

Trauma and coping among crime scene examiners: A phenomenological inquiry

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Trauma and coping among crime scene examiners: A phenomenological inquiry

By

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Declaration

I, Sithembile Charity Linda, hereby declare that the dissertation-concerning “Trauma and coping among crime scene examiners: A phenomenological inquiry” submitted in fulfilment for the degree MA (Criminology) is my own independent work and has not been submitted for a degree at another University. I acknowledge that the data used in the report remains the intellectual property of the University of Pretoria.

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Abstract

Crime scene examiners (CSEs) use analytical techniques to collect physical evidence on crime scenes. As such, they often have close contact with dead bodies and body fluids. Research on trauma and coping among CSEs is in its infancy in South Africa. The aim of the study was to conduct a phenomenological study on the trauma and coping methods used by CSEs at four Local Criminal Record Centres (LCRCs) in the City of Tshwane Metropolitan Municipality. The objectives of the study were to investigate the nature of trauma experienced by the CSEs when interacting with violent and traumatic crime scenes, identifying the methods that CSEs use to cope with trauma experiences, and ascertain the usefulness of the coping methods CSEs use.

A qualitative research approach was used as it focused on detailed descriptions of participants' experiences and beliefs, and was fitting for a study with unquantifiable data. Thus, due to paucity of local studies regarding research problem, objectives articulated for the study prescribed the utilisation of transcendental phenomenology research design. As an access point, LCRC managers were firstly approached to refer the researcher to potential participants, after which snowball sampling was employed. Personal interviews were conducted with 25 CSEs, utilising a semi-structured interview schedule. The data was analysed to find a subjective meaning of different realities.

With alarmingly high crime rates in South Africa (particularly murder), crime scenes have negative effects on CSEs who have to attend and process such violent scenes. The findings reveal that potential stress triggers stem from violent crime scenes that have children and women as victims. The findings suggested that CSEs are potentially at risk of adopting maladaptive behaviour to cope with stress because of a lack of support. Noteworthy observations are that ineffective coping results to neglecting work details to avoid triggering stress, refusing to use debriefing and support programmes and self-isolation which often leads to severe depression and in some cases suicide.

The low uptake of employee health and wellness programmes by CSEs is of a major concern. Although coping mechanisms used by CSEs are maladaptive, CSEs are still found investing in destructive behaviours in order to cope with stress levels. The destructive behaviours pose a risk to CSEs ability to function and perform tasks effectively. Consequently, two key recommendations are that firstly debriefing needs to be implemented more frequently by psychologists, social workers and chaplains. Secondly, there is a need for programmes specifically aimed at promoting mental health and physical wellbeing among CSEs.

Key words: trauma; crime scenes; coping; forensic investigation; murder; crime scene examiners and City of Tshwane Metropolitan Municipality.

List of abbreviations

CSE:	Crime Scene Examiner
PTSD:	Post-Traumatic Stress Disorder
EHW:	Employee Health and Wellness
SAPS:	South African Police Services
DSM5:	Diagnostic and Statistical Manual of Mental Disorders
LCRC:	Local Criminal Record Centre
CJS:	Criminal Justice System

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Chapter 1: Background and purpose

1.1 Introduction

Law enforcement officers are constantly exposed to dangerous circumstances since they have to respond to unpredictable events as criminal investigators (Gehl & Plecas, 2016:1). Officers are vulnerable to experiencing trauma and other forms of stress because they are often exposed to stressors and disturbing events that include physical violence, gruesome crime scenes and suffering victims (Sollie, Kop & Euwema, 2017:1581). Investigators usually become resilient and not seek professional help after hostile events (Kelty & Gordon, 2015:274). In this regard, repressing emotions as a coping mechanism puts strain on personal relationships and isolate police officers, including crime scene examiners, from their families and friends (Craun, Bourke, Bieri & Williams, 2014:300).

The media reported some of the harsh realities that CSEs are exposed to. On 11 December 2014, News24 published an article that described a gruesome crime scene that CSEs were confronted with. Six men were found dead with their hands bound and heads crushed with rocks. CSEs on the scene had to warn off residents asserting that seeing the bodies will cause nightmares and trauma. Hardened investigators in Cape Town were shocked by the brutality, with a photographer describing in detail seeing brain matter protruding from the crushed heads (News24, 11 December 2014). In another article, a CSE explained going to a crime scene where a father had accidentally driven over his two-year-old son. The CSE described how the incident severely affected him since he also had recently become a father. He was overwhelmed by the scene, especially because a CSE is required to interact closely with all aspects of the scene, such as the body and blood, and attend the autopsy (IOL News, 18 March 2014).

In 2012, former police minister Nathi Mthethwa expressed concern at the number of police officers' suffering from depression and post-traumatic stress disorder (PTSD). Furthermore, Polmed a South African police service medical scheme revealed that specific disorders, namely substance abuse, depression and PTSD were prevalent among CSEs and likely stemmed from stress endured at work (SA News.gov.za, 21 June 2012). Although studies have been conducted on police officers' stress and coping methods, very limited local research that has been conducted explored stress, trauma and coping mechanisms among CSEs (Gumani, Fourie & Terreblanche, 2013:2; Jorgensen & Rothman, 2008:1; Klopper & Steyn, 2016:14; Louw & Viviers 2010:1; Steyn & Klopper, 2020:287).

1.2 Origin and rationale

The nature of work carried out by CSEs is traumatic and exposes them to numerous violent and gruesome sights, even more often in South Africa given the country's high murder rate. Murders in South Africa remain very high, with 1.4% increases in reported cases between 2018/2019 and 2019/2020 (Official Crime Statistics, 2019/2020). Approximately 58 people are murdered in the country every day at a rate of 35.8 people per 100,000 population (BusinessTech, 2020). Crime rate in South Africa is very high compared to countries like Qatar, which have a crime rate of 11.9% in a population of approximately three million. Qatar is followed by Taiwan with a crime rate of 15.28% in a population of approximately 24 million (World Population Review, 2020). The high murder rate in South Africa necessitates a larger contingent of CSEs, and concomitant workload, to process crime scenes where homicides took place.

The study seeks to describe the trauma and coping mechanisms used by CSEs when faced with harrowing crime scenes, which often involve dead bodies, blood and other bodily fluids. CSEs are expected to interact closely with gruesome crime scenes, including decomposed, dismembered and disfigured bodies (Rosanky, Cook, Rosenberg & Sprague, 2019:1). While working on violent crime scenes, CSEs often come into contact with hazardous chemicals, toxins and on-site pollution, which puts their health at risk (Mona, Chimbari, & Hongoro, 2019:2). The limited research on the trauma that CSEs endure highlights the need for qualitative investigations to explore the lived experiences of trauma and coping among CSEs in depth (Rosanky et al.; Mrevlje, 2015:375).

It is important to identify the coping methods that CSEs use when faced with trauma in order to establish whether the mechanisms are adaptive or maladaptive. The knowledge of their coping methods will highlight effective and ineffective strategies in an attempt to ensure that CSEs are provided with the correct support, and stress and trauma are minimised to ensure efficiency in their work. Research by Klopper and Steyn (2016) raised the following important questions that ought to be further explored:

- Why would CSEs use denial when faced with a traumatic event?
- How would CSEs describe the stress endured on the crime scenes?
- What resources are mobilised as buffers against negative physical and psychological effects?
- Why do some CSEs not use the in-house psychosocial support that the South African Police Service (SAPS) offers?

The present study sets out to fill the current local knowledge gap regarding CSEs and their work by posing the following qualitative research questions: What trauma do CSEs experience and how do they cope with such trauma?

1.3 Aim and objectives

The aim is to conduct a phenomenological study on the trauma and coping methods used by CSEs. The objectives are to:

- Investigate the nature of trauma experienced by the CSE when interacting with violent and traumatic crime scenes
- Identify methods CSEs use to cope with trauma experiences
- Ascertain the usefulness of the coping methods CSEs use

1.4 Value of the study

The value of the study lies in the probable findings, to further understand trauma and coping phenomenon in South Africa, as well as generating a point of departure for further research endeavours. Due to the limited research presented on CSEs, the findings shed light on trauma and stress endured by CSEs and preferred coping methods (Rosanky et al., 2019:1; Mrevlje, 2015:375). Additionally, the findings provide insight into the extent of trauma on CSEs by describing their experiences of interacting with gruesome and violent crime scenes and identifying coping methods used by CSEs. Determining the usefulness of the coping methods used by CSEs has not been explored fully in South Africa. For that reason, the findings of the present study will be circulated on appropriate platforms, which may enhance the knowledge of, policies for and responses to the field of coping with trauma among CSEs research.

The current study's use of qualitative paradigm provides detailed insight into the experiences of stress and trauma among CSEs. Research into trauma and coping methods in Criminology has focused tremendously on frontline and law enforcement workers (Craun *et al.*, 2014:30). The value of research focusing on trauma and coping methods lies in the fact the current research highlights traumatic experiences of CSEs and methods used to cope with stress. The emotional and physical wellbeing of CSEs is significant in Criminology as CSEs play a vital role in collecting evidence from violent crime scenes, which helps to potentially solve cases and fight crime. Therefore, the current study may strengthen the development of support systems within the SAPS to help lessen the stress and strain CSEs experience while working on violent and harrowing crime scenes. Inherently, this will help CSEs process and produce better evidence and the overall investigation. The study also presents an integrated model to

explain trauma and coping among CSEs, which contributes to Criminology's sub-discipline of theory and theory development.

1.5 Summary of research design and methods

Although the research methods of the current study are discussed in considerable detail in Chapter 4, a brief synopsis is necessary as part of the introductory chapter. The research question and the philosophical foundation in which the study is rooted are based within the subjectivism paradigm. The paradigm provides in-depth information about the phenomenon by focusing on individual experiences, perceptions and interpretations of the world and social relations (Mills, Durepos & Wiebe, 2010:2). The objectives formulated dictated the adoption of a qualitative approach, which allows the researcher to seek views on a focused topic with key informants to understand experiences and conditions from a personal perspective (Hammarberg, Kirkman & de Lacey, 2015:499). The qualitative approach enabled the researcher to be interpretive and adopt a naturalistic approach to the subject matter (Aspers & Corte, 2019:142). The study was explorative in nature to provide a better understanding of a complex topic and provide a more comprehensive understanding of trauma and coping methods used by CSEs (Babbie, 2011:96).

A phenomenological approach was preferred as a research design as it would permit CSEs to discuss their everyday experiences of violent crime scenes and gruesome imagery in depth. Furthermore, the researcher opted for transcendental phenomenology as it was the most practical due to the attention being placed on CSEs within the Tshwane area in Gauteng (Grossoehme, 2014:117). Non-probability sampling was best suited when there was limited time available and when results were needed urgently (Maree, Creswell, Ebersöhn, Eloff, Ferreira, Ivankova, Jansen, Nieuwenhuis, Pietersen & Piano Clark, 2016:197).

The data gathering technique for the study was personal interviews, utilising a semi-structured interview schedule. Semi-structured interviews were used to discover deeper and more meaningful information regarding the CSEs' experiences. The semi-structured interview schedule enabled the researcher to apply probing questions for clarification to broaden the line of enquiry. Semi-structured interviews were face to face and allowed for a conversational tone in order to make it easier for participants to relay their experiences of trauma and coping (Maree *et al.*, 2016:93). Qualitative research often uses the triangulation technique, which is defined as the use of multiple data sources and multiple analytical methods to enhance trustworthiness and rigor. The technique minimises and recognises probable preconceptions while guaranteeing the examiner's analysis reliability.

1.6 Definition of concepts

Trauma refers to events that involve potential risk of death, harm or even sexual violation (Lewis, Arseneault, Caspi, Fisher, Mathews, Moffitt, Odgers, Stahl, Ying Teng & Danese, 2019:247). Trauma is caused by physical and psychological dangers, threats of violence and death, and exposure to harmful environments and stress (Boshoff, Strydom, Botha, 2015: 262). The centre for treatment of anxiety and mood disorders (2014) defines trauma as a psychosomatic and emotive response to an occurrence or an experience that is deeply distressing and unsettling, such as illness, injury, an accident or losing a loved one through death and divorce. Events are often viewed subjectively and trauma broadly encompasses and includes extreme events, such as rape. Trauma is a type of psychological injury that is difficult to process, especially if a person lacks the necessary resources to manage mental issues that emerge (Lewis, 2019:249). A distressing experience may disturb an individual's inhabitation of the world in a safe and comprehensible manner. In the present study, trauma refers to any incident that overpowers current defences against anxiety and stress.

Stress refers to stress as any external or internal event that threatens to upset an individual's internal equilibrium. Stress is further described as a condition or feeling experienced by a person when an event is perceived to have demands beyond the personal resources of an individual (Bhargava & Trivedi, 2018:109). Stress can also be defined as emotional and mental tension that may be influenced by internal and or surrounding environments that interrupt the homeostasis of an individual. In the present study, stress is defined as any physical or physiological reaction to a potential stressor for a prolonged period of time.

Coping refers to activities undertaken to alleviate stress (Orzechowska, Zajączkowska, Talarowska & Gałeczki, 2013:1050). Coping has been considered as any effort, healthy or unhealthy, conscious or unconscious, to eliminate or lessen stressors or even coping with them in the least harmful way (Mohamed & Baqutayan, 2015:481). In the present study, coping refers to any activity that reduces or eradicates stress including both positive and negative coping activities.

Crime scene refers to any physical scene that may provide potential evidence to an investigator (UNODC, 2008:209). It is the site of the original or first criminal activity and is focused on physical evidence (Miller, 2014:116). In the present study, a crime scene refers to any site where potential evidence can be collected by a crime scene examiner .

Crime scene examiners (CSE) identify traces on crime scenes in order to inform police investigations (Wyatt, 2014:443). CSEs are members of the Division: Forensic Services performing the forensic examination and processing of crime scene (National Instruction 1 of 2015). In the present study, CSEs are professionals tasked with examining and identifying

traces of evidence on crime scenes to inform law enforcement investigations. Crime scene examiners and crime scene technicians will be used interchangeably in the study .

Forensic investigation refers to technical approaches used to unravel misconduct. The process includes gathering and investigating all crime-related physical evidence such as blood, bodily fluids, fingerprints and residue (Avais, 2012:252). It is the gathering of facts to assist in resolving crimes and/or other irregularities a scientific investigation that aims to bring criminals to justice (Gillespie, 2014:5). In the present study, forensic investigation refers to all scientific methods used as facts and evidence to solve crimes.

Murder refers to the unlawful killing of any person with malice or aforethought, either expressed or implied by law (Hossain & Rahi, 2018:461). Murder is the unlawful and intentional killing of a human being (South African Police Service, 2020). In the present study, murder refers to any unlawful and intentional killing of another individual.

The City of Tshwane Metropolitan Municipality refers to the metropolitan area centred on the city of Pretoria in the Gauteng province. According to the 2011 census data, Tshwane's population is estimated at 2,921,488 (463.89 per km²) (Statssa 2020). In the present study, the researcher uses the Tshwane municipality as the research site.

1.7 Structure and layout of the report

Chapter 1 presented the study and its purpose to the reader. The chapter defines key concepts, outlines the aims and objectives and narrates the origin and rationale of the study. Furthermore, the chapter reviews the significance of research and concludes with a summary of the research methods used in the study.

Chapter 2 explores research evidence to facilitate the comprehension of the current phenomenon. The literature review contains historical origins and understanding of trauma and stress phenomena, types of trauma, international and national research pertaining to trauma among CSEs and coping techniques used to alleviate trauma and stress.

Chapter 3 explicates the theoretical framework. It clarifies particular theories and their application regarding trauma and stress among crime scene technicians and provide essential theoretical context to the research.

Chapter 4 clarifies research methods and techniques used in the study in relation to the research paradigm, research approach selected, purpose of research, type of research and research design. It also explains sampling methods, data gathering procedures, methods and instrument used, as well as data analysis.

Chapter 5 presents the data gathered through interviews as it is, without any alterations. The exclusive purpose of the chapter is to allure the reader's attention to the results that the fieldwork exercise generated.

Chapter 6 discusses and interprets results in relation to theoretical framework. It compares evidence and arguments from existing studies with the results of the current study. Furthermore, the chapter discusses any inconsistencies and makes recommendations regarding policy and practice.

1.8 Summary

There is extensive research and evidence on police officers and frontline workers, but there is a lack of research and data gathered focused on traumatic experiences endured by CSEs and the coping techniques they use to cope with stress and anxiety. Trauma and coping have been elucidated in separate research papers. However, the extent of trauma and potential risk factors of interacting with violent crime scenes by CSEs needs to be described and explored with greater diligence. An investigation on coping methods used by CSEs and their effectiveness has not been conducted. Consequently, the aim of the study is to investigate the nature of trauma experienced by the CSE when interacting with violent and traumatic crime scenes and further identify trauma coping methods for CSEs, with specific focus being on CSEs in Tshwane municipality in Gauteng.

Chapter 2: Literature review

2.1 Introduction

Chapter 2 provides a literature review aligned with the aims and objectives of the current research study. The purpose of the current literature review is to scrutinise, summarise and evaluate a number of sources, including but not limited to academic journals, books, articles and conference papers. The sources focus on a particular research area, specifically trauma and coping among CSEs, in order to gain a deeper understanding of historical and modern research in relation to the research problem. The current chapter firstly provides a brief overview of the historical context of trauma and stress in order to understand where they stem from and what they actually are. Secondly, it is followed by a presentation of the magnitude of the research problem among CSEs by exploring and presenting international and national evidence. Thirdly, it discusses coping and non-coping methods utilised by CSEs when enduring stress and trauma (Benacherine, 2019:1). Literature focusing on trauma and coping methods among CSEs remains in its infancy stages, particularly in South Africa. Much importance has been put on collecting forensic evidence to aid in investigations and prosecution. However, reactions regarding the nature of work carried out by CSEs has not been studied, which limits the knowledge of causes and coping methods of trauma (Holt, Blevins, Foran & Waddell Smith, 2016:2).

2.2 Historical origins and understanding trauma and stress phenomena

In this context, the following key points regarding CSEs will be discussed:

- Historical origins of trauma and stress
- Definition of the concepts
- Common causes of stress and trauma
- Prevalence rate of trauma and stress occurrences globally and locally
- Common experiences and responses to trauma and stress

2.2.1 Historical origins of trauma

It was during the 1970s where a dynamic shift in perspective occurred in relation to how psychological trauma was perceived and handled. Before the 1970s, public opinion was that a person without family history of mental illness or other proof of susceptibility would naturally heal and recover from a traumatic event without long-term consequences. Psychological trauma became important when delayed stress syndrome was discovered among healthy soldiers in the course of the Vietnam War. Soldiers who had showed no apparent signs of chronic stress during traumatic exposure later displayed signs of deep suffering and severe

distress. The discovery led to the launch and depiction of psychological trauma as a new concept (Jones & Wessely, 2006:217).

Historically, signs of traumatic stress were recorded in both military and civilian populations. Initial reports described the effects of battle conditions on soldiers with specific terminology, such as soldier's heart and nostalgia, used for traumatic stress reactions during the American Civil War in the 1860s. The change in war techniques and strategies led to more physiological descriptions to explain effects of explosion, such as shell shock which is a combat stress reaction to horrific occurrences during war. On the contrary, the focus on civilians illustrated that traumatic stress resulted from dramatic catastrophes such as railway accidents, natural disasters, occupational health stories and contemporary literature (Centre for Substance Abuse Treatment, 2014). During the World War I, the mass civilian army was first exposed to warfare emotional stresses that led to the proposal of an organic explanation for post distressing disorder called shell shock. Civil and military authorities outlawed that no war pensioners would be awarded for psychiatric war injuries, which led to many soldiers being diagnosed with exhaustion during World War II. The use of such a term was to nullify the seriousness of the condition and imply natural recovery. However, more and more casualties among seasoned troops emerged displaying a need for trauma to be acknowledged as a serious ailment. Table 1 demonstrates war syndromes characterised by medical terms in an effort to combat the epidemic of shell shock and trauma as explained by Edward Jones and Simon Wesley (Jones *et al.*, 2018:218).

Table 1: War syndromes characterised by unexplained medical terms

War syndromes characterised by unexplained medical terms	
War	Medical terms
Pre-1914	Soldiers heart, irritable heart, palpitation, Da Costa syndrome, disorder action of the heart, nostalgia and wind constitution
World War I (1914-1918)	Shell shock, effort syndrome, neuro-circulatory asthenia, war neurosis, gas hysteria and neurasthenia
World War II (1939-1945)	Effort syndrome, non-ulcer dyspepsia, psychoneurosis and battle exhaustion
Vietnam War (1956-1945)	Effects of Agent Orange
Gulf War (1991)	Desert storm syndrome, Gulf War syndrome, Gulf-related illness

Table 1 clearly demonstrates clinicians' denial of trauma during diagnosis of soldiers and the failure to combat the pandemic. A dire need for research into psychological effects of war was imperative. Therefore, an investigation into psychological impact of World War II commenced in Europe among holocaust survivors. Many scientific research authors agree that the effects of trauma due to World War II continued for extended periods of time (Rzeszutek, Lis-Turlejska, Krajewska, Zawadzka, Lewandowski & Szumial, 2020: 2).

Research depicts traumatic stress as likely to occur in response to extreme and unusual circumstances that evoke significant symptoms of distress in almost everyone, as shown through evidence from convenience samples and the general population. Consequently, any shift in environmental conditions led to a revisiting of earlier constructions of traumatic descriptions. Historical events, such as the holocaust and extreme maltreatment in Nazi camps, led to a formal inclusion of traumatic stress as a psychiatric condition and potential stressors in the DSM 3 (Eagle, 2014:4). With both international and national influences from mental health organisations and research, the DSM-IV modified the definition of trauma and gave it a broader interpretation (Andreason, 2010:67). The modified definition of trauma has been maintained by the DSM-V, but the current criterion remains ambiguous about whether traumatic events must be experienced directly or indirectly in order to meet diagnosis (American Psychiatric Association, 2013).

The definition of trauma is extensive and broad because it embraces reactions from different circumstances, namely accidents, natural disasters, crime, surgeries, death, violent events and incidental accidents. Moreover, it also includes responses related to prolonged or recurring experiences such as neglect, abusive relationships, and municipal violence (Giller, 1999:1). Subsequently, it becomes difficult to determine whether a particular event is traumatic or not because it depends on the individual's interpretation of their experience. In this context, trauma refers to intense physical and psychological reactions elicited after experiencing a threatening event or circumstances affecting an individual's functioning. Numerous individuals describe trauma by referring to a specific event or multiple chronic events in some cases (Substance Abuse and Mental Health Services Administration, 2019). However, the 5th edition of Diagnostic and Statistical Manual of Mental Disorders (DSM5) states that an individual needs to be exposed to actual or threatened death, serious injury or sexual violence to meet the diagnostic criteria (American Psychiatry Association: Diagnostic and statistical manual of mental disorder, 2019:275). Trauma, however, cannot be limited to a diagnostic criteria and must be characterised broadly. Acknowledging trauma can occur in the absence of psychical harm, an event is therefore traumatic if it contradicts one's worldview and overpowers an individual's ability to cope (Centre for Substance Abuse Treatment, 2014:7).

2.2.2 Types of trauma

There are generally three broad forms of trauma that are universally agreed upon, namely acute trauma, complex trauma and chronic trauma. Injury, medicinal treatment and recovery mechanisms may have major impact on an individual's wellbeing. Therefore, physical disabilities such as ache, lethargy and weakened wound healing are related to the emergence of acute trauma (Visser, Gosens, Oudsten & De Vries, 2018:1). Acute stress reactions may occur following exposure to a traumatic event and are composed of a cluster of symptoms that occur within the first month (Garfin, Holman & Silver, 2015: 676). Existing literature presented on acute trauma show that symptoms present immediately after a traumatic event are normally temporary, with many individuals being able to progress throughout life. When focusing on subsections of acute trauma, physical stimulation felt instantly after a stressful event has been a forecaster of later development of stress, depression and emotional numbing (Barber, Kohl, Kassam-Adams & Gold, 2015:6). Specific symptoms of acute stress disorder are diagnosed when a person is exposed to a traumatic event as follows (Grohol, 2020:1):

- An individual experienced, observed, or was antagonised with an experience that involved concrete or endangered death or serious harm, or a threat to the physical integrity of self or others.
- An individual's response is likely to involve intense fear, helplessness or horror (not all individuals experience this). Consequently, following one of the disturbing and stressful events, a person will further display three or more of the following dissociative symptoms:
 - Personal sense of numbing, disinterest or absenteeism of sensitivity
A decline in mindfulness of his or her environment
Derealisation
Depersonalisation
Dissociative amnesia or inability to remember significant features of ordeal.

Complex trauma results from constant exposure to traumatic and disturbing events one experienced as a child. A person with complex disorder normally has symptoms that resemble PTSD (Giourou, Skokou, Andrew, Alexopoulou, Gourzis & Jelastopulu, 2018: 13). Contact to several harrowing events, especially in childhood, provides a diagnosis symptomatology later in life (Marinova & Maercker, 2015:2). Complex trauma refers to individuals who have been victims of a series of traumatic events, which often result in a display of symptoms related to PTSD. In other words, complex trauma is characterised by repeated episodes of interpersonal trauma occurring in physical, psychological and social surroundings. To be diagnosed with complex trauma, an individual must display the following characteristics (Tarrochi, Aschieri, Fantini & Smith, 2013: 2):

- Deficiency of capability to control emotional reactions
- Changes in awareness and individuality
- Amendment in personal insight
- Shifts in awareness of wrongdoer
- Somatisation which is initiated by emotional responses such as anxiety and depression
- Changes in observations and views of others
- Adjustments in classifications of significance

Given that complex trauma includes exposure to multiple events, it is rational to assume that a combination of effects may be intricate. An accumulation of different traumas leads to a wider assortment of symptoms and there is an overlap of symptoms that sometimes present themselves as chronic trauma (Briere & Scott, 2015:517). Chronic trauma is usually formed from lengthy experiences of repeated and multiple harm. It should be noted that chronic trauma is sometimes used interchangeably with complex trauma. Chronic trauma arises from different types of abuse characterised by the following components:

- Abuse that occurs in an intimate relationship and the victim knows the perpetrator
- Long-term exposure to repeated abuse and displayed through a recurring pattern of conduct
- Emotional and/or psychological abuse, facets may also involve physical, sexual or financial abuse (Paper Dolls Research Group 2019:5)

Chronic trauma can be worsened by several occurrences or accumulative abuse where victims experience abuse from different committers at different stages of life. There is no clear distinction between before, during and after experience as abuse effects are felt and endured after a survivor has left the traumatic environment. Furthermore, the long-term consequences of abuse have severe effects and influence on the victim's life surrounding areas, such as education, occupation, family and other relationships (Paper dolls research group, 2019:1).

