4 times per week	5 - 6 times per week	7 - 8 times per week	9 or more times per week
20	How often do you work at crime scenes in general?	1	2	3	4	5	6	7	8	9	10
21	How often do you work at scenes where someone has died, no matter the cause of death?	1	2	3	4	5	6	7	8	9	10
22	How often do you work at scenes where someone has died violently?	1	2	3	4	5	6	7	8	9	10

Please indicate how often you attend crime scenes involving the following:

		never	once every few months	1 - 2 times per month	3 - 4 times per month	5 - 6 times per month	1 - 2 times per week	3 - 4 times per week	5 - 6 times per week	7 - 8 times per week	9 or more times per week
23	deceased fetuses	1	2	3	4	5	6	7	8	9	10
24	deceased children	1	2	3	4	5	6	7	8	9	10
25	deceased adults	1	2	3	4	5	6	7	8	9	10
26	dismembered bodies	1	2	3	4	5	6	7	8	9	10
27	disfigured bodies	1	2	3	4	5	6	7	8	9	10
28	decomposed bodies	1	2	3	4	5	6	7	8	9	10
29	murder committed for the use of muti (muti murder)	1	2	3	4	5	6	7	8	9	10
30	when the victim is still alive and is still on scene	1	2	3	4	5	6	7	8	9	10
31	where there are bystanders or relatives of a victim/perpetrator on scene	1	2	3	4	5	6	7	8	9	10

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32	Do you attend autopsies?	Yes	1	No	2
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33	How often do you attend autopsies?	Never	1
		Daily	2
		Several times per week	3
		Several times per month	4

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34	Main reasons for not attending autopsies, if not attended	I have no time to attend autopsies	1
		Attending autopsies isn't in my job description	2
		I don't feel comfortable attending autopsies	3
		Other (please explain in the space below):	

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If you attend autopsies, please answer questions 35-42.

If you do not attend autopsies, **please go to question 43**

How often do you attend autopsies:

		never	once every few months	1 - 2 times per month	3 - 4 times per month	5 - 6 times per month	1 - 2 times per week	3 - 4 times per week	5 - 6 times per week	7 - 8 times per week	9 or more times per week
35	Where the person had died violently?	1	2	3	4	5	6	7	8	9	10
36	For a foetus?	1	2	3	4	5	6	7	8	9	10
37	For a child?	1	2	3	4	5	6	7	8	9	10
38	For an adult?	1	2	3	4	5	6	7	8	9	10
39	For a dismembered body?	1	2	3	4	5	6	7	8	9	10
40	For a disfigured body?	1	2	3	4	5	6	7	8	9	10
41	For a decomposed body?	1	2	3	4	5	6	7	8	9	10
42	For a victim of muti murder?	1	2	3	4	5	6	7	8	9	10

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		Always	Most of the time	Sometimes	Hardly ever	Never
43	Are you required to take photographs of crime scenes as part of your job?	1	2	3	4	5
44	Are you required to compile photo albums of the crime scenes that you attend?	1	2	3	4	5
45	How often do you arrive on the scene of a crime in a marked SAPS vehicle?	1	2	3	4	5

Section C: Experiences and dealing with work

Please take note of the below difficulties and indicate how much you have been distressed or bothered by these difficulties **during the past seven days**, in direct relation to your work at traumatic crime scenes and/or autopsies.

		Not at all	A little bit	Moderately	Quite a bit	Extremely
46	Any reminder brought back feelings about it	1	2	3	4	5
47	I had trouble staying asleep	1	2	3	4	5
48	Other things kept making me think about it	1	2	3	4	5
49	I felt irritable and angry	1	2	3	4	5
50	I avoided getting upset when I thought about it or was reminded of it	1	2	3	4	5
51	I thought about it when I didn't mean to	1	2	3	4	5
52	I felt as if it hadn't happened or wasn't real	1	2	3	4	5
53	I stayed away from reminders of it	1	2	3	4	5
54	Pictures about it popped into my mind	1	2	3	4	5
55	I was jumpy and easily startled	1	2	3	4	5
56	I tried not to think about it	1	2	3	4	5
57	I was aware that I still had a lot of feelings about it, but I didn't deal with them	1	2	3	4	5
58	My feelings about it were kind of numb	1	2	3	4	5

(continued from previous page)

		Not at all	A little bit	Moderately	Quite a bit	Extremely
59	I found myself acting or feeling like I was back at that time	1	2	3	4	5
60	I had trouble falling asleep	1	2	3	4	5
61	I had waves of strong feelings about it	1	2	3	4	5
62	I tried to remove it from my memory	1	2	3	4	5
63	I had trouble concentrating	1	2	3	4	5
64	Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart	1	2	3	4	5
65	I had dreams about it	1	2	3	4	5
66	I felt watchful and on-guard	1	2	3	4	5
67	I tried not to talk about it	1	2	3	4	5

