AN ANALYSIS OF DEBRIEFING MEASURES FOR FIREFIGHTERS AS OFFICIAL FIRST RESPONDERS IN SOL PLAATJE MUNICIPALITY, NORTHERN CAPE, SOUTH AFRICA

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DEDICATION

This dissertation is dedicated to my husband,
Kenneth Kgotsofalang Bessie,
and to our two beautiful children,
Kano Kenneth Bessie
and
Bophelo Tehilla Bessie.

For the glory of the Lord.

DECLARATION

I, Mmapula Kgomotso Emmah Bessie, declare that the coursework master's mini-dissertation that I herewith submit for the master's degree qualification Master of Disaster Management at the University of the Free State, is my independent work and that I have not previously submitted it for a qualification at another institution of higher education.

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ABSTRACT

The firefighting profession is physically and psychologically demanding, due to the various calls they respond to, such as motor accidents, wild fires and structural fires. Their work exposes them to constant experiences that are painful and provocative, including inconsistent sleep schedules. The horrific or traumatic events they are exposed to can adversely affect their mental health. The study analysed debriefing measures for firefighters as official first responders in the Sol Plaatje Municipality (SPM).The study area was in the SPM in the Northern Cape province in South Africa. The Sol Plaatje Emergency Service was the key organisation of the research.

The study focused on exploring and providing knowledge on the available debriefing measures in the SPM within the Sol Plaatje Emergency Service. Furthermore, the study sought to highlight the importance of debriefing measures needed to mitigate the psychological impacts caused by the traumatic events experienced by firefighters as official first responders. The study adopted a qualitative approach with an exploratory research design. Fifteen participants from the Sol Plaatje Emergency Service were purposefully sampled to form part of the empirical study. In-depth interviews were used as the mode of data collection.

The Wits Trauma Model assisted to theoretically explain the traumatic experiences firefighters encounter in their line of duty and possible interventions to mitigate the negative mental health effects through adequate debriefing measures. There is a lack of South African literature in relation to debriefing measures provided to firefighters, therefore it was necessary to conduct this study.

The results and findings of the study indicated that the participants had somewhat of an understanding of what debriefing was and were aware of the debriefing measures available in SPM. The findings showed that the majority of the participants (N=13) were aware that SPM had a counsellor available to provide debriefing or counselling; however, the participants did not know who the counsellor was. Although most firefighters (N=12) did not make use of this service, the few (N=3) that had requested referral to the counsellor, never received the needed assistance. Employer support was a concern to many participants as they were of the opinion that the employer did not prioritise debriefing for firefighters. Therefore, they chose to resort to their own coping mechanisms to deal with the trauma.

On the basis of these results, recommendations were made to SPM to prioritise debriefing in their policies and operational guidelines, to ensure that it is implemented to firefighters in the Sol Plaatje Emergency Service. The study also recommends that the appointed professional within the employee assistance programme be introduced to the firefighters and its services be promoted. Awareness programmes should be conducted to educate firefighters on the effects of traumatic events, seeking help from management and trauma counsellors. The existing legislation that guide the work of firefighters, must prioritise the mental health of firefighters.

Keywords: critical incident stress debriefing, debriefing, firefighters, official first responders, trauma, traumatic events

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LIST OF ABBREVIATIONS

APA	American Psychiatric Association
CISM	Critical Incident Stress Management
CISD	Critical Incident Stress Debriefing
EAP	Employee Assistance Programme
DSM-5	Diagnostic and Statistical Manual
IDP	Integrated Development Plan
IAFF	International Association of Firefighters
NFCC	National Fire Chiefs Council
PTSD	Post-Traumatic Stress Disorder
SA	South Africa
SAMHSA	Substance Abuse and Mental Health Services Administration
SDG	Sustainable Developmental Goals
SPM	Sol Plaatje Municipality
SPES	Sol Plaatje Emergency Service
UN	United Nations
UNISDR	United Nations International Strategy for Disaster Reduction
USA	United States of America
WHO	World Health Organization
WITS	University of the Witwatersrand
WTM	Wits Trauma Model

GLOSSARY OF TERMS AND CONCEPTS

❒ Debriefing/Critical Incident Stress Debriefing

Critical Incident Stress Debriefing was introduced in the 1980s as a tool to manage the psychological effects of traumatic/critical incidents faced by emergency workers such as firefighters, police officers and paramedics (IAFF Centre of Excellence Staff 2020:1). Critical Incident Stress Debriefing is one of the many crisis intervention methods or techniques that are included within the umbrella of the Critical Incident Stress Management programme (Mitchell & Everly 1997:2).

❒ Firefighter

A firefighter is regarded as a person who provides a range of firefighting services, which are fire inspections, fire investigations, prevention of fires and public education. Firefighters also offer specialised emergency respond services such as responding to structural fires, wildfires, motor vehicle accidents, extraction of injured people or corpses (Metcalf 2020:6).

❒ First responder

The term *first responder* includes a number of disciplines such as firefighterfirefighters, police officers, medical personnel, nurses, paramedics and volunteers (Substance Abuse and Mental Health Services Administration 2018:1). Wimberly (2011:48) stated that some of the first responders might not act on a professional basis and are not trained as emergency services; however, they volunteer to assist and work together with professionally trained first responders. A first responder can also be any person such as civilians or a survivor of an accident, who are first to arrive in a car accident or any traumatic event and may respond by contacting the police, firefighters and the ambulance. They may sometimes even attempt to rescue those injured or trapped and also remove any hazardous items from a scene (Van Straten 2019:51).

❒ Official first responder

Similar to first responders, the term *official first responder* includes police officers, firefighters, paramedics, search and rescue teams, and nurses. These are officials that are trained to provide critical services during emergency situations (Van Straten 2019:51). They are regarded as trained responders and the first official that respond to a scene where a traumatic event has occurred, such as a disaster or an accident (Haugen et al. 2012:370).

❒ Trauma

Trauma can be described as those experiences that cause serious and intense psychological and physical stress reactions on an individual. It can further refer to one event, many events, or a couple of situations that are experienced by an individual as threatening or harmful to their physical and emotional well-being. The effects of trauma have lasting adverse effects on the person's social, physical, spiritual and emotional well-being (American Psychological Association 2013).

❒ Traumatic events

Traumatic events can be described as incidents or events in which a person may be exposed to a threat of injury or death to others or self. The response to such an event can be feeling helpless, hopeless and intense fear (American Psychological Association 2013).

❒ Mental health

Mental health of an individual is important. The World Health Organization (WHO 2014) defines health as a state in which there is complete mental, social and physical well-being and it is not simply the absence of a disease or illness. Therefore, mental health follows when the person is able to recognise their own abilities, work productivity, coping with stress, and their contribution to the community. Mental health is thus a significant element of the total health of the individual and contributes to the quality of life. Moreover, the presence of positive mental health can act a shield towards stressors of everyday life and can also decrease the risk of the occurrence or development of mental illness (WHO 2014).

❒ Mental illness

Mental illness is a term that is used in the medical field to describe conditions that are caused by the connections between personal, environmental and biological factors. These factors have serious effects on the thoughts, moods and behaviour of an individual. These reactions create a barrier on the normal functioning of an individual because of the symptoms of the illness. The symptoms in nature are chronic or temporary (Stein 2013).

❒ Post-traumatic stress disorder

The American Association's Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5) describes post-traumatic stress disorder as a condition that occurs as a result of exposure to actual or threatened serious injury, death, threatened death, or actual or threatened sexual violence (American Psychiatric Association 2013). The person suffering from post-traumatic stress disorder may continuously re-experience the event in the form of

nightmares and flashbacks, and the general functioning of the person is impacted by a number of symptoms such as sleeping problems, lack of concentration, hopelessness, feeling ashamed, irritability, and feelings of isolation (American Psychiatric Association 2013).

❒ Suicide

Suicide is not a diagnoses but rather an act that is usually as a result of distress that overwhelms the individual's ability to cope (American Psychiatric Association 2013).

❒ Depression

Depression is described as a mood disorder that has negative effects on the individuals physical, psychological, and cognitive functioning. Symptoms or experiences of depression include persistent emptiness, sadness, irritability, loss of interest and fatigue that can result in sleeping too much/ or insomnia, multiple aches, pains, and cognitive difficulties (American Psychiatric Association 2013).

Chapter 1
BACKGROUND OF STUDY

1.1 INTRODUCTION

The world more often experiences disasters and events that are traumatic and have a significant impact on the psychological and social functioning of communities and humanitarian workers. Hazards such as earthquakes, floods, hurricanes, fires, and assaults from terrorists affect large populations of people around the world, and the numbers are relatively increasing (Guha-Sapir et al. 2013). Many individuals are exposed to trauma as part of their daily job as they are employed in professions such as firefighters, police officers and paramedics who help with emergency response. Studies conducted on the occurrence of psychological disorders prevalent among employees who are exposed to disasters include misuse of alcohol, post-traumatic stress disorders (PTSD) and anxiety (Strohmeier & Scholte 2015).

According to Abbot et al. (2015), it is estimated that 30% of official first responders (OFRs) develop behavioural health illnesses that include PTSD and depression, compared to 20% in the overall population. In a report conducted by Stanley et al. (2016), which focused on suicide, it has been reported that there are many firefighters who attempt to commit suicide and have suicide thinking patterns. “In law enforcement, the estimates suggest between 125 and 300 police officers commit suicide every year” (Badge of Life cited in Substance Abuse and Mental Health Services Administration [SAMHSA] 2018:3).

From the above-mentioned, OFRs are among those who arrive first at the disaster scenes and they face dangerous, horrific and emotional situations. The OFR is the first to provide help to those who are survivors of a disaster and they provide immediate physical and emotional support. Even though the OFRs are employed to help the communities affected by these disasters, the job can be strenuous and there can be increased risk of trauma and vicarious trauma as time progresses (SAMHSA 2018:3).

This study aims at examining and making an analysis of the available intervention measures for firefighters as OFRs within the fire and rescue department in the Sol Plaatje Municipality (SPM) in the Northern Cape province. The study focused on firefighters as they work in life-threatening environments of rescuing injured people in car accidents and burning houses, also seeing the horrific incidents caused by fires. The exposure to these traumatic events

can be harmful and have a psychological impact on the mental health of the firefighters as it can result in PTSD, depression, substance abuse, which may lead to suicide. The researcher was interested to determine how firefighters function after working in a traumatic situation(s), and the support systems and debriefing measures they receive from their respective employers, as well as to further determine whether debriefing measures are provided for firefighters and their effectiveness for the purpose of preventing mental health illnesses.

This chapter gives a description of the study area which is SPM. It further discusses the rationale of the study, the research problem, research questions, research objectives and significance of the study. The research methodology includes the research design and research population and sampling. The chapter also discusses the data collection tools, data analysis, data validity and reliability, the limitations, and delimitations of the study and lastly the ethical consideration.