2.2.3 Common experiences and responses to trauma

Traumatic stress severely impacts an individual's everyday functioning, relationships, work-related tasks and may even include psychological conditions, such as PTSD, but fall short in meeting the diagnostic threshold. Global prevalence of PTSD is estimated to be 2% in Western Europe, less than 10% in North America and 2.3% in South Africa (Swain, Pillay & Kliever, 2017:1). Longitudinal studies show PTSD and depression as frequently occurring mental disorders after experiencing a traumatic event. The re-experience of a traumatic event and avoidance of trauma related stimuli are the main symptoms of trauma and stressor related disorders (Ophuis, Oliji, Polinder & Haagsma, 2018:2). Research studies show that over 70%

of individuals will be exposed to a potentially traumatic event such as witnessing a death, severe injury, unexpected death or being in a life-threatening accident (Atwoli, Stein, Williams, McLaughlin, Petukhova, Kessler & Koenen, 2013:5). A number of risks and resilience factors such as cognitive flexibility and active coping influence the way individuals react to traumatic events, which inherently result in no single dominant predictor of PTSD being identified (Knipscheer, Sleijpen, Frank, De Graaf, Kleber, Have, Duckers, 2020:2). However, trauma and PTSD are not synonymous, which means that not all traumatised individuals will develop PTSD because PTSD does not capture post traumatic manifestations entirely (Lewis, 2019:5). Consequently, it is important to note the different responses to trauma as reactions will not always be negative but may show an individual's capacity to adapt to stressful circumstances positively.

Numerous reactions are often reported and/or observed after trauma such as development of PTSD or stress. Some exhibited reactions may be immediate and can be resolved without long-term consequences while some individuals show severe impairment and symptoms that meet the criteria for trauma-related stress disorders. Reactions are considered normal responses to traumatic events and distressing experiences, however, they do not specify symptoms of mental illness and/or disorder (Substance Abuse and Mental Health Services, 2014:3).

Emotional responses to sudden traumatic events differ and the most influential factor is sociocultural history, as described by Carpenter and Trull (2014:2). Common immediate reactions that may be displayed by an individual faced with a traumatic event range from rage, to terror, sorrow and humility. Individuals faced with trauma lack the ability to interpret emotions. A difficulty in regulating and interpreting feelings can be explained as emotional dysregulation and is characterised by being unable to adapt to and handle emotions. The shortfall in emotional regulation adds to an inclination to engage in dysregulated actions to cope and decrease destructive effects to strain (Carpenter & Trull, 2014:2). People engage in many activities and patterns to cope with strain and regulate emotions. Some may engage in substance abuse to redeem emotional control, engage in high-risk activities such as self-injuring behaviour, eating disorders and compulsive actions such as gambling, overworking and repressing emotions. However, not all emotion regulating behaviours are destructive, some people engage in positive actions by engaging in healthy habits, such as renewed interest in physical activity and accessing organisations that support trauma survivors (Substance Abuse and Mental Health Services Administration, 2014:5).

Emotional numbing plays an important role in relationships, particularly intimacy displayed through detaching from others, losing interest in activities that a person loved and a very

restricted range of effects (Nunnink, Goldwaser, Afari, Nievergelt & Baker, 2010:426). Numbing is a core characteristic of sorrow and interferes significantly with reversing the severe effects of trauma on an individual (Mascaro, 2016:1). In essence, numbing conceals what occurs internally in relation to emotions and most individuals cannot associate emotions and history of a traumatic event. Repressing and denying emotions often lead to the full development of PTSD caused by lessening severity of trauma and its impact (Substance Abuse and Mental Health Services, 2014:5).

Physical reactions are manifestations of trauma and are comprised of common signs such as weariness, exhaustion, lack of concentration and a sprinting heartbeat. Victims of trauma often exhibit extreme anxiety or panic attacks when they are unable to handle stress. Physical signs are disturbing and should be taken as a serious injury (American Addiction Centers Resource, 2020:3). Common physical disorders range from sleep disturbances to gastrointestinal, cardiovascular diseases, substance abuse disorders and neurological disorders. Numerous individuals are likely to display somatic symptoms (Pain, headaches, weakness, dizziness, abdominal pains) related to traumatic stress and many people are not aware of the connecting link between emotions and physical symptoms. However, not all victims of trauma who reveal physical symptoms fail to express emotional pain but may have conditions that need medical assistance (Substance Abuse and Mental Health Services, 2014:7).

Cognitive responses are based on instinct based on how the individual feels in a challenging setting. The individual uses primary appraisal to determine whether their resources are adequate to be applied to a circumstance. (Harvey, Nathens, Bandiera & LeBlanc, 2010: 588). Some examples of cognitive responses are demonstrated by individuals through triggering events and flashbacks. Triggers to certain events or situations are a huge demonstration of cognitive responses to trauma. Although some circumstances may not reflect any meaningful connection to trauma, some form of effect can surface out of nowhere. Also, triggers from events have sensory similarities that an individual may have experienced before or after a traumatic event. Stimuli may range from colour to shape, smell and even body sensations (Ehlers, 2010:141). Flashbacks are also associated with cognitive responses to trauma and are described as memories that an individual experience differently from memories that a person retrieves at own will. Studies such as (Brewin, 2015:2) demonstrate that flashbacks reflect a negative arousal to trauma and are normally accompanied by an increase in heart rate, fear and extreme feelings of helplessness. The individual often feels strain from re-experiencing a sorrowful experience with no sense of control over the feelings associated with the trauma .

Behavioural responses to trauma vary widely and usually individuals participate in activities to control the intensity of emotions or stressful facets of a traumatic experience. An individual may choose to engage in avoidant behaviours, such as drinking and over-eating to reduce stress, which are a reflection of compulsivity, impulsive behaviours or even self-harming activities (Centre for substance abuse treatment, 2014:9). Research studies have demonstrated high correlation between trauma and substance abuse. The studies highlight that earlier traumatic experiences increase the probability of an individual who uses substances to control emotions. A person self-medicates by using substances to dampen mood and further disrupt biological stress responses to trauma (Khoury, Tang, Bradley, Cubells & Ressler, 2010: 1078). Bingeing has been associated with trauma for many centuries, with heightened eating disorders being related to depression and lower self-esteem leading to weight gain (Grilo, White, Barnes & Masheb, 2012:4). Self-injury refers to harming oneself without intent to commit suicide. An individual will engage in activities that include self-mutilating in order to cope with trauma. Individuals who engage in this behaviour require medical attention because injuries endured are severe and increase in magnitude over lengthy periods of time (Lang & Sharma-Patel, 2011:24).

2.2.4 Historical origins of stress

Less than 100 years ago, the term stress as a psychological occurrence did not exist. Stress has become ubiquitous in modern academic literature but in spite of high prevalence, stress remains an indefinable concept (Bhargava & Trivedi, 2018:109). Before stress was used as a psychological term, the ancient Romans understood the significance of stress as a force acting on an object. The first account of stress as a reaction to both external and internal responses in the early 1800s was in a study by William Shaw in Ireland, in which he investigated females dying in their youth due to stressors from violent heats at work (Robinson, 2018:2). It was not until the 19th century that stress in relation to organisms was formally explained by physiologist Claude Bernard. He argued that the inner medium of an organism was not only to provide sustenance to cells but rather a state of free and autonomous life. The physiologist further labelled the physiological state of an organism as homeostasis designation and described the feelings of flight or fight as a general discharge of the sympathetic system used by animals to defend themselves during threatening circumstances. Such type of response was later acknowledged as the primary initial process of the general adaption syndrome by Hans Selye (Fink, 2010:1).

A definition of stress is therefore required to explain reaction to harmful circumstances and events that interrupt an individual's homeostasis. Stress is defined as any challenge that disrupts an individual's sense of internal balance, manifesting in two forms as either eustress

or distress. Eustress is described as good stress, a form of stress that motivates a person to continue working. When stress can no longer be controlled, it manifests as distress. Distress is a bad or negative stress that leads to bad decisions and becomes too much to bear or cope with (Waghachavare, Dhumale, Kadam & Gore, 2013:423).. In basic terms, stress is categorised according to the nature of the stressor (psychological or physiological), its impact on a person (positive or negative) and the duration to which an individual is exposed to the potential stressor (Shahsavarani, Abadi & Kalkhoran, 2015:232).

2.2.5 Symptoms of stress and potential stressors in a work environment

Some symptoms of stress symbolise distress from emotional, behavioural and cognitive perceptions. Symptoms of stress are often demonstrated in an individual's personality and behavioural responses to specific stressful events. Individuals display stress through feelings of helplessness, melancholy, rage and dullness or loss of interest in activities. Stress is inherently often experienced and felt by employees for various reasons, such as poor time management, lack of adequate leadership and work overload. Certain occupations are inherently linked to stress, such as frontline workers in the context of the current study of CSEs. Table 2 shows potential stressors, and their effects, that can affect an employee in the workplace (Nekzada &Tekeste, 2013:16).

Table 2: Potential stressors and their effects of stress in the workplace

Stressors in the place of work	Consequences of stress
Job role: Common occurring incidents where employees are confused about what tasks to complete due to overwhelming work load.	Work overload and burnout
Underutilisation: Lack of motivation caused by inadequate workload.	Misuse of power
Responsibility for others: Occurs when an individual is in charge of others and has a level of responsibility to lead them in the workplace.	Inadequate decisions or leader's behaviour
Poor working conditions: Conditions such as too high or too low office temperature and perceived working space proximity, which increase the level of stress in the office.	Overcrowding or noise

Although individuals are exposed to similar stressors and events in the workplace, the responses displayed are often different and can be attributed to their personality. Personality traits of an individual have the potential to determine probable stress to an encounter or an inclination towards stress (Janhua & Chandrakanta, 2012:110). Furthermore, stress is not influenced by only external factors but is characterised by susceptibility to distress, acceptance and patience as well as the ability of an individual to adapt, which is closely linked to personality. Therefore, people view different external occurring circumstances as stressful, which can be equated to personality characteristics (Anitei, Stoica & Samsonescu, 2013:1011). Perceived stress plays an important role in how an individual performs in a working environment. Therefore, it is important to delve deeper into stress occurring in the workplace, particularly in the context of CSEs whose work environment is strenuous and highly charged with stress.

2.3 Stress, trauma and the nature of forensic work

Research highlights law enforcement as a stress-related and strenuous profession. Officers experience stress that often leads to health problems, such as cardiovascular diseases, depression, maladaptive and antisocial behaviour (. CSEs are moreover at risk because of potential exposure to critical incidents and traumatic stressors (Gershon, Barocas, Canton, Li & Vlahov, 2009:276). CSEs are required to examine, touch and handle dead and decomposed bodies and bodily fluids (Rosanky et al., 2019:1). Numerous studies (McCanlies, Gu, Andrew, Burchfiel & Violanti, 2017; Maugen, Metzler, McCaslin, Inslicht, Henn-Hasse, Neylan & Marmar, 2009; Marmar, Mccaslin, Metzler, Best, Weiss, Fagan, Liberman, Pole, Ote, Yehuda, Mohr & Neylan, 2006) have been conducted on police stress but very little is known about the wellbeing of CSEs. Few existing studies illustrate that CSEs are exposed to different sources of stress more intensively than police officers. Although CSEs are exposed to distressing circumstances, many continue with investigative work (Sollie, Kop, Euwema, 2017:1581).

Forensic scientists are exposed to horrendous crime scenes and experience high levels of work-related stress. During investigations, CSEs occupy crime scenes for prolonged hours and are in close relation to the elements of scenes, including victims and even weapons (Leone & Keel, 2016: 65). There is a need to understand strains that CSEs endure and coping methods they use when faced with challenges. Investigating occupational stressors and experiences of CSEs can help understand and identify potential stress triggers, which can assist in reducing negative experiences and improve efficiency (Holt et al., 2016:19). Research continuously shows that occupational stress is closely related to health grievances than any life stressor. Certain occupations, such as being a police officer, produce more stress because of work environment (Leone & Keel, 2016: 64). High stress levels lead to absenteeism,

burnout, distracted and unfocused workers, early retirement and work-related accidents (Salinas & Webb, 2018:239).

Extreme levels of strain and stress on CSEs negatively affect their work efficiency, which is vital when conducting investigations. Strain and stress can be defined in many ways, but stress endured by CSEs is called work-related stress. Health and safety executives define work-related stress as progression that ascends when different work strains exceed an individual's capacity to cope, which changes a person's physical and mental health in response to everyday tasks and challenges (Adderley, Smith, Bond & Smith, 2012:167). The American Society of Crime Laboratory Directors define stress as an individual's observation and evaluation of tasks and if the individual has necessary resources to accomplish the demand of tasks at hand (American Society of Crime Laboratory Directors, 2019:1). Seyle (Tan & Yip, 2018:170) defines stress as a non-specific body response to any demand made on an individual. Seyle further states that even characteristics of stress debilitate if not addressed adequately and effectively. High levels of stress often lead to PTSD, a syndrome associated with disaster and trauma (Van Patten & Burke, 2001:132). CSEs are exposed to several potential stressors such chronic anxiety and depression that, if ignored, maylead to PTSD. The Health and Safety Executive of the UK states that there are many definitions of stress that focuses specifically on work-related stress. Work-related stress is defined as any process that arises where work demands of various types and combinations exceed an individual's capacities and capabilities to cope. Distressing events that provoke stress are called stressors and cover different circumstances. The events range from physical immediate danger to loss of a loved one and even working on a difficult case. Some of the main stressors among CSEs are (Adderley et al., 2012: 2):

- Finances: Most individuals experience stress related to money. Most CSEs need money to maintain their lifestyle and fulfil their needs, failure to meet their financial requirements creates stress.
- Relationships: Some CSEs find it difficult to maintain healthy relationships with neighbours, friends and family due to long working hours and other work-related problems.
- Career: Job stress is very chronic to CSEs and can negatively affect their work performance and overall functioning. High competition and lack of job security are some of the many causes of job stress.
- Time management: A lack of time management also causes stress for CSEs. Failing to complete tasks on time and balancing home life can be difficult. Challenges increase when work pressure increases.

2.3.1 Stressors produced by frontline police work

Several studies (Rees & Smith, 2017; Steyn, 2009 & Violanti, 2006) focus on police stress and the nature of their work. It is important to note the sources of stressors and their effects on law enforcers, particularly CSEs. The causes of stress can be divided into three types, namely inherent, organisational and operational stressors. Inherent stressors are events related to work and can harm an individual mentally and physically. Examples of inherent stressors include the use of extreme force, idleness and boredom, continual contact with community members in pain, exposure to distress, hazards and violence (Odunayo, Austines & Kolawole, 2015:72). Gruesome crime scenes involving a woman, baby or elderly person can cause an emotional and stressful trigger as CSEs feel grief, injustice and helplessness to traumatic situations (Sollie et al., 2017: 1590). In a study conducted in California among eleven police agencies, 35.5% were found to have no control over traumatic events and consequently uncertainty creates anxiety and distress (Colwell, Lyons, Bruce, Garner & Miller, 2011:114).

Organisational stress is defined as police procedures that induce stress. The procedures include inadequate training, low earnings, poorly maintained equipment, lack of peer and administrative support and poor working relationships with superiors (Odunayo *et al.*, 2015:72). Some CSEs state that colleagues cause more stress than intricacies of work. Stress arises when work quality and accountability between colleagues is low, which leads to a lack of confidence and conflict among team members (Sollie *et al.*, 2017:1592).

A study conducted among police in North West province in South Africa revealed that 8.5% of roughly 2000 officers committed suicide because of a lack of social support systems and poor working relationships among other factors (Jorgensen & Rothmann, 2008:2). In South Africa, ineffective administration within a police organisation contributes tremendously to police stress. Also, a lack of adequate supervisory management was listed as a top organisational stressor (Williams, Nicholas & Bawa, 2011:49).

Operational stressors, similar to inherent stressors, focus on factors related to work. Stressors include working night shifts alone, working overtime, potential danger to a person's safety, fatigue from excessive work demands and burnout (Odunayo *et al.*, 2015:72). During busy days, CSEs have back to back shifts that lead to fatigue and lack of adequate sleep. Such an intense work schedule causes stress and disrupts family time. Disruptions to home life put a strain on relationships with partners, children and friends. CSEs are affected not only physically, but the quality of work they produce is also negatively affected. Operational stressors often lead to job dissatisfaction, lack of concentration and energy to carry out tasks (Sollie et al., 2017: 1589). Research conducted by Clausen, Nielson, Gomes Carneiro and Borg (2011) shows a relationship between job resources and job demands.

2.4 Evidence of trauma among crime scene examiners

Literature presented on trauma and coping has shown that CSEs confront numerous crisis circumstances that provoke immediate or delayed reactions to stress. Accumulated stress can be very dangerous and detrimental to physical and mental health. Moreover, emotional detachment is a sign of traumatic stress in itself (Clark, Distelrath, Vaquera, Winterich & DeZolt, 2015:4). Following being exposed to traumatic events such as dead bodies, sexual violence, natural disasters and serious injuries, highly trained individuals, particularly CSEs, are vulnerable to PTSD. Further, PTSD indicators include distressing memories and dreams, feelings of detachment and dissociative experiences such as flashbacks (Rosansky et al. 2019:1444). Prolonged chronic stress has negative effects on mental and physical health of an individual. The effects include increasing hormones, which affects the nervous system and every organ. Continual secretion of stress leads to ailments linked to job-related stress, which lead to anxiety, depression, poor work performance, PTSD, premature death, substance abuse and suicide. Stress experienced by forensic technicians can be chronic and result in biological impairment, overwhelming trauma and stress (American Society of Crime Laboratory Directors, 2019:2). The following section presents international and national evidences and uncommon literature that particularly focuses on CSEs to demonstrate the extent of trauma among CSEs caused by the nature of their work.

2.4.1 International research

There is a limited body of research that explores the nature and extent of trauma and stress experienced by CSEs. A study was conducted among 64 Slovenian crime scene technicians; participants were asked to describe the most extreme traumatic work event they have ever experienced. Results showed that 60.42% of the participants described a death involving an adult and 45.83% described a death involving a minor. The study further shows that CSEs have post traumatic symptomology characteristics that impair functioning, but do not meet full diagnostic as determined by DSM-5 for full blown PTSD (Mrevlje, 2018:6).

Nine out of nineteen CSEs in Australia reported presence of a victim's relative or friends on the crime scene as one of many sources of stress. Many CSEs in Australia reported detaching from a victim's family and friends in order to effectively manage extremely difficult scenes, such as child suicides. Feelings of stress serve as an occupational stressor that affects staff morale and effective management (Kelty & Gordon, 2015:281). A study conducted in America among 51 CSEs in a Midwestern state revealed that 63% of the CSEs, who were part of the study, experienced moderate to high levels of post-incident stress symptoms following interacting with critical incident trauma. Specifically, 78% reported that they have experienced a physical symptom at work, such as a headache, loss of appetite or insomnia (Clark,

Distelrath & Vaquera, 2015:939). In a Jamaican study, findings revealed that negative working conditions and emotion-based coping were associated with very high levels of depression and anxiety. Roughly 33% of 134 CSEs displayed symptoms of anxiety and depression. High percentages of depression and anxiety are closely related to ill mental health caused by negative working conditions, particularly gruesome crime scenes (Nelson & Smith, 2016:490).

Research conducted among CSEs in Baltimore revealed that more than 84% who were part of the study felt tired at work even with adequate sleep. Roughly 54% felt spiritually, physically and emotionally depleted, with 52% feeling stressed and anxious at work. Findings concur that constant interaction with stressful and traumatic events results in burnout. Approximately 31% of participants in the current study reported that they experience burnout from work and job-related tasks (Gershon et al., 2009:283). Signs and symptoms of PTSD are very common in Baltimore, showing similarities to other studies and a link between work-related stress and chronic mental health. A growing body of research highlights that high levels of trauma among CSEs lead to ineffective coping strategies, which affect an individual's capacity to function.

2.4.2 South African research

In an article on high crime violence in South Africa, Gould (2014) states that violence still remains prevalent. The number of South Africans who have experienced and witnessed violence increases each year, and so does the extent of national trauma. Firearms remain one of the highest causes of death among South Africans and women being killed by firearms being the highest globally (Brankovic, 2019:4). Official crime statistics in South Africa for 2019/20 show a tremendous increase in violent crime. Murders have increased by 1.4% from 21 022 in 2018/19 to 21 325 in 2019/20. Sexual offences increased by 1.7% from 52 420 in 2018/19 to 53 293 in 2019/20. Subsequently, an increase in crime means CSEs are even more exposed to challenging and hostile traumatic conditions (Official crime statistics 2019/2020).

Media reports concur some harsh realities CSEs are exposed to daily. A News24 article published on 27 December 2019 describes a horrid crime scene CSEs were confronted with. Seven bodies were found and one was burned beyond recognition, while the remaining six sustained upper body trauma to the chest and head. Preliminary investigations confirmed that the wounds were from gunshots and the six bodies were also burnt, but recognisable. Victims had been killed at an alternative location, then moved and dumped next to a freeway (News24, 27 December 2019). A recent article published on 21 January 2020 by IOL news described a murdered intern doctor's body that was already decomposing with a foul smell coming from the doctor's quarters. Details of when and what was used to kill her remain unknown (IOL, 21 January 2020). The abovementioned newspaper articles and crime statistics raise concern

over working conditions and traumatic experiences CSEs endure. The articles indicate a dire need for research that highlights the struggles of CSEs. There is currently very limited local research on stress, trauma and coping methods among CSEs.

The existing research on trauma, stress and coping methods has been conducted among police officers in South Africa. Studies focusing on law enforcement officers provide very limited knowledge about CSEs trauma experiences. Therefore, the limit in studies on CSEs trauma experiences indicates that further investigation that focuses specifically on CSEs is needed. As a result, a few studies on police stress will be discussed. Research assessing relationships between occupational stress and health was conducted among 111 SAPS members of a Local Criminal Record Centre (LCRC) in North West province. Alarming high scores were reported for psychological health symptoms, such as feelings of restlessness, depression, anxiety, alcohol and substance abuse (including abuse of prescription medication). Also, some LCRC members reported physical health symptoms, such as backache, headache, high blood pressure and gastrointestinal illnesses. Consequently, ill health is caused by both psychological and physical pressure experienced by an individual (Jorgensen & Rothmann, 2008:11).

A convenience sample of male and female police officers was surveyed for stress and traumatic symptoms at an Eastern Cape police station. Results showed a high frequency exposure to stressful incidents, with male officers reporting a frequency of up to 91%. Incidents that evoke high emotional intensity are colleague suicide. Roughly 87% of the male participants reported four commonly occurring tense incidents, namely finding a corpse after murder, reporting to a scene involving accidental injury of a child, pursuing an armed suspect and finding a corpse of a person who died of natural causes. On the other hand, 85% of female participants reported frequently occurring stressful incidents, such as participating in a raid with armed and dangerous suspects and scenes involving fire. Approximately 80% of the female participants reported high emotional intensity to responding to a scene with an accidental injury of a child and finding a corpse affected by natural causes (Williams, Nicholas & Bawa, 2011:54). The Eastern Cape police station shows that exposure to stressful incidents by officers is extremely high, especially to serious events.

Research investigating types and frequency of trauma and PTSD among 217 rural police in Limpopo revealed information that contradicts the existing studies. Although officers were exposed to many events that can increase symptoms and advanced development of PTSD, interpersonal issues were more disruptive to working environment. Approximately 82 of the 217 officers reported that they have witnessed someone being mutilated, seriously injured or violently killed. However, less than 20% reported being negatively affected by such an

experience. Roughly 116 police reported seeing or handling dead bodies, but only 20% reported being traumatised by such a serious incident. Research among rural officers in Limpopo showed low reports on incidents of potentially traumatic experiences in police working environment. Trauma associated with horrific crime scenes is reported in very low numbers among rural police officers (Steyn, 2009:142).

A quantitative study in KwaZulu-Natal focused on law enforcement officers and included a small number of CSEs in the research study. The findings showed that emerging frontline workers hardly showed signs of mental illnesses regardless of being exposed to disturbing crime scenes (Kittur, 2017:240). A qualitative study by Boshof *et al.* (2015) among 40 police officials in specialised units in North West revealed that stress was reinforced by interacting with multiple crime scenes. The CSEs who were part of the study reported being overwhelmed by a large number of crimes scenes that needed attention without any back up. One of the CSEs said that after 15 years of working with violent crime scenes, he was not well and just wanted the trauma to end. The study shows that repeated exposure to various distressing incidents results in traumatisation and trauma-related symptoms.

Klopper and Steyn (2016:14) produced a technical report for the SAPS Division: Forensic Services based on a survey among CSEs in Tshwane. The report recommended that an in-depth, qualitative work is needed to better understand stress and coping methods among CSEs. For example, the report showed that roughly a third of respondents sometimes used denial as a coping strategy, although reasons behind the results remain unclear. Also, more than half of the respondents experienced upsetting thoughts about crime scenes. They felt upset by the crime scene reminders, yet the nature of the survey could not accommodate an in-depth exploration of such experiences. Inherently, there is a need for qualitative research that clarifies reasons for numerical results of technical reports. Subsequent section will focus on the coping mechanism adopted by CSEs.

2.5 Coping techniques in response to stress and trauma

Crime scene technicians endure a variety of traumatic stressors that affect their mental and physical health. Research has shown that categorising adaptive and maladaptive coping strategies requires supposition based on discernment and appeal of an individual to adapt to a particular occurrence (Cherewick, Doocy, Tol, Burnham & Glass, 2016:2). In this section, coping strategies will be examined by defining coping and identifying positive and negative coping mechanisms. The unit will also discuss the common and uncommon coping strategies, as well as debriefing as an entity that already exists in the CSEs work environment when faced with stress.

2.5.1 Defining coping

It is extremely difficult to find an exact definition of a coping strategy. Coping depends on an individual's mindset and external factors that influence how an individual respond to stressors or potential stressors. Consequently, a coping strategy is defined by an individual choosing to either approach or avoid a potential stressful situation. Some coping strategies are more useful than others (Louw & Viviers, 2010:3). Modern literature describes coping as cognitive and behavioural responses to cope with stress in a manner that lessens the effects of stressors. It is a process that unfolds over periods of time (Wassermann, Meiring & Becker, 2016:98). Therefore, the current study is vital in investigating coping strategies used by CSEs to determine if responses to stress are adaptive or maladaptive and to additionally uncover how coping reactions adjust over time (Wassermann *et al.*, 2016:104). Coping strategies utilised by CSEs are an important factor to focus on because CSEs are exposed to hazardous environments that put them at risk of developing trauma-related effects (Mrevlje, 2015:375).