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Please take note of the below coping methods and indicate how often you have been using them **over the past two weeks**

		Not at all	Not often	A medium amount	Frequently
68	I've been turning to work or other activities to take my mind off things	1	2	3	4
69	I've been concentrating my efforts onto doing something about the situation I'm in	1	2	3	4
70	I've been saying to myself "this isn't real"	1	2	3	4
71	I've been using alcohol or other drugs to make myself feel better	1	2	3	4
72	I've been getting emotional support from others	1	2	3	4
73	I've been giving up trying to deal with it	1	2	3	4
74	I've been taking action to try to make the situation better	1	2	3	4
75	I've been refusing to believe that it has happened	1	2	3	4
76	I've been saying things to let my unpleasant feelings escape	1	2	3	4
77	I've been getting help and advice from other people	1	2	3	4
78	I've been using alcohol or other drugs to help get me through it	1	2	3	4
79	I've been trying to see it in a different light, to make it seem more positive	1	2	3	4
80	I've been criticising myself	1	2	3	4
81	I've been trying to come up with a strategy about what to do	1	2	3	4
82	I've been getting comfort and understanding from someone	1	2	3	4
83	I've been giving up the attempt to cope	1	2	3	4
84	I've been looking for something good in what is happening	1	2	3	4
85	I've been making jokes about it	1	2	3	4
86	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, or shopping	1	2	3	4
87	I've been accepting the reality of the fact that it has happened	1	2	3	4
88	I've been expressing my negative feelings	1	2	3	4
89	I've been trying to find comfort in my religion or spiritual beliefs	1	2	3	4
90	I've been trying to get advice or help from other people about what to do	1	2	3	4

(continued from previous page)

(continued from previous page)		Not at all	Not often	A medium amount	Frequently	For office use only
91	I've been learning to live with it	1	2	3	4	
92	I've been thinking hard about what steps to take	1	2	3	4	
93	I've been blaming myself for things that happened	1	2	3	4	
94	I've been praying or meditating	1	2	3	4	
95	I've been making fun of the situation	1	2	3	4	

96	How stressful do you find working at crime scenes in general?	Not stressful at all	1
		A little stressful	2
		Quite stressful	3
		Very stressful	4

97	How stressful do you find working at violent crime scenes?	Not stressful at all	1
		A little stressful	2
		Quite stressful	3
		Very stressful	4

98	Do you find that working at a crime scene at night is more stressful than working at a crime scene during the day?	Always	1
		Most of the time	2
		Sometimes	3
		Hardly ever	4
		Never	5

If you answered "never" to question 98 above, please go to **question 106**

Do you find that the following contributes to you feeling more stressed while working at crime scenes at night?

Do you find that the following contributes to you feeling more stressed while working at crime scenes at night?		Yes	No
99	There is limited visibility	1	2
100	I feel less safe at night	1	2
101	I worry I may not find the scene in the dark	1	2
102	I may get lost	1	2
103	I don't like to leave my family at home alone at night while I'm out working	1	2
104	I have to be more vigilant at night	1	2
105	Other (please explain in the space below):		

106	Do you find that working at a crime scene in an informal settlement is more stressful than working at a crime scene in an urban area?	Always	1
		Most of the time	2
		Sometimes	3
		Hardly ever	4
		Never	5

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If you answered "never" to question 106 above, please go to **question 114**

Do you find that the following contributes to you feeling more stressed while working at a crime scene in an informal settlement?		Yes	No
107	There is limited lighting	1	2
108	I may get lost more easily	1	2
109	Several dwellings in close proximity create hiding places for perpetrators	1	2
110	A lack of street names results in confusion in finding scenes	1	2
111	It is more difficult to arrive at and leave scenes	1	2
112	The roads are in a poor condition	1	2
113	Other (please explain in the space below):		

Indicate how stressed you feel in the following situations:		Not stressed	A little stressed	Quite stressed	Very stressed
114	You're on your way to a crime scene	1	2	3	4
115	While working at a crime scene	1	2	3	4
116	After you've finished working at a crime scene	1	2	3	4

117	Do you find yourself less stressed if you arrive on scene in a marked SAPS vehicle?	Yes	1	No	2
-----	---	-----	---	----	---

118	How stressful do you find taking photographs of crime scenes?	I don't take photos	1
		Not stressful at all	2
		A little stressful	3
		Quite stressful	4
		Very stressful	5