1.2 DESCRIPTION OF THE STUDY AREA

1.2.1 Background of Sol Plaatje Municipality

South Africa is one of the countries within the African continent and it is located at the bottom of the continent. It is called the Republic of South Africa, as shown in Figure 1.1. South Africa has nine provinces, which are the Eastern Cape, KwaZulu-Natal, Gauteng, Free State, Mpumalanga, North West, Northern Cape and Western Cape and Limpopo. The country has six neighbouring countries, namely Lesotho, Botswana, Namibia, Zimbabwe, Mozambique and Swaziland. South Africa is a diverse country with various cultures, ethnic groups and races, and it is called the rainbow nation because of its diversity. There are 11 official languages of which English is predominately spoken (World Health Organization [WHO] 2007:7).

The Northern Cape province is regarded as the largest province in South Africa, which takes up about a third of the country's total land area. The province is situated south of the Orange River, which is the main river that provides the province with water for a good agricultural system. The province is well known for its diamond industry. The province is located in the north-west of South Africa, it has international borders with Namibia and Botswana and also local borders with the Eastern Cape and Western Cape provinces in the south, and the North West and Free State provinces in the east. There are five districts in the Northern Cape province, namely Frances Baard, John Taolo Gaetsewe, Siyanda, Pixley ka Seme and Namakwa District Municipality (SPM Integrated Development Plan [IDP] 2017–2022:19).

Figure 1.1 Map of South Africa showing the Northern Cape province (Adapted from Google Maps 2020)

In this research, the focus was on the local municipality called the Sol Plaatje Municipality that is situated within the Frances Baard District Municipality in the Northern Cape province. The SPM is the second-largest local municipality in the district, with an area covering 3 145 km^2. In terms of the population and size, it comprises a large urban node in the form of Kimberley, including farms and villages. The administrative centre of the municipality is Kimberley (Josias et al. 2017:33-37). The SPM is bordered by Dikgatlong in the north, the Pixley ka Seme District in the south and west and the Free State province in the east. The towns found in the SPM are Kimberley, Ritchie and Galeshewe. Kimberley is the key town and the capital city of the Northern Cape province. The city is known for its diamond mining and an economical hub for the province. The SPM was named after a renowned leader, Solomon Tshekisho Plaatje, who was one of South Africa's journalists, intellectual, writer, linguist, politician, and translator (SPM IDP 2017–2022:40).

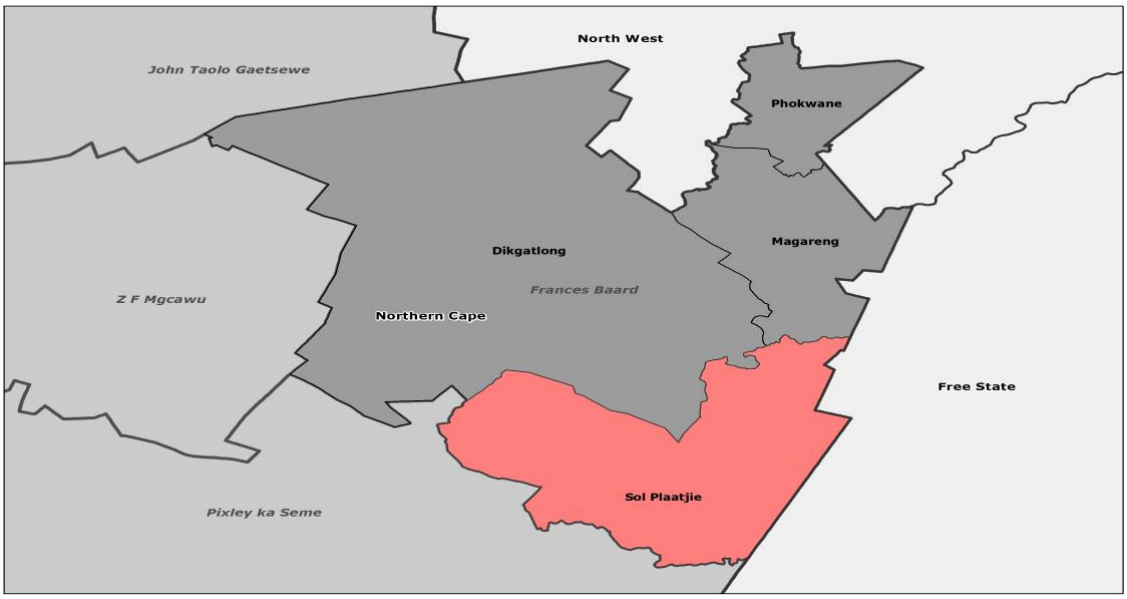

Figure 1.2 Map showing the Sol Plaatje Municipality (Adapted from Google Maps 2020)

The SPM has a population of almost 280 000 people, and it housed 0.5% of South Africa's total population in 2015. The total population growth rate is 2.22%, which is somewhat higher than that of the Frances Baard District Municipality's annual growth rate (1.78%). There are different facilities within the SPM such as churches, schools, government departments, tourism attractions, hospitals, clinics, fire and rescue services and police stations. Kimberley is the main town within the SPM that is home to provincial departments such as the South African Police Service and the fire and rescue department offices are also found in Kimberley (SPM IDP 2017–2022:21-40).

The fire service and rescue department in the SPM is called the Sol Plaatje Emergency Services (SPES). It has an operational area of 3 800 km^2 and services a population of 280 000. There are three satellite offices within the municipality, one is located in Ritchie, the other one in Galeshewe and the third one in Homevale (one of the suburbs in Kimberley). The main office is situated in Kimberley and it has been in the same location for the past 60 years (Josias et al. 2017:33-37). The organisational structure of the SPES is constructed as follows: a chief fire officer who is also a senior manager, three managers that support the chief fire officer and three station commanders. Furthermore, one staff member is responsible for operations and training and another one for public safety and disaster management. The SPES employs 60 firefighters at the three fire stations and they work on a two-shift system (Josias et al. 2017:33-37).

It is reported that the most common incidents that firefighters respond to are structural, wildfires, vehicle extrication, confined space rescues, hazardous chemical spills and high-angle. The firefighters do not work in isolation; in such incidents they work in collaboration

with the South African Police Service and paramedics officials employed in the SPM (Josias et al. 2017:33-37).

1.2.2 Background of the study area

The world has seen an increase in the number of traumatic events such as criminal acts, acts of terrorism and natural disasters. These traumatic events occur more and more frequently. Therefore, it is important that the psychological impact of these experiences should be understood and intervention measures and support systems be established to ensure that help is provided to those who may suffer from mental illness or even PTSD (Guha-Sapir et al. 2013). The employment companies should prioritise the mental health of the employees who work more frequently in these traumatic events, namely the OFRs such as police officers and firefighters. It is the responsibility of the employer to act swiftly and appropriately in order to protect the mental health of the OFRs, whether trauma exposure occurs unexpectedly or is predictable (Brooks et al. 2019:1).

According to Brooks et al. (2019:1) that employees that are exposed to trauma at work are more likely to experience psychological symptoms which may negatively affect their health, relationship with their significant other and even their work productivity after the traumatic incident. In other work employment companies where trauma exposure is a predictable risk, employers are more likely to have different types of trauma-focused psychological support systems in place. However, other employment companies may not have these trauma-focused psychological support systems in place. In the aftermath of a traumatic event, supervisors or even managers within the departments that do not routinely deal with trauma may find it difficult to provide support themselves to employees and ensure business continuity without any clear plan as how to go about doing so (Brooks et al. 2019:1).

Brooks et al. (2016:1) further shows that OFRs face mental and health problems due to traumatic events, as they work in life-threatening environments and rescuing communities or people in need of help during disaster situations. They witness the hurt, pain, loss, injuries and death that the victims of disasters experiences. Firefighters are relatively more exposed to these traumatic events. The exposure to these traumatic events leads to burnout, vicarious trauma and compassion fatigue which is translated to PTSD (Brooks et al. 2016:1). In another study conducted by Stanley et al. (2016:15), it was discovered that OFRs have thoughts of suicide and behavioural problems.

According to Harris et al. (2018) OFRs have knowledge of their work and they are skilled individuals, agencies and organisations. OFR constantly make informed decisions that assist them to organise and help communities that are affected, not affected and those who

are less affected by the disasters. They ensure that they provide aid and needed resources to the affected communities. In the process of providing help and services to victims of disasters, the OFRs are exposed to injuries, death, loss, pain or grief. This directly affects their daily functioning and coping skills (Botha et al. 2015).

It is reported that police officials are likely to experience mental health illnesses which are caused by the nature of their job that is dangerous and this places their lives at risk. Police officers are therefore likely to experience dangerous environments, distressing activities and crucial cases (Abbot et al. 2015). In a study conducted by Fleischmann et al. (2018) it is indicated that approximately a third of police officials that were surveyed reported to have experienced incidents that are distressing. Only half of these officials had informed their immediate authorities at their employment companies. In addition, a few of these officials stated that they were being informed individually of a specific person or a high ranked law enforcement official who improved after going through a distressful occasion, and a small portion of officials mentioned to have known a colleague within their organisation who had decided to commit suicide (Fleischmann et al. 2018).

Harvey et al. (2016) discovered that police officers consumed alcohol at a high rate and in a dangerous manner and their manner of consuming alcohol was linked to exposure to Hurricane Katrina that happened in the south-eastern United States. Furthermore, Brooks et al. (2016) were of the opinion that due to the lack of rest, failure to take vocational leave and working long hours in circumstances that were emotionally straining, contributed to work dissatisfaction, psychological distress, health complaints and fatigue. Providing services to severe accidents or dealing with corpses led to a higher possibility of occurrences of substance abuse, anxiety, pressure and fatigue symptoms, depression and PTSD (Brooks et al. 2016).

Similar to police officers, the work environment of firefighters also continuously exposes them to excruciating inflammatory encounters and irregular sleeping patterns that can result in firefighters being at high risk of mental illnesses (Stanley et al. 2017). In addition to the risk, firefighters come across many obstacles when they have to seek for help, along with feeling ashamed to be ridiculed and not taken seriously. For example, Stanley et al. (2017) stated that volunteer firefighters have more structural limitations to use mental health services (consisting of value, inadequate transportation, not access to enough leave days and adequate resources) than permanent firefighters and the overall populace.

The study done by Haddock et al. (2017) showed that 22.2% of female professional firefighters were prone to depression, while 38.5% of female volunteers were susceptible to depression. According to this study, this may cause perceptions in the society that women

are not fit to be employed in jobs that are dominated by men. As a result, female professionals may experience discrimination in their occupation compared to their male colleagues.