Numerous studies focusing on police coping strategies have revealed that certain coping strategies help alleviate stressors experienced from crime scenes. Problem-focused coping and emotional-focused coping have yielded positive responses to stressors experienced by police officers (Wassermann *et al.*, 2016:4). Effective coping in police stress refers to displaying behaviour that confronts a complicated and stressful circumstance rather than avoiding it (Gumani, Fourie & Terre Blanche, 2013:2). Emotional-focused coping relieves stress among officers through support from superiors and social support from peers, colleagues, family and the community as a whole. Some officers choose religion to help buffer stress and cope in stressful situations (Wassermann, 2016:5). The following section will focus on the coping mechanism adopted by CSEs.

2.5.2 Adaptive coping

Some police officers use healthy coping methods, also called adaptive coping, when encountering stressful events at work (Zulkafaly, Kamaruddin & Hassan, 2017: 461). Studies have highlighted physical exercise as an effective method to minimise stressors encountered at work (Bezzera, de Souza Minayo & Constantino, 2013:656). Officers with high levels of stress often have poor physical health and fail to maintain a regular exercise routine (Della-Rossa, 2014:19). Effective coping with regards to CSEs involves expressing a certain behaviour, which is to directly face traumatic circumstances instead of avoiding them. Positive reappraisal is often related to adaptive coping, which means reacting to a stressful situation in a positive and healthy manner (Wassermann, Meiring & Becker, 2016: 99). Healthy methods to employ when encountering stressful events include:

- Meditation and leisure activities
- Acceptance
- Humour
- Problem solving
- Resilience
- Therapy and counselling
- Family and friends support
- Religion

Meditation and leisure activities

A lack of leisure time has resulted in severe psychological stress. Engaging in leisure activities can lessen stress and improve the quality of life. However, leisure time should be limited since excessive leisure can end up boring and increase stress levels. Individuals who are faced with stressful encounters and extreme work demands show a reduction in stress symptoms after taking time off work to engage in sporting activities and other outdoors activities (Qian, Yarnal & Almeida, 2013: 5). Being physically active includes engaging in activities such as running, swimming, jogging and cycling. An increase in such physical activities has shown to reduce stress-related health problems (Park & Kim, 2018:3).

Acceptance

Acceptance involves accommodating the idea that a distressing event has happened and is real. Instead of focusing on the negative impact of the distressing event, focus is put on positive reframing. In other words, the individual looks for growth in a bad concurrence and finds some positivity (Al-Dubai, Al-Naggar, Alshagagga & Rampal, 2011:58). The person adapts to unchangeable negative events by maintaining a positive mental psyche. Acceptance incorporates accepting circumstances even when they do not meet the individual's wishes and prospects (Nakamura & Orth, 2015:282).

Humour

Research studies show that dark humour can help CSEs cope with threatening conditions and ghastly crime scenes painted with murder, suicide and even accidents (Craun & Bourke, 2014: 841). A commonly used humorous style that falls within a grey area between positive and negative is gallows humour. Gallows humour is often called dark and sick humour and is used to make fun of the notion of death. CSEs use gallows humour to deal with emotionally threatening circumstances, which intentionally distracts thoughts and mind of frightening circumstances (Vivona, 2013:131).

Problem solving

Problem solving refers to coping in a manner that creates strategies to solve problems that occur daily. The problem-solving concept is also referred to as adaptive problem solving and involves methodical tactics for resolving stressful situations, such as outlining a problem, creating resolutions and evaluating the outcome (Reich, Blackwell, Simmons & Beck, 2015:31). A general assumption is that successful problem solving stabilises an individual, which means that the individual identifies effective adaptive solutions for particular problems that occur daily (Chinaveh, 2013:4).

Resilience

Resilience includes an ability to prosper in the face of hardship. Although there is no universally accepted definition of resilience, it can be defined as the ability to maintain positivity regardless of stressful circumstances. High intensities of resilience as a key characteristic serve as a protective buffer against hostile outcomes of a traumatic event (Thompson, Fiorillo, Rothbaum, Ressler & Michopoulos, 2018: 2). Resilience refers to an individual's ability to cope with distress and it is a character trait that can be developed in all individuals. Therefore, resilience is referred to as a human process rather than a personality trait. A common misconception is that resilient individuals do not harbour negative thoughts, however, an accurate account is that resilient individuals develop effective coping mechanisms (Friedberg & Malefakis, 2018:83).

Therapy and counselling

Therapy and counselling provide support and help in detecting and relating helpful coping approaches to manage mental disturbances and trauma. The distressed individual becomes the primary agent in developing skills and schemes to deal with everyday stressful and traumatic encounters and not be overwhelmed by them (Shanely, 2012:507). A form of therapy that helps particularly with handling job stress is cognitive therapy as it emphasises optimistic free will of a person and creates a positive working environment due to the person's attitude (Onoyase, 2015:112).

Family and friends support

Family and friends support refer to the encouragement a distressed individual receives from people in their social circle, such as a relatively close family member or parental figure, peers or colleagues, the broader community neighbours or even church. Family and friends support the individual throughout their stressful circumstance (Hiller, Halligan, Tomlinson, Stewart, Skeen & Christie, 2017: 4). Social support notably contributes to mental health and consequently acts as a shield to trauma and its damaging consequences. It assists in averting

trauma by constructing a notion that detrimental experiences are perceived as inconsequential (Aflakseir, 2010:102).

Religion

It is essential to seek spiritual support and make compassionate spiritual revisions as a means of coping with stress and trauma (Park, Smith, Lee, Mazure, Mckee & Hoff, 2017:2). Research indicates that when faced with stress, a person may rely on religion as a coping strategy. Using religion as a coping mechanism lowers anti-social behaviour and depressive symptoms. Positive religious coping is linked to a person looking for the meaning of life and pursuing support from religious community and forgiveness from the higher entity (Cherewick *et al.*, 2016:13).

Although CSEs encounter traumatic stressors within work environment, not all CSEs facing harrowing events display psychological reactions, particularly because police ethos presents contradictory attitudes to emotional expression and disclosure. While some CSEs may willingly express emotions, some may be reluctant to do so because of the fear of looking hopeless, feeble and not in control (Davidson & Moss, 2008:54). Consequently, some CSEs express feelings of embarrassment, guilt and shame when displaying sentimental emotions to death (Van Patten & Burke, 2001:136).

2.5.3 Maladaptive coping

Police officers also adopt dysfunctional processes to cope with stressors, such as using alcohol as an attempt to self-medicate. Dysfunctional coping mechanisms are associated with poor work performance, domestic violence and suicide. However, officers become even more stressed after using maladaptive coping methods (Wassermann, 2019:6). Some CSEs adopt ineffective coping mechanisms when faced with trauma in order to cope with violent crime scenes. Ineffective coping methods have short- and long-term effects, which negatively affect an individual's wellbeing (Mrevlje, 2015:375).

Individuals sometimes choose to cope with stress by opting for behaviours that negatively affect their daily functioning. Maladaptive coping refers to ineffective handling of traumatic situations (Mrevlje, 2015:375). Maladaptive coping methods commonly used by CSEs, such as excessive drinking and smoking, are used to alleviate stress especially when an individual endures an unbearable emotional state emanating from their occupation. Marska and Howellb (2016) research (Zulkafaly, Kamaruddin & Hassan, 2017:461; Leino, Eskelinen, Summala & Viranen, 2011:152) agree that consuming substances excessively is a way to reduce harm when performing work-related tasks evokes stress). Below are some examples of maladaptive coping mechanisms used by CSEs:

- Alcohol and substance abuse
- Emotional numbing
- Withdrawal and isolation
- Compulsive and risk-taking behaviour
- Self-harm
- Suicide
- Denial
- Dissociation
- Avoidance

Alcohol and other substance abuse

Alcohol and substance abuse are a very common coping strategy that is often utilised to numb out pain and distract an individual from present traumatic consequences. The individual is temporarily distracted from trauma experiences and is able to cope with physiological symptoms of arousal that may be elicited to respond to stressful circumstances. Trauma then serves as a buffer to memories of trauma and stress (O' Hare, 2013:12). Continuous exposure to trauma leads to high levels of alcohol and substance abuse. Prolonged periods of exposure increase the levels of usage and also quantities of drugs consumed daily. Individuals often rely on substances to effectively cope and numb after effects of a stressful encounter (International Society for Traumatic Stress Studies, 2010:2).

Emotional numbing

Severe deficit is a lack of clear expression of emotion and is often displayed by an increase in loss of interest in social activities, detaching from people around and a restricted range of effect such as a display of emotions. Consequently, emotional numbing has highlighted symptoms that play a vital role in post-traumatic stress ailments (Weiss, Tull, Anestiss & Gratz 2013:45). Numbing of emotions is actively inhibiting emotional expression. Thus, a person will be unwilling to be involved in expression of feelings and views (Kaplow, Layne, Oosterhoff & Hill, 2014:5).

Withdrawal and isolation

Withdrawal and isolation refers to voluntary removal from social activities and social interactions for lengthy periods of time to a degree that an individual terminates any relationships with other people and the outside world. Withdrawing from people and the world is considered a potential risk factor to developing severe mental health problems (Morese, Palermo, Torello & Sechi, 2020: 114). Withdrawal and isolation are core characteristics of symptoms related to many mental disorders (Starr & Howard, 2009: 397). The factors that

cause an individual to withdraw and isolate differ from person to person. In most cases, they are influenced by three main concepts, namely introversion and reserve, aloofness and lack of social skills, and social evasion (Barzeva, Meeus & Oldehinkel, 2018:865).

Compulsive and risk taking behaviour

Compulsive and risk taking behaviour often involves a person having to decide between positive and negative outcomes without certainty of the consequences. The person will have a choice but will have to balance potential risk to harm and danger to probable accomplishment or return (Reynolds, Schreiber, Giesel, Macpherson, Ernst & Lejuez, 2013:2). Engaging in compulsive and risk taking behaviour can result in crucial damages, which may be substantial unintended detriment to a person or others around them. Risk taking can be an arrangement of both implicit or explicit and physical or social (Zur & Zeidner, 2009:110).

Self-harm

Self-harm refers to engaging in behaviours that inflict harm on self by an individual without an intent to commit suicide performed without affective or social motivation. The person who harms themselves participates in activities like self-mutilating in order to cope with trauma. Many individuals who engage in this behaviour require medical attention because injuries endured are severe and increase in magnitude over lengthy periods of time (Lang & Sharma-Patel, 2011:24).

Suicide

Suicidal behaviour involves an individual engaging in a conscious act of killing self because they are unhappy and have severe stress. The person feels and perceives a problematic situation as overwhelming and views death as a solution to the problem (Bazrafshan, Jahangir, Mansouri & Kashfi, 2014: 1). Individuals who experience interpersonal life events are at an amplified risk of committing suicide, especially if trauma endured is a build-up from childhood experiences or involves sexual abuse. A lack of finding effective psychological health measures results in traumatic events that overwhelm an individual, pushing them to commit suicide (Asgeirsdottir, Valdimarsdottir, Lund, Tomasson, Nyberg & Hauksdottir, 2018:3).

Denial

Denial is classified as an effort to discard the reality of a stressful situation (Al-Dubai *et al.*, 2011:58). The denial of traumatic events has been closely related to dissociation. It is a form of escape that an individual develops in order to escape the reality of their stressful circumstances. An individual in denial removes self from feelings of distress by pretending the stressful occurrence does not exist. Denial is a form of coping that causes a person to change their everyday functioning, fortifications and self-representation. Consequently, the individual

actively engages in activities such as sentimental blocking, changes in concentration and puts continuous effort in eliminating emotions (Sigel, 2012:52).

Dissociation

Dissociation is an extreme loss of control over mental processes, which results in changes in mindful consciousness and self-attribution. A dissociated person displays temporary lapses from reality in response to intimidating circumstances that seem emotionally exhausting and equate in loss of control in the environment (Roman, Danies & Anglin, 2016: 3). Dissociation is also a mental escape from emotional and physical suffering related to an overpowering stressful experience, including reoccurring trauma without an escape. Chronic dissociation can affect an individual's everyday functioning and have devastating effects for every aspects of life, the mental disruption affects emotional wellbeing and can result in an individual being confused (Lanius, 2015:1).

Avoidance

Avoidance is when an individual seeks to forget a traumatic event. The distraction may temporarily alleviate the stressful problem, particularly when stress is reoccurring, but the individual may be less adaptive and lack empathy and social skills when interacting with others in the long-term (Cherewick *et al.*, 2016:12). Avoidance coping impedes on natural recovery of a person from destructive emotions related to trauma recovery. Also, trauma survivors who are highly reliant on avoidance coping and highly reactive to stressful events are less likely to recover from traumatic events (Pineles, Mostoufi, Ready, Street, Griffin & Resick, 2011:7).

2.5.4 Commonly used coping styles among crime scene examiners

An individual who chooses a coping mechanism is influenced by two main factors, namely the coping methods known and their effectiveness to alleviate stress. Research shows problem-focused coping and confronting stressors as methods used mostly by officers when confronted with stress. Problem-focused coping, such as accepting responsibility, and problem-solving coping were used predominantly by officers. Literature shows that emotional-focused coping, such as seeking social support and having a sense of responsibility, was used mostly by Swedish and South African police officers. The least used coping mechanisms are maladaptive behaviours such as denial, avoidance, mental disengagement such as venting of emotions, focusing on feelings, escape avoidance and distancing oneself from traumatic events. Officers hardly use mechanisms such as self-blame and tension-focused mechanisms when facing stressful traumatic events (Wassermann, 2016:7).

Although employee assistance programmes are widely available, very few crime scene personnel use such programmes to cope with stress and trauma. However, the minimal use

of employee assistance programmes can be linked to the police subculture and a lack of trust in counsellors who are viewed as outsiders in the police working environment. The commonly used coping mechanisms among crime scene personnel in Texas are active coping, planning and acceptance, highlighting the use of adaptive coping strategies. Present research differs from past knowledge, which emphasised high use of avoidant coping by CSEs (Salinas & Webb, 2018:244). An online questionnaire conducted among 99 police investigators in the United Kingdom revealed that investigators used individual coping strategies. The strategies included venting feelings appropriately by playing sport or having other interests out of work and a regular exercise programme not exceeding 30-minute sessions (Roach, Cartwright & Sharratt, 2012:260).

Recent research studies frequently depict CSEs and police officers employing positive coping mechanisms to manage occupational stressors. Very few CSEs engage in negative coping mechanisms, such as substance abuse. However, research continuously shows a very limited number of CSEs and officers seeking professional help from counsellors or therapists. Forensic scientists are under immense strain due to work environment, but a need to investigate coping mechanisms used and why strategies are preferred is important. Past research and current research show different approaches. Therefore, finding appropriate ways to help CSEs cope with stress can help manage programmes and working conditions such as improving day to day experiences, reducing levels of burn out, absenteeism and poor working performance (Holt, Blevins, Foran & Smith, 2016:11).

A study by Boshof *et al.*, (2015) on trauma intervention programmes highlights a need for support to police officers. Research shows that despite existing trauma intervention programmes being implemented, police officers still display high level of negative behavioural problems. Police in North West province in South Africa were satisfied with intervention programmes, however, the officers' personal and unique needs were not considered and the level of confidentiality was questionable. An in-depth investigation is needed to evaluate the effectiveness of intervention programmes and support offered and accessible to law enforcers.

2.5.5 Briefing and debriefing among crime scene examiners

An individual's choice to cope with a stressful encounter changes over time. A limited number of CSEs seek social support when faced with stress and traumatic situations (Wassermann *et al.*, 2016:104). The police culture presents conflicting views to emotional expression and disclosure. Although officers recognise emotional expression as a healthy method to help cope with stress and trauma, many are reluctant to reveal emotions at work because of the fear of looking incompetent and failing to be in control (Davidson & Moss, 2008:54). Debriefing and briefing are important when dealing with stress and trauma, CSEs in particular experience

severe trauma from horrific crime scenes. It is important that CSEs use debriefing because it serves as protection against unfortunate incidents (McMahon & Winch, 2018:3).

The police environment uses two types of briefing, namely operational briefing and psychological briefing. Operational briefing enables a person to share their own thoughts about a traumatic event, including discussing confidential work-related information, conducting risk assessments and threats to a scene. Psychological briefing is necessary to prepare CSEs for the emotional impact of dangerous incidents and help an individual develop coping strategies for trauma-related tasks (Elntib & Armstrong, 2014:418). Research studies show social support systems as very important in lessening PTSD symptoms. Social support indirectly influences PTSD symptoms by encouraging resilience (McCanlies, Kook, Gu, Andrew, Burchfiel & Violanti, 2017:6).

There is currently little to no evidence that highlights briefing among police officers before traumatic events in South Africa. CSEs sometime work in dangerous areas and are likely to encounter violent and traumatic incidents daily. A need for CSEs to be afforded an opportunity to express personal feelings and learn from previous errors is important. There should be relevant information because legislature clearly states a moral obligation for briefing and debriefing of CSEs before attending to incidents. CSEs require enough support in order to deal with trauma adaptively (Elntib & Armstrong, 2014:418).

Debriefing is in regulation with the South African Firearms Control Act. Act 60 of 2000 states that it is obligatory for law enforcement officers to get psychological debriefing within 48 hours after experiencing any intense incident that involves a discharge of a firearm. However, this Act lacks details and specifications, such as for how long debriefing should last after a traumatic occurrence and the impact of debriefing on police officers' mental health. A cause for concern is that debriefing sessions are carried out by chaplains who lack formal training in a stressful and intense work environment, such as that of police officers (Elntib *et al.*, 2014: 419).

Life-threatening incidents affect a person and evoke emotionally driven responses. Debriefing is very important in controlling and managing stress elicited by a traumatic and stressful occurrence. Debriefing is made up of a peer-driven and therapist-guided method, focuses on encouraging recovery of individuals in a manner that alleviates stressful responses and prevents potential long-term effects (Vaithilingam, Jain & Davies, 2008:252). Debriefing is educational and extremely beneficial in managing and lessening stress. Finding an appropriate support system for law enforcement workers increase motivation, productivity and leads to stable working conditions and happier and mentally stable employees.

Trauma debriefing is accessible to all SAPS members. Intervention must be implemented soon after a traumatic incident. SAPS debriefing takes two forms, informal and formal, and both are received upon request. It is important that debriefing takes place soon after a traumatic incident has taken place to minimise and manage stress and anxiety that an officer has experienced. There are many benefits of trauma debriefing, as delineated by SAPS National Trauma Debriefing Committee (Maabela, 2011:29):

- A decrease in short- and long-term consequences of trauma
- Decline in personal problems
- Less anxiety and stress when one ask for assistance
- Reduced work-related problems such as burnout and absenteeism
- Fewer individuals view post trauma reactions as a sign of a weakness
- Accentuates views that an organisation cares and offers support

Studies show that some officers who are reluctant to seek psychological help are more willing to discuss issues with trained peer support teams. Time and peer support are very important in debriefing, optimal time after an incident should be 24 to 72 hours. Peer support helps mitigate mental harm by discussing events and seeing what actions can be avoided in future to control reactions to traumatic events. Also, finding an appropriate debriefing model to help with coping can address behavioural inconsistencies displayed by CSEs and police officers (Pillay, 2008:40).

2.6 Summary

In the current chapter, applicable literature was presented. A comprehensive understanding of concepts of trauma and stress as well as potential causes and reactions were provided, typologies of trauma and causes of stress in work environment were included. The chapter also discussed the presence of trauma and stress in the work environment, focusing specifically on CSEs. A few studies were presented showcasing the occurrence of trauma among frontline works, particularly CSEs, by exploring international and national research studies. Lastly, the chapter explored and described coping methods adopted by CSEs when faced with distressing and harrowing circumstances in the work environment. A range of adaptive and maladaptive coping methods were explored as well as available avenues such as debriefing, which are not foreign to a highly stress charged environment such as the Department of Forensic. The CSEs are faced with disturbing occurrences and visuals from violent crime scenes. In Chapter 3, the focus will be placed on theories pertaining to trauma and stress and possible reactions to such strain and pressure among CSEs. An elucidation and assessment of these theories will be provided, which guided the development of the integrated theoretical model.

Chapter 3: Theoretical framework

3.1 Introduction

The current study is concerned with trauma and coping methods adopted by CSEs when interacting with violent crime scenes. A theoretical framework is an important component of the research process because it is the foundation from which knowledge on a particular theme is constructed. Consequently, a study without a theoretical framework lacks structure and the vision for the study remains unclear. Theories in a research study serve as a guide and support the study by providing a framework and blueprint that directs the philosophical, methodological and analytical approach of the research as a whole (Grant & Osanloo, 2014:12). Selecting an appropriate theoretical framework requires an in-depth understanding of the problem under investigation, purpose and significance of the research. Subsequently, the research findings must have noticeable aspects of the framework and enable the researcher to expand and modify existing theories to fulfil and answer the research inquiry (Adom, Hussein & Joe, 2018: 439).

The theoretical framework relevant to the current investigation consists of understandings of stress to explain factors that contribute to stress and trauma experienced by CSEs. The theories include Lazarus and Folkman's transactional model of stress, general adaptation syndrome, terror management theory and conservation of resources theory. As a whole, the theories provide a conceptual model of how individuals respond to stress and the internal and external coping methods adopted to manage effects of trauma on physical and mental wellbeing of a person (Maschi, Viola & Morgen, 2013:858). The use of the abovementioned theories is important when research is focused on such a sensitive topic of stress, trauma and coping among CSEs, more especially as law enforcement ethos often displays contradictory views to emotive communication. Although police recognise expressive communication as a positive mechanism to help cope with stress and trauma, many are unwilling to reveal feelings on the job because of the dread of looking inept and failing to be in control (Davidson & Moss, 2008:54).

An integrated theoretical model of research has been included in the current study as it may offer valuable insights into the extent of trauma among CSEs, as well as the coping methods used. An integrated model of theories includes combining existing theories in a manner that permits a specific phenomenon to be sufficiently explained (Grant *et al.*, 2014:19). The integrated model for the current research study is a combination of three theories; the transactional model, general adaptations syndrome and the terror management theory. The integrated model presents a sufficient explanation of the trauma and coping phenomenon

among CSEs. The theories will be discussed individually before being integrated together and applied to the current research study.

3.2 Lazarus and Folkman's transactional model of stress

Richard Lazarus proposed the transactional model of stress to evaluate the process of coping with stressful events. Lazarus's continual exploration in the field of stress and coping led to many publications, such as research papers and books. He worked in collaboration with numerous scientists, but more especially Susan Folkman. Together, they created a model that evaluates how key life events and everyday disturbances influence reactions, with emphasis on cognitive appraisal and coping with stress (Goh, Sawang & Po Oei, 2010:3). The theory is anchored on the notion that stressful experiences are a direct result of transactions between the individual and the environment. The transaction is dependent on the impact of a worrying factor as arbitrated by an individual's appraisal of stress, together with coping resources available. Rendering to the theory, the level of stress is based on judgment on whether the internal and external demands exceed available resources, which influences coping (Margaret, Ngigi & Mutisya, 2018:19). In other words, Lazarus and Folkman's transactional model of stress seeks to explain how individuals exposed to the same stressors respond differently. The model defines stress as a constant change in cognitive and behavioural responses by a person when demands are more than what the individual can handle (Kin, 2017:14). It explains stress as not dependent on an environmental stimulus, character of a person or a response, but a relationship between demands and ability to respond accordingly. Lazarus and Folkman suggest two methods that provide meaning and influence to coping, which include primary appraisal and secondary appraisal.

In primary appraisal, a person evaluates threatening tendency of stress. A range of personality characteristics influence the individual's evaluation of what is at stake in a stressful encounter. An individual will seek to interrogate what they have at stake in a particularly intimidating circumstance. Secondary appraisal is an assessment of resources required to minimise stress. Various coping methods are evaluated, such as overcoming and preventing harm, seeking more information or even refraining from acting impulsively. The focus of the person is on what they can do to respond to the perceived threat and the coping methods are attributed to the individual's personality (Margaret *et al.*, 2018:19).

The last component of the transactional model involves coping, which is defined as a constant change in cognitive and behavioural efforts to control specific internal and external demands. In other words, coping involves an individual choosing between cognitive and behavioural efforts, which may in turn change primary appraisal and influence skills available to cope with a stressful situation (De Villiers, 2003:25). There are two forms of coping; problem-focused

coping and emotion-focused coping. With problem-focused coping, an individual feels they are in control of the stressful situation and can manage the problem. The person manages stress through the following steps (Gunawan, 2016:3):

- Defining the problem
- Creating substitute resolutions
- Learning novel abilities to handle inconvenient circumstances
- Reassessing and discovering novel values of demeanour

With emotion-focused coping, an individual feels they cannot manage the problem. Therefore, the person resorts to finding strategies to regulate stress, such as ones listed below (Gunawan, 2016:4):

- Avoiding
- Distancing
- Acceptance
- Seeking medical support
- Turning to alcohol

Consequently, coping strategies are derived from the cognitive and behavioural resources, which further influence how a person reacts to a stressful event. A lack of sensitive and responsive resources and feeling overwhelmed lead to negative coping mechanisms, while availability of avenues to seek help potentially leads to positive coping mechanisms (Margaret *et al.*, 2018:19). The following is a simplified transactional model of stress and coping by Lazarus and Folkman:

- During primary appraisal, an individual assesses threatening tendency of stress displayed through potential vulnerability, apparent harshness and stress significance.
- When faced with a potential stressor, an individual will seek for resources to minimise stress. It is during secondary appraisal that a person evaluates for apparent control of the crisis, alleged control of feelings and self-effectiveness.
- An individual assesses various coping methods to overcome potential harm. The focus of the person to respond to stress and the coping methods are attributed to the individual's personality based on problem management and emotional regulation.
- Coping methods are influenced by external influences, which are attributed to an individual's personality such as social support, spiritual beliefs and events.
- An individual adapts to potential stressor through emotional wellbeing, functional status and health behaviours.

Despite numerous studies incorporating the transactional model of strain and managing stress, some inconsistencies have occurred and led to criticism. The first criticism is on the existing paucity or no experimental proof that supports the abovementioned transactional model's linear process, among variables with stress as an outcome after cognitive appraisal. The second major drawback is that numerous literature studies have shown psycho-physiological stress foregoing coping behaviour. Lastly, although intense emotions influence the choice of coping (positive or negative), adding other variables can have a major impact on the linear process (Goh *et al.*, 2010:5).