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119	How stressful do you find compiling photo albums of crime scenes?	I don't compile photo albums	1
		Not stressful at all	2
		A little stressful	3
		Quite stressful	4
		Very stressful	5

How traumatic do you find violent crime scenes that involve:		Not traumatic	A little traumatic	Quite traumatic	Very traumatic
120	Deceased fetuses?	1	2	3	4
121	Deceased children?	1	2	3	4
122	Deceased adults?	1	2	3	4
123	Dismembered bodies?	1	2	3	4
124	Disfigured bodies?	1	2	3	4
125	Decomposed bodies?	1	2	3	4
126	Murder for the use of muti?	1	2	3	4
127	Victims who are still alive?	1	2	3	4
128	Bystanders or relatives of a victim or of a perpetrator who are on the scene of the crime?	1	2	3	4

		Yes	No
129	Have you ever been threatened by a bystander or a relative of a victim or a perpetrator who was on the scene of the crime?	1	2
130	Have you ever been physically assaulted by a bystander or relative of a victim or a perpetrator who was on the scene of the crime?	1	2

If you attend autopsies, please answer the following questions.

If you do not attend autopsies, please go to **question 139**

How traumatic do you find autopsies that involve:		Not traumatic	A little traumatic	Quite traumatic	Very traumatic
131	Fetuses?	1	2	3	4
132	Children?	1	2	3	4
133	Adults?	1	2	3	4
134	Dismembered bodies?	1	2	3	4
135	Disfigured bodies?	1	2	3	4
136	Decomposed bodies?	1	2	3	4
137	Where the deceased died in a violent manner?	1	2	3	4
138	Muti murder victims?	1	2	3	4

139	Would you recommend working as a crime scene examiner?	Definitely	Maybe	Never
		1	2	3

140	Have you ever thought of resigning from your job because of the nature of your work?	Always	Most of the time	Sometimes	Hardly ever	Never
		1	2	3	4	5

141	How would you rate your work satisfaction?	Very good	Good	Average	Poor	Very poor
		1	2	3	4	5

Section D: Briefing and debriefing

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		Yes	No	
142	Have you ever felt the need to speak to someone because of the work you do?	1	2	
143	Have you ever acted on this and spoken to someone because of your work?	1	2	

Have you spoken to any of the below people about your work?		Yes	No	
144	A colleague	1	2	
145	A family member	1	2	
146	A friend	1	2	
147	A professional at work	1	2	
148	A religious leader	1	2	
149	A professional outside of work	1	2	
150	Other (please specify who)			

151	Have you received any training or skills development from SAPS to assist you to cope with your work?	Yes	1	No	2	
-----	--	-----	---	----	---	----------------------

152	How would you rate the training received?	I haven't received training	1	
		Excellent	2	
		Good	3	
		Average	4	
		Poor	5	

153	If you have not received training, would you like to?	I have received training	Yes	No	Uncertain	
		1	2	3	4	

154	How often are you briefed about the nature of a crime scene before you arrive at the scene?	Always	Most of the time	Sometimes	Hardly ever	Never	
		1	2	3	4	5	

155	Would you like to be briefed about a crime scene before you arrive at the scene?	Yes	Uncertain	No	
		1	2	3	

156	How useful is the briefing in preparing you to deal emotionally with the crime scene?	I am not briefed	1	
		Very useful	2	
		Sometimes useful	3	
		Not useful	4	

Please note that the below questions are in reference to the EHW (employee health and wellness) debriefing available to you as a SAPS member

157	Are you aware that SAPS offers debriefing services?	Yes	No	
		1	2	

158	Is emotional debriefing available to you after you have completed your work at a crime scene?				
	Always	Most of the time	Sometimes	Hardly ever	Never
	1	2	3	4	5

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		Yes	Uncertain	No
159	Would you be willing to use emotional debriefing?	1	2	3

		Always	Most of the time	Sometimes	Hardly ever	Never
160	How often do you use the debriefing services?	1	2	3	4	5

		Excellent	Good	Average	Poor
161	How would you rate the debriefing services?	1	2	3	4

If you do use the debriefing services, please skip to **question 171**

If you **do not** use the debriefing services, please indicate if the following has any effect on your decision to not use the debriefing services.