There is often conflicting and limited evidence on how to best support trauma-exposed employees such as firefighters. However, there is one intervention that has been mostly used, which is called Critical Incident Stress Debriefing (CISD). This is a psychological debriefing that is used to communicate with affected OFRs, either individually or as a group. The CISD is used to discuss the traumatic event and the feelings that the OFRs have towards it. Nevertheless, it is said that there is little evidence whether this debriefing intervention is helpful and other researches indicated that the CISD can be ineffective and even harmful (Brooks et al. 2019:1). Furthermore, there is no consistent evidence that shows that any formal interventions conducted within the first month of a traumatic event are effective in preventing the onset of PTSD (Brooks et al. 2019:1).

1.3 RESEARCH PROBLEM

Firefighting as a profession is physically and psychologically demanding due to the various calls they respond to, such as motor accidents, wildfires and structural fires. Therefore, while rendering these services to the affected people, firefighters are exposed to horrific or traumatic events that can affect their mental health. The trauma experienced by firefighters may cause major harm in their daily functioning if they do not receive early intervention services. In South Africa, it seems that the mental health of professionals such as firefighters is not prioritised by their employment companies.

There is limited literature available on the mental health of firefighters and the type of intervention services offered to them within their employment companies This study planned to help identify gaps within the fire and rescue departments, specifically in the SPM in relation to mental health services provided to firefighters. The researcher planned get an opportunity to determine whether firefighters in the SPES receive debriefing or any other intervention services after working in traumatic events.

Many studies have been conducted in South Africa on the general mental health of communities affected by traumatic events. However, there is limited research on the mental health of firefighters as OFRs working in traumatic events. The researcher discovered that there is no information or literature of the use of debriefing within the fire and rescue departments in South Africa. Based on the study conducted by Edwards (2005:127), it shows that the prevalence of PTSD in South Africa continues to be a concern. It was highlighted by Zungu (2013:22) that the incidence and lifetime prevalence of PTSD among

the South African population is 1% to 9%. It is essential that the mental health of firefighters should be taken care of because their work requires them to be emotionally and physically strong in order to render quality services to the communities affected by disasters.

In a conversation in 2020 with Mr Clifford Jones, manager of the disaster management unit in the Frances Baard District Municipality, he described his experience as a firefighter. Mr Jones was employed as a firefighter in SPES for a period of 20 years. According to Mr Jones, in the 20 years that he worked as a firefighter, he could not remember receiving any counselling or debriefing after working in traumatic events. Mr Jones explained that he remembers a specific case that he worked on that was traumatic. The first case was when he started as a firefighter where there were an accident between a motor vehicle and two trucks that had occurred on the N12 road. He said the accident was horrific and traumatic as they had to pick up the body pieces of people who died in the accident. Mr Jones explained that no form of support in terms of counselling was provided to the firefighters that worked on that event. He said he could not eat for three days as he kept seeing the human remains that he picked up at the accident.

Mr Jones further explained that there was no counsellor appointed to provide trauma intervention services to firefighters. They had to work in these traumatic events and were expected to remain strong and continue with their lives. He highlighted that the SPES currently does not have a crisis worker or counsellor employed to work with firefighters that need trauma management intervention or trauma counselling.

1.4 RESEARCH QUESTIONS

1. What are the debriefing measures that are available to assist firefighters to deal with the effects of traumatic incidents?
2. Are firefighters aware of the available debriefing measures provided at their employment department in the Sol Plaatje Emergency Service?
3. If the Sol Plaatje Municipality firefighters are aware of the available debriefing measures, do they make use of these services? If not, why not?
4. Are the debriefing measures that Sol Plaatje Municipality firefighters access sufficient to reduce the effects of work-related trauma?
5. What is the role of the employer as a support system for firefighters employed in the Sol Plaatje Emergency Service?

1.5 RESEARCH OBJECTIVES

1. To determine the existence and availability of debriefing measures aimed at reducing the effects of trauma on firefighters employed at the Sol Plaatje Emergency Service.
2. To determine whether the firefighters are accessing debriefing intervention services within their employed departments in the Sol Plaatje Municipality.
3. To determine the effectiveness of the available debriefing measures for firefighters in the Sol Plaatje Municipality.
4. To determine the level of employer support in ensuring that each of the firefighters receive debriefing after working in a traumatic event.

1.6 SIGNIFICANCE OF THE STUDY

OFRs face mental and health problems due to traumatic events that they experience while rescuing communities or people in need of help during disaster situations. Therefore, it is important that these professionals should receive constant and effective debriefing measures. OFRs, such as firefighters, are constantly exposed to traumatic events as part of their daily jobs (Brooks et al. 2018:1). The occupation of firefighters exposes them to constant experiences that are painful and provocative, including inconsistent sleep schedules. These experiences can pose a significant risk to firefighters' mental health (Boffa et al. 2017).

This study first addresses the lack of research on firefighters' mental services in the SPES. Second, to explore and provide knowledge on the available debriefing measures used by other fire and rescue service departments in the world. Third, to further determine how these measures can assist firefighters to deal with trauma, stress and other mental health issues. The study also sought to highlight the importance and effectiveness of debriefing measures needed to mitigate psychological impacts caused by traumatic situations experienced by firefighters as OFRs. Furthermore, to provide knowledge on the importance of employer support and full participation in ensuring that firefighters receive the necessary intervention before and after working in a traumatic situation.

In a study conducted by Wagner et al. (2010), high rates of PTSD were reported and a standardised measure of PTSD, which is called the Impact of Events Scale, was administered. The study was conducted on 94 paid professional firefighters and the same assessment was given to 91 professionals that were not employed within the emergency service. The results showed that scores of firefighters were twice as high as compared to other professionals on the measure of PTSD. Furthermore, depression has been reported

among police officials after a study conducted on law enforcement officials following the 9/11 attacks on the World Trade Centre in New York. The study established a 24.7% occurrence of depression and a 47.7% occurrence of both anxiety and depression in police officials (Bowler et al. 2016).

1.7 RESEARCH METHODOLOGY

A qualitative research approach was used in this study and the research design, which is exploratory research, assisted the researcher in unpacking knowledge, gaining insight and clarity on the research problem. Purposive sampling was used to recruit samples and the population of the study was firefighters employed at SPM within the SPES. Fifteen firefighters were selected and participated in the study. Semi-structured interviews were conducted which allowed the researcher to have a one-on-one interaction with the participants.

For the purpose of answering the main questions of the study, the researcher had to analyse the data. The data had to be broken down, themes had to be identified and prepared into categories. It was important for the researcher to identify the links and patterns with and inside categories. The researcher then interpreted the findings of the study by these styles and connection and then ensured that the information was summarised in accordance with the given themes (Rithie et al. 2013). A detailed description of the methodology is provided in Chapter 4.

1.8 LIMITATIONS AND DELIMITATIONS OF THE STUDY

1.8.1 Limitations

According to De Vos et al. (2011), researchers often experience potential limitations even if the study is well planned. Therefore, it is important that the researcher should mention limitations that were experienced during the study. The study had limitations as the researcher had to conduct interviews based on the work schedule of firefighters. During the interviews, the researcher was interrupted as some of the firefighters had to respond to an emergency call and had to participate in the interviews at a later stage. Firefighters who are designated to other fire service points such as Ritchie took longer to arrive at the venue, which delayed the interviewing process. More limitations are mentioned in Chapter 4.

1.8.2 Delimitations

The interview questions asked were based on the interview guide that was compiled by the researcher. The focus was only on these questions and the researcher allowed participants to give answers based on how they understood the question. The researcher constantly assured participants that the purpose of the research was entirely for academic purposes and their participation would remain anonymous. The 15 participants willingly participated in the interviews.

1.9 ETHICAL CONSIDERATIONS

The researcher applied for ethical clearance at the University of the Free State Ethics Committee before data collection, in order to continue with the research with firefighters employed in the SPM within the SPES. Permission was also requested from the mayor of the SPM as the municipality is the employer of the firefighters. The researcher allowed firefighters to willingly and voluntarily participate in the study through completion of consent forms. This allowed each participant not to feel forced or manipulated to participate. The purpose of the study was outlined to all participants. Protecting the privacy of participants was guaranteed as the researcher would not reveal the identity of the participants. The researcher ensured that the research was conducted with all honesty and respect towards the participants. Were other authors' work was used, the researcher ensured that the work is acknowledged.

1.10 CHAPTER OUTLINE

This research study was arranged into six chapters that are interlinked. Chapter 1 focuses on providing the background of the study, were the description focuses on the purpose of the study, the research problem, research questions and objectives, significance of the study, research methodology, limitations, delimitations and ethical considerations. Chapter 2 outlines the theoretical and legislation framework that guided the study. Chapter 3 explores and provide the literature that is relevant to the study. Chapter 4 outlines the methodology adopted to collect and analyse data. Chapter 5 focuses on presenting, interpreting and discussing the results of the collected data. Chapter 6 provides the conclusion and recommendations of participants and that of the researcher.

Chapter 2
THEORETICAL AND LEGISLATIVE FRAMEWORK

2.1 INTRODUCTION

This chapter focuses on the theoretical and legislative framework that relates to the work of firefighters as OFRs. The Wits Trauma Model (WTM) will be used as the main theory applicable in this study. The WTM is relevant for firefighters as they experience trauma due to traumatic events they encounter in the line of duty. According to Grant and Osanloo (2014), a theoretical framework is described as theories or a theory that prevail in the literature that has already been proven and authenticated by other researchers. It is an accepted theory in the academic literature and gives direction and focus to the study. Therefore, this chapter introduces and describes the theoretical framework that justified the research problem investigated in this study.

The chapter first focuses on the five components of the WTM, the significance of the model as well as it's the strengths and limitations. Furthermore, the identified legislative frameworks that guide the work of firefighters internationally as well as in South Africa are outlined in this chapter to explain the linkage to the study.

2.2 WITS TRAUMA MODEL

2.2.1 Description

The model was developed at the psychology department of the University of the Witwatersrand (WITS) in South Africa by Eagle, Friedman and Shumkler (as cited in Bean 2008:22). Eagle (1998) highlighted that the WTM was mainly designed to treat more straightforward PTSD and acute stress disorders. The model has five components of intervention, which are telling/retelling of a traumatic story, normalising of traumatic symptoms, the ability to address survivor guilt or self-blame, promoting mastery, and facilitating the creation of meaning. Bean (2008:22) further explained that the WTM was created from a combination of clinical experience and theoretically informed approaches used to treat traumatic stress conditions in South Africa.