3.3 General adaption syndrome

Continuous and severe stressful events influence biological functioning. Hans Seyle, an endocrinologist, conducted numerous animal studies and discovered that stimulus events applied intensely and for long periods of time are capable of producing common effects. He empirically discovered the three biological stages while experimenting on rats and extended the discovery to human entities. Life can be viewed as a three-stage adaption to new external stressors (Crevecouer, 2016:1). Stress is viewed as a non-specific response that results in a physiological response, such as death or illness. The endocrinologist was the earliest researcher to acknowledge stress as supporting the broad-based symbols and indicators of ailment (Tan, 2018:3). Consequently, Seyle coined general adaption syndrome (GAS), which depicts a predictable way in which the body responds to stress. The body response to stress follows three stages, namely an alarm reaction phase, resilience or adaption phase and exhaustion phase.

An alarm reaction represents an initial shock phase that results in flight or fight. Physiologically, the initial shock ignites an adrenal discharge. A generalised stimulation of autonomic nervous system during the initial shock stage is instigated. It is important to note that after the initial shock, a counter shock occurs if the stressor persists. The second phase is a stage of resistance where an alarm reaction disappears and there is a resistance to the initial stress and other stressors. Resistance is an attempt at survival by the body's syntonik defence mechanisms in order for an individual and stressor to coexist. If the resistance or adaption phase lasts for prolonged periods of time without pauses for relaxation, victims become disposed to exhaustion, lack of attentiveness, petulance and weariness (Crevecouer, 2016:2). It is important to note that regardless of time spent in resistance (even when the menacing variable is efficiently handled), the entity is able to revert to the original condition and position assumed before the stressful circumstance.

The last phase is exhaustion, where an organism's ability to adapt to stress is depleted. There are symptoms of alarm reaction return but resistance is no longer possible, resulting in

irreversible tissue damage. In this phase, endocrine activity is heightened and stress-induced hormones such as cortisol have negative effects on the immune and digestive systems. In essence, resistance cannot be maintained indefinitely, resulting in a damaged system that leads to severe health problems or even death (Krohne, 2002:2; Rice, 2012:24, 25). The exhaustion phase shows adaption syndromes failing and causing the individual to exhibit biological and psychosocial symptoms, and if systems continue shutting down, death can even occur (Crevecouer, 2016:2).

3.4 Terror management theory

Terror management theory was proposed by three psychologists; Jeff Greenberg, Tom Pyszczynski and Sheldon Solomon who were impressed and impacted by Ernest Becker's extensive theory of what motivates humans to survive. Becker reformulated the Freudian psychoanalysis concept arguing that human existence is deeply rooted in the fear of death (Scimecca, 1979:64). Furthermore, Becker states that the method an individual uses to alleviate terror signifies a person's personality defence and personal armour contrary to the overpowering worry as well as existential fright that accompanies the consciousness of an inescapable decease (Hayes, 2010:1). Ernest Becker says that social mindfulness of the irrevocability of passing away has an intense effect on varied features of belief, feeling, impulse and behaviour. Anxiety from the inevitability of death awareness is maintained by having faith in different perspectives and self-confidence.

A desire for self-worth is a unique social characteristic that subsists because of our capabilities, progressive and philosophical ideals. Characteristics have great influence on how we stay alive in varied settings (Greenberg *et al.*, 1991:196). Similar views state that humans would be paralysed with fear if they denied that the universe is uncontrollable and a variety of chance events can occur at any given moment. Also, Becker states that all cultures provide a detailed description of world creation and how to lead a meaningful life. Culture provides a person with an ability to find a benevolent view that allows them to deny ultimate vulnerability and morality (Greenberg *et al.*, 1991:196).

Terror management theory explains why individuals invest so heavily into their belief system and the need to feel valued in all that a person does. Given the fundamental notion to save oneself from death, the theory further offers insight into a broad array of human motivations and behaviours (Burke, Martens & Faucher, 2009:2).

3.5 Conservation of resources theory

The conservation of resources theory follows a notion that CSEs primarily attempt to attain, preserve and guard things that they personally deem important. The main principles

overarching the theory are that strain arises when vital or important assets are vulnerable to forfeiture, principal or crucial resources are absent, and loss occurs in obtaining key and central resources following a significant effort. The theory portrays the understanding that human behaviour is founded on a progressive desire to attain and protect assets in order to survive a key aspect of mortal behavioural inheritances (Hobfoll, Halbesleben, Neveu & Westman, 2018:104). The conservation of resources theory is governed by the following four principles:

1. Primary loss principle
2. Resource investment principal
3. Gain paradox principle
4. Desperation principle

The primary loss principle states that losing assets is disproportionately more significant than gaining assets. Particularly in the context of stress and strain, the impression is that individuals are more affected by losing assets than regaining them (Halbesleben, Neveu, Underhahl & Westman, 2014:2). Assets are important items, circumstances, subjective features and vitalities that are deemed important to survive or assist in obtaining assets (Alvaro, Lyons, Warner, Hobfoll, Martens, Labonte & Brown, 2010:3).

The resource investment principle states that an individual need to invest in assets such as social support to safeguard against loss, recuperate and get assets. In the context of coping, resource investment principle involves investing in resources that will help curtail potential stressors, strain and trauma (Halbesleben *et al.*, 2014:3).

The gain paradox principle states that when a person loses extensively, the need to gain more help and assistance becomes vital. The principle is rooted in the idea that those with greater assets are not as susceptible to stress and strain as those with lesser assets, and are capable of adapting and source new coping strategies. In the context of stress and coping, once an individual has a coping mechanism, they are able to adapt to a stressful encounter than individual without a coping mechanism.

The desperation principle states that when a person is helpless and frustrated, they become self-protective, violent, illogical and irrational (Hobfoll *et al.*, 2018:106). The individual becomes defensive to preserve resources or being exploited by seeking adaption strategies where a new coping strategy may emerge (Alvaro *et al.*, 2010:3).

3.6 Integrated model of trauma and coping among CSEs

The four discussed theoretical trauma and coping viewpoints served as a foundation for developing a model used in the current study. The theoretical approaches explain potential risks of stress, trauma and responses to strain using biological and cognitive factors. Consequently, it is vital to design an integrated model of stress and strain among CSEs. Variables from the abovementioned theories collectively explain probabilities of stress and coping of CSEs through propositions that explain biological and cognitive responses to strain and threatening situations.

The current integrated model of trauma and coping among CSEs is deeply rooted in a concept that stimulus events, which happen suddenly, have to be applied for prolonged periods of time to create an alarm reaction (as specified by general adaption syndrome). CSEs interact with violent scenes and can potentially experience an alarm reaction such as shock or anxiety (as specified by terror management theory). The reaction depends on an individual's personality type and beliefs determine the type of reaction elicited (as specified by Lazarus and Folkman's transactional model of stress). A person can evaluate resources available to help alleviate stress and trauma. CSEs' responses may be biological or psychological (as specified by general adaption syndrome). Cognitive process includes cultural views, thoughts and beliefs that influence how an individual potentially chooses to cope in response to a stressful situation (as specified by terror management theory). Lastly, a behavioural response is characterised by adaptive and maladaptive coping behaviour (as specified by Lazarus and Folkman's transactional model). However, losing resources can be more significant to an individual than gaining resources.

The model demonstrates how sudden and unpredictable stimulus events occur, such as car accidents, homicides, suicides, scenes painted with horror and gruesome imagery. An initial alarm reaction is elicited through shock or anxiety. Beliefs, cultural views and thoughts determine an individual's evaluation of available resources to reduce stress and alleviate trauma. However, potential loss of resources plays a more significant role to an individual than gaining resources. Consequently, when CSEs are faced with unpredictable stimulus, their initial alarm reaction and display of emotions such as shock, sadness and even extreme sympathy can demonstrate a loss of control. Moreover, losing a fellow colleague or work member through death can potentially affect resource loss and add stress. Subsequently, resource loss is significantly associated with psychological distress (Hobfoll *et al.*, 2018:104). CSEs become stressed due to feeling overwhelmed and losing control, which can affect relationships with family and friends, as well as enhance PTSD symptoms and extreme distress (as specified by conservation of resources theory).

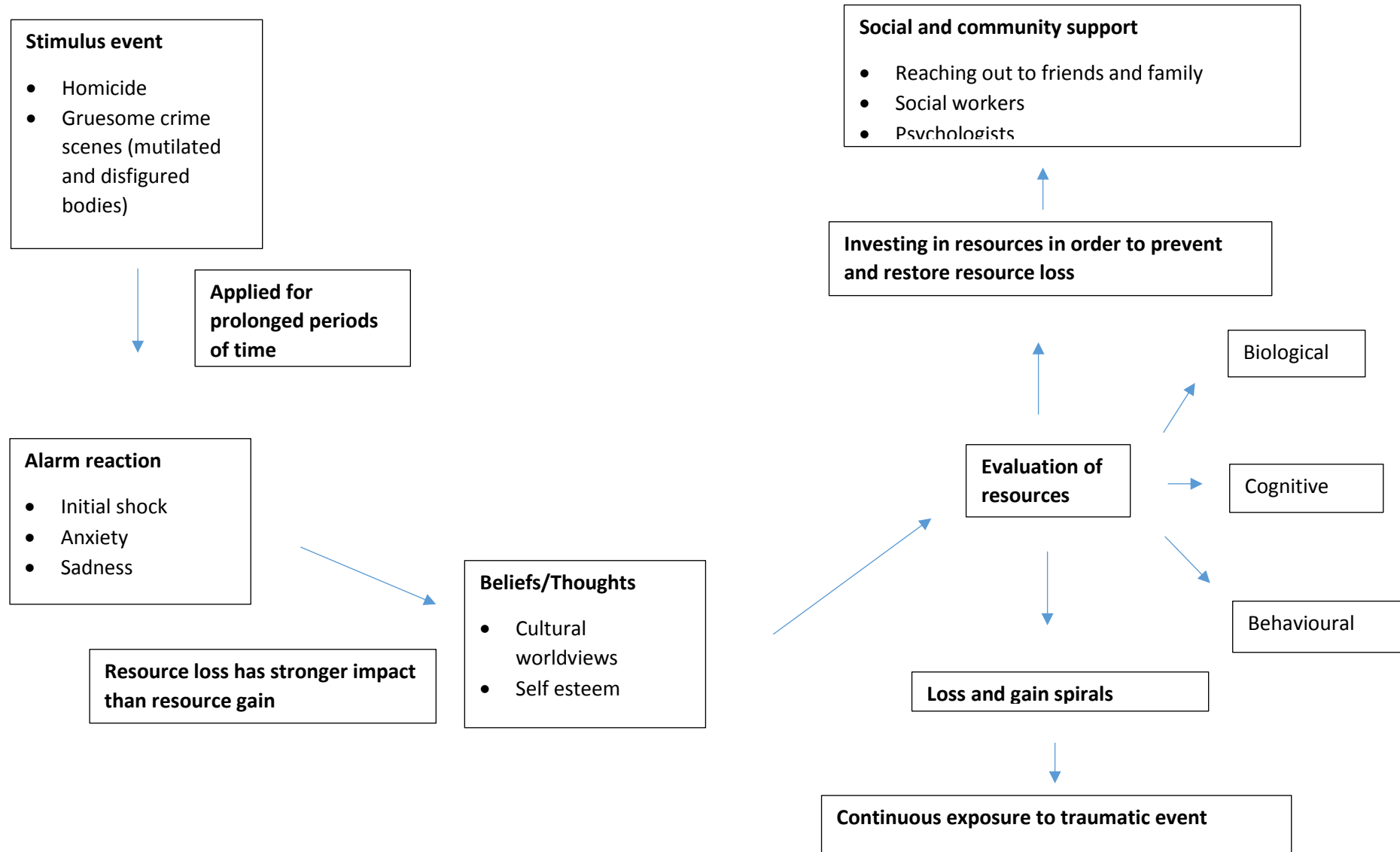
CSEs' reactions to stressful and traumatic conditions differ. Some may display biological reactions, such as high blood pressure, lymphoid shrinkage or even secretion of the stress hormone cortisol. Reaction may also be cognitive, CSEs may react to stress in a positive manner when they feel support from their meaningful others – albeit family, friends or colleagues. When CSEs invest in resources to mitigate trauma, such as talking to colleagues, speaking to psychologists and social workers about the nature of their work, stress and psychological disorders such as PTSD are less likely to develop (Hobfoll *et al.*, 2018:104). Investing in resources such as social support can reduce trauma and stress while enhancing positive coping mechanism (as specified by conservation of resources theory). Lastly, behavioural responses may include CSEs choosing to play sport as adaptive coping or opting for excessive alcohol consumption, displaying maladaptive behaviour. However, continuous exposure to violent and gruesome crime scenes and risks to physical health suggests a loss of resources, which makes adjusting to life very challenging. Resources are minimised through continuous exposure to traumatic circumstances, leading to a loss that creates more stress and strain (as specified by conservation of resources theory).

The integrated theoretical model presents following assertions (See figure:1):

- CSEs are exposed to gruesome crime scenes and interact with dead and decomposed bodies for prolonged periods of time.
- As a result of an increase in crime in South Africa, CSEs are exposed to killings and gruesome murders. Suddenness and unpredictability of an experience or situation create a traumatic atmosphere.
- Unpredictability of scenes creates an alarm reaction, such as an initial shock or anxiety.
- In essence, CSEs being able to perceive personal vulnerability and morality means that crime scene technicians can expect a diversity of horrific ordeals from interacting with violent crime scenes.
- CSEs have beliefs and thoughts that can influence their self-esteem and cultural views. Beliefs and views inherently determine a positive or negative response to trauma experienced. Being able to control emotions can be seen as a resource loss, which has a tremendous impact on relationships with family and friends and perceived mental health.
- An individual evaluates the appropriate coping method to trauma from available resources.
- CSEs may display chronic biological symptoms of stress, which may lead to development of PTSD if persistent for prolonged periods of time.

- Individuals who invest in resources prevent and restore resource loss. Reaching out to family and friends in times of stress can mitigate the impact of a traumatic event.
- Investing in resources such as speaking to psychologists and social workers after seeing traumatic crime scenes can alleviate PTSD symptoms and offer opportunities of effective coping.
- Some CSEs may display cognitive responses, minimising stress by normalising death and the predictability of life.
- It is through culture that terror can be minimised because culture normalises and allows for the predictability of life. Consequently, CSEs normalise interaction with violent crime scenes every day and downplay vulnerabilities due to the working environment.
- CSEs may display behavioural responses, which can be adaptive or maladaptive depending on environmental influences.
- An individual with an effective coping mechanism may lose ability to cope with potential stress due to continued exposure to trauma or events that trigger PTSD may also cause the individual to spiral out of control.
- Continuous contact to distressing happenings suggests loss of resources, creating difficulties in adapting to life's challenges.
- Repeated exposure to violent and gruesome crime scenes can affect CSEs ability to function and perform tasks effectively. Furthermore, CSEs are potentially at risk of experiencing a decline to their physical and mental health.

Figure 1: Integrated model of trauma and coping among CSEs



3.7 Summary

The theoretical framework consists of the transactional model of stress and coping, general adaption syndrome, terror management theory and conservation of resources theory. An exposition regarding the aforementioned theories related to stress, trauma and coping provided a foundation to develop an integrated theoretical model. There are many existing theories and models that explain trauma and coping. However, the theories chosen in the current study to explain trauma and coping serve as a provisional model. The key feature of the five discussed theories is that stress stems from unexpected and unpredictable events and that an individual's ability to respond depends on their personality and their perceived view of available resources. A person's perception of available resources influences their coping mechanism, which can be adaptive or maladaptive, depending on the level of the stressor. In the current study, the integrated theoretical model potentially seeks to reveal the extent of trauma among CSEs when faced with violent crime scenes and coping methods opted for when faced with threatening potential stressors.

Chapter 4: Methodology

4.1 Introduction

The investigation enquiry the study aimed to answer was as follows: Trauma and coping among crime scene examiners: A phenomenological inquiry. The literature review underlined that trauma and coping methods among CSEs remains in its infancy stages, particularly in South Africa. Much importance has been put on collecting forensic evidence to aid in investigations and prosecution. However, reactions regarding the nature of work carried out by CSEs has been studied to a lesser extent locally, thus limiting the knowledge of causes of trauma and coping methods used (Holt et al., 2016:2). Determining the experiences of CSEs to scenes of a violent nature and coping methods used to cope with stress was important to redress the paucity in the study. In pursuit of producing a comprehensive study, the following chapter presents the methods used to conduct the study by providing validations for methods used, techniques and approaches opted for by the researcher.

4.2 Research paradigm and approach

Due to the rarity of local studies regarding the research problem, evidence relating to trauma and coping among CSEs was needed. The subjectivism paradigm is centred on providing in-depth information about a phenomenon by focusing on individual experiences, perceptions and interpretations of the world and social relations (Mills, Durepos & Wiebe, 2010:2). Therefore, the philosophical foundation within which the study is rooted is the subjectivism paradigm. Subjectivism enables researchers to primarily focus on the lived experiences of CSEs when interacting with violent crime scenes, and interpretations and meanings ascribed to the trauma they experience. The researcher was able to obtain in-depth information regarding the beliefs and values that CSEs rely on to cope with trauma. In other words, subjectivism created a world view from the perspective of an insider by identifying challenges CSEs encounter after interacting with crime scenes, especially in relation to trauma and stress. Thus, the subjectivism paradigm aided in observing the trauma that CSEs endure by narrating their daily experiences when interacting with violent crime scenes through personal interviews.

In order to obtain comprehensive knowledge of the occurrence of trauma together with coping among CSEs, a qualitative research approach was utilised. Qualitative research is best suited because the research is not statistical and analysis entails the subjective meaning of different realities (Rahman, 2016:103). The aim and objectives framed for the study prescribed the adoption of a qualitative approach. Qualitative research focuses on detailed descriptions of participants' feelings, beliefs and interpretive meanings to actions (Rahman, 2016:104). The main departure point of the research is the insider's perspective; interacting with the participants in their natural settings (i.e., at their workplace) increases the probability of them opening up about their experiences (Hammarberg et al., 2016:499).

The research then highlights an idiographic causation of why a phenomenon occurs and the researcher was able to conduct cross-case comparison and analysis (Rahman, 2016:10).

Given the focus of the existing study, a quantitative approach would have been unsuitable, owing to the fact the research was aimed at understanding a complex issue such as trauma. Furthermore, research analysing such a complex topic does not require to be generalised to the larger population as it is focused on identifying and highlighting what traumas are experienced and what coping mechanism are employed by individuals. Also, any knowledge produced may be too abstract to apply across situations, contexts and individuals. Instead, the aim of the study to investigate trauma and coping among CSEs was to highlight the complexity of the work CSEs engage in on a daily basis through non-quantifiable data (Pathak, Jena & Kalra, 2013:192).

4.3 Research purpose

The research aimed to scrutinise the trauma and coping methods used by CSEs in the Tshwane area. Exploration was chosen to acquaint the researcher with the phenomenon and complementary evidences concerning trauma and coping. Explorative research is typically used when research is relatively novel and the topic needs to be explored. The explorative research played a meaningful role in social science research, especially when exploring a new theme such as trauma among CSEs. Explorative research aimed to provide a better understanding of a complex topic and provide a more comprehensive understanding of trauma and coping methods used by CSEs (Babbie, 2011:96). No studies have been conducted on CSEs and the trauma they experience in South Africa; although there are some quantitative insights, there is a lack of in-depth exploration. The growing body of research, as highlighted by Mrevlje (2015), has opened room for assumptions about the consequences endured by CSEs due to the nature of their work. Therefore, the study explored the elements of trauma and coping among CSEs in order to provide insight into the traumatic nature of their work. The elements comprised of focusing on the experiences to highlight the consequences of trauma experienced by CSEs and how they cope.

4.4 Basic Research

The current study is characterised as basic research, also referred to as pure or fundamental research. Basic research is rooted in curiosity driven inquiries, such as what causes the phenomenon in question. A research type is driven by a desire to expand knowledge and enhance understanding. The current study explores the fundamental findings regarding the trauma experienced by South African CSEs, and highlight coping methods used (Punch, 2014:9). Therefore, the current study focused on acquiring and expanding the fundamental knowledge by informing the research question through CSEs relating their experiences and coping mechanisms used in dealing with trauma. It is noteworthy to mention that conducting basic research in the current study assisted in gathering evidence illustrating what can be improved and what problematic factors regarding trauma and coping mechanisms used by CSEs can

be addressed. The use of basic research allows for a critical analysis of CSEs trauma and coping methods in order to highlight the difficulties they face when working on violent crime scenes.

4.5 Research design

Research methodology is a strategy according to which the research will be conducted. Therefore, the research design guides the researcher in formulating a problem and objectives as well as presenting evidence from data obtained, which is to explore trauma and coping among CSEs in the current study (Sileyew, 2019:2). The objectives of the study dictated phenomenology as best suited for a study that is aimed at understanding the trauma experienced by CSEs. The research design focused on the lived experiences of CSEs who interact with violent crime scenes by obtaining comprehensive descriptions of the matter under investigation. From the different personal descriptions provided by CSEs about trauma and coping methods, common universal meanings were identified, creating an image of what CSEs experience due to the nature of their work. Phenomenology is deeply rooted in finding individuals who have commonly experienced a phenomenon; the knowledge derived is then reduced to a description that details the nature of the experienced phenomenon (Maree *et al.*, 2016:77). An advantage of phenomenological research is that the researcher was able to follow her own curiosity to propel the study forward. Consequently, this allowed for constant revision to be made throughout the study. In other words, the researcher was able to construct new themes and identify significant patterns, which were conducive to the study among the different narrations by CSEs.

The researcher opted for transcendental phenomenology as it was the most practical, due to the attention being placed on CSEs within the Tshwane area in Gauteng. Transcendental phenomenology was a suitable theoretical approach to explore trauma and coping among CSEs because it sought after the comprehension of social practice and was methodologically focused on debunking any preconceived ideas to see the phenomenon clearly and without bias (Sheehan, 2014:10). In the proposed study, transcendental methods focused largely on the descriptions given by CSEs regarding their experiences of trauma and coping, and not the researcher's interpretations. The techniques focused on identifying the phenomenon, removing one's personal bias and collecting data from the experiences shared by different CSEs who have experienced trauma. The information obtained was then reduced to significant statements or quotes and put into categorical themes. The researcher developed a textual and structural description of the trauma experienced by CSEs in order to convey the overall essence of the phenomenon. A combination of what participants experienced and how they experienced it regarding conditions and situational context when examining crime scenes will portray the complete experience (Maree *et al.*, 2016:78).

Each research design has its own advantages and disadvantages. Transcendental phenomenology was favoured because of its ability to delve deeply into consciousness and uncover fundamental constructions of a phenomenon, such as trauma and coping methods among CSEs (Hirsh, 2015:252).

It also provided a methodical tactic to examine data about lived experiences. The researcher further developed objectivity by combining the personal experiences of different individuals, which also allowed for the identification of patterns and similarities in lived experiences (Moerer-Urdahl & Creswell, 2004:32). Participants' experiences were interpreted using pre-conceived concepts and philosophies, but the focus was rather on participants' experiences and their perceptions of the matter under investigation. The disadvantage of transcendental approach is subjectivity, establishing reliability and validity can be challenging. However, the researcher ensured to use exactness, trustworthiness and transferability to minimise subjectivity and research induced bias that could have influenced the study. Presentation is another disadvantage of transcendental phenomenology as a research design. Presenting results in a useful manner to practitioners can be difficult. In the current study, the researcher ensured that results are presented properly by identifying themes and subthemes, and direct quotes from participants.

4.6 Research methods

The dialogue below delivers a synopsis of approaches utilised in the study, with specific reference to the:

- Study population and sampling strategies
- Data collection technique and instrument
- Data analysis process
- Measurement quality
- Pilot study

4.6.1 Study population and sampling

The study's focus was placed on the lived experiences of CSEs of interacting with violent crime scenes. The study population can be defined as a group of individuals who possess specific characteristics, from which a sample for the study can be drawn in order to determine parameters of the study. Non-probability sampling was best suited when there was limited time available and when results were needed urgently (Maree et al., 2016:197). Therefore, the study population consisted of CSEs in the Tshwane area who might have experienced disparate levels of work-related stress and trauma.

The following criteria had to be met to for participants to be included in the study. Inclusion criteria included:

- Voluntary participation
- Six months' experience working as a CSE regardless of level or rank
- Direct interaction with crime scenes
- Working at one of the Tshwane LCRCs

The study aimed to interview 25-30 participants or until saturation was reached, and the research took place at LCRCs in Tshwane. Due to the Covid-19 pandemic and growing safety concerns, coupled with resistance from some LCRC managers, the researcher sufficed with the minimum pre-set number of 25 respondents. The number of participants was deemed sufficient to identify trauma and coping among CSEs in the Tshwane area. The sample was identified and selected in terms of its relevance to the aim of the study for all objectives to be met. Non-probability sampling was utilised in the study because it was assumed to be less expensive and swiftly implemented. By utilising non-probability sampling, the target respondents CSEs in the Tshwane area were reached effectively.

A blend of purposive and snowball sampling was selected due to the limited number of CSEs and likelihood of reluctance to engage on the topic of trauma by the chosen study population with the researcher. Approximately 176 CSEs work in Tshwane. Twenty-five CSEs were interviewed for the purpose of the current study. The limited number of CSEs was due to work schedule, such as working in shifts. CSEs were inaccessible as they had to attend to crime scenes, some had to testify in court and the CSEs in the office were processing dockets. Therefore, the potential number of participants became less. The key objective of purposive sampling is to produce a sample whose features are affiliated with that of the group (CSEs), which the scientist aims to study. Therefore, purposive sampling proved advantageous for the current study as it created a clearer representation relating to CSEs trauma and coping. Purposive sampling was utilised because it enabled the researcher to specifically select CSEs in the Tshwane area to participate in the study. Furthermore, purposive sampling allowed the researcher to focus on experiences and views of participants (Maree *et al.*, 2016:198). Purposive sampling was utilised in order to approach the first CSEs, and thereafter the researcher used snowball sampling to obtain the rest of the respondents.

As an access point, referral sampling was done to identify individuals who meet the set criteria of being CSEs. As such, a LCRC manager was firstly approached to refer the researcher to potential participant(s), after which snowball sampling was employed (Power, Schulkin, Loft & Hogan, 2009:1). Snowball sampling was used to locate participants, therefore, referrals from initial participants (obtained through purposive sampling) served to generate supplementary participants. Snowball sampling was advantageous as contact was made with CSEs in one area, who then referred the researcher to other potential participants who met the inclusion criteria. Snowball sampling produced an ample number of respondents. In addition, purposive sampling assisted to reduce complications in discovering participants of similar characteristics in the vicinity (Maree *et al.*, 2016: 198). The method allowed for referral to be made within the circle of associates in a population sample (Cohen & Arieli, 2011:427).