		Yes	No
162	I have no time to attend debriefing	1	2
163	I worry that my colleagues will think less of me for attending debriefing	1	2
164	I consult a private psychologist	1	2
165	I don't want others to know how I feel	1	2
166	I don't trust the people providing the service	1	2
167	I don't find the debriefing helpful	1	2
168	I don't feel I need to attend debriefing	1	2
169	Debriefing offered by EHW staff is not helpful because they do not understand the realities of my daily job experience	1	2
170	Other (please explain in the space below)		

		Yes	No	Uncertain
171	Would you attend EHW debriefing if the person running it has personal experience with the CSE role and the scenes that you work with (they used to work as a CSE)?	1	2	3

- Thank you for completing this questionnaire. Please return your completed questionnaire back to the colleague who handed it to you.
- Please do **not** give it back in the original envelope that has your name on it as the questionnaire is anonymous. Please place it in the blank envelope you were provided with and seal it to prevent anyone but the researcher from seeing your answers.
- If you have any additional feedback about your work and the stress you encounter, please feel free to leave any written comments on the blank sheet attached.



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YUNIBESITHI YA PRETORIA

Faculty of Humanities

Department of Social Work and Criminology

Researcher: Katherine Goldman

Telephone: 0810466392

Email: katiegoldman92@yahoo.co.za

Informed Consent Information Leaflet

Dear participant,

You are invited to participate in a research study. The following details apply to the study, which will assist you in deciding whether you wish to participate:

Title of the study:

Trauma levels and coping strategies of Southern Gauteng crime scene examiners exposed to traumatic crime scenes and autopsies

Goal of the study:

The purpose of the study is to ascertain the levels and extent of trauma experienced by Southern Gauteng crime scene examiners who are exposed to traumatic crime scenes and autopsies. In addition, it shall be determined what the nature and impact is of the exposure and to additionally discover what coping strategies are implemented by the Southern Gauteng crime scene examiners. The data may then be further utilised to assist the South African Police Service in providing more effective support to crime scene examiners.

Procedures:

You will be requested to complete a questionnaire which will entail basic questions regarding your demographics (eg. age, sex, population group, marital status). There will additionally be more detailed questions pertaining to the levels of trauma that you experience, as well as the coping strategies you utilise in your everyday life to assist with your work. The questionnaire mostly requires you to choose an appropriate response / answer from a list of possible answers, although there are a limited number of questions that may require further elaboration, depending on your answer to the question.

Possible benefits of the study:

There will be no direct benefits attached to your participation in the study, however, your involvement may indirectly contribute toward the implementation of policies or strategies that can potentially contribute to more effective management of trauma experienced within your work environment.

Risks and discomforts:

A possible risk associated with your participation in the study is that the questions within the questionnaire are of a personal nature and may cause emotional distress. As a counter-measure, you will be provided with a list of relevant support services, as well as the contact details of the researcher, in the event that you experience any discomfort during or after your participation in the study. You are encouraged to call the support services or researcher at any time or stage should you experience distress that relates to your participation in the study. One of the relevant support services is the Employee Health and Wellness within the SAPS. They have been informed about the research study and they are therefore aware that you may require support as a result of the study. They offer their services free of charge and will provide you with access to psychological and medical professionals if needed.

Participants' rights:

Your participation in the study is voluntary, which means that you have the right to choose to participate and also withdraw from the study. There will be no negative consequences for either choosing to not participate in the study or choosing to withdraw from the study.

Anonymity:

It will be impossible to trace your completed questionnaire back to you as you will not be required to sign your name on the questionnaire. In other words, you will remain anonymous. Only the researcher and her supervisor will have access to the data collected and the informed consent forms. The forms and the completed questionnaires will be kept in a safe at the University of Pretoria and used for academic purposes only. The questionnaire does not contain identifying information such as names, addresses, phone numbers or email addresses.

Access to the researcher:

The contact person for the research study is Katherine Goldman. If you have any questions regarding the study or you have suffered any harm as a result of your participation in the study, please contact her on 0810466392 or at katiegoldman92@yahoo.co.za. Alternatively you may contact the supervisor Ms Harriët Klopper, at harriet.klopper@up.ac.za.

Data storage:

The data will be stored for 15 years in a safe in the Department of Social Work and Criminology, as per the policy of the University of Pretoria. The purpose of the data storage will be for archiving and possible future research purposes.

Data usage:

The data collected will be used for the completion of an academic Master's degree. The research findings will be disseminated in the format of a research dissertation, articles in academic journals and conference papers. Should you be interested to receive feedback regarding the research findings, the researcher can be contacted.

Informed consent: Participant statement

In order to protect your anonymity, please only tick the relevant boxes below:

The research has been fully explained to me	Yes	No
The researcher read and explained the information sheet to me	Yes	No
I read and understand the information sheet	Yes	No

Please note, if your answer to any of the above statements is no, please do not hesitate to contact the researcher if you require clarification to inform your decision to participate.