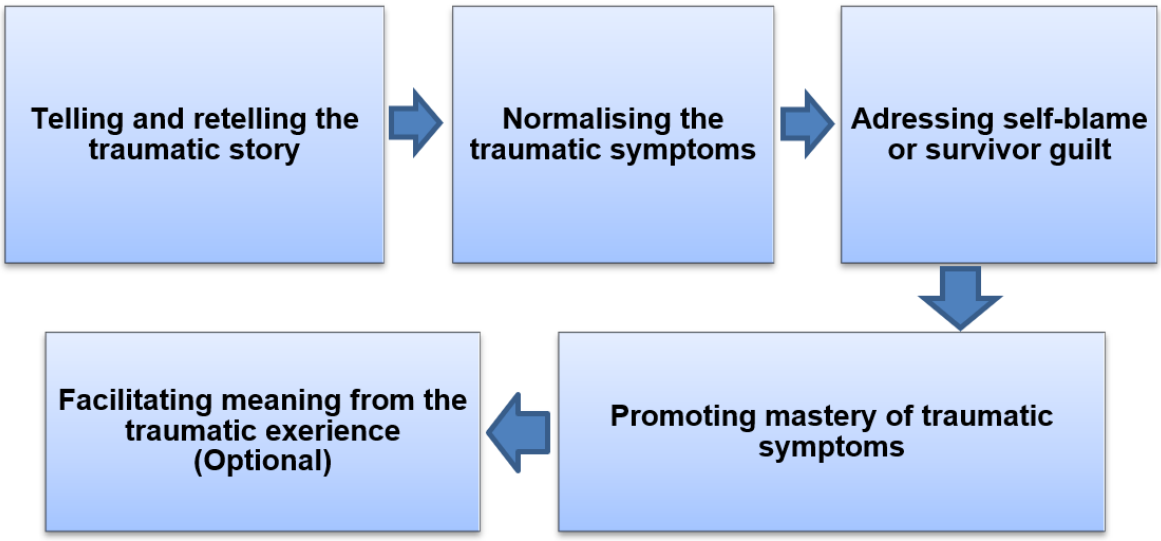

Figure 2.1 Wits trauma model (Adapted from Maabela 2015:66)

In South Africa, in the 1980s and 1990s clinical psychologists had to be called to address a number of clients that suffered from different forms of traumatic stress. These traumatic stress ranged from state repression to increasing behaviour of criminal violence and torture (Eagle 1998:1). Therefore, the birth of the WTM was influenced by the increasing numbers of mental health illnesses caused by traumatic events that happened in South Africa. It is reported that there has been an increase in violent crimes, domestic and sexual violence in South Africa since the early 1990s; the increase in these crimes made victims vulnerable to developing PTSD and affected the mental health status of South Africans (Maabela 2015:66).

In this study, the WTM provides a basis since it is integrative by nature, it also acknowledges that trauma can have an impact on the individual's internal (cognitive) and external (behaviour) psychological functioning (Hajiyiannis & Robertson 1999:4). In order to address the impact of trauma on people, there should be a treatment approach that addresses the internal psychodynamic processes and an intervention that is problem-orientated and structured to address the external impact of trauma (Maabela 2015:61).

According to Hajiyiannis and Robertson (1999:4), the aim of a cognitive behavioural approach is to facilitate the development of coping skills and give support to the individual in order to identify and correct cognitive falsifications and ascriptions that the person has from the traumatic experience. Moreover, integrative approaches assist in the assimilation of trauma and further prevent the use of repression as a defence mechanism. The purpose of integrative approaches is to combine the core components of interventions that have been identified from different models of health care. These components include methods that originate within the cognitive behavioural and psychodynamic approaches (Hajiyiannis

& Robertson 1999:4). Furthermore, the model directs the intervention to a specific dimension of traumatic stress. This is done when a strong focus is placed on either the psychodynamic, anxiety management elements, cognitive features or exposure elements. Hence, the cognitive behavioural and psychodynamic processes interact to influence the development, prevention and maintenance of mental health illnesses such as PTSD (Hajiyiannis & Robertson 1999:4).

Sibisi (1999:12) was of the opinion that in order to effectively address the client's distress, the WTM is an important model as it promotes the recognition of both cognitive and behavioural impact of trauma in facilitating the trauma management process. In this regard, the WTM provides an effective trauma management resource that is necessary to address subjective elements of trauma and PTSD (Sibisi 1999:12). Therefore, an effective trauma management programme is necessary, more specifically in the context of fire and rescue departments. In these departments, firefighters are constantly exposed to and experience trauma in their line of duty. Therefore, a comprehensive approach is needed to effectively manage the impact of trauma.

The WTM is a relevant model to guide therapists when rendering intervention services to firefighters who work in traumatic events. The work of firefighters can be emotional and physically demanding, dangerous and more often personally heartbreaking and draining. The devastating circumstances of their work environment put them at a higher risk of facing a number of mental health and other health problems such as PTSD, depression, suicide and substance abuse (Andersen et al. 2015:23).

2.2.2 Five components of the Wits Trauma Model

The WTM consist of five components which can be used interchangeably depending on the specific needs that the client has, the circumstances the client faces and also on the natural flow of the debriefing sessions or trauma counselling (Eagle 1998:138), namely:

- Telling/retelling of a traumatic story.
- Normalising of traumatic symptoms.
- Ability to address survivor guilt or self-blame.
- Promoting mastery.
- Facilitating the creation of meaning.

These components can be used to promote recovery from managing trauma. The components can be best understood as representing an integration of psychodynamic and

cognitive behavioural approaches of intervention (Eagle 1998:138). In this discussion, the client is the firefighter.

2.2.2.1 Telling and retelling of a traumatic story

This component provides the basis of the therapeutic session. It forms a foundation for rapport building. In this component the client is given the opportunity to give a detailed description of the traumatic event, which is done in sequence, where facts, thoughts, cognitions and sensations are reflected. The client are given the opportunity to tell the story in their own way and present their experiences to the counsellor in a comfortable manner. Furthermore, the main focus of this stage is where the aspects of a traumatic event are imagined (Eagle 1998:139). During life-threatening situations, people tend to suppress or hold back any feelings that are caused by a traumatic event. Therefore, this stage allows clients to get the confidence to express their feelings and fantasies without feeling ashamed or embarrassed. The ability of the counsellor to create an environment that is safe for the client to express their feeling allows the therapeutic sessions to flow. It is important that as the client tells their story, the counsellor should take the client back to the traumatic event by asking: “What was your worst moment?” This useful question will allow the counsellor and the client to explore more and even obtain more information on the most difficult part of the experience (Eagle 1998:139).

This stage provides many benefits for the clients as they get a chance to share their feelings and fantasies, which prevents their displacement and repression into other symptoms. In the process of telling the story, the client has the ability to impose a time sequence on the traumatic event and this allows sensory and episodic memories to be transformed to the realm of processed symbolism and thought (Eagle 1998:139).

As it will be the responsibility of the therapist to psychologically accompany the client through the traumatic event, this will allow the therapist to show the ability to tolerate aspects of the trauma that are overwhelming or horrific. This will help in terms of serving as a model to clients when their memories are evoked in the future. When the client tells the story in detail, it encourages them to confront, rather than to avoid aversive stimuli, and the anticipated anxiety which is associated with stimuli is also reduced (Eagle 1998:139). Furthermore, Bean (2008:13) highlighted that the main goal of this psychodynamic approach is also to facilitate integration of the trauma and to prevent using repression as a defence mechanism.

This is a stage where the client’s anxiety and sense of confusion, which are often presented after trauma, can be reduced. It is important that the counsellor’s presence should be felt

by the client. The ability of the counsellor to listen attentively to the client, enter the living world of the client, show empathy and even ask appropriate and relevant questions is crucial during this stage (Eagle 1998:140). For cognitive structures to be created around the traumatic event, the story should be told in detail. This will lead to the process of fully understanding and even accommodating of the traumatic event into the present cognitive framework being facilitated (Eagle 1998:140).

Encouraging clients and making them aware of the benefits of talking about traumatic experiences offers a useful opportunity to ventilate (Tehrani 2011:17). It also helps the client to recognise that talking about the traumatic event is a supportive occupational health intervention tool, as it will help the client to manage historical trauma memories. In order to modify irrational and childlike thinking, which is experienced by trauma survivors, the traumatic thoughts, experiences and effects should be brought to the surface. This will activate logical communication of thought material and further facilitate the internalisation of such irrational constructs (Eagle 1998:139).

2.2.2.2 Normalise the traumatic symptoms

In this component, the main focus is to ensure that the information about the traumatic symptoms experienced by the client is obtained by the trauma counsellor. The trauma counsellor directs the session in such a way that the symptoms of the client are discussed in detail and the client is understood. The client (firefighter) will be informed by the counsellor about other possible symptoms that they should expect. The purpose of informing the clients (firefighters) about these symptoms are to prepare them and to reduce fear. Education is the main aspect in this component as the client is made aware of other symptoms that they should expect. It is crucial that clients should be educated on PTSD symptoms in this component (Eagle 1998:140).

In this component, firefighters will be educated on how to effectively handle and manage trauma, as their occupation constantly exposes them to traumatic events. When a client is educated about their symptoms, it gives them the opportunity to make sense of what is happening in their body and how to deal with it. The education brings about a sense of normalcy as they are informed and become mentally prepared even before the exposure to a traumatic situation. Therefore, in the event of being exposed to a traumatic event, firefighters will know which trauma symptoms are likely to occur after and how to deal with these symptoms.

This component allows the firefighter to make a link between the traumatic event and the symptoms that are experienced. The firefighter is reassured by the trauma counsellor that

the symptoms and responses are normal, based on the intensity of the trauma caused by these abnormal situations. The counsellor continues to highlight to the firefighter that after receiving trauma counselling, the expectancy of the reaction will diminish over time. It should be noted that this component of normalising the situation is based on the psychoeducational intervention and it is under the same sphere of cognitive behavioural intervention (Eagle 1998:140).

2.2.2.3 Ability to address survivor guilt or self-blame

Trauma survivors always present with feelings of self-blame and guilty feelings (Eagle 1998:141). They blame themselves for what happened and hope they could have done something to stop the traumatic situation from occurring. Self-blame has a big effect of how the trauma survivor view themselves, it is easy to lose confidence about the future and this can affect their general functioning. It is highlighted that the psychological impact of self-blame is more likely to damage the self-esteem, therefore it is important that such feelings should be managed effectively (Eagle 1998:141). Interventions or techniques that are used to address feelings of self-blame by trauma survivors differ. During the intervention process the goal of the trauma counsellor is to help the firefighter to regain self-respect. The trauma counsellor uses guided imagery enactment of traumatic scenarios that a client prefers. These images will assist the client to process their experienced guilt feelings and self-blame (Eagle 1998:141).