4.6.2 Data collection

The data gathering technique for the study was personal interviews, utilising a semi-structured interview schedule. Personal interviews were conducted with CSEs to generate data about their experiences

with trauma and coping. The interviews were semi-structured in order to discover deeper and more meaningful information regarding their experiences. The primary focus was to gain the perspectives of CSEs when interacting with violent crime scenes as well as the coping methods opted for when facing stress. A semi-structured interview schedule enabled the researcher to apply probing questions for clarification to broaden the line of enquiry. Semi-structured interviews also allowed for a conversational tone in order to make it easier for participants to relay their experiences of trauma and coping (Maree *et al.*, 2016:93). The participants found the conversational to be accommodating as they could relay experiences as they saw fit when questions were posed. They were also able to recall past events and scenes from memory, which traumatised them or proved very stressful.

Semi-structured interviews are best suited for research studies that particularly have open-ended questions, which require follow-up enquiries. Below descriptions of when semi-structured interviews should be employed are discussed (Adams, 2015, 494):

- The researcher had to ask probing and open-ended questions to determine CSEs personal and independent thoughts about trauma and crime.
- The researcher was careful when probing on topics of a sensitive nature as individuals were not comfortable about being open about their trauma and stress in front of peers or in group settings.
- The researcher conducted one-on-one interviews with key programme managers, staff or frontline service providers.
- The researcher examined unexplored territory with unknown but prospective significant issues and used the opportunity through dialogue to spot useful leads and pursue them.

The interview process was systematic to eliminate bias in answers given and it was vital that questions were posed in a manner that generated an honest response. Also, the interview process was transparent as the researcher was open and clear with participants about the research study to avoid disappointments during the interview process. The methods used to conduct interviews are written below so that readers know clearly how data was obtained. Interacting directly with CSEs helped the researcher understand sensitive information and the severity of the conditions CSEs experience daily. The topic of discussion was sensitive for some participants, so the researcher was careful in the manner she presented questions to the participants. The researcher took charge of the interview when the participant went off track and redirected the participant to focus on the matter under investigation, but very few incidents of this nature happened (Maree *et al.*, 2016:93).

The interview schedule was developed by doing a thorough review of the literature on trauma and coping among CSEs, as well as drawing from a technical report conducted by Klopper and Steyn (2016). The report raised noteworthy questions that ought to be further explored relating to the phenomenon. The interview schedule was separated into core subdivisions to aid in the evaluation of the information obtained. Further rationale for formatting of the interview schedule was that the topic

under discussion was sensitive in nature. Therefore, the researcher needed to give participants a level of freedom to clearly express their experiences of trauma and distress without too much interference, but still leave room for probing when necessary. The interview schedule was divided into the three sections shown in Table 3. Interview schedule

Table: 3 Interview three sub-sections

B. Experiences	Crime scene attendance in a week, stressful part of working on a violent crime scene, focusing on types of crime scenes, status of bodies (decomposed, foetus, children), levels of stress in relation to work compared present to when the CSE started, the stress endured related to work, describing working on violent crime scenes.
C. Coping methods	How does an individual cope with stress and trauma experienced from violent crime scenes, how do stress and trauma affect family and relationships, elaborating on most effective coping method, identifying ineffective coping mechanisms used by other CSEs, and speaking to someone about the nature of work CSEs do

The interview schedule format consisted of open-ended questions. Open-ended questions are used to explore topics in depth and often produces lengthy narratives and themes (Weller, Vickers, Bernard, Blackburn, Borgatti, Gravlee & Johnson, 2018:2). The advantage of using open-ended questions in research is that participants are offered an opportunity to provide a wide range of answers, allowing for detailed information to be shared (Hyman & Sierra, 2016:3). Inherently, the use of open-ended questions allowed the researcher to take a holistic and comprehensive look at the phenomenon of trauma and coping among CSEs. The open-ended responses permitted the participants to provide opinions that added to the diversity of the research and knowledge gained (Allen, 2017:1). Allowing CSEs to elaborate on experiences shed light on the extent of trauma and stress the participants endured on violent crime scenes, even when the respondent claimed not to have stress and trauma.

The personal interviews were voice recorded using a recorder and a transcribing app called *Otter* (<https://otter.ai/>). Information was then reviewed for apparent motifs (Al-Yateem, 2012: 31). The recording was achieved by using a voice recorder technique, which made it easier for the researcher to focus on the interview content. Electronic records are not easily corrupted and the integrity of the files is ensured. Thus, electronic records allow files to be recovered and inspected in an adjustable manner (Tessier, 2012:449). The main advantage of a recorded interview is that the record can be frequently revisited when uncertainty arises or for the period of examination and delivers a foundation for dependability and legitimacy (Al-Yateem, 2012: 31).

The transcriptions from the Otter app were edited using the voice recordings to make sure the correct content was captured. Transcriptions aid in minimising inconsistencies that arose during recording, such as noise interruptions and interferences that occurred during the interview (Nascimento & Steinbruch, 2019:417). During some of the interviews with CSEs, the researcher noted that due to the busy nature of their work, there were some interruptions that occurred. The interruptions included phone calls that informed CSEs to attend to crime scenes or other colleagues entering the room to enquire about work-related matters. The researcher paused the interview and recording when interrupted and the interview was resumed as soon as the CSE was ready to continue. Transcriptions were further grouped into the three themes, as structured by the semi-structured interview schedule in Table 3. Thus, the researcher is enabled to further explore and generate interpretations that answer the aims and objectives of the research study. Furthermore, leaving transcriptions in their purest form with limited changes by the researcher allows transparency to the reader and demonstrates the reason for analysis (Nascimento & Steinbruch, 2019:420). After recorded interviews were transcribed, the researcher then started to investigate and inspect for deeper themes that arose from the experiences shared.

4.6.3 Data analysis and presentation

Qualitative research is about seeing the world from another individual's perspective, what remains important is that the data analysis and management remains true to participants. The researcher needs to ensure that the respondent's voices are heard, reported and interpreted in a manner that others can learn from (Sutton & Austin, 2015:227). In other words, data analysis serves to reduce data to an interpretable form, to ensure that related research problems can be studied and verified to enable conclusions to be drawn (De Vos, Strydom, Fouché & Delpont, 2011:249). The qualitative data has to be systematic and organised and therefore requires important steps to be undertaken.

In the current study, the researcher corrected any spelling errors and ensured anonymity on each transcript by removing names, places and significant events so the participant cannot be identified (Sutton & Austin, 2015:227). The next step was coding, which refers to the pinpointing of subjects, matters, resemblances and alterations presented by respondents' tales and elucidated by the researcher (Sutton & Austin, 2015:228). Inherently, the researcher developed a suitable coding system

by reading carefully through the transcribed notes and divided them into meaningful analytical units. The process enabled the researcher to understand the trauma and coping phenomenon from the participants' perspective. In addition, the researcher used emergent coding, which proved very useful after the first interview had been conducted. It was useful because the researcher was able to identify meaningful units and significant statements shared by the participants. The significant statements were further put into established categories, which was imperative to make sense of data collected. The categories were established by grouping similar statements into themes and sub-themes. Moreover, throughout the coding process, crystallisation was continually used as a concept because it provided a complex and deeper understanding of the experiences of the participants in the research study (Maree *et al.*, 2016:112). Also, the researcher was able to reflect on the analysis experience and identify patterns and themes from the respondents' narrations.

Subsequently, the participants' narrations were themed in order to present the transcripts in a meaningful and coherent way. The process is called theming and is very important in qualitative research because at its conclusion it is possible to present interviews using quotations from individual transcripts to illustrate the researcher's interpretations (Sutton & Austin, 2015:229). A qualitative study of this nature required content analysis because the researcher was able document large amounts of information received from texts and divide it into fewer content categories in order to present it clearly to the reader (Maree *et al.*, 2016:111). The content analysis used was latent; exploration of the chronicles procured from participants required the researcher to focus on finding meaning and also interpret what was said during the interviews. The advantage of using content analysis is that it is unobtrusive and easy to conduct. Furthermore, it is a very inexpensive method that is easily applied and understood. Using latent analysis proved advantageous as it permitted the researcher to interpret data and seek the underlying meaning of the text (Bengtsson, 2016:10). It should be noted that the use of content analysis is limited only to the analysis of the information, which is communicated and that which is readily available.

To ensure anonymity, all research participants are numbered. In other words, the sources of data are indicated as P1 without use of personal names.. To simplify reading, all quotations are presented in paragraphs and are indented, loose standing and in italics. Also, the quotes are presented verbatim and all geographic names were changed to protect participants' identity.

4.6.4 Measurement quality

Measurement quality is very important in modern research, especially because it enhances the accuracy of the assessment and evaluation of the research study (Haradhan, 2017:59). Validity and reliability are very important concepts in research since a lack of either concept can result in a study being disputed or severely criticised. Furthermore, the two concepts are fundamental principles of research that ensure the exactness of findings and assist in evaluating a measurement tool (Neuman,

2011:208). Unlike quantitative research where statistical methods to ensure validity and reliability can be applied, qualitative research incorporates technical approaches to safeguard the reliability of the discoveries (Noble & Smith, 2015:34). Qualitative research often uses the triangulation technique, which is defined as the use of multiple data sources and multiple analytical methods to enhance trustworthiness and rigor. The triangulation method recognises and minimises probable preconception while guaranteeing the examiner's reliability of analysis. It is essential that academics in qualitative research display their discoveries as trustworthy and ensure that reliability and validity are demonstrated by focusing on exactness, trustworthiness and transferability as key concepts to assessing a subjective research study. (Sullivan & Sarageant, 2011:452).

For the purpose of ensuring measurement quality in the current study, data and theory triangulation were used. Triangulation refers to the use of different methods to help produce a comprehensive set of findings (Noble *et al.*, 2015:35). Data triangulation is achieved by contrasting data gathered at different times and settings, while theory triangulation involves interpreting the data using more than one theoretical framework (Turner & Turner, 2009:3). The researcher noted in relation to data triangulation that audio interviews recorded in a secluded private office yielded a better response. The participants were more open and narrated more of their experiences in depth with little to no interruptions by other colleagues in comparison to when interviews were conducted in an open plan office space. Also, interviews that were conducted very early in the morning before the participants attended to crime scenes displayed that participants were more engaged and enthusiastic than interviews conducted when CSEs have come back from crime scenes. Regarding the theory triangulation, the researcher used four theories to interpret the findings, which are in Chapter 3 and will be elaborated on in the discussion and recommendations in Chapter 6. The theoretical framework consists of Lazarus and Folkman's transactional model of stress, Hans Seyle's general adaption syndrome and Ernest Becker's terror management. The researcher will also present an integrated model of trauma and coping among CSEs founded on the variables of the abovementioned theories.

Qualitative researchers use trustworthiness to ensure data quality, which follows the four criteria proposed by Guba. The criteria include, but is not limited to, credibility, transferability, dependability and conformability (Guba, 1981:27). Credibility is the degree to which research findings represent the views of research participants. The researcher's activity is paramount as information might be sensitive, especially when asking about trauma. The data gathering tool was semi-structured interviews, which encouraged participants to share knowledge and personal experiences in an honest way (Maree *et al.*, 2016:123). To enhance credibility of the current research, two interviews were piloted to refine interview protocol, time management and overall process flow of interviews (Forero, Nahidi, De Costa, Mohsin, Fitzgerald, Gibson, McCarthy & Sarfo, 2018: 5). It should be noted that the use of a semi-structured interview schedule allowed for flexibility and included several prompts for expansion of answers and request of clarity to information provided.

Transferability ensures that readers can make connections between elements of a study and their own experiences. Researchers are required to provide readers with a thick description of the results, thereby giving them a full account of content which in this case is the participants' experiences of trauma and coping methods (Maree *et al.*, 2016:124). In other words, transferability is focused on the reader being able to assess findings as being transferable to their own setting, the implication is that the reader and not researcher makes transferability judgment. Also, rich accounts of descriptive data detailing where the research was carried out, settings, sample size, sampling strategy, inclusion criteria and interview procedure enhanced transferability within the current study (Korstjens & Moser, 2018:122). Giving clear descriptions of culture, context and selection characteristics of participants as stated above enhances trustworthiness and credibility. Thus, the researcher presented the collected data in a way that allowed the reader to look for alternative interpretations (Elo, Kaariainen, Kanste, Polkki, Utrianen & Kngas, 2014:6).

Dependability is demonstrated by the research design and its implementation; phenomenology is best suited for a study that aims to understand the essence of trauma experienced by CSEs. The design focused on the meaning of the lived experiences of CSEs who interact with violent crime scenes by obtaining comprehensive descriptions (Maree *et al.*, 2016:125). The researcher cautiously kept a track record of the data collection process (dates, times, duration, location) and used data coding, identified overlapping themes and backed-up recorded audio files to verify consistency and preserve the original information given by the participants (Forero *et al.*, 2018:6). An audit trail was established, although interviews are presented for the purpose of the study in transcription format, back-up files have been kept and stored in an external storage device and are available for future access if required.

Lastly, confirmability emphasises neutrality – the researcher did not influence participants to present their experiences in a manner to confirm the ideas and beliefs of the researcher. Instead, participants remained in control and stated their experiences without being influenced by the researcher (Maree *et al.*, 2016:125). Interpretations derived from the data were not based on own particular viewpoints and preferences, but were embedded in the data collected (Korstjens & Moser, 2018:122). Confirmability was enforced to ensure researcher remained objective by ensuring that the data presented represents the participants' voice and conditions accurately, without researcher bias, motivations and own perspectives. The implication is that the data must represent the views of the participants clearly and precisely (Elo *et al.*, 2018:6) Qualitative research requires a need to be constantly self-aware and reflexive about one's role in the process of collecting, analysing and interpreting data, and the inevitable preconceived ideas an individual can bring to their own research. The study was further augmented by using a pilot study.

Reflexivity is a continual process that involves reflection and a need to constantly reconstruct the understanding of social realities through interaction and engaging in dialogue about other people's

experiences. Firstly, reflexivity empowered the researcher to continually interrogate if questions posed to participants were indeed relevant and focused on trauma and stress. Secondly, the researcher examined data collected through interviews by identifying patterns in the participants' responses and grouped responses into themes and sub-themes. The themes and sub-themes were constantly being reconstructed in relation to the context in which trauma and stress occur, while accepting and articulating views, assumptions and perspectives (Barrett, Kujamaa, & Johnston, 2020:3). Being continually reflexive and challenging underlying perspectives is an important part of rigour research because a researcher may not be aware of own prejudices. In the current study, the researcher acknowledged motivations for conducting research related to trauma and stress. Although the study had theoretical aims, the researcher had personal objectives to discover on a deeper level what trauma and stress trigger CSEs encounters on violent scenes, what coping methods are used and how effective the coping mechanisms are. In the current study, academic and personal aims were intertwined. The researcher was able to apply sensitivity to self-preconceptions and sensibilities that influence research. Thus, the researcher's ontological position and identity were reflected as influences through the choice of theoretical frameworks, methodology and interpretative rationale (Haynes, 2012:8).

4.6.5 Pilot study

Pilot studies are minor procedural tests piloted to inform focal research by ensuring that approaches and philosophies are appropriate, relevant and error free. The key value of piloting a study is that it provides the researcher with an opportunity to make modifications and amendments in the main study (Kim, 2010:191). Furthermore, pilot studies ensure achievement of the aim of the research study and increase its value. In addition to the approaches discussed in the preceding section to ensure validity and reliability, a pilot study regulates the feasibility of the study (Babbie & Mouton, 2010:244). The researcher benefited from the pilot exercise as it was used to self-evaluate readiness, competence and commitment to the research (Kim, 2010:193). Usually, responses and reactions from interviews are used throughout the study to rearrange the interview schedule if necessary, to alter questions posed by researcher. The researcher is able to evaluate the practical aspects of the study and its feasibility.

The procedures of the study were piloted with two CSEs who no longer attended to crime scenes, but were team leaders with the forensics division in the SAPS in Tshwane. The pilot study served to determine if the questions posed were accurate in exploring trauma and coping strategies (Ismail, Kinchin & Edwards, 2018:1). The same inclusion and exclusion criteria for the main research was applied to the pilot study sample. Through piloting, the researcher was able to refine the research questions and estimate the time needed to conduct the interviews. In addition, data collection methods and analysis can be continually adjusted to emerging findings if a study is piloted (Ismail et al., 2018:4).

In terms of the current study, the pilot study revealed no issues regarding the data collection instrument. Consequently, the personal semi-structured interview schedule was not altered in any way. Therefore,

the decision to include the two participants used for the pilot study into the main study was not considered problematic because the interviews were administered to all participants in exactly the same manner and within the same environment. The depth of the interviews and the experiences shared proved sufficient to achieve the aims and goals of the research. However, the main findings from the pilot study helped the participants understand and answer questions with great ease. Although, the interview schedule was conversational and had a semi-structure, the researcher had to sometimes have follow-up probing questions to gain clarity on the experiences shared on trauma and coping. It is important to note that the busy nature of CSEs made it difficult, in a few instances, to conduct interviews without the interruptions of phone calls or enquiries from colleagues when on shift duty.

4.7 Ethical considerations

Ethics relay the method in which the researcher treats participants in an exploratory study. In essence, research ethics deal with good and bad qualities of character by emphasising morality and the ability to distinguish between right and wrong. Ethics are important in strengthening the quality of research while ensuring that the researcher demonstrates ethical sensitivity (Simelane-Mnsis, 2018:1). All ethical considerations were obeyed within the current study and the researcher made all participants conscious of all the benefits and risks of participating in the study. Participants knew what to expect and were not introduced to new information or situations during participation, and they knew what was expected from them and the researcher. Anonymity and confidentiality were upheld; no name or identification was used to link the responses to a particular respondent as interviews did not require names. Consequently, moral concerns relevant in the current research are discussed in depth in following section.

4.7.1 Voluntary participation

The fundamental ethical rule of research when involving participants is that they agree to research prior to commencing with the research study (Gadd, Karstedt & Messner, 2012:502). The main principal of voluntary participation is that participants are not coerced into participating in the study and participate voluntarily. The important dimensions of participants feeling that participating in research is voluntary lies in an individual having the freedom to choose whether or not to join the study. The decision to participate in research must not feel forced or a participant must not feel that it is compulsory to be part of the study (Marshall, Adebamowo, Adeyemo, Ogundiran, Strenski, Zhou & Rotimi, 2014:5). In the current study, no participants were forced to participate in the research and voluntary agreed to engage in audio recorded personal interviews with the researcher. The researcher made all participants aware of the benefits and risks of participating in the study. A consistent concept with voluntary participation is the right to retract from the research and participants' information logged be withdrawn from study where possible (Vanclay, Baines & Taylor, 2013:247). Likewise, participants were informed prior to participating that they were allowed to pull out of research study whenever they want devoid of

repercussions. Research field experts emphasise that voluntary participation in research enhances research validity and reliability because voluntary participation plays a significant role on the validity of the data presented (Kilinc & Firat, 2017:1481).

4.7.2 Informed consent

A knowledgeable agreement, also called informed consent, is a written document that needs a signature and date. The form is obligatory where research collects personal data, in the present study CSEs sharing experiences of trauma and coping (Manti & Licari, 2018:145). Information regarding the current study had to be provided to all CSEs who were approached to participate in the study, inherently supplementing them with enough facts to make a knowledgeable decision about their participation or non-participation in the study (Wesmarland, 2011:142). Participants were made to sign a letter of informed consent that explains the purpose, procedures and outcomes of the proposed study. The researcher offered to answer any questions and all additional questions that the CSEs had. CSEs who were approached were given the opportunity to choose to participate in the research study. The participants who consented to the interviews agreed to the interviews being voice recorded using a recorder instrument and an Otter recording app, which transcribed the recording as it was being recorded.

Voluntary participation requires participants to be willing to share information about personal experiences without feeling forced or intimidated to disclose such information (Christensen, Burke Johnson & Turner, 2015:125). Willing CSEs were encouraged to share as much as possible about their traumatic experiences from violent crime scenes and disclose coping methods used to deal with stress. It is important to note that no participants were forced to share information they do not wish to share. CSEs were afforded an opportunity to freely share the traumas they felt comfortable recalling and narrating without pressure or limitation. Informed consent ensures that participants are protected and safe from harm (Dixon & Quirke, 2018:18). Also, participants were informed of possible risks of potential experiences of emotional distress as a result of the sensitive nature of the topic under discussion. It should be noted that the CSEs were made aware of the fact that the informed consent forms and data will be stored securely at the Department of Social Work and Criminology, University of Pretoria for a minimum period of 15 years. The informed consent form is attached as Appendix C.

4.7.3 Avoidance of harm

Adler and Clark (2011) state that a researcher must have a certain level of competence in order to minimise harm to respondents. No harm to participants highlights the need to respect other persons. Beneficence emphasises that participants must not be harmed by research or suffer secondary victimisation. Harm refers to any bodily, mental or emotional harm the study might bring to participants (Westerland, 2011:144). Thus, participants were not harmed neither physically nor psychologically during the interviews. The personal interviews took place at the LCRC in an available space, either in

an empty office or boardroom, to ensure comfortability of respondents. The researcher ensured that participants felt relaxed and reiterated that should the respondent feel they no longer want to participate in the study, they can withdraw. Participants were also made to understand that by participating or choosing not to participate in the research study, circumstances of the CSE within the division of forensics service in the SAPS will not be improved.

Participants were informed that although the information to be discussed is sensitive, it is not the intention of the researcher to harm or hurt the feelings of CSEs based on questions posed. Involvement in a societal inquiry may sometimes result in participants deliberating on delicate matters, conveying sensitive suffering (Vanclay et al., 2013:247). In the current study, CSEs recalling of traumatic experiences and exposure to violent scenes may have evoked emotional distress. Consequently, the researcher was obligated to ensure that there is alternative assistance and counselling, which ensured that the participants were not harmed as a result of participating in the study. Kelt (2009) states that the researcher should conduct research from respondent's perspective with an aim of alleviating risks of psychological harm and physical health. The aim of research is to maximise benefits of research and minimise psychological harm to respondents.

4.7.4 Confidentiality

Personal interviews were opted for as a data collection strategy in the current study, which means that the researcher had to follow high levels of confidentiality (Bhattacharjee, 2012:138). The information obtained from the personal interviews must be respected and not discussed with anyone else outside of the research study. Confidentiality is very important in light of the researcher being able to identify individual participants and their responses. Participants were informed that all information shared will be kept confidential, including participants' names and surnames (Christensen *et al.*, 2015:135). CSEs were informed that the voice recordings of interviews would be used for research purposes only and all information gathered would be kept confidential. Furthermore, participants were informed that pseudonyms would be used in the dissertation and that any information, such as events or geographic locations, would not be reported.

Only the researcher and her supervisor will have access to the information shared by the participants, including the voice recordings and informed consent forms. Participants were made aware of provisions to be taken to safeguard the concealment of information and were further alerted of other entities that may have contact with research (Surmiak, 2018:7). In addition, the personal interviews do not contain any identifying information such as names, addresses, relative's names or any personal contact information. It is impossible to link informed consent forms with the recorded interviews in order to ensure confidentiality and anonymity. The interviews were numbered and dated with no names and surnames to ensure that no CSE was attached to any identifiable information.

4.7.5 Debriefing

Debriefing is an essential component of qualitative research, especially when using interviews. Debriefing serves as protection against unfortunate incidents (McMahon & Winch, 2018:3). Literature illustrates that an individual's choice to cope with a stressful encounter changes over time. A limited number of CSEs seek social support when faced with stress and traumatic situations (Wassermann *et al.*, 2016: 104). The researcher sought the help of a registered social worker who is a lecturer in the Department of Social Work at the University of Pretoria and was willing to assist with debriefing of participants in case it was needed. Debriefing allows participants an opportunity to discuss their thoughts and receive professional help in order to reduce and eliminate any possible harm stemming from the research questions or research procedures (Hanna & Romana, 2007:45). Participants were further informed that in an instance of emotional discomfort, the researcher would make arrangements to be debriefed by a registered social worker. However, none of the participants requested assistance during the interview process and data gathering phase of research.

4.7.6 Competence as a researcher

There are various definitions of research competence. In the current study, competence refers to the prospective ability of a person to effectively adapt in certain circumstances or complete tasks based on formal or informal criteria set by someone else (Johansson & Wallo, 2019:3). The competence of researchers is vital in human research. As a researcher, it is important as to have the necessary skills, experience and guidance provided by a supervisor to embark on and successfully execute the research study. During research, emphasis is put on ethical practice and methodological thoroughness (Mooney-Somers & Olsen, 2017:129). In other words, the researcher has experience gathering information using the necessary tools and techniques and is familiar with processing data through previous research exposure. The researcher of the current study boasts sufficient research skills. She previously compiled a research proposal that focused on the experiences of individuals with communication disabilities within the Criminal Justice System (CJS), particularly regarding sexual offences at Honours level. Furthermore, the researcher compiled a research report based on an investigation focusing on undergraduate student's experiences of online victimisation. She currently a lecturing assistant and has compiled a research report for Camp Sizani, which required coding and capturing results from research to an excel spreadsheet. Open-ended questions were typed into a word document where they would be grouped according to similar responses. The project is continuous and constant revision is conducted on the questionnaire to make sure it addresses the key problems. It should be noted that the researcher was deemed competent based on the discussed criteria. When there were limitations, the researcher consulted with the supervisor who served as a guide to ensure that the researcher was fit to complete the research study.

4.8 Limitations and challenges

Methods employed in the research were judged as the most suitable to achieve the aim and objectives of the study. However, certain limitations were identified in the methodology. Due to the use of non-probability sampling, the results cannot be generalised to the larger population. Gaining access to potential participants was difficult due to one of the LCRC commanders refusing to allow the researcher to have contact with members on duty or sharing their details for contact. Potential participants were informed during the informed consent phase that the interviews would last approximately 30 minutes. Consequently, because of the high demand of CSEs and a limited number being on shift duty, some interviewees were in a rush. Others gave cryptic short answers and explained to the researcher that they could only answer questions in a quick and rushed manner. A few participants felt the interview was interfering with their work, which included completing and finalising case dockets or attending to crime scenes.