☐

I hereby give consent to participate in the research project.

☐

I hereby decline to participate in the research project.



Faculty of Humanities
Research Ethics Committee

27 August 2018

Dear Ms Goldman

Project: Trauma levels and coping strategies of Southern Gauteng
crime scene examiners exposed to traumatic crime scenes
and autopsies
Researcher: KJT Goldman
Supervisor: Ms H Klopper
Department: Social Work and Criminology
Reference number: 10688189 (GW20180325HS)

Thank you for the response to the Committee's correspondence of 30 January 2017.

I have pleasure in informing you that the Research Ethics Committee formally **approved** the above study at an *ad hoc* meeting held on 27 August 2018. Data collection may therefore commence.

Please note that this approval is based on the assumption that the research will be carried out along the lines laid out in the proposal. Should your actual research depart significantly from the proposed research, it will be necessary to apply for a new research approval and ethical clearance.

We wish you success with the project.

Sincerely



Prof Maxi Schoeman
Deputy Dean: Postgraduate and Research Ethics
Faculty of Humanities
UNIVERSITY OF PRETORIA
e-mail: tracey.andrew@up.ac.za

cc: Prof A Lombard (HoD)

Fakulteit Geesteswetenskappe
Lefapha la Bomotheo

Research Ethics Committee Members: Prof MME Schoeman (Deputy Dean); Prof KL Harris; Mr A Bizos; Dr L Blokland; Dr K Booyens; Dr A-M de Beer; Ms A dos Santos; Dr R Fasselt; Ms KT Govinder Andrew; Dr E Johnson; Dr W Kelleher; Mr A Mohamed; Dr C Puttergill; Dr D Reyburn; Dr M Soer; Prof E Taljard; Prof V Thebe; Ms B Tsebe; Ms D Mokalapa

South African Police Service



Suid-Afrikaanse Polisie

Privaatsak Private Bag X94	Pretoria 0001	Faks No. Fax No.	(012) 393 2128
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Your reference/U verwysing:

My referensie/my verwysing: **3/34/2**

THE DIVISIONAL COMMISSIONER: RESEARCH
SOUTH AFRICAN POLICE SERVICE
PRETORIA
0001

Enquise/Navraag: **Lt Col Joubert**
AC Thenga
Tel: **(012) 393 3118**
Email: **JoubertG@saps.gov.za**

Ms K Goldman
UNIVERSITY OF PRETORIA

RE: PERMISSION TO CONDUCT RESEARCH IN SAPS: TRAUMA LEVELS AND COPING STRATEGIES OF SOUTHERN GAUTENG CRIME SCENE EXAMINERS EXPOSED TO TRAUMATIC CRIME SCENES AND AUTOPSIES: UNIVERSITY OF PRETORIA: MASTERS DEGREE: RESEARCHER: K GOLDMAN

The above subject matter refers.

You are hereby granted approval for your research study on the above mentioned topic in terms of National Instruction 1 of 2006.

Further arrangements regarding the research study may be made with the following office:

The Divisional Commissioner: Forensic Services:

- **Contact Person:** Col NM Rababalela
- **Contact Details:** (012) 421 0440/082 378 3457
- **Email Address:** RababalelaM@saps.gov.za

Kindly adhere to paragraph 6 of our Attached letter signed on the **2018-08-07** with the same above reference number.


LIEUTENANT GENERAL
DIVISIONAL COMMISSIONER: RESEARCH
DR BM ZULU

DATE: 2018/08/22



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Humanities
Department of Social Work and Criminology

The Head

Employee Health and Wellness South African Police Service

I have applied to conduct a study with Southern Gauteng crime scene examiners (CSEs) working for the South African Police Service (SAPS). The purpose of the study is to ascertain the levels and extent of trauma experienced by CSEs, who are exposed to traumatic crime scenes and autopsies. In addition, it shall be determined what the nature and impact is of the exposure and to additionally discover what coping strategies are implemented by the CSEs. The data may then be further utilised to assist the SAPS in providing more effective support to the CSEs.

The CSEs will be requested to complete a questionnaire which will entail basic questions regarding their demographics (eg. age, sex, population group, marital status). There will additionally be more detailed questions pertaining to the levels of trauma that the CSEs experience, as well as the coping strategies that they utilise in their everyday life to assist them with their work.

A possible risk associated with participation in the study is that the CSEs may feel emotional distress due to the fact that the questions in the questionnaire are of a personal nature. We request the EHW services kindly avail itself to some of the CSEs who may feel that they need emotional support after participating in the study. The participants will be informed of EHW contact details in an informed consent information leaflet.

Kind regards,

Katherine Goldman