At this stage, the goal of the counsellor is to move the client from self-blame to a point where the client realise that they played a significant role during a traumatic event; for example, a firefighter has done well to rescue a child that almost died in a blazing fire. During this phase, because of the education that the counsellor provided, the client discovers that their guilt is irrational and did best under the circumstances. A firefighter will discover their worth and value during a traumatic event, and the role that they played helped to save a life (Eagle 1998:141).

Therefore, when the trauma counsellor addresses self-blame and survivor guilt it serves various functions. It first applauds the client for their best response under unfavourable circumstances. Second, it assists in restoring self-esteem through affirming effective behaviours, thoughts or even strategies that were helpful and effective during a traumatic situation. Third, it strengthens the fact that the actions that the client took helped them to survive the circumstances. Fourth, it addresses the concerns the client might still have in relation to their actions that might harm others. Last, irrational beliefs that have developed are explored (Eagle 1998:141).

2.2.2.4 Promoting mastery

In this phase or component, the counsellor helps the client to continue to function and carry out their tasks of daily living and restore their levels of coping. Support systems, be it family members, friends or the community, are important for a trauma survivor to cope (Macauley 2011:1; Pfeifer 2011:18). It is therefore important that the counsellor should encourage the client to build and maintain meaningful relationships with significant others. The support systems build around the client has a fundamental role to play as it ensures that the client complies and adheres to treatment, attends therapy sessions, and that any symptoms presented are attended to. Furthermore, through the help of a family member, the client can be reminded and accompanied to their therapy session or doctors' visits, it can be ensured that the client eats nutritious food that are beneficial for his health and engages the client to fun activities such as family gatherings and social activities (Eagle 1998:142).

The support from family and friends is essential in encouraging the client to complete the tasks assigned by the counsellor and it makes the client realise the importance of sharing their thoughts, fears or emotions about a traumatic event. Trauma survivors normally experience feelings of helplessness and hopelessness; therefore, it is crucial that they get constant support from family and friends (Eagle 1998:142). Firefighters can be given an opportunity to talk to their families and friends about their work experiences and to also entrust any fears and stressful situations to them. The more family members and friends know about the trauma that the firefighter experienced, the more support is rendered.

In this phase, the counsellor educates and creates awareness on the impact of using negative coping mechanisms (Eagle 1998:142). The client is discouraged and educated on ineffective coping mechanisms such as avoidance, splitting (which is a pattern of intense and unstable interpersonal relationships that are considered alternating between extreme devaluation and idealisation), meditating on trauma, making use of substance abuse to numb the pain and acting out (Haddock et al. 2017:635). In replacing negative coping mechanisms, the client is encouraged to use positive coping mechanism such as relaxation techniques, exercising and engaging in positive relationships.

Eagle (1998:142) illustrated that in order to deal with feelings that are experienced after trauma, such as self-blame, guilt feelings and social withdrawal, then behavioural rehearsals can be useful. The trauma counsellor can use progressive relaxation techniques to enhance both the physical and mental strength, concentration, including avoidance problems. After a person has been exposed to trauma it is crucial that they should regenerate physical and mental energy (Eagle 1998:142).

2.2.2.5 Facilitating creation of meaning

This is the last and final stage of the WTM and it is not mandatory for counsellors to use this stage. The trauma counsellor can pursue this stage if the client has an interest in having a deeper meaning to the traumatic experiences (Eagle 1998:143). In order to help the client to find meaning out of a traumatic event it is required that the trauma counsellor engage the client on their belief systems, moreover on their political, existential or even spiritual level. This will help the trauma counsellor to understand the reasons behind the client's interest in finding meaning to their traumatic experiences. The counsellor can encourage the client to even seek meaning from using the existing belief systems, such as pastors or priests or any other healers. It is therefore crucial that the trauma counsellor be able to respect the client's experiences and beliefs and use this to guide and assist the client in deriving some form of meaning from the traumatic event. This should be done in a way that produces some future perspective and hope (Eagle 1998:143).

Since firefighters come from different cultural or spiritual backgrounds, the trauma counsellor should to be aware and alert of that. This will help in terms of understanding the reasons behind the client's desire to derive meaning from a traumatic event. For trauma counsellors to understand this component of the WTM, it is important to look within the frameworks developed by Klein (1960), which are the Kleinian theory and self-psychology (as cited in Eagle 1998:43). In the process of creating meaning from traumatic experiences using the Kleinian frameworks that signify the individual's transition from a more damaged paranoid-schizoid position into a depressive position that are healthier, shows the ability of the person to integrate good and bad in relations with others in the world. This paranoid-schizoid position includes a group of defences, anxieties, internal and external object relations characteristic of the earliest months of an infant's life continuing to a greater extent into childhood and adulthood (Eagle 1998:143).

This component aims to assist the client in moving from a place of defeat to a place of victory. The client is taken through a process where they have a sense of victory and wholeness, embracing who they are as survivors not victims, being there during the attack or traumatic event and survived. It is in this stage that the trauma counsellor observes that the client shows appreciation of the present life over a future (Eagle 1998:143).

2.2.3 Significance of the Wits Trauma Model

The occupation of firefighters exposes them to constant experiences that are painful and provocative, including inconsistent sleep schedules; these experiences can pose a significant risk to firefighters' mental health (Boffa et al. 2017). High rates of PTSD have

been reported in numerous studies. In a study conducted by Wagner et al. (2010), a standardised measure of PTSD, which is called the Impact of Events Scale, was administered. The study was conducted on 94 paid professional firefighters and the same assessment was given to 91 professionals that were not employed within the emergency service (Wagner et al. 2010). The results showed that scores of firefighters were twice as high as compared to other professionals on the measure of PTSD.

The researcher chose the WTM because its components will help in facilitating the formulation of intervention guidelines for the purpose of managing trauma within SPES. The WTM is comprehensive and has a clear structure in addressing the concerns and unique needs of trauma survivors. The comprehensiveness of the WTM allows it to be used by apprentice counsellors and mental health practitioners that are qualified in their field. Through application of the model, the individual trauma counsellors will be able to incorporate different counselling and therapeutic styles, irrespective of their different education, training, and orientations (Hajiyiannis & Robertson 1999:8).

It should be noted that each firefighter within the fire and rescue departments has a different or unique way to respond to traumatic experiences. The WTM model caters for the uniqueness of each individual and it can be used by all trained mental and health professionals and trauma counsellors within and outside the fire and rescue departments. The use of the WTM can positively contribute to the effective management of PTSD, depression and other trauma-related disorders within SPES. According to Maabela (2015:61), the WTM is an effective model for both men and women who come from different cultural backgrounds and age groups. In this regard, the WTM is envisioned to benefit firefighters within the SPM as they come from different backgrounds and different demographics.

Bean (2008:13) explained that the WTM uses the psychodynamic approach for the purpose of locating the impact of trauma within the person's environment and historical context. Firefighters are constantly exposed to traumatic events on a daily basis, fires or car accidents happen at any time, therefore firefighters employed in the SPES will be exposed to this work environment until they decide to quit or go on retirement. On that basis, the WTM will be helpful in assisting firefighters to deal with and even manage similar historical and previous trauma experiences. According to Hajiyiannis and Roberts (1998:9), clients can benefit from the WTM, irrespective of the strength or weaknesses they possess. They do not necessarily have to be psychologically minded or even sophisticated individuals.

It is important that the fire and rescue department should generate effective coping mechanisms for firefighters because their occupation is physically and psychologically

demanding. Preparedness measures should be put in place by their employment agencies to ensure that their mental health is prioritised. In a study conducted by Brooks et al. (2016), it is highlighted that proper preparedness and assessment should be done for new employees before they assume their role as firefighters. This will help ensure that the mental health status and personalities of firefighters are optimal or sufficient to cope with work-related stress. The fire and rescue departments should be prepared for the possible psychological impact of the job, as well as to provide debriefings and mental health training (Brooks et al. 2016).

Sibisi (1999:72) illustrated that when a client has the ability to develop new beliefs, direction in life and meaning this leads to a positive outlook, such as restored feelings of competence and enhanced self-management. Therefore, the use of the WTM allows a client to create a cognitive structure that is consistent around traumatic events. These are coping mechanisms that are important to help firefighters function optimally in their daily work (Sibisi 1999:72). Maabela (2015:61) stated that the management of trauma symptoms provides an opportunity to restore the morale of employees, and this allow them to function fully within their workspaces.

In choosing the WTM, the researcher realised the huge contribution this model has on trauma management. The model makes a significant recognition on the fact that trauma can have a real impact on the individuals' mind and even on their behaviour. Mitchell (2011) reported that firefighters who do not receive acknowledgement from their employers as rescue workers or disaster relief workers caused mental health problems. In a study conducted by Brooks et al. (2016), it was recognised that trauma has a major impact on the daily work of OFRs suchas firefighters. They develop neurotic personalities, or they even avoid traumatic thoughts, and this type of behaviour is associated with greater PTSD and psychological distress.

Employer support is important towards the workers' perceptions of their work environment; therefore, it is important that firefighters should have the ability to recognize the support rendered by their employment agencies. Through adoption and implementation of the WTM, it is possible to see feelings of appreciation shown by firefighters and further enabling the process of traumatic experiences in a safe and supportive environment (Maabela 2015:62).

2.2.4 The strengths of the Wits trauma model

Based on the study conducted by Hajiyiannis and Robertson (1999:5), which focused on examining the experiences of counsellors that used the model, it shows that there were some strengths identified from the WTM. It was generally observed that all therapists or

counsellors that were interviewed had positive experiences on the use of the model in dealing with complicated cases of trauma and further with those clients that were temporarily disorganised due to their traumatic experiences. One specific counsellor indicated that the success of the model is in the fact that they saw it working and the counsellor felt equipped and confident to go into the therapeutic session armed with this model. In using the model, most counsellors testified that they saw a decrease in PTSD symptoms and clients' coping skills improved while they were treated using the WTM.

The WTM is flexible and appropriate to be used on all types of trauma. The model can be used with clients across cultures, with different socio-economic backgrounds and with all genders and age groups. The model does not require a client to be sophisticated nor psychologically minded to benefit from it. Every client responds differently to the model, based on their unique needs. For example, a client who comes from a cultural background that encourages man not to talk about their problems, the model encourages the client to tell their story in a unique way, which is the important part of counselling (Hajiyiannis & Robertson 1999:5-6). The model has been used on South Africans that suffered from PTSD; therefore, it can be used to treat firefighters as trauma survivors.