In addition to the limitations of the study elucidated above, the following challenges were encountered during data collection stage of the study:

- It was difficult on numerous occasions to get in contact with the LCRC commanders. The researcher had to call LCRC commanders to get referrals to potentially available CSEs. The researcher had to wait for long periods of time in between the data gathering phase because of resistance from commanders, such as not responding to calls, emails and messages to set up appointments.
- It was difficult to gain trust of some participants, with a few being suspicious of consequences related to sharing details. The researcher had to reassure participants that she was not there to evaluate the stress level competency but rather to gather research. She assured them that they would remain anonymous. The male dominated nature of the environment sometimes became an obstacle as the men refused to engage in a stress dialogue, thus limiting comprehensive responses.
- It was at times difficult to find potentially available participants. CSEs currently work on a four-day shift system and with only a few CSEs present on each shift, gaining access to potentially available participants was difficult as some participants had to leave to attend to crime scenes. Many CSEs were on study leave because this was an exam period and some were in quarantine because of the Covid-19 pandemic.
- Some of the LCRC centres were closed due to potential participants testing positive for Covid-19, therefore limiting participants due to quarantine period. Most of the centres closed for three days, which meant the researcher had to wait for decontamination to take place and therefore delaying the progress of the study.
- Covid-19 pandemic made it difficult to conduct interviews with potential respondents. Due to safety concerns for both the researcher and the CSEs, the data collection stage had to be terminated once the minimum number of interviews (25) were conducted.

- Once the researcher explained the purpose of the study, some of the potential participants became nervous because of the presence of the researcher and did not wish to take part in the research study. Four participants refused to participate in the study.
- Severe resistance was experienced at one LCRC where the commanders were very aggressive in their nature and blocked access to potential participants on duty. The researcher had a limited number of participants from that LCRC in comparison to other LCRCs. The commander stopped the researcher from conducting research until potential participants had to attend to crime scenes, leaving the researcher with no one to interview.
- CSEs are difficult to find and locate due to the demanding nature of their work. The researcher had to be at the LCRCs very early in the morning to find available respondents.
- Very few females were interviewed compared to men. Many females start as CSEs and due to their sensitivity to violent crime scenes and the nature of work, they are reportedly rotated and put into administration positions within the LCRC to avoid further trauma.

4.9 Summary

The researcher provided a detailed discussion of methodological procedures that were implemented in the study. Also, the research employed a qualitative research approach immersed within the subjectivism paradigm. The objectives framed for the study sanctioned for basic research to be carried out and the research purpose, which was exploratory in nature. Participants were selected using the non-probability sampling method using a combination of purposive and snowballing techniques. Personal interviews were conducted as a data collection method with 25 CSEs based at the four LCRC's in the Tshwane area, namely Lyttleton, Pretoria Central, Ga Rankuwa and Pretoria North. The data collection method served as an ideal tool for gathering personal information such as experiences of trauma and stress and coping methods opted for. The measurement quality, ethical considerations and challenges encountered during the execution of the study were explicated. In the following chapter, the information obtained from recorded interviews will be discussed.

Chapter 5: Empirical results

5.1 Introduction

The current chapter focuses on the analysis and presentation of the data gathered from 25 CSEs within the City of Tshwane in Gauteng. The results are illustrated in paragraphs and quotations to ensure easy reading and understanding. The data was collected by means of a semi-structured interview schedule. The literature review, and the aim and objectives of the study guided the formulation of the of the semi-structured interview schedule used in the study. As indicated in Chapter 4, the interview schedule was divided into three sections. Section A covered, among others, the age of respondents, their sex and marital status. Section B covered the experiences of the CSEs, entailing questions about the number of crime scenes attended and stressful aspects of interacting with violent crime scenes. Section C focused on coping methods, such as how CSEs cope with stress and trauma endured at work.

To ensure anonymity, all research participants were numbered. In other words, the sources of data are indicated as P2 or P16. To simplify reading, all quotations are presented in paragraphs as indented, loose standing text in italics in inverted commas. The current chapter conveys results only and Chapter 6 will provide a detailed analysis of results presented.

5.2 General demographic information

Table 4 presents the background information of the participants. Seen broadly, most of the participants were male and between the ages of 41 and 45 years. Most of them were married and 13 obtained a National Diploma.

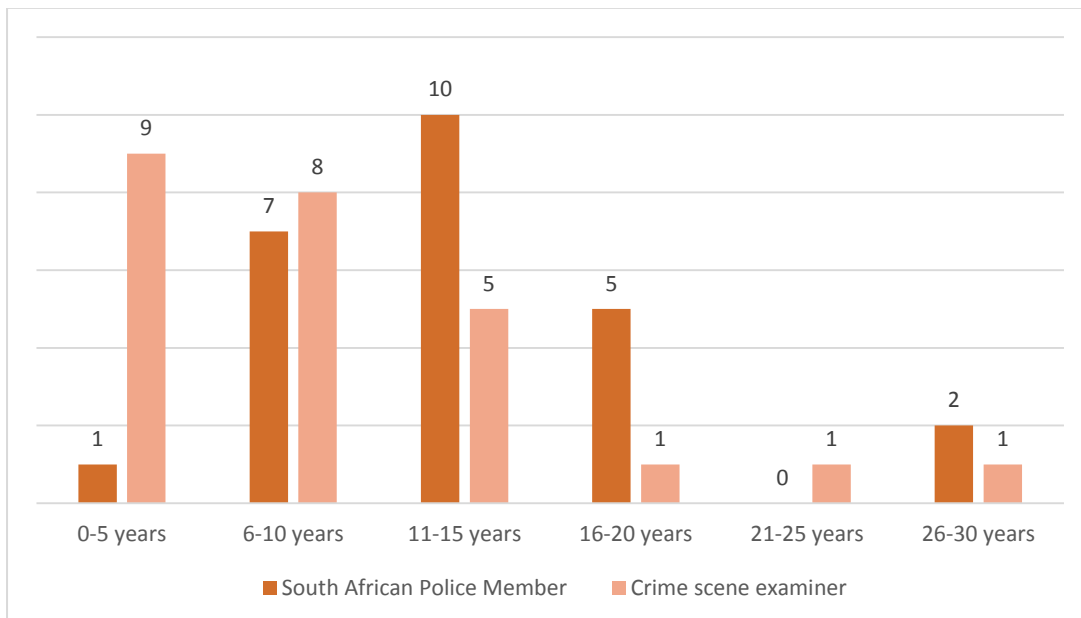
Table 4: Demographic Information

	n
Gender:	
Male	17
Female	8
Age:	
≤ 29	1
30 – 35	7
36 – 40	6
41 – 45	8
46 – 50	2
≥ 51	1

Relationship status:	
Married	20
Single	5
Children:	
One	1
Two	8
Three	8
Four	3
Education:	
Grade 12	4
National Diploma	13
Bachelor's degree	4
Postgraduate degree	4

Seventeen respondents had more than ten years' experience of working for the SAPS, while nine respondents had less than six years' experience of working as a CSE.

Figure 2: Years of working in the South African Police Service as a crime scene examiner



5.3 Overview of themes and sub-themes

Table 5 presents themes and sub-themes that serve as a summary of respondents' responses.

Table 5 Themes and sub-themes

Themes	Sub-themes
Number of crime scenes worked at	• Varying workloads • Size and location of CRC • Impact of Covid-19 • Temporary fluctuations
Stressful nature of crime scenes	• Nature of dead bodies • Murdered children • Murdered women • Personal identification with victim and family • Lack of resources • Feeling unsafe at crime scene
Stressful elements of work	• Highly charged environment • Fear and uncertainty • Work-related tasks
Increase and decrease of stress levels	• Unfamiliar working environment • Stress remains the same • Higher stress levels • Experience in forensic field • Workplace challenges • Stress is normalised
Most stressful part of working on violent crime scenes	• Processing crime scenes accurately • Traumatic memories • Seeing family and community members on crime scenes
Family and relationships	• Separate work and home life • Aggressive interaction with family • Surrounded by understanding spouses and family • Mental stability • Paranoia • Socialising with friends
Effective coping method	• Talking and engaging in dialogue • Activities and hobbies • Counselling and debriefing • Use of humour • Self-motivation • Talking to friends and family • Sharing traumatic experiences with colleagues • Religion and belief system • Advice from experienced CSEs

Ineffective coping	• Use of alcohol and drugs • Self-isolation • Getting personal and emotional • Neglecting work details to avoid triggering stress • No use of debriefing or talking • Thought suppression
Sharing stress and trauma experiences	• Use self-motivation • Having difficulties discussing traumatic experiences • Positive responses to EHW and professional support

5.4 Routine working experiences of crime scene examiners

The following section presents only selected participants verbatim quotes that have been collected regarding experiences of CSEs when interacting with violent crime scenes. Quotes were selected by relevance and link to reoccurring identified themes. The data includes the number of crime scenes attended to in a week, describing stressful elements of working on violent crime scenes, i.e., types of crime scenes, status of bodies (decomposed, foetus, children) and materials and fluids. The data also includes how stressful CSE work, comparing stressful levels of a CSE started in the forensic field to now.

5.4.1 Number of crime scenes attended to in a week

Participants suggested **varying workloads** in terms of the exact number of crime scenes attended to daily or weekly:

“It depends there’s a lot but let’s say per week maybe I can attend six per day it depends on that day and in a week maybe 60 or 70” (P10).

“It depends on the time of the month but roughly I can say maybe let me just give an average of 15 to 20 [per week]” (P14).

“Since we are working four-day shift I can say about 12 to 15 will be cases attended to but its different crime scenes and different categories of cases you attend, they will be burglaries, robberies where there is house robberies, hijacked vehicles sometimes there will be a scene of inquest where people will hang himself or herself or murder cases ... Then when you combine them it will give 15 or 12 cases in a week” (P16).

The **size and location of the CRC** and the service area played a large role in the number of cases respondents attended to:

“Currently I am working in a small office so in a week we are looking at six on average, an interesting one is in a bigger office I did ten cases a day. If I work four days a week its 25 but then

we would be working standby's night and day. Now our working schedule has changed we now work what is this shifts and with shifts it's quite easy compared to then a far as the pressure is concerned" (P5).

"In a week, it depends if you are working the certain stations, sometimes you get to in a week or more than that. Like X it is the busiest but most of the case burglary and house robberies, business robberies and inquest no there are few there's not much in Pretoria compared to where I'm coming from in X" (P17).

"Then further I will just say the area that we are working in or the place that we are staying is not really quite busy but as a person that has worked townships, urban areas and also in the city, in the city it is very busy and those guys in the big houses experience house robberies as they are after their money cars jewellery so compared to both sides this side is a bit quiet" (P15).

Some participants noted that the **impact of Covid-19** pandemic had a major influence on crime and reporting rates:

"I can't say much about this year. We work shifts four days in four days off. Let me just say that in four days I can do close to 15 cases. But ever since it was a lockdown, there was no cases. It's quiet, like yesterday it was my first day on shift and I did four cases. Today's my second day and I have one case. See, I can do 15 per week" (P2).

Participants noted that the number of cases they work with vary due to **temporary fluctuations**:

"Actually it depends during summer crime is high and during winter it is a bit low usually the people are at home so maybe you can attend maybe five or six in a week and it depends cases occurring during the day are house break-ins and then you experience robberies during the night. At night you can do maybe one or two in a week business robberies most victims are the business people for the tuckshops and the taverns also they are the ones experiencing crime often" (P15).

"Basically the crime fluctuates if your working month end you know it's going to be busy during the month sometimes you can attend maybe 15 crime scenes starting from burglary residence, those are the minor cases and then murder, sometimes you can work maybe three shifts without attending a murder case, or maybe three weeks to be precise without attending a murder case. In the area I'm working it's very big so the [number of] cases are sometimes scary" (P18).

5.4.2 Most stressful part of working at violent crime scenes

Participants noted varying responses to the **nature of dead bodies** on violent crime scenes:

"I've come across a decomposed body; it was a 42-year-old man staying at the new settlement. He hanged himself behind the door, he was staying alone. So they noticed after two weeks it was

very bad decomposed and it was smelling. We even struggled to enter through the door, we had to take out other corrugated iron so that we can get through” (P22).

“The person might be found after ten days especially in summer that’s when you will experience trauma seriously you will find that you have to get into the house, it is the smell that is uncomfortable to you. When you are wearing those protective clothing jumpsuit and mask that we are using I don’t feel that much protected because when you go through the house and you go to the decomposed body before you can arrive there you will be inhaling that smell and I think that the masks that we are using are not that much protective” (P21).

“It is very very much traumatising because you see the eye that side, the intestine that side. So, those things when you’re picturing them, sometimes it comes back to you when you’re at home. You get that picture of a crime scene” (P2).

“I remember it was on a Saturday I got this call and they said there is a person there and when I get there it was very bad the person was like foaming and it was like he first started foaming and it was like he might have been given a dangerous substance even today I don’t forget easily when I pass that side I just look at those trees because I feel like I’m seeing guys lying there” (P9).

Participants stated that working on violent crime scenes involving **murdered children** is particularly stressful:

“As far as dealing with children and foetus it’s quite touching especially now that I have a one-year four months daughter it comes back home. There was a case I attended of a little boy who was one year that time my daughter was I think four months or so and it hit me. Sometimes you want to cry and like naah I can’t cry here ... I think that’s where my weaknesses would be” (P5).

“What is affecting me personally is the case of children that affect me very bad I don’t want to attend a case where a child is involved because I have children so seeing another child lying there eish it affect me but it’s my job I have to do it anyway so that’s what affect me personally. I just do what I’m there to after I leave the crime scene even if I get home I don’t think about that crime scene I just tell myself that I don’t know that person you must just work and leave the crime scene” (P18).

“You know the most painful thing for myself is when you find that you are attending a crime scene whereby children are victims ... let’s say for example rape took place you can see that the father cannot take care of those children” (P15).

“Cases they differ but the most that are stressful are the ones that involve kids and those ones are so traumatic. There was another case where the couple were fighting and the guy he killed the lady with the kid he used an axe to kill them and it was in a small room and you know when a person was hacked there was blood all over so that it was little bit traumatic” (P25).

Crimes involving **murdered women** are stressful for participants:

“With a person like me I have a soft spot on woman, like on murders when I find a woman on a crime scene those are the parts that hurt me the most but other murders I think I cope faster than the one with a woman” (P8).

“Everything is very stressful firstly from receiving the calls telling you what is happening to attending a scene with a woman. It’s very stressful let me put it this way one was murder where a lady was murdered by her ex-husband they were in a process of divorce. When I got there like when they were telling me the story it was like he shot that lady and for me as a woman I was so traumatised seeing that lady lying there in front of her mother her children like it was so painful I put myself in that situation and it started affecting me and I was acting like you know it was nothing but when I drove home I cried the whole way up until I got home” (P20).

Some participants reported **personally identifying with the victim and family members**:

“The other thing that will affect an individual on a crime scene is when you know that person, if that person is my friend and has been shot I don’t think I’ll be able to do that crime scene they have to call someone else to do that crime scene if somebody is related to you, they will have to find someone to replace you at that crime scene so people who are close to you affect me personally” (P18).

“I remember this other case the younger brother burnt the house where they are all dependent on it. It was so like you feel sorry for those people I mean it’s the only house that they have and out of the blue he just burnt it. So those kind of cases are traumatic” (P7).

“If I were to say the family of the deceased, me seeing them what they are going through losing their loved ones makes it difficult for me but I cope, its stressful which I can say it actually shake me” (P19).

Participants were of the opinion that **a lack of resources** is stressful when working on crime scenes:

“Not having the reliable resources that is where you start to have stress and a lot of scenes are violent” (P11).

“Sometimes you find that the problem of man power because in our shift how many maybe seven or eigh, so the most important thing here we are experiencing is man power if we can get maybe that thing of manpower because right now they cannot afford to release two or three people in a group otherwise the remaining members will suffer because we are covering a bigger area Pretoria starting from side of Atteridgeville until Bronkhorstspuit side even Moloto they are covering a bigger area even the current number we are not coping “ (P13).

"I can say the job is more stressful now because when you are still new you keep on learning and learning. But as months go by you gather more information than you can process scenes differently. In some of the scenes you'll be alone and then now you have to see what to do, you are alone there because of shortages of man power" (P17).

A lack of safety and **feeling unsafe working on violent crime scenes** is stated by participants:

"I can say maybe security because when you go there at night you can't guarantee your security because you find when you get to the scene there are lots of exhibits related to firearms so it's not safe at that time that's the only time that I feel it's not good" (P24).

"The most stressful thing is that we are driving alone, at some point you find that you are at the crime scene and you are alone you don't have the escort of the SAPS members due to some other unforeseen circumstances of their stations so you end being threatened or maybe being afraid to complete your duties on that crime scene because of your safety you are not safe and then you are worried. That is what I come across especially during the night it's very stressful alone" (P22).

"The other one I went to a scene a guy was killed and then they put him in a tavern because in that tavern there was a Pitbull. So when I got there I asked the guys who arrived first did you see the dog they said no there are no dogs here so then I went in took photos and everything. It was dark in that room when he took out the light we see the Pitbull it was sitting there watching me I was passing next to it you know I was I don't know the only thing that came into my mind was that if that Pitbull can catch me it will never leave me until I die. So I will die doing this job and somebody didn't do his job and check the place if it was safe for me (P20).

5.4.3 How stressful is the work done

Participants were of the opinion that stressful nature of work is caused by the **highly charged working environment**:

"Very very stressful environment, it's not your normal environment. You know, it's like I was saying is that you need a special breed of person here in the LCRC. Not a lot of people make it here" (P1).

"They are very much stressful you see according to me or to my knowledge practically I don't think this work is good for woman, men are stronger and woman they don't survive only a very few and that's the stressful part about it" (P21).

"For me this work is not for woman especially but even for guys I can see most of them they've changed a lot. You see someone coming in a new person they are all that but along the way you will lose that thing. There was a time I couldn't talk to my kids when I get home I took my work

home I was afraid of my husband because I had this thing that even this guy is capable of killing me so even if we argue I will withdraw” (P20).

The stressful nature of work stems from **fear and uncertainty** of what participants will encounter:

“It’s too stressful unfortunately because you can never be prepared for anything each and every day brings a new thing. Even today, you can say I have seen the worst yesterday but you are still going to see the worst of it” (P7).

“The work that I do is stressful really its very stressful because every time when you wake up you don’t know what types of scenes you going to attend to so its stressful. You don’t know at the end of the day, you know you have to go and do those scenes no one else, it’s stressful really” (P9).

“It is quite stressful it is so you have to find ways of r dealing with what you’ve witnessed at the crime scene” (P23).

Participants noted that stress stemmed from **work-related tasks**:

“In terms of load of cases that’s where it is stressful but its enjoyable whereby you are able to attend less cases so you are able to give yourself time on a crime scene to do thorough investigation but when it started to be more than five six then it started to be stressful that you are asking yourself when are you going to finish” (P6)

“It’s very stressful because you know you have to deal with a lot of people on a daily basis so the emotions come especially because the crime scenes are different so most of the time when I get there I don’t even see what is happening honestly speaking, [after returning to the office], you have to compile an album that is when old scenes come back because remember when the pictures are there you have to watch them one by one and explain each photo what is happening” (P14).

“Our work is for me I will say it stressful when coming to load of cases. You have to attend to murder case and then on the side there’s a case that needs fingerprints also, you go to them and assist them then at some point you get to the crime scenes and you don’t get cooperation of the complainants, some of them will just be shouting at you” (P16).

5.4.4 Increases and decreases of stress levels

Some participants noted that stress levels were high in the beginning because of the **unfamiliar working environment**:

“Yes when I started it was more stressful because I was new in the environment then now I’m coping I’m used to it” (P3).

“When I started it was more stressful but now I’m get to use to it” (P6).

"It's more stressful when you start because you'll never experience such things like when I came here I never saw a dead body being shot or what and then when you come here you find that my first case it was a suicide, that guy fell from a flat it was eleventh floor to ground imagine when you come there and eish it was my first scene to photograph" (P22).

"In the beginning it was stressful, if they say there's a crime scene when I started here I used to be so energetic because I didn't know what I was going to come across so if the call comes you get to the van and get to the crime scene, but now you have adjusted yourself to what situation you are going to come across" (P19).

Some participants noted that the **stress remained the same** since they started working as CSEs:

"I think it's been the same because every crime scene is different when you are called to come attend you expect something different, sometimes you'll find that it's not traumatic sometimes you'll find its too traumatic but when it comes to stress you cannot know, today it can be stressful and then tomorrow it can be fine" (P8).

"I think it's the same as long as we are doing these inquests everyday it's the same there is no difference" (P9).

"No as you get used to it you start to adjust let me say it's bad when you start exposing you to new things especially the pathology part but you know" (P21).

Participants reported **higher stress levels** now than in the beginning:

"I think it's more stressful now because as time goes it starts to get to you, when you're starting it's a new experience and you'll still always be surprised but now you get a point where you can see the brutality of people" (P7).

"I think it's more stressful now than before because of the amount of cases and especially in Pretoria because I'm working here it's becoming rough and the amount of crime scenes we're doing is too much and the violent nature of it is too much compared to the past five to six years back" (P14).

"When I started it was not that bad because I was only taking fingerprints but when it comes to that part of taking photos yoh that's when hell break loose" (P20).

Some participants felt that **experience in the field of forensics** changes one's perspective of stress levels:

"For now I don't feel any stress due to that of experience I have in the environment then now I came out with strategies on how to fulfil my duties and how to prioritise cases as I receive them" (P16).

"Look I was younger and I'm older. If your younger even if you can prepare your mind that you going to see things a normal human being does not see you can only prepare it to a certain stage or level but until you really see things, you'll be stressed of course comparing it to today I don't know but I think I have a mechanism that works for me" (P5).

"The thing is, there's a variety of choices. And obviously when I started it would have been very stressful. But mind you I'm talking about 30 years ago now we tend to deal with it ourselves [stress levels], like I'm saying it's a job" (P1).

Stress that was experienced in the present could be equated to **workplace challenges**:

"But if we can be able to attend the cases as soon as possible then we can be able to gather evidence as soon as possible because the decisions that are sometimes being made up there they are not working. It's not working like currently people are working shifts. It's about results they don't care; you look for resources they don't give you resources it's very hard" (P25).

"There is more stress now than in the beginning, now that one is going to get into office politics and all that. But with good management and good equipment our job becomes more simpler than we love what we do, but once the job becomes starts to feel like a burden, now you start tiring and all of those things" (P11).

"The only thing that will make you stressed in this environment is office politics. It's just difficult you find that somebody who is responsible in the office to order a certain equipment for you, when you need to utilise it it's not there because now they are expecting me to produce results but not providing the equipment" (P15).

Some of the participants were of the opinion that **stress is normalised**:

"The work that I'm doing is it's not that stressful ... It's not as stressful. It's stressful sometimes, but not all the time. It depends on the crime scene that you do but we normally do the cases of housebreaking. Those cases of murder it's very, very much scarce" (P2).

"In my own words, no I am used to it now because of my ten years' experience I don't think it's that stressful anymore. It is something that is doable" (P3).

"This work is not so stressful because you don't usually get stressful crime scenes every day, serious crimes that can make you stressful" (P12).

5.4.5 Most stressful part of working on violent crime scenes

Participants were of the opinion that **processing crime scenes accurately** was a priority:

"I just take it as a work because I'm doing my job so I don't have a problem with that but I'm scared maybe in future it will affect me psychologically. I don't know but I'm scared because I'm

still young so I don't know when I'm 45 will I be normal or not so I'm not sure and its really stressing me" (P24).

"For me I'm there because I have to attend a crime scene but I don't get emotionally attached to the crime scene" (P14).

Some participants noted that **traumatic memories** are often embedded in their thoughts:

"It's very hectic unfortunately it will take some time to go away sometimes you might even feel you can even feel the smell when you are just looking at the photos [crime scene imagery] and you can even feel, it is a tough situation" (P7).

"For me it's really not healthy because even if you're at home you feel like eish when those memories come, you feel like no this kind of thing I cannot do it anymore and it stresses. Your worrying about these scenes and stuff your worrying about going to work and I don't know what I'm going to come across" (P9).

"I can still remember the scene very clearly perpetrators had got into there and they shot up the family and this lady. So what had happened is when we lifted her off, we found the child underneath, you know, but they had used the AK 47. So it actually penetrated both of them and they were killed. So I just kind of like broke down on that one" (P1).

Participants were of the opinion that **seeing family and community members** at the crime scene is difficult:

"You know it's very much challenging in a way because when you've attended the scene there are lots of people by the time the police come and it's hard to chase people away" (P21).

"I play the role of when you look at me you see hope, you see justice you see that okay fine these are the forensic people. You know meaning that the perpetrator will be arrested in short space of time and he will be sent to jail. That is where the emotions come in you even have to play the role of counselling in other victims to understand what is happening" (P11).

"Yoh it's difficult sometimes you feel like you want to be there for the family and not be a crime scene examiner or go to a funeral sometimes just to get closure which is not possible because you are there to process a scene and go so you have to find ways of dealing with the crime scene itself" (P23).

5.5 Coping methods used by crime scene examiners

The following section presents data gathered concerning coping mechanisms utilised by CSES when encountering vicious and distressing crime scenes. The information gathered in the form of statements includes:

- CSEs stating how they cope with stress and trauma experienced from violent crime scenes.

- How stress and trauma affect family and other relationships
- The CSEs' perspective on what is the most effective coping method and their reason for the method(s) of preference.
- The ineffective coping mechanisms some CSEs have used and if they ever speak to someone about the nature of their work.

5.5.1 Stress and trauma affecting family and other relationships

Participants said that they **separate work and home life** to manage relationships:

"No it doesn't have to, it doesn't affect my family and other relationships. It doesn't" (P3).

"I normally don't mix work, when I'm at work I make sure that everything that I came across I don't even go home and talk about it because I'm staying with my children they are young and I cannot tell them more information about what I'm doing. When I get home I switch off and then play a role as a mother, I play a role as a teacher to them, helping with homework's but I make sure that I don't mix" (P8).

"Okay in terms of my family I don't think it has affected me in a way because in terms of the children I make sure that they don't get involved when I get home I leave my work behind" (P14).

Participants stated that stress and trauma cause **aggressive interaction** towards family members:

"What I've realised is that sometimes when you are at home when you are looking at your child you ask yourself what is going to happen to your child? You started to be a little bit aggressive towards your family and they ask you a question and you find out you don't answer it, you just say no, something like that you becoming like aggressive" (P6).

"As I was saying while you are with your kids those memories keep on coming and disturb you sometimes you feel you shout at the kids for nothing which is big thing" (P9).

"It does a lot, remember if you have short temper it's going to affect lot of things you see, so a family that doesn't understand what you do and then they demanding a lot, and you know the stress that you having at home you don't need to have it" (P11).

Participants noted **being surrounded by understanding spouses and family**:

"My wife she is also in the force so she understands if I got a serious crime I share and I talk to her about it and then she just counsel me, like who was it? What did you do and how did you feel? Or we discuss about them [crime scenes]" (P12).