2.2.5 Limitations of the Wits trauma model to the study

The researcher identified that the model had not been used for professionals such as firefighters as there was no study that indicates the use of the model on these professions in South Africa. Based on the study conducted by Hajiyiannis and Robertson (1999:6), the model is not applicable for clients who are highly anxious, those who display regressive features and still reliving events. Clients who have psychiatric conditions, personality disorders and are psychotic will not benefit from this model. The model requires clients who have the ability to verbalise their traumatic experiences and this can be a challenge to those who do not have verbal skills. Counsellors that form part of the study indicated that the model was less effective for black men that were rooted in their traditional belief systems. For example, in a black tradition, it is believed that bad things happen because of witchcraft; therefore, the client might want a deeper meaning to why they have all these traumatic experiences.

It should be noted that the WTM has not been applied to professionals such as firefighters even though they can also be regarded as trauma survivors based on their work. The researcher acknowledges that the model might be new to some of the counsellors employed within the SPM who are working with employees such as firefighters.

2.2.6 Conclusion

The WTM was created out of a combination of clinical experience and theoretically informed approaches used to treat traumatic stress conditions in South Africa. The birth of the WTM was influenced by increasing numbers of mental health illnesses caused by traumatic events that happened in South Africa. Based on the number of traumatic events that firefighters are exposed to, the researcher considered the model as a relevant model to adopt for the study. The WTM provides a basis since it is integrative by nature; it also acknowledges that trauma can have an impact on the individual's internal (cognitive) and external (behavioural) psychological functioning. Firefighters from different cultural, socio-economic backgrounds, of all age groups and genders, will benefit from the model. The model has components that allow the model to flow in a process that the counsellor can use to take the client through a process of recovery. The components are telling and retelling the traumatic story, normalising of traumatic symptoms, the ability to address survivor guilt or self-blame, promoting mastery and facilitating creation of meaning.

2.3 LEGISLATIVE FRAMEWORKS APPLYING TO FIREFIGHTERS

Legislation is an important tool that is used by the government and other institutions to organise society and protect the rights of citizens. It determines the rights and responsibilities of authorities and individuals to whom the legislation applies (De Jager 2000:1). The purpose of legislation in this study was to outline the rights of firefighters as employees. International laws will be highlighted to see how they relate to South African laws in relation to firefighters. A brief explanation of these legislative frameworks will be outlined in this chapter to explain the linkage to the study.

2.3.1 International practices

2.3.1.1 Antares: Managing stress in humanitarian workers – Guidelines for good practice

The Antares Foundation (Ager & Ehrenreich 2012) saw a need to address stress among humanitarian workers on all levels in many organisations and departments around the world through the development of the principles for good practice. This was done through collaboration with centres such as the Centers for Disease Control and Prevention in Atlanta, United States of America (USA) (Ager & Ehrenreich 2012:5). The partnership with different stakeholders such as managers of nongovernmental organisations and mental health specialists helped to develop an integrated approach that will mitigate stress on humanitarian workers. Humanitarian workers include first responders and rescue workers

such as firefighters, police officers and health care workers. There are eight principles that are suggested within the guidelines and they can be applied universally; however, the implementation will be specific to the culture and context of the organisation (Ager & Ehrenreich 2012:5-7).

The main purpose of these principles is to assist organisations to identify and define their own needs that relate to stress management and development of their own staff care system. It is important to note that organisations or companies work differently, therefore the process will be different as well (Ager & Ehrenreich 2012:5-7). For the purpose of the study, the focus will be on the eight principles and a description of each principle is given below:

- **Principle 1: Policy**

It is important that every organisation or department where humanitarian workers such a firefighters are employed should have written and active policies that will help to prevent and mitigate the effects of stress caused by traumatic events to which they are constantly exposed. Through this policy, the department or organisation's understanding of the effect of stress will be reflected and the ability of the organisation to serve and support its workers. Staff support will be integrated within the department's operational framework (Ager & Ehrenreich 2012:15).

- **Principle 2: Screening and assessing**

It is important that the organisation or department should assess the ability and capacity of staff members to respond to and cope with the anticipated effects of traumatic events and positions that they hold. A thorough assessment should be done, which is aims to design appropriate training, assign of assignments that are appropriate, and plan for individual support needs. This should be done before the individual is assigned a specific assignment to do (Ager & Ehrenreich 2012:17).

- **Principle 3: Preparation and training**

Literature indicates that exposure to traumatic events can cause major harm to the psychological well-being of a humanitarian worker if they do not receive necessary counselling after the exposure. Therefore, it is important that all staff members should have proper pre-assignment preparation and training that will help them to manage any trauma or related stress caused by traumatic events. Educational and awareness programmes about trauma should be carried out as it will help in terms of reducing the effects of trauma (Ager & Ehrenreich 2012:19).

❒ Principle 4: Monitoring

The work of humanitarian workers, such as firefighters, results from the everyday pressures of work such as working conditions, long and irregular hours and repeated exposure to danger. Through the development of policies, screening and assessing the staff, the organisation will be in a position to monitor the progress of the staff on how they deal with stressful situations that they work in. The monitoring will allow the employer to provide an environment that is more caring and enabling for humanitarian staff (Ager & Ehrenreich 2012:22-23).

❒ Principle 5: Ongoing support

The safety and security of humanitarian staff should be a priority of their employers, it is also the responsibility of the employee to ensure that their environment is safe. The support received from the employer and even from staff members creates a comfortable environment that helps in emotional distress reduction (Ager & Ehrenreich 2012:24-25).

❒ Principle 6: Crisis support and management

The exposure to traumatic events can commonly cause lasting distress to people who experiences them. Some of the typical responses identified are depressions, PTSD, anxiety and self-destructive behaviour. The organisation should have a well-implemented response plan and make provision for the individual's psychological support. Organisation's management should be well informed about the traumatic event experienced by the staff members and be able to provide a prompt response for support. Support rendered to the staff member should be specific to their needs and even be culturally relevant in the wake of a traumatic event (Ager & Ehrenreich 2012:27-29).

❒ Principle 7: End of assignment support

In the event a humanitarian staff such as a firefighter has reached an end of his/her assignment, it is important that a practical, emotional, and cultural support should be provided (Ager & Ehrenreich 2012:30-32).

❒ Principle 8: Post-assignment support

During this stage, the organisation or department has clear policies that guide the employer and even employees on how to support each other during and after experiencing a traumatic event. The policy developed will help the staff to deal with job-related stress or traumas such as depression, burnout, anxiety, severe stress, PTSD or even compassion fatigue. The developed policies will address matters that related to compensation of workers

who are severely affected by constant exposure to traumatic events (Ager & Ehrenreich 2012:33-34).

2.3.1.2 World Health Organization: Mental Health Action Plan 2013–2030

The WHO has provided an action plan that can be used internationally, nationally and on local levels. The goal of the WHO is to ensure that mental health is promoted, valued and protected in every country (WHO 2021:4). The WHO envisions a world where mental health disorders are prevented and individuals suffering from mental health disorders are provided adequate care and services. Persons affected by mental health disorders have the right to have access to mental health services that are of high quality, needs-based and culturally relevant. Through the access of these high levels of mental health services, persons affected can function optimally in the society and work environment, be free from discrimination and stigmatisation (WHO 2021:5).

Effective leadership and governance for mental health should be strengthened in every country. Strategies that aimed at promoting and preventing mental health should be implemented. Information systems, research for mental health and evidence should be strengthened (WHO 2021:5).

2.3.1.3 Sendai Framework for Disaster Risk Reduction 2015–2030

The Sendai Framework was adopted as a successor instrument to the Hyogo Framework for Action 2005–2015. The aim of the Sendai Framework is to build the resilience of nations and communities affected by disasters. Through the Sendai Framework, collaboration and coordination of services by different stakeholders is encouraged for the purpose of disaster risk management and reduction (United Nations International Strategy for Disaster Reduction [UNISDR] 2015:5). There are four priorities within the Sendai Framework, namely understanding disaster risk, strengthening disaster risk governance to manage disaster risk, investing in disaster risk reduction for resilience and enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction (UNISDR 2015:14-21).

These priorities are relevant to this study as firefighters are humanitarian workers and they are exposed and vulnerable to the effects of disasters. The policies related to fire and rescue services should understand the disaster risk related to firefighting. These policies can be used to ensure that the mental health of firefighters is prioritised. Preventative measures that are aimed at reducing the impact of traumatic work should be implemented. The employers of firefighters should be capacitated and strengthened to manage disaster risk

related to firefighting. The fire and rescue departments should train and educate firefighters on mental health illnesses and services available.

2.3.1.4 Sustainable developmental goals

According to Votruba et al. (2016:1), in the year 2000 the eight Millennium Development Goals were established at the United Nations (UN) Millennium Declarations. These goals were successful in reducing the overall health gap between poor and rich countries and there was a significant achievements for communicable diseases such as HIV/Aids or malaria. Irrespective of the achievements reached through the Millennium Development Goals, mental health illnesses were not included (Votruba et al. 2016:1).

The sustainable development goals (SDGs) are 17 international goals aimed at promoting sustainable health for all persons in every level. The SDGs were adopted in September 2015 by the UN General Assembly and they are to run from 2016 until 2030 (Morton et al. 2017:2). SDG 3 is applicable to the study as it focuses on good health and well-being. During the year 2015, the UN made a decision to include mental health in the SDGs. The UN acknowledged that the world is facing a huge burden in terms of diseases that are caused by mental health and this became a priority for the next 15 years (Morton et al. 2017).

Based on SDG 3, the mental health of every person should be prioritised. Humanitarian workers such as firefighters should not be excluded from the persons that need mental health services.

2.3.1.5 Sphere Project: Humanitarian charter and minimum standards in humanitarian response

The main aim and belief of The Sphere Project (known as Sphere) was to ensure that communities or nations that are affected by disasters have the right to life with dignity and that they receive adequate and efficient response and assistance. It should be the goal of every humanitarian agency to ensure that the effects of disasters are mitigated, preparedness measures are implemented, response is enhanced, and rehabilitation is provided (Sphere 2011:4).

In Sphere, there are six core standards and four minimum standards. The core standards explain processes that should be followed in achieving all the minimum standards. Standard 1 focuses on people-centred humanitarian response, Standard 2 coordination and collaboration, Standard 3 assessment, Standard 4 design and response, Standard 5

performance, transparency and learning, and Standard 6 is aid worker performance (Sphere 2011:52).

The core standard that relates to the study is Standard 6, which focuses on the aid workers' performance. This core standard encourages humanitarian agencies to provide appropriate psychosocial support, management, and supervision to humanitarian workers (Sphere 2011:73). The support should be for the physical and emotional well-being of humanitarian workers. It remains the responsibility of the humanitarian agencies to ensure that workers avoid long-term exhaustion, including illnesses. The managers of these agencies should capacitate workers on risks associated with traumatic work. Workers should be protected from exposure to emotional health and physical threats. Measures such as access to psychological support, reducing long working hours and providing sufficient security management should be put in place (Sphere 2011:73).

The minimum standards give guidance to humanitarian agencies on strategies to be used when rendering services to communities affected by disasters. These are minimum standards in water supply, sanitation and hygiene promotion, minimum standards in food security and nutrition, minimum standards in shelter, settlement and non-food items and minimum standards in health action (Sphere 2011:4).

The relevant minimum standard for this study is the minimum standard in health action. Psychosocial and mental health problems occur in all humanitarian environments. Therefore, the necessary mental health care services should be put in place. It is the right of people to have access to mental health services for preventing and reducing psychosocial problems. Humanitarian workers such as firefighters have the right to mental health services, irrespective of their age, race, language and gender. Humanitarian agencies such as fire and rescue departments should make provision for mental health interventions services. Mental health interventions should be developed based on the identified needs of humanitarian workers (Sphere 2011:333).

Mental health of humanitarian workers or OFRs such as firefighters, should be prioritised. The adopted international legislation indicates the need and access for mental health services that are valuable and of a good standard. The listed legislation serves as a good guideline for every department that employs humanitarian workers such as firefighters. They provide a good platform for departments or organisations to develop and implement relevant policies to prevent and mitigate the effects of PTSD, anxiety, substance abuse and depression on employees. Assessment and screening of employees are crucial as the employer is able to understand the impact of traumatic events on employees. Proper preparation and training allows employees to be prepared to manage any trauma caused

by traumatic events. This will lead to a monitoring system that will help in monitoring the progress of employees in dealing with stressful situations. Strong support systems play a major role in employees; therefore, it is the responsibility of the employer to ensure that proper safety and security measures are in place for all employees such as firefighters.

2.3.2 South African laws

South Africa has laws that protect the rights of employees from any form of discrimination. A number of acts are used for employee safety and security. Some these acts do not focus on the mental health of employees but rather on physical safety. Fair labour practices such as mental health services are not prioritised within these identified acts.

The identified legislative frameworks that guide the work of firefighters in South Africa are the Constitution of the Republic of South Africa, 1996; Fire Brigade Service Act 99 of 1987 and its amendments; Disaster Management Act 57 of 2002; South African National Disaster Management Framework of 2005 and its amendments; Occupational Health and Safety Act 85 of 1993; the Basic Conditions of Employment Act 75 of 1997, and the Compensation for Occupational Disease and Injuries Act 130 of 1993.

2.3.2.1 Constitution of the Republic of South Africa, 1996

The Constitution of the Republic of South Africa is a legislative framework that is above all other legislation and policies in South Africa. It consists of values, principles and imperatives, which form the basis of legislation that have a bearing on the provision of safety and security of citizens (Sieberhagen et al. 2009:5). Section 23 of the Constitution stipulates that every person has the right to fair labour practices. Section 9 of the Constitution prohibits that a person should be unfairly discriminated, whether directly or indirectly, based on their gender, race, gender, marital status, pregnancy, ethnic origin, birth, language, sexual orientation, age, religion, disability, belief and conscience (SA 1996).

Section 9 and 23 of the Constitution emphasise that every employee, such as a firefighter, has the right to be treated with respect and dignity (SA 1996). Their rights should be upheld, irrespective of their cultural, mental health or socio-economic status. In the event a firefighter has been diagnosed with a mental illness such as PTSD, depression or substance abuse, the employer or any person at the workplace should treat such a firefighter with respect and not show any prejudice or discrimination. Necessary intervention measures should be put in place to ensure that the employer is provided with the help needed.

2.3.2.2 Fire Brigade Service Act 99 of 1987 and its amendments

The Fire Brigade Service Act 99 of 1987 is an important legislation to fire disasters in South Africa. The purpose of this legislation is to ensure that there are legal and operational requirements of fire fighting in South Africa. The objectives of the Act are for the establishment, employment, co-ordination, standardisation and maintenance of fire brigade services. To protect and prevent fire outbreaks and ensure that lives and properties are protected. To fight and extinguish fire and control incidents that involve hazardous materials or goods (SA 1987:1).

The researcher observed that the Act focuses more on the operational functions than on the physical and psychological training of firefighters. The Act does not priorities preventative measures that can be employed to ensure that firefighters do not have prolonged psychological effects that cause PTSD, depressions, suicide, and substance abuse. It is important that intervention services such as the WTM should be included as part of prevention measures of firefighters who worked in traumatic events.

2.3.2.3 Disaster Management Act 57 of 2002

The Disaster Management Act is the most important act that guides South Africa in terms of management of disasters. The main focus of the act is to prevent and reduce disaster risks such as fires, cyclones, pandemics, floods and droughts. The act also focuses on mitigation of the severity of disasters, by providing preparedness measures for emergencies; furthermore, ensuring that there is effective response and relief provided to communities affected by disasters (SA 2002:1). The Disaster Management Act is relevant to the study as firefighters are responsible to provide emergency services to communities affected by fires of any nature. However, the Act does not mention mental health intervention services to OFRs.

2.3.2.4 South African National Disaster Management Framework of 2005

The purpose of the South African National Disaster Management Framework (SA Department of Provincial and Local Government 2005:109) is to ensure that there are coordinated and integrative services in preventing and reducing of disaster risks within its communities. All stakeholders, including fire and rescue services, should be able to provide services to communities that are affected by disasters immediately after the occurrence of a disaster.

Enabler 2 within the framework focuses on training, education, public awareness, and research, and emphasises that education and training of officials and policymakers within

the national and provincial organs of the state should be constantly conducted. The Disaster Management Framework does not mention the need to train, educate and create public awareness on matters of mental health. It is stated that the national and provincial organs of the state should have substantial budgets to ensure that training of officials for disaster risk management is conducted. All the formal trainings should be accredited and this will guarantee the quality of training interventions and education provided for officials (SA 2005:1). It is alarming because the budgets allocated does not include mental health services of OFRs such as firefighters.

2.3.2.5 Occupational Health and Safety Act 85 of 1993

This piece of legislation applies to all employers in South Africa, including fire and rescue departments. The Act aims at establishing a council that will advise the minister on occupational health and safety. The Act propels every employer to provide a work environment that is reasonably safe and healthy, to ensure that information, training and supervision are provided to employees as it is essential for health and safety. In the event an employee becomes sick, dies, is injured or exposed to a dangerous situation at work, then such an incident should be reported to the inspector (SA 1993). The Act also places a responsibility on every employee to ensure that they adhere to health and safety protocols and rules. If an employee feels the environment is not safe and healthy then such an incident or concern should be reported to the employer or representatives of the health and safety (SA 1993).

This Act applies to firefighters, as well as providing the employer with the guideline on how to protect the health and safety of firefighters. It is important that the employer should provide adequate support to firefighters to ensure that their work environment is safe and secure. The magnitude, frequency and severity of any incident they work with, should be evaluated in order to determine its impact on the psychological well-being of all firefighters. The employer should ensure that there is a trauma counsellor for all firefighters that work in traumatic situations. The counselling should be done immediately after the firefighter has worked in such a traumatic event. In the event where the employer does not have a trauma counsellor or crisis worker who can provide debriefing or counselling to firefighters, then a referral should be done to prevent longer effects of mental illnesses. As already mentioned, the WTM can be used as a model to provide debriefing.

2.3.2.6 Basic Conditions of Employment Act 75 of 1997

According to this Act, it is important that working hours of employees should not exceed a certain maximum, employees should be granted sufficient breaks during the day, provided

with sick leave, vocational leave and in the event an employee works overtime on Sundays and public holidays, then they should be paid a premium for those hours (SA 1997). In South Africa, firefighters usually work 10 to 24 hour shifts per week. Because of large numbers of fire calls, they are sometimes required to work beyond the expected hours (Geach 2019:1).

In a study conducted by Brooks et al. (2016), it was reported that OFRs such as firefighters that stayed longer at the disaster site or traumatic event had higher levels of mental health issues such as depression and PTSD. Furthermore, working long hours in a disaster situation or circumstances that are demanding and unfamiliar and even not taking leave or a day off can lead to mental distress, fatigue, subjective health complaints and job dissatisfaction.

The study conducted by Brooks et al. (2016) showed the importance of sufficient working hours that allow the employees to rest so that they can be fit to perform their duties. The Act further emphasises that the employer should ensure that the employee does not work hours that are unfavourable as it can cause mental health issues, as mentioned by Brooks et al. (2016).

2.3.2.7 Compensation for Occupational Disease and Injuries Act 130 of 1993

This Act regulates that employees or their dependents who suffered death, injuries or illness due to their work responsibilities should be compensated. Furthermore, the Act considers the health and wellness of employees as it ensures that compensation is done for employees whose health was negatively impacted or affected while performing their work (SA 1993). It means that in the event a firefighter dies or is injured or has an illness, then the employer should ensure that compensation is provided to such a person.

2.4 CHAPTER SUMMARY

The legislation chosen for this study plays a significant role for all employees in South Africa. They allow the rights of employees to be protected. The legislation provides structure and order within the government sector. Employees are protected against any prejudice or discrimination. Firefighting as a profession is regulated and recognised as one of the career paths in South Africa. The Fire Brigade Service Act 99 of 1987 is an important legislation to fire disasters in South Africa. It guides and regulates the fire service departments. The Disaster Management Act is the most important act that guides South Africa in terms of management of disasters. Therefore, this act is crucial in guiding South Africans on disaster-related matters.

Chapter 3
LITERATURE REVIEW

3.1 INTRODUCTION

Recent tragedies and disasters around the world indicate the bravery and boldness of firefighters as OFRs in terms of how they respond to the injuries, death, displacement of populations and damages caused by major disasters. Even though firefighters experience tragedy, horror and death on a regular basis and daily, such information of their work is not always disseminated to the public as a way of acknowledging their work (Heyman et al. 2018:7). In a study conducted by Abbot et al. (2015:2), it was indicated that constant exposure to traumatic events or critical incidents involving OFRs causes behavioural health conditions and illnesses, including stress, PTSD and depression. Heyman et al. (2018:7) further explained that when OFRs are constantly exposed to traumatic events such as witnessing accidents, shootings, death, destruction and injuries, this can have an impact on their mental health.

The purpose of this chapter is to unpack literature that is relevant to the study and which focuses on analysing the effectiveness of debriefing measures for firefighters as OFRs. Recent literature will be presented, which will allow the researcher to discuss the findings and conclusions related to the effectiveness of debriefing measures for firefighters in South Africa and around the world. The focus is on firefighting as a profession, firefighters as OFRs, the roles of firefighters during traumatic events, the impact of traumatic events, the impact of traumatic work on firefighters as OFRs, debriefing as a process of intervention after traumatic events, practical implementation of debriefing within the fire departments, effectiveness of debriefing within the fire departments and intervention services used in the fire departments.