"What would happen is that, you know, obviously, the wife knows you and the children know you had a stressful day. They'll see it. Let's say that daddy's not feeling well today. I just say I had a bad day today" (P1).

Participants were of the opinion that stress and trauma affect them **mentally and psychologically**, which affects family relations:

"It affects you mentally but I just decided that you know what whatever I do here it remains here so I manage to discuss it here at work" (P25).

"It affect the, like when I'm getting a call at 12 o'clock at night I don't know when I'm going to come back I can come back the following day no bath no eating nothing for me I was losing weight too much. That thing with trauma you don't feel pain I realised when I lost my mom, my siblings were crying but for me because I'm used to [death], I just looked at them I didn't feel nothing" (P17).

"I wake up a lot I don't sleep maybe I sleep three or four hours in a night every now and then the smallest sound that I can hear. I wake up just to check because I'm weary of you know all those things. So I'm always sleeping with one eye open just checking and just to check if ever its clear or what so I think psychologically it does affect me in a way" (P14).

Participants noted that stress and trauma evoke **paranoia**, which affects relationships:

"You've witnessed a child being raped by a relative then you get home you've got kids as well and relatives and your thinking yoh an uncle somewhere just raped their nephews or the nieces. So you just get that anxiety or paranoia what if? It's just one of those so it affects you on how you dealing with relatives" (P23).

"It cause a lot of problem, it causes a lot of damage. My husband I'm afraid of him, I was afraid of my husband because I had this thing that even this guy is capable of killing me (P20).

Participants noted that **socialising with friends** helps relationships:

"I don't normally talk about my work when I'm at home the only thing that I do is go to my friends there we just go and have some little beers" (P19).

"When I arrive at home we've got a very good atmosphere at my place. Where I stay we are at peace and there are no problems. We are always laughing" (P2).

"I think I mange my relationships quite well with my friends, look I am quite a social person and I get along very well with people and I think that calling people and being an extrovert sharing lot of jokes that should be helping me" (P5).

5.5.2 Effective coping mechanism

Participants stated that **talking and engaging in dialogue** is an effective coping method:

"Talking with my other colleagues who are doing the same work that you are doing. Because they understand better and some have been doing it for longer than myself" (P3).

"The most effective coping method is talking, talk about things because when you keep them you even dream about them but when you talk about them it's like you'll find that your colleagues seen worse. Like with a decomposed body I once found a decomposed body that was full of I thought its rice, but it was full of worms and I came back and I talk to my colleagues and one of them found a skeleton so you see it's different" (P8).

"The best method is to cough up when you are stressed you need to cough up because if you are keep it to yourself at some stages it comes back to destroy you somewhere somehow so the best thing is to cough up" (P9).

Participants were of the opinion that engaging in varying **activities and hobbies** is an effective coping method:

"They know at my place that if I woke up or just woke up and iron or woke up and clean just to take my mind off. I just woke up and try to do something" (P7).

"I can give an advice is always find something to do, have a hobby or something to do it might not be a hobby but find something to do. Believe me if you find a hobby, something to do you will not notice some of the things so that will be my advice" (P15).

Participants noted that **counselling and debriefing** is an effective coping method:

"I think the best way if it was possible with each and every scene that you attend maybe it's gruesome they have to give you social workers so that they can counsel you. After that serious scene you go for counselling. I think that was going to be the best way every serious scene you go for counselling" (P10).

"To cope with stress we must discuss and get at least counselling and share with them the experience and everything" (P22).

"I think if the commanders were caring following those procedures that if you've attended a traumatic scene, they must take you to EHW [counselling services] they must talk to you and find out how is it treating you. If EHW to help us in some of the cases it can be much better" (P20).

"I think talking debriefing in short I think that can assist even though we have EHW [counselling services] that is available as I've mentioned I started in Kempton park here I haven't seen it so far I saw it when I started its just now because of this Covid thing. I think if they can here put more systems that can assist with EHW to know that they are available it can assist most of the people" (P25).

Participants were of the opinion that **using humour** is an effective coping method:

"The best way is to talk in parade like making jokes about it and that's the best method but bottling it up into you is going to deal with but talking about it is the best way" (P12).

"You see me and my colleagues when we don't have anything that we are doing we talk about these things we laugh about these things just to make it easier" (P18).

Participants noted that **self-motivation and focusing on tasks** is an effective coping method:

"I think it as looking at yourself as a hero, did I just say that? Yes, I did it's looking at yourself as a hero, looking at yourself as a solution to a whole lot of things. To the families that mourn their lost ones, loved ones. It's to see yourself as the backbone of the entire organisation whether they notice you or they don't whether somebody sees it or not" (P5).

"Try to relax the best method to cope when dealing with the stress I think if you can try to relax man relax your mind and try to adjust the work situation as professional as possible. When you adjust I know as people we are not adjusting the same but the way I'm doing it I'm trying to take this very simple so that I can be at ease that's my overview" (P16).

Participants noted that **talking to family and friends** helps to cope with stress and trauma:

"I go home I talk to friends, I talk to my wife I speak to people and I overcome it and yes eventually it goes off my mind" (P4).

"I try to speak about it and then I also share with my wife and friends you understand but not everyone, but now my family members they will be asking questions how do you handle this thing" (P16).

"I will talk to anyone that I can talk to any person generally any person who will ask me about my work. I will even talk to my husband about it and talk to everyone in the office about it so it gets much better then" (P7).

Participants were of the opinion that **sharing experiences with colleagues** helps an individual cope:

"To deal with that, the best way is to discuss it with your colleagues. When we come back to the office we talk a lot about the scenes and that is how we cope" (P3).

"Okay what I mostly do after attending those scenes I came to the office, I discuss with my fellow colleagues and then the moment I discuss with them and with my commander actually I feel like the burden is better" (P9).

"The best way that I do is share with my colleagues what I've seen and then we talk through it, that helps a lot and also praying before and after a crime scene" (P23).

"I usually talk with other colleagues to say I once came across such a scene this is how I dealt with it how do you deal with it when you get a scene like this, as in I'm trying to exchange information so that's how I do it" (P25).

Some participants noted using **religion and having a belief system** helps to cope with stress and trauma:

"I always try to motivate myself, I read my Bible way too much. The Bible is able to motivate me a lot and I go onto the internet if sometimes I sense that I am having some stress. I try by all means to motivate myself" (P2).

"I don't know if that is really helping but I am a believer, I am a Christian and my faith is that the Lord is helping me you know. I know that in logical sense there has to be that one thing that is said is really but it will be difficult to say" (P5).

"For my side I'm a church goer that's helped me so much with everything that's stressing me because when I'm at church it seems everything is wiping it off so I can eat more when I'm coming from a crime scene before I couldn't eat meat" (P17).

"The coping method is reading the Bible let me say for instance they can just give you Timothy 2 verse 3 and it talks about people who are humble together people and things the more I read the bible and the more I talk about it" (P6).

Participants were of the opinion that taking **advice from experienced CSEs** is a method that helps to cope with stress and trauma:

"We normally debrief in the office like with our operational commander we normally we report such cases to him so when we come back we report to him and you take some of the stress off when you talk to someone about it" (P19).

"At first I took them in the back of my mind and said he's dead then what? There was also this Captain who said don't worry when you get to the scene pretend it's a doll and not a person and when you at the mortuary concentrate on what you need and leave the person, you are going to photograph is doll and not a person" (P20).

"They [commanders] were trying to teach us with regard to counselling and trauma and one of the coping mechanisms is to not to take things personal. You just tell yourself that it's a job, you don't get emotional or you don't get sentimental, you know, and stuff like that. So you keep your feelings aside, you're here to do your job" (P1).

5.5.3 Ineffective coping mechanisms

Participants noted that the **use of alcohol and drugs** among colleagues as ineffective coping mechanism:

"Drugs of course, what I have noticed is that the use of drugs especially alcohol well I only know one guy who misused it to the last degree where he ended up on the streets. You know what I have noticed is that people who have a background in religion is concerned they are not allowed to drink but once they start this job they start drinking and stuff, I'm one of them" (P5).

"Most of the guys are using alcohol but I don't think it's effective because it will come back after you are sober it will definitely come back to you again. So but I see most of the guys using that one and as time goes on you are finding that there are some problems because you can imagine we are all cope different and it hits us at a different times and in different manners" (P7).

"I think like ones who are drinking alcohol, they are drinking a lot thinking they are distressing but I think it turns them to be alcoholics or something so I choose not to follow that path" (P8).

"Some I saw them they are drinking a lot and you find that still it is not working. They get to work late abscond and you can see that there are lot of issues and they are not fine so drinking that's what I've seen" (P25).

Participants assumed **self-isolation** is an ineffective coping method:

"Keeping to themselves, some people when they have got stress, it will be you can see that this person is having a stress, that the person is angry. You are trying to make a joke, but he is taking it serious in a way that he will be angry at you like for two months. The person just came in and do his work. You're sitting here and I tell him you didn't greet me. He just says okay, I didn't see you" (P2).

"But what I know is that some people are not open they don't talk about these stressful scenes and you can see by the look, that this person has got problems but is not coughing up [talking]. You can see after the scene or you heard he attended this kind of a scene but he is not open and keep it in to himself or herself" (P9).

Participants were of the opinion that **getting personal and emotional** is an ineffective coping mechanism:

"I think the ineffective part of it is to get personal and to get emotional. A lady here tends to get personal. So much so and I told her you know what you need to be careful because this is not your family and your friends. She goes the extra mile. I know for that for one she had a suicide case and later on she attended the funeral and memorial, but you can't do that. Because this is not what we supposed to do" (P1).

"Okay what I've seen from them is that they relate the crime scene to their families that's what they do that's why some of them they normally crash" (P19).

"Yoh it's difficult sometimes you feel like you want to be there for the family and not be a crime scene examiner or go to a funeral sometimes just to get closure which is not possible because you are there to process a scene and go" (P23).

Participants noted that colleagues often **neglect work details to avoid triggering stress**:

“Let me say for instance you are on a crime scene; I think some other people they tell themselves they have been long in the service so they just ignore it [work details on crime scene]” (P6).

“If they come across a case where it needs more attention of him or her he will just lose the attention of it whereby it’s not right. What I’ve seen from my colleagues is they don’t put effort and don’t concentrate. There’s this other thing on the crime scene you miss on collecting evidence because you were not putting your mind on work while you were doing it” (P16).

Participants noted that CSEs do **not use debriefing**:

“The ineffective method I can say is when you are talk to somebody who is expected to counsel you and when he or she is supposed to counsel you, you are the one who is going to counsel because he or she will be the one that is crying instead of you crying” (P12).

“You know the thing is I don’t remember attending a session [debriefing] where they are saying if you are not coping this is what you must do this is what you must not do” (P15).

Some participant’s used **thought suppression** as coping mechanism:

“Like I don’t take them seriously I take them as my job when I go home I just forget about them” (P24).

“I tell myself that I am going to forget that’s why I’m actually forgetting a lot of things. I tell myself this one I’m going to forget, it’s in the past and it happened and there is nothing I can do about it and then we move to the next chapter” (P5).

“You just have to forget about it at some point, just live with it and forget about it because every day out there what you do see its really difficult” (P15).

5.5.4 Sharing stress and trauma experiences

Some participants noted that CSEs do not **speak to anyone** about the nature of their work:

“Myself if ever you don’t come and ask never tell hey don’t give don’t feed people with the unnecessary information they don’t want they will judge you according to that so I just relax I never tell to anybody ask me and I’ll tell you” (P15).

“No I never spoke to EHW people [counsellors] the thing is neh that’s why I said I have my way of coping. If I don’t find my own way of coping each and every week I’ll go to those people get counselling and go back to the street so myself I see it as a waste of time” (P18).

“No I have not done so I thought of doing so but I haven’t done it and I found two days later I felt better” (P23).

“There was this guy he is saying he does talk, he does talk really we share a lot but he is the one that seems more affected it seems as if talking for him is not really helping because he’ll tell you when he sleeps and when he’s doing what...its really affecting him to an extent that even now he doesn’t want to do the cases that will have photos you see so he’s got a partner” (P13).

Participants noted **having difficulties discussing traumatic experiences**:

“Yes, I also share with my family friends, especially my dad. I’m not a person of the psychologist and social worker we African people don’t usually go on such a thing or maybe I will say myself” (P16).

“Only my colleagues I feel like psychologists and EHW don’t know what we go through so that’s why I feel my colleagues truly understand where I come from” (P19).

“I would suggest you know I can say counselling I’ve never been in counselling but to me it would feel like a waste of time to me because you are going to tell me something I already know” (P11).

Participants noted **positive responses to EHW and professional support** :

“Yeah I love talking to my doctor about it I usually talk to my doctor about it” (P7).

“I did that time I was admitted [Hospital] and I think it helped a lot because I had a lot in my closet and I think speaking sometimes it helps even though at the end of the day it’s you who must make it work. When I went to the psych wellness they helped me a lot even though I’m still having those nightmares and those panic attacks but I’m better” (P20).

“Yeah, I have a younger sister who is a psychologist sometimes we talk about these things and it’s not on a professional level it’s on a sister to sister but because she’s educated on this it also helps to talk to her about it” (P8).

5.6 Summary

In the pursuit of the aim of the proposed study, the abovementioned results reflect the objectives formulated for the study. More specifically, the results provide the reader with a broad understanding of trauma and stress experienced by CSEs when interacting with violent crime scenes. Effective and ineffective coping methods based on CSEs opinions have been provided. Chapter 6 interprets the data with reference to literature review and theoretical framework, as well as integrated model developed for the purpose of the current study.

Chapter 6: Discussion and recommendations

6.1 Introduction

The current study aimed to identify trauma and coping methods used by CSEs when encountering violent crime scenes in City of Tshwane Metropolitan Municipality, Gauteng. Key concepts such as trauma, stress and coping methods are defined in Chapter 1, with the remainder of the chapter focusing on the origin, rationale, aims and objectives. Chapter 2 comprises a literature review with research findings that have been inspected, assessed and which relates to the current study. An exposition of relevant theories that provide an explanation to possible trauma and stress in CSEs were presented in Chapter 3. In addition, the researcher developed an integrated model in order to facilitate a more holistic understanding of trauma and stress as well as coping methods adopted by CSEs in City of Tshwane Metropolitan Municipality, Gauteng. In Chapter 4, methodological procedures applied in the study were discussed and justified and the appropriate ethical considerations were disclosed. The empirical results from interviews conducted with CSEs were presented in Chapter 5.

The focus of the present chapter is on answering the research question that was formulated for the study: What trauma do CSEs experience and how do they cope with such trauma? The objectives of the study were centred on investigating the nature of trauma experienced by the CSE when interacting with violent and traumatic crime scenes, identifying methods CSEs use to cope with trauma experiences, and ascertaining the usefulness of the coping methods CSEs use. The chapter is structured broadly according to the aforementioned objectives. The chapter concludes with recommendations and a brief reflection on how the aims and objectives were met.

6.2 General demographic information

Information pertaining to CSEs socio-demographic characteristics and backgrounds (i.e. gender, age, marital status, children, highest level of education, years working for the SAPS and experience as a crime scene examiner) shed light on factors that could explain existence of trauma, stress and extent to CSEs wellbeing as well as coping methods opted for when faced with harrowing and gruesome circumstances. The sociodemographic factors defining CSEs are discussed below.

6.2.1 Sociodemographic characteristics and background information of CSEs

A total of 25 CSEs in City of Tshwane Metropolitan Municipality were interviewed, the sample included seventeen males and eight females. There was a lack of female participants in the selected sample in the current research. Evidence shows that female CSEs present higher stress levels than their male counterparts (Michigan State University, 2019:5), although another study found that women perform better as CSEs because they are more detail oriented when examining crime scene evidence (Barbaro, 2019: 138). Also, it is important to keep in mind that the police service has traditionally been seen as dominated by men, which could explain the disproportionate number of men in the current study. The

average age of the participants was 41-45 years. Twenty participants were married and five were single. Nine participants had less than six years' experience of working for SAPS, while 17 participants had more than ten years' working experience. The work experience suggests that CSEs are committed to their work despite traumatic experiences endured on the job.

Approximately 13 participants had a National Diploma in Policing as their highest level of education and four have studied further and obtained a postgraduate qualification. Research from Australia raised concern about CSEs needing a science degree because CSEs need a very particular set of skills (Kelty, Julian & Robertson, 2011: 180). Findings of the current study suggest that very few CSEs study further probably because most focus on skills related to on-the-job operations. For a CSE to be both competent and proficient, skills and knowledge related to the forensic field are important, particularly understanding that policing and receiving training related to forensics such as what is admissible and potentially valuable evidence to aid in investigations.

6.3 Number of crime scenes worked at in a week

The national crime statistics released by the SAPS for the 2020/2021 financial year reflected that murder rates were on the rise in South Africa, with an increase of 1.3%, making Gauteng the second highest province with a high murder rate (Official Crime Statistics, 2019/2020). The results suggest that CSEs have a large workload which can cause strain, moreover cases such as murder can result in harrowing violent and gruesome imagery that can trigger trauma if a CSE is exposed to traumatic events for prolonged periods of time. Current results in the study agree with existing research that work pressures are precursors to stress and job performance. Participant 16 stated that stress is evoked by the overwhelming load of cases that a CSE needs to attend to. Also, Participant 6 stated that overwhelming number of cases means less time is spent on each scene. Therefore, when CSEs feel less able to have control over work environment, it may result in reduced work production and a lack of attention to detail required for collecting evidence (Clark *et al.*, 2015:7). The data further supports studies that CSEs are susceptible to potential stressors such as overwhelming workload, shift work, internal expectations and pressures from senior leadership within the forensic field (Boone, 2020:2). Participant 13 stated that stress partially stems from a lack of manpower as only a limited number of staff members are able to work in a specific shift. Consequently, CSEs experience extreme pressure caused by a lack of available CSEs to attend to overwhelming number of reported cases in each shift.

6.4 Most stressful part of working at violent crime scenes

Participants in the current study stated that working on violent crime scenes involving murdered children is extremely stressful and traumatising. In other words, CSEs being able to perceive personal vulnerability and mortality means crime scene technicians are exposed to a diversity of horrific ordeals from interacting with violent crime scenes as stated in the integrated model. The horrific ordeals include

examining, touching and handling dead and decomposed bodies and bodily fluids, resulting in feelings of distress, especially if crime scenes involve the vulnerable. The results confirm that CSEs find attending to violent crime scenes involving the vulnerable, such as women and children, very challenging. Participants 8 and 20 stated that attending to crime scenes where women and children were victims is extremely traumatic and affects them psychologically. Participant 8 further shared that they cope faster with other crime scenes, but have extreme difficulty in processing scenes with the vulnerable. The findings support that the perceived vulnerability of women and children to CSEs causes trauma and is very stressful, more especially because CSEs may relate crime scenes to their own spouse or children. Despite progressive laws and legislations, official crime statistics for crimes against women and children in South Africa are still disturbingly high (Hendricks, 2014:550; Songca, 2018:78). Also, a technical report by Klopper and Steyn (2016:14) supports current findings that female CSEs are more likely to find crime scenes involving fetuses very traumatic.

Data from various sources show that in order for CSEs to thrive in their role, they must separate work and personal life (Clark, 2015:4). Although CSEs work long shifts, they are required to still be able to switch off and not allow work to interfere with their personal life (Kelty & Gordon, 2015:283). However, in the current study some CSEs presented that the most stressful part of working on a violent crime scene was caused by personally identifying with the victim. When exposed to stressful events, they experience psychological responses related to the degree of empathy with victims (Williams et al., 2011:48). The results show that some CSEs sometimes personally identify with the victim, especially if the victim resembles characteristics close to CSE's own personal life. Participant 19 stated that they were shaken when they saw the family of the deceased on the crime scenes. Seeing the family members and what they were going through triggered stress. The results agree with the transactional model of stress, in that CSEs often relate to victims because of a feeling of helplessness and lack of control. In this regard, Participant 18 stated feeling helpless and stressed when having to attend to a crime scene involving a friend. The participant stated that they needed to be replaced as they were affected personally, supporting the notion that when internal and external demands exceed available resources, process of anxiety and overwhelming retained emotion causes stress triggers and traumatic symptoms (Margaret, Ngigi & Mutisya, 2018:19).

6.5 Stressful elements of work

Exposure to certain crimes, such as the death of an officer and mass fatalities, can stimulate high levels of stress. Such violent environments engender higher levels of stress. Work conducted in highly charged environments further enhances stress-inducing characteristics in an individual (Leone & Keel., 2016:66). The data indicates that the stressful nature of work is caused by the highly charged working environment. Findings in the current study support views of the general adaption theory regarding long-term effects of stress, as continuous exposure to severe stressful events influences physiological

functioning. A change in physiological function was shared by Participant 14 who detailed having difficulty sleeping, and that hearing even the smallest sound at night evoked fear and weariness. He further stated sleeping with one eye open because he kept thinking of traumatic scenes. Results further confirm that stimulus events applied intensely and for long periods of time are capable of producing trauma and stress effects (Crevecouer, 2016:1). Consequently, CSEs being exposed to violent crime scenes and working in highly charged environments daily can induce biological and psychosocial symptomatology. Participant 17 specified that the problem with trauma was not being able to feel pain, he only realised some effects after losing his mother. He stated being used to death and not being able to cry even in times when circumstances require an emotive response. In other words, CSEs work environments are very stressful and continual exposure to gruesome imagery on crime scenes may trigger long-term consequences of trauma. For example, Participant 20 detailed being afraid of her husband because of attending to scenes where a woman was killed by her spouse. Therefore, seeing violent crime scenes causes some CSEs to live in fear, although the fear might not be realistic, but induced by working on violent crime scenes.

It can be acknowledged that being a CSE is a stressful occupation that can produce chronic trauma and complications to a person's wellbeing and everyday functioning. Feelings of anxiousness and paranoia affect CSEs even when confronted with everyday occurrences. Participant 23 shared difficulties of not trusting extended family around her children based on a crime scene where an uncle had raped a niece and nephew. However, it should be noted that individuals respond to challenging situations differently; some thrive under pressure while others suffer (Adderly *et al.*, 2012:2). Literature studies have focused mostly on effects of trauma rather than the cause of CSE stress (Hickman, Fricas, Strom & Pope, 2011:227). It is important to investigate what triggers stress and trauma in CSEs. In the current study, findings suggest that the stressful nature of CSE work stems from fear and uncertainty of what participants will encounter on different crime scenes. Participant 7 stated that they can never be prepared enough for what they would encounter on each day because each day the scenes have the potential of revealing the worst an individual has seen yet. Results confirm that the unpredictability of crime scenes creates an alarm reaction. The alarm reaction includes an initial shock or anxiety caused by an individual's self-perceived disproportion between a demanding situation presented and available resources. However, not all CSEs will have the anxiety, increase in heart rate and breathing as stress reactivity. Participant 8 expressed feeling no stress and opted to adjust to all different unknown, but violent and gruesome settings. Consequently, the result can be ascribed to stress that is not identified or dealt with, which can result in chronic trauma, burnout, lack of attention to detail and depression.

6.6 Increase and decrease of stress levels

Stressors experienced by CSEs in the present study can be equated to workplace challenges. Primarily CSEs reported having difficulty with processing crime scenes because of a lack of resources, such as equipment. When collecting evidence, it is important not to alter items or objects that can be sources of evidence on the crime scene, especially as object may contain clues such as fingerprints which are important for investigation (Muthini, 2018:14). The data in current study agrees with various sources that stress in the workplace has negative consequences (Kanten-Sadullah, 2012:8; Bui *et al.*, 2016:318; Hamden, 2012:33). Worryingly, Participant 6 stated that some CSEs claim to be experienced and then neglect work details on the scene in order to avoid reliving trauma and feeling stressed. CSEs are subjected to many pressures that emanate from the environment, office culture, experience and lack of equipment and resources (Jeanguenat & Dror, 2017:1). The abovementioned factors have negative implications on focused attention and work performance. The negative effects result in adverse interruptions to processes needed to be carried out by CSEs on crime scenes to ensure effective crime scene investigations are carried out.

Mental manipulations of psychological distress are a common occurrence when it comes to trauma, permitting persons, such as CSEs, to perform duties and function in overwhelming crime scenes and toxic situations (Logan, 2019:88). Consequently, CSEs develop an internal defense, mechanism to vulnerability and distress. Results in the current study suggest that stress is normalised by some CSEs to reduce internal tension, physical and psychological distress caused by a violent or critical incident scene. Findings support the desperation principle in the conservation theory, in that when a person is helpless and frustrated, they become self-protective (Hobfoll *et al.*, 2018:106). CSEs become defensive to preserve resources and try to alleviate trauma and stress (Alvaro *et al.*, 2010:3). The data shared by some participants involved using thought suppression, actively forgetting in order to not feel and lessen feelings of distress. Participant 15 stated that it is important to get to a point of actively suppressing traumatic memories because every day is difficult. It should be noted in general adaption syndrome, if the resistance phase is applied by CSEs to stressful situations and it continues to last for prolonged periods of time without pauses for relaxation. Victims become disposed to exhaustion, lack of attentiveness, petulance and weariness (Crevecouer, 2016:2). Unidentified stress leads to possible long-term effects of trauma that result in mental and physical health problems, poor job performance, low morale and absenteeism. In terms of work performance, Participant 16 affirmed that when some colleagues come across crime scenes that need attention, some neglect concentrating and putting effort into scenes, which is problematic in evidence collection.

6.7 Most stressful part of working on violent crime scenes

Although CSEs repress emotions and appear hardened, some suffer long-term consequences of trauma internally, such as harbouring traumatic memories from violent and gruesome crime scenes.

Participant 9 stated having feelings of helplessness and not being able to continue sometimes because of the traumatic memories and imagery encountered on crime scenes. Participant 24 specified fearing that trauma will affect them psychologically in the future. The results agree with the notion put forward by the conservation of resources theory called the primary loss principle. In the context of stress and strain, the impression is that CSEs are extremely affected by losing assets than gaining them back (Halbesleben, *et al.*, 2014:2). Assets in context of the current study can be equated to a lack of control of circumstances and failing to forget traumatic memories from the gruesome crime scenes. In the current study, results agree with the principle in that CSEs reported traumatic memories that were embedded in their thoughts. Participant 7 shared difficulties with a smell of a decomposed body, seeing the crime scene photos bring back the crime scene and the smell. Reliving crime scenes due to ghastly imagery and circumstances can be considered as a loss of coping assets, which are subjective features and vitalities that are deemed important to survive or assist in obtaining assets (Alvaro *et al.*, 2010:3). In other words, CSEs failure to cope with traumatic memories is a loss of assets, which in turn results in the likelihood that CSEs spiral out of control due to continual exposure to disturbing circumstances. For example, Participant 1 shared breaking down after attending a crime scene where a child and mother had been shot dead with an AK47, displaying a loss of control of composure which is a fundamental ethos in this line of work.

6.8 Family and relationships

CSEs have more experiences of seeing dead bodies from extremely violent and painful deaths than the norm. Consequently, CSEs live in a constant state of anxiety about death and extreme dangers. Death, anxiety and psychological distress caused by traumatic experiences can result in paranoia and poor relations with family and friends (Yoo, Cho, Cha, & Boo, 2013:139). Results in the current study support that death, fear and anxiety can elicit traumatic reactions that can affect family relations, with some CSEs reporting being aggressive towards children because of work stress. Participant 9 stated that when memories come back they often look at their own children and shout at them for nothing. The disturbing memories cause unnecessary aggression to children and family. The data further agrees with the terror management theory that anxiety from inevitability of death awareness, if not maintained by having faith and self-confidence, can lead to intense feelings and impulsive behaviour (Hayes, 2010:1). Thus, Participant 25 shared that fellow colleagues engage in impulsive drinking which later causes them to come to work late and even abscond from work duties. CSEs are often filled with overpowering worry and existential fright that accompanies their consciousness often displayed through temporary interactions with family, such as aggression, self-isolation, overwhelming emotions and stress. Some CSEs are affected by stress and trauma, which in turn affects family relations. In this regard, Participant 11 expressed having a short temper and feels that work and family are demanding and this taxes them and results in antisocial behaviour.

6.9 Effective coping method

CSEs often find comfort in religion and having a belief system to cope with stress and trauma (Slack, 2020:315). The results of the current study suggest that many CSEs use religion as a coping mechanism and find it effective in alleviating feelings of distress. Participant 17 voiced that going to church has helped him to gain back the weight lost due to stress on crime scenes. He further stated that they can now add meat in their diet, which was not possible before due to the gruesome imagery from crime scene. Church serves as coping mechanism and wipes the slate clean. The current findings agree with terror management theory that provides an explanation as to why individuals invest so heavily into their belief system and the need to feel valued in all that a person does (Burke, Martens & Faucher, 2009:2). Participants 2 and 6 reported using the Bible to motivate and comfort themselves when facing difficulties. Faith was seen as a helping force that assists in removing the stress. Although there are limited studies that expose the in-depth role of spirituality and religion, existing literature supports results of present study that spirituality and having a belief system are effective in lessening stress and trauma and potentially improve job performance (Robinson, 2019:52). Research indicates that when faced with stress, a person may rely on religion as a coping strategy with symptoms of lower anti-social behaviour and depressive symptoms. Participant 6 affirmed that reading the Bible helps with coping with stress as they are often encouraged to talk to others about stress. Positive religious coping is linked with a person looking for meaning from life and pursuing support from the religious community and forgiveness from higher entity (Cherewick *et al.*, 2016:13). Participant 5 reported finding motivation from reading the Bible. Then during debriefing sessions with CSEs, the sessions included interacting with a chaplain, praying and sharing traumatic experiences. Many CSEs remained stressed and traumatised because police culture does not encourage emotional expression.

6.10 Ineffective coping

CSEs like police officers work in an environment that requires them to suppress their sentimental reactions related to shock, fear and sorrow. Various studies (Davidson *et al.*, 2008:54; Salinas *et al.*, 2018:243; Sollie *et al.*, 2017:1581; Van Patten *et al.*, 2001:136) related to coping with trauma by frontline workers like CSEs support views that displaying emotions is often viewed as weak and soft. Failure to emotionally distance from disturbing crime scenes is often perceived as a CSE failing to be in control of situations and stressor (Mushwana, Govender & Nel, 2019:3). The results of the present study support the notion that getting personal and emotional is an ineffective coping mechanism in the forensic field. For example, Participant 19 shared that getting personal and emotional was an application to crash in this line of work. It should be noted that some CSEs are unable to speak and discuss the work they do and what harrowing circumstances they encounter. Participant 11 stated that talking to psychologists or anyone about their line of work is a waste of time as potential response includes identifying and telling them what they already know. Consequently, many are misunderstood by family members and friends, leading to self-isolation and frustration. The misunderstanding

inevitably results in heightened levels of stress, sometimes suicide and engaging in self-destructive and addictive behaviours in attempts to try and cope with trauma and emotional distancing. In the current study, participants reported anger and aggression as results of harboured trauma and stress. Participant 9 shared that fellow colleagues who keep to themselves often display aggressive behaviour and engage in excessive use of alcohol and drugs. The finding can be ascribed to the general adaption syndrome that resistance cannot be maintained indefinitely, resulting in a damaged system that leads to death or severe health problems (Krohne, 2002:2; Rice, 2012:24, 25). In other words, maladaptive coping is utilised to try maintain and attempt control over inevitable stress from distressing circumstances.

6.11 Theoretical application

The integrated model appears to confirm that exposure to distressing stimulus and traumatic conditions applied for prolonged periods of time creates an alarm reaction. The alarm reaction is displayed through anxiety, increased heart rate and alterations to physiological and biological functioning among CSEs. As a result of an increase in crime in South Africa, CSEs are exposed to killings and gruesome murders. Furthermore, the unexpectedness and unpredictability of an experience or situation creates a traumatic atmosphere. In essence, CSEs being able to perceive personal vulnerability and mortality means crime scene technicians can expect a diversity of negative emotions and physiological responses from interacting with violent crime scenes.

The results of the current study agree that having a belief system and faith affect the reaction to traumatic conditions. CSEs have beliefs and thoughts that can influence self-esteem and cultural views. Inherently, beliefs and views determine a positive response to trauma experienced. Being able to control emotions can be seen as a resource loss, which has a tremendous impact on relationships with family and friends and also perceived mental health. The results of the current study support the views that emotional distancing further affects relationships with friends and family. CSEs are often misunderstood by family members and self-isolate, which further heightens stress experienced and lead to psychological disturbances such as anxiety.

The integrated model states that individuals who invest in resources prevent and restore resource loss. Reaching out to family and friends in times of stress can mitigate the impact of a traumatic event. Some CSEs in the study further agree with the view that actively seeking family support can help them feel less stressed and effectively cope with traumatic encounters. Although results confirm that having family support helps to mitigate and lessen distress among CSEs, some prefer keeping the traumatic encounters and distressing conditions to themselves because of the fear of potentially triggering stress in family and friends.

The integrated model asserts that investing in resources such as speaking to psychologists and social workers after seeing traumatic crime scenes can alleviate PTSD symptoms and offer opportunities of

effective coping. The results of the current study are not conclusive in supporting the idea of the integrated model. Most CSEs preferred discussing work stress and traumatic tasks with colleagues as it was seen as an opportunity to learn and also speak to someone who knows what happens on the scenes. The findings of the current study indicated that CSEs have unsatisfactory experiences when it comes to debriefing with professionals, such as social workers. Therefore, they preferred not to seek help from psychologists as the CSEs in the current study deemed it ineffective. Participant 18 voiced that speaking to psychologists is a waste of time because an individual goes back to the stressful conditions after speaking to them, so finding another coping method is more suitable.

CSEs may display behavioural responses that can be adaptive or maladaptive, depending on the environmental influences. The results of the current study confirm that CSEs' choice of adaptive or maladaptive coping mechanism depends on the surrounding environment. The CSEs in the current study noted that having a supportive family and being able to engage in dialogue with fellow colleagues in similar environment helped to lessen distress. Also, those who repressed emotions and denied having stress often engaged in maladaptive coping, such as abusing alcohol and substances. Participant 5 stated that even CSEs with religious background who do not drink end up drinking due to this line of work in order to cope with stressful conditions and pressures. External and internal influences have a huge impact on the chosen method of coping.

Some CSEs may display cognitive responses, minimising stress by normalising death and the predictability of life. It is through culture that terror can be minimised because culture normalises and allows for the predictability of life. Consequently, CSEs normalise interaction with violent crime scenes every day and downplay vulnerabilities due to their working environment. The results of the current study confirm that stress is normalised among some CSEs as they often fear appearing weak and soft. Emotional expression is not encouraged in the police and CSE culture because it isolates an individual from fellow colleagues. The data gathered in the current study supports that stress is normalised, but it should be distinguished that repressed emotions and distress result in chronic trauma.

Continuous contact to distressing events suggests loss of resources, creating difficulties in adapting to life's challenges. Repeated exposure to violent and gruesome crime scenes can affect CSEs ability to function and perform tasks effectively. Furthermore, CSEs are potentially at risk of experiencing a decline in their physical and mental health. The integrated model of stress and coping does not show a noteworthy decline in CSEs physical health. However, most CSEs in the current study displayed symptoms of severe trauma and many stated having difficulty coping with stress but continuing to ignore triggers because of the fear of appearing weak. Some opted to engage in addictive and destructive behaviours to help cope with trauma. Although the coping mechanism is maladaptive, CSEs found that investing in such behaviours helped to maintain stress levels.

6.12 Meeting the aim and objectives of the research

The aim of the study was to conduct a phenomenological study into the trauma and coping methods used by CSEs. The main objectives pursued in answering the research question were as follows.

The first objective was to investigate the nature of trauma experienced by the CSE when interacting with violent and traumatic crime scenes. International and national studies reflected a need to highlight the extent of trauma and coping used by CSEs. It can be concluded that the alarmingly high crime rates, particularly murder, have detrimental effects on CSEs who have to attend and process such violent scenes. The current findings reveal that potential stress triggers stem from violent crime scenes that have children and women as victims. Furthermore, trauma is evoked by personally identifying with victims on the crime scenes. Therefore, it can be concluded that CSEs experience severe traumatic events and display effects of trauma through responses such as anxiety, aggression, burnout, poor work performance and production, if not addressed.

The second objective was to identify methods CSEs use to cope with trauma experiences. The literature review indicated that the coping methods used by CSEs are influenced by the immediate environment and surroundings. A CSE may choose positive or maladaptive coping based on judging the current distressing circumstance and assessing available resources. If the disturbing event exceeds the ability to cope, the individual may engage in destructive behaviour. The findings suggested that CSEs are potentially at risk of spiraling out of control because of a lack of support. The noteworthy observations are ineffective coping results in neglecting work details to avoid triggering stress, refusing to use debriefing and support programmes and self-isolation which often leads to severe depression and suicide in some cases. Adaptive coping involves peer support and sharing with colleagues, and getting advice from senior CSEs.

The third objective was to ascertain the usefulness of the coping methods CSEs use. The investigation into effectiveness of coping was discussed according to the literature review. Research studies and findings were correlated and connections were made. The findings indicated that talking about trauma and stress among CSEs is regarded as an effective and useful coping method. Debriefing and the use of EHW and professional support are still questionable and programmes are not utilised by CSEs because crime scene technicians feel misunderstood. It was observed that CSEs find it difficult to share traumatic experiences and often opt to withdraw and not speak to anyone. Also, a noteworthy finding was that getting personal and emotional with crime scenes was considered an ineffective coping method and that supports the literature reviews, which highlight that police culture encourages emotional detachment and suppression.

6.13 Recommendations

The following recommendations were derived from the research findings:

- Given the overwhelming number of cases reported daily and a lack of CSEs available on shift duty to attend to all of them, research is needed to identify the ideal number of CSEs needed on each shift to help collect evidence and help with crime scene processing.
- Debriefing needs to be implemented more frequently by psychologists, social workers and chaplains for the CSEs to identify and address traumatic experiences and negative consequences to stress and extreme pressures, which are inherent to the environment.
- Programmes need to be developed, specifically aimed at promoting mental health and physical wellbeing among CSEs. The programmes should particularly address key negative factors such as depression, burnout and anxiety.
- Debriefing and employee assistance services in SAPS should be continually promoted among CSEs in order to create awareness about such support structures.
- Potential rotation of CSEs to other departments within the policing field should be considered since the investigation environment is highly charged and results from current study suggest a need for CSEs to be relieved of high pressures and potential stressors.

6.14 Future research

The researcher offers the following suggestions pertaining to future research into CSEs:

- The findings of the current study suggested that being exposed to traumatic conditions for prolonged periods of time yields negative consequences for CSEs. Thus, more research should be conducted into quantitative and longitudinal research to track trauma and coping over time.
- Due to the study focusing on identifying, analysing and highlighting what traumas CSEs experience and coping methods employed, the results could not be generalised. Therefore, further research should focus on identifying representative samples to generalise results to a larger population. Investigation into rural CSEs and urban CSEs in terms of workloads, work stress and coping mechanisms.
- In order to fully comprehend the extent of trauma among CSEs, there is a need for research into different geographic locations across South Africa. Expanding into different geographic locations will allow for larger sample sizes to be accessed and create an opportunity for comparisons to be drawn.
- There is need for research that further probes into male and female reactions and experiences to traumatic events to furnish a lack of female representation in forensic field. It is also needed to provide a response to male domination within the law enforcement field as a whole.

6.15 Conclusion

The researcher investigated trauma and coping among CSEs to better understand the phenomenon by highlighting experiences of CSEs and triggering stressors found in this highly charged environment.

The researcher further identified coping methods and assessed their usefulness and effective coping. Therefore, in conclusion, CSEs are exposed to violent and disturbing crime scenes. Inherently, scenes evoke emotional distress, chronic trauma and behaviour displaying anxiety and emotional suffering. Stress triggers experienced by CSEs arouse mental reactions such as unease, loneliness, worry and unhappiness. Furthermore, physical indicators may include increased heart rate, random outbursts of aggression, paranoia and some symptoms resembling the development of PTSD. Adaptive coping methods used by CSEs include sharing traumatic details of crime scenes with colleagues and getting advice from experienced CSEs on how to deal with overwhelming disturbing scenes. The commonly used maladaptive coping mechanisms include alcohol and drug abuse, thought suppression and isolation. It should be noted that CSEs still refuse to engage and use existing facilities such as EHW and professional support within the organisation. Using more debriefing and implementing training programmes focused on mental health was integral in the recommendations of the study. Future research should use representative samples and longer term study designs to determine the influence of trauma and coping over time.

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Annexure A – Declaration of originality

DECLARATION OF ORIGINALITY UNIVERSITY OF PRETORIA

The Department of SOCIAL WORK AND CRIMINOLOGY places great emphasis upon integrity and ethical conduct in the preparation of all written work submitted for academic evaluation.

Academics teach you about referencing techniques and how to avoid plagiarism; it is your responsibility to act on this knowledge. If you are at any stage uncertain as to what is required, you should speak to your lecturer before any written work is submitted.

You are guilty of plagiarism if you copy something from another author's work (e.g. a book, an article or a website) without acknowledging the source and pass it off as your own. In effect you are stealing something that belongs to someone else. This is not only the case when you copy work word-for-word (verbatim) but also when you submit someone else's work in a slightly altered form (paraphrase) or use a line of argument without acknowledging it.

Students who commit plagiarism will not be given any credit for plagiarised work. The matter may also be referred to the Disciplinary Committee (Students) for a ruling. Plagiarism is regarded as a serious contravention of the University's rules and can lead to expulsion from the University.

The declaration which follows must accompany all written work submitted while you are a student of the Department of SOCIAL WORK AND CRIMINOLOGY..... No written work will be accepted unless the declaration has been completed and submitted.

Full names and surname of student: SITHEMBILE CHARITY LINDA

Student number: 13037902

Topic of work: MA DISSERTATION

Declaration

1. I understand what plagiarism is and am aware of the University's policy in this regard.
2. I declare that this MA DISSERTATION (e.g. essay, report, project, assignment, dissertation, thesis, etc) is my own original work. Where other people's work has been used (either from a printed source, Internet or any other source), this has been properly acknowledged and referenced in accordance with departmental requirements.

SC LINDA

22/12/2020

Annexure B - Interview schedule

Opening:

- A. My name is Sithembile Linda and I am a Master's student conducting a study on the trauma and coping methods used by crime scene examiners. This interview is going to help highlight some of the challenges that crime scene examiners experience as a results of their work. (Establishing rapport)
- B. I would like to ask you some questions about your background, experiences as a crime scene examiner. What stresses or trauma have you endured on the job and what coping methods do you use and why? (Purpose)
- C. I hope to utilise this information to highlight the impact of exposure of crime scene examiners to traumatic crime scenes, and identify coping methods used to cope with traumatic experiences. (Motivation)
- D. This interview should take about 30 minutes. Are you available to answer questions during this time? (Timeline)

Transition: (Let me start by asking you about your age, education and family)

- A. (General demographic information)

General

- 1. What is your gender?
- 2. How old are you?
- 3. Which population group best describes you?

Family

- 4. What is your marital status?
- 5. Do you have children? How many?

Education

- 6. What is your highest level of education?
- 7. Years working i) for SAPS and ii) as crime scene examiner?

- B. (Let us move on to your experiences as a crime scene examiner)

Experiences

- 8. How many crime scenes do you attend to in a week?
- 9. What is the most stressful part of working at violent crime scenes?
 - a. Types of crime scenes
 - b. Status of bodies (decomposed, foetus, children, etc.)

c. Materials/fluids

10. How stressful is your work? Please elaborate.

11. Did you find your work more stressful when you started (compared to now)?

12. How would you describe working on violent crime scenes?

(Let us move on to coping with stress and trauma?)

Coping methods

13. How do you cope with stress and trauma experienced from violent crime scenes?

14. How does the stress and trauma affect family and other relationships?

15. What do you think is the most effective coping method? And why?

16. What are ineffective coping mechanisms some examiners use?

17. Do you ever speak to someone about the nature of your work?

Annexure C – Letter of informed consent



Researcher: Ms Sithembile Linda (072 596 6991, sthe_l@yahoo.co.uk)
Supervisor: Prof Francois Steyn (012-420 3734, francois.steyn@up.ac.za)

INFORMED CONSENT

The University of Pretoria's Research Ethics Committee requires that a researcher should ensure informed consent from a participant before commencing with the research inquiry. Informed consent entails providing potential participants with information about the following aspects of the research study:

1. Purpose of the study

The aim of the study is to conduct a phenomenological study into the trauma and coping methods used by crime scene examiners.

2. Procedures

I, the participant, understand that I am requested to take part in the study about crime scene examiners. I understand that I will take part in personal interviews at a location of my preference in a time slot that suits me. I understand that I will be interviewed by a Criminology postgraduate student from the University of Pretoria. I will answer questions relating to my experience of trauma and coping methods. I am willing to spend sufficient time with the researcher in order for her to gather information from me. I allow the researcher to voice record the interview.

3. Possible risks

I will not be physically harmed, and it is not the intention of the researcher to hurt my feelings or cause any harm whatsoever. I understand that there is a possibility of experiencing emotional distress as a result of the sensitive nature of the topic under discussion. However, I will tell the researcher should I experience any negative emotions during and after data collection. In case of emotional discomfort, the researcher will make arrangements for me to be debriefed by a registered social worker. The social worker is Leanne Jordaan, a lecturer in the Department of Social Work and Criminology.

4. Benefits of participation

I understand that there is no compensation, whether financial or material, for participating in the research. I understand that by participating, or choosing not to participate, my circumstances within the division of forensics service in the South African Police Service will remain unaltered.

5. Rights as a participant

I understand that my participation in the research inquiry is voluntary and that I can withdraw from the inquiry at any time without explanation or negative consequences. In the event of me withdrawing from the inquiry, all data collected from me will be destroyed. I understand that there will be no penalty or loss of benefit should I decide not to participate. I understand that I have the right to access the data I have contributed towards the inquiry.

6. Anonymity and confidentiality

I understand that the voice recordings will be used for research purposes only and all information will be kept confidential. Collected data will be accessed by the researcher and her supervisor only. My name and surname will not be made known.

7. Contact details

I can contact the researcher and her supervisor at the contact details above if I have any questions or concerns relating to the study.

8. Data storage

I understand that the research data collected will be stored for a period of 15 years at the Department of Social Work and Criminology at the University of Pretoria, as stipulated in their policy, for archiving and future research purposes. I understand that the collected data could, in addition to a research dissertation, be used for research outputs in the form of scientific articles and conference papers.

9. Permission for participation in the research study

I understand what the study is about, and I am participating on a voluntary basis.

Research participant

Date

Annexure D – Full ethical clearance letter



Faculty of Humanities
Fakulteit Geesteswetenskappe
Lefapha la Bomotheo



09 December 2020

Dear Miss SC Linda

Project Title:	Trauma and coping among crime scene examiners: A phenomenological inquiry
Researcher:	Miss SC Linda
Supervisor(s):	Prof F Steyn
Department:	Social Work and Criminology
Reference number:	13037902 (HUM031/1119)
Degree:	Masters

I have pleasure in informing you that the above application was **approved** by the Research Ethics Committee on 09 December 2020. 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 the 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 Innocent Pikirayi

**Deputy Dean: Postgraduate Studies and Research Ethics Faculty of
Humanities**
UNIVERSITY OF PRETORIA
e-mail: PGHumanities@up.ac.za

Fakulteit Geesteswetenskappe
Lefapha la Bomotheo

Research Ethics Committee Members: Prof I Pikirayi (Deputy Dean); Prof KL Harris; Mr A Bizo; Dr A-M de Beer; Dr A dos Santos; Ms KT Govinder Andrew; Dr P Gutura; Dr E Johnson; Prof D Maree; Mr A Mohamed; Dr I Noomé; Dr C Puttergill; Prof D Reyburn; Prof M Soer; Prof E Taljard; Prof V Thebe; Ms B Tsebe; Ms D Mokalapa

Annexure E – Editing certificate



Editing Certificate

Date: 2020/12/22

CERTIFICATE OF ENGLISH EDITING

To whom it may concern

This is to certify that the dissertation with the title Trauma and coping among crime scene examiners: A phenomenological inquiry to be submitted by Sithembile Linda has been professionally edited for language by Happy Sabeni Mahlangu of Sabeni Language Services. The content of the research and the intentions of the researcher were not changed in any way during the editing process.

I guarantee the quality of the English language in this paper, provided my changes are accepted and further changes made are checked by me.

If you have any further queries, please do not hesitate to contact me on happy.m@2sparrows.co.za.

Sincerely,

Happy Mahlangu
Language practitioner

South African Police Service



Suid-Afrikaanse Polisie

Privaatsak
Private Bag X94

Pretoria
0001

Faks No.
Fax No.

(012) 334 3518

Your reference/U verwysing:

My reference/My verwysing: 3/34/2

Enquiries/Navrae:

Lt Col Joubert
AC Thenga
(012) 393 3118
JoubertG@saps.gov.za

Tel:

Email:

THE HEAD: RESEARCH
SOUTH AFRICAN POLICE SERVICE
PRETORIA
0001

APPROVED

Ms SC Linda
UNIVERSITY OF PRETORIA

**RE: PERMISSION TO CONDUCT RESEARCH IN SAPS: TRAUMA AND COPING AMONG
CRIME SCENE EXAMINERS: A PHENOMENOLOGICAL INQUIRY: UNIVERSITY OF
PRETORIA: MASTERS DEGREE: RESEARCHER: SC LINDA**

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 **2020-02-18** with the same above reference number.


THE HEAD: RESEARCH
DR PR VUMA

MAJOR GENERAL

DATE: 81-05-2020

SUID-AFRIKAANSE POLISIEDIENS SOUTH AFRICAN POLICE SERVICE

Privaatsak/Private Bag X 94

Verwysing/Reference: 3/34/2

Navrae/Enquiries: Lt Col Joubert
AC Thenga

Telefoon/Telephone: (012) 393 3118

**THE HEAD: RESEARCH
SOUTH AFRICAN POLICE SERVICE
PRETORIA
0001**

- A. The Divisional Commissioner
FORENSIC SERVICES
- B. The Divisional Commissioner
PERSONNEL MANAGEMENT
- C. The Provincial Commissioner
GAUTENG

**PERMISSION TO CONDUCT RESEARCH IN SAPS: TRAUMA AND COPING
AMONG CRIME SCENE EXAMINERS: A PHENOMENOLOGICAL INQUIRY:
UNIVERSITY OF PRETORIA: MASTERS DEGREE: RESEARCHER: SC LINDA**

- A.
 - 1. The above subject matter refers.
 - 2. The researcher, Ms SC Linda, is conducting a study: Trauma and coping among crime scene examiners (CSEs): a phenomenological inquiry with the aim ***to conduct a phenomenological study into the trauma and coping methods used by crime scene managers.***
 - 3. The researcher is requesting permission to interview thirty (30) crime scene examiners in the Tshwane area at four (4) Local Criminal Record Centres (LCRCs), namely Pretoria North, Pretoria Central, Ga-Rankuwa and Lyttleton. The various LCRC commanders will firstly be approached to refer the researcher further to potential participants.
 - 4. The proposal was perused according to National Instruction 1 of 2006. This office recommends that permission be granted for the research study, subject to the final approval and further arrangements by the office of the Divisional Commissioner: Forensic Services.
 - 5. We hereby request the final approval by your office if you concur with our recommendation. Your office is also at liberty to set terms and conditions to the researcher to ensure that compliance standards are adhere to during the research process and that research has impact to the organisation.

**PERMISSION TO CONDUCT RESEARCH IN SAPS: TRAUMA AND COPING
AMONG CRIME SCENE EXAMINERS: A PHENOMENOLOGICAL INQUIRY:
UNIVERSITY OF PRETORIA: MASTERS DEGREE: RESEARCHER: SC LINDA**

6. If approval is granted by your office, this office will obtain a signed undertaking from researcher prior to the commencement of the research which will include your terms and conditions if there are any and the following:
 - 6.1. The research will be conducted at his/her exclusive cost.
 - 6.2. The researcher will conduct the research without the disruption of the duties of members of the Service and where it is necessary for the research goals, research procedures or research instruments to disrupt the duties of a member, prior arrangements must be made with the commander of such member.
 - 6.3. The researcher should bear in mind that participation in the interviews must be on a voluntary basis.
 - 6.4. The information will at all times be treated as strictly confidential.
 - 6.5. The researcher will provide an annotated copy of the research work to the Service.
 - 6.6. The researcher will ensure that research report / publication complies with all conditions for the approval of research.
7. If approval is granted by your office, for smooth coordination of research process between your office and the researcher, the following information is kindly requested to be forwarded to our office:
 - **Contact person:** Rank, Initials and Surname.
 - **Contact details:** Office telephone number and email address.
8. A copy of the approval (if granted) and signed undertaking as per paragraph 6 supra to be provided to this office within 21 days after receipt of this letter.
9. Your cooperation will be highly appreciated.

B-C. 1. Copy for your information.


MAJOR GENERAL
THE HEAD: RESEARCH
DR PR VUMA

DATE: 2020-02-18