3.2 FIREFIGHTING AS A PROFESSION

The United States Department of Transportation (1997:1-13) stated that it is required that all first responders should be certified to provide a public service related to the first response. In order to qualify as a first responder, the individuals should complete a curriculum titled *First Responder*. This is the national standard curriculum that comprises of 40 hours of training, accompanied by an assessment that demonstrates the ability of the individual to perform optimally and to have a professional knowledge of first response. The curriculum

allows the interested individuals to study in specific fields of work, which are fire and rescue, law enforcement and emergency medical professionals (United States Department of Transportation 1997:1-13).

In the South African National Disaster Management Framework (2005:109), education and training of officials and policymakers within the national and provincial organs of the state are emphasised. It is stated that the national and provincial organs of the state should have substantial budgets to ensure that training of officials for disaster risk management is conducted. All the formal trainings should be accredited, and this will guarantee the quality of training interventions and education provided for officials.

The Southern African Emergency Services Institute is an accredited provider of fire and rescue training in South Africa. Firefighters in South Africa can qualify for a diploma in fire engineering (Southern African Emergency Services Institute 2017). Through the establishment of this institute in 1959, firefighters are viewed as professionals and not seen as men who are involved in skilled labour.

Substantial training is needed for any person to qualify as a firefighter. Therefore, in order to qualify as a firefighter, one has to undergo 16 weeks training, which is physically and mentally demanding (Newman 2019). Age groups that are allowed to study in the firefighting profession are from the ages of 18 years but not older than 45 years. A matric certificate is required to study firefighting. It is important that the individual who wishes to pursue this training should be physically and mentally fit, should not fear heights or enclosed spaces, have the ability to work in stressful situations and be an efficient communicator (Newman 2019).

In order to be promoted to other ranks within the firefighting profession, the individual has to study further and complete exams. The different higher ranks that require further training are that of platoon commander, station commander, and divisional chief, deputy chief and chief. It should be noted that these ranks vary according to fire departments in South Africa (Newman 2019). The profession of firefighting is as important as any other profession and firefighters are regarded as essential and frontline workers in South Africa, as they are the first to arrive at a traumatic scene (Payi 2021).

3.3 FIREFIGHTERS AS OFFICIAL FIRST RESPONDERS

Immediately after the occurrence of a disaster, first responders are the first to be called to action and respond first to the needs of the communities affected. First responders include a number of disciplines such as firefighters, police officers, medical personnel, nurses and

paramedics and volunteers (SAMHSA 2018:3). First responders are a dedicated group of professionals who put the needs of others before theirs. Their lives are dedicated to the profession that they chose. Even though their lives are fully dedicated to the cause of saving lives, they are constantly exposed to potentially traumatic situations (Morgan 2018). Similarly, OFRs are trained professionals that are expected to respond and provide critical services immediately after the occurrence of a critical incident (Van Straten 2019). OFRs respond within their official capacity as part of their daily duties and they are constantly exposed to a number of hazards (Haugen et al. 2012:370).

Wimberly (2011:48) stated that some of the first responders might not act on a professional basis and are not trained as emergency services; however, they volunteer to assist and work together with professionally trained first responders. First responders may be any person, such as civilians or a survivor of an accident, who are first to arrive in a car accident or any traumatic event and may respond by contacting the police, firefighters and ambulance, sometimes even attempt to rescue those injured or trapped and also remove any hazardous items (Van Straten 2019:51).

In relation to the critical role that firefighters as OFRs play in the communities, the United States Fire Administration (2015) indicated that since 2013 about 30 000 fire departments have protected the United States. Approximately 2 500 of these departments were all career firefighters and the focus was mainly on protecting communities of about 25 000 people or even more. These fire departments also had almost 20 000 volunteers who protected communities that were less than 25 000 people. The remaining departments, known as “combination”, were volunteer and career responders.

In South Africa, the fire problem is regarded as the highest in the entire world and this is seen through the loss of life, injuries on people, which can either be permanent or temporary, loss of housing or property and economic loss. In Southern Africa, 200 000 people annually lose their lives, property and are injured due to paraffin-related fires (Paraffin Safety Association, as cited in the South African National Disaster Management Centre 2020:31). Therefore, fire departments in the country are constantly confronted with fire-related cases that need immediate responses. In addition, there are numerous factors that increase vulnerability to fire across the country, such as the rapid increase of the population and urbanisation. In South Africa, about 60% of the population resides in urban areas (South African National Disaster Management Centre 2020:25). In the past years, the Western Cape province in South Africa faced gruesome fires that destroyed many homes in the informal settlements. As a result of these fires, firefighters had to recover burned bodies, which was traumatic (Ngope 2018:69).

3.4 ROLE OF FIREFIGHTERS DURING TRAUMATIC EVENTS AND CALLS

In a survey conducted by Joubert (2012) in South Africa, firefighting appeared to be the most stressful job and this causes firefighters to consistently deal with the substantial amount of pressure and strain on their daily relationships such as family, marriages or friends. In 2015, the career information site (called CareerCast) named firefighting as the most stressful job in the USA, followed by that of the military personnel (CareerCast 2015). Draznin (2013) indicated that during a mass school shooting in Newtown in the USA, OFRs such as firefighters were the first to arrive at the crime scene. They ensured that first aid was provided to the wounded children, they offered psychological support, and carried the wounded children. These men and women were expected to fulfil their mandate in an expected manner to meet the required tasks (Manzella & Papazoglou 2014:103-116).

The work of firefighters has significantly grown over the years. The profession expanded as firefighters were not only limited to respond to fire calls; however, they can rescue people who are trapped in vehicles and structures that collapsed. Firefighters respond to other environmental disasters and to almost all other non-security-related incidents (Deppa 2015:6). During these incidents, firefighters are the first ones to arrive on the scene and to provide care and rescue to the victims of natural and man-made disasters, mass casualties, terrorist attacks and many more tragedies (Deppa 2015:6).

In South Africa and all over the world, the fire services play an important role in terms of protecting strategic and productive assets that sustain the economy (South African National Disaster Management Centre 2020:27). Firefighters in South Africa are exposed to different types of operational incidents that requires them to work under stressful situations. These operational tasks include extensive crawling in ventilation roofs or walls using hand or power tools, hose-line operations, rescue operations, carrying heavy objects, forcible entry and other emergency response actions (Ngope 2018:69). In order to perform these tasks, firefighters need to wear heavy gear such as personal protective equipment and self-contained breathing gear that will help them while working in cold or hot environments for extended times (Ngope 2018:69).

According to Haynes and Stein (2017:2), it is estimated that about 60% of fire departments offer their communities with some form of emergency medical service and this service is either offered in a basic or advanced level. It is evident that OFRs are exposed to an overabundance of traumatic and even life-threatening situations over the cause of their careers. The role of firefighters as OFRs during traumatic events is quite significant and the responsibilities attached to their work is more complex than what people may think (Papazoglou 2017:1). In South Africa, firefighters responded to a devastating blazing fire

that occurred in Table Mountain, Cape Town. These men and women were ready to serve the community and were the first to arrive at the scene to try and contain the spread of the wildfire (Payi 2021). Therefore, one can say firefighters are at the forefront of protecting our communities against harmful circumstances.

3.5 IMPACT OF TRAUMATIC EVENTS

Traumatic events are described as incidents or events in which a person may be exposed to threat of injury or death to others or self; the response to such an event can be feeling helpless, hopeless and intense fear. It should be noted that one traumatic event is not usually sufficient to cause a fully blown trauma, instead repeated exposure to such harmful events can result in a big traumatic event leading to a traumatised state (APA 2013). Traumatic events are usually sudden, powerful events that are totally out of the comfort zone or daily experiences of an individual or even communities (APA 2013).

Trauma can be described as those experiences that causes severe and intense psychological and physical stress reactions on an individual. It can further refer to one event, many events or a couple of situations that are experienced by an individual as threatening or harmful to their physical and emotional being. The effects of trauma have lasting adverse effects on the person's social, physical, spiritual and emotional being (SAMHSA 2012:20).

Psychological trauma and physical trauma are two major forms of trauma. Physical trauma is different types of severe harm and injuries caused on the body, for instance, when an object strikes in the body resulting in physical harm and broken limbs or bones. The other type of physical trauma is sexual violence which also can be through an object that pierces in the body (Tran 2018:1). Based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), psychological harm as one of the forms of trauma is described as exposure to severe harm which can cause death, severe injuries or sexual violence (APA 2013:271). The DSM-5 is usually used by health care professionals as a tool that guides them to diagnose mental health disorders. In the DSM-5, it is also stated that there are many ways of personal experience of a traumatic event that is a first-hand encounter or witnessing of the event that relates to injury, death, learning or physical threat (APA 2013:271).

3.5.1 Impact of traumatic events in the general population

Natural disasters and catastrophic wars have been some of the sources of trauma on a massive scale across Africa, including assaults and accidents which occur daily. Therefore, Africa is known for its wars, disasters and crimes that fuel the experiences of trauma among

thousands of victims (Edwards 2005:125). According to Amanyuzu-Nyamongo (2013:590), the social environment in many African countries does not nurture good mental health, mainly due to the myriad of conflicts and post-conflict situations. Amanyuzu-Nyamongo (2013:590) further highlighted that the status of mental health and psychological well-being of people is fundamentally influenced by the prevalence of and exposure to war and major disasters. Across Africa, about 50% of refugees are suffering from mental illnesses, which also includes PTSD (Amanyuzu-Nyamongo 2013:590; Plüddemann et al. 2014:34).

Edwards (2005:127) recognised that the prevalence of PTSD in South Africa continues to be a concern. Zungu (2013:22) highlighted that the incidence and lifetime prevalence of PTSD across the South African population is 1–9%. Trauma experience is not limited to those who experience it; however, a quarter of those who witness a traumatic event are also more likely to develop PTSD (Van Zyl et al. 2008:119). It is reported that there has been an increase in violent crimes, domestic and sexual violence in South Africa since the early 1990. The increase in these crimes makes victims vulnerable to developing PTSD and affects the mental health status of South Africans (Kaminer & Eagle 2010).

Findings from several research studies consistently pointed to the fact that the experience of violence by victims will most likely lead to a diagnosis associated with PTSD (Edwards 2005:127; Kaminer & Eagle 2010; Suliman & Stein 2012:2). Based on the rate of mental health problems highlighted in these studies, the overall mental status of South Africans must be addressed, including that of the OFRs such as firefighters.

3.6 IMPACT OF TRAUMATIC WORK ON FIREFIGHTERS AS OFFICIAL FIRST RESPONDERS

Firefighters regularly experience psychological and physical trauma as they respond to natural disasters, death, accidents, fires and shootings. This is because they are the first to arrive at the scene to help survivors of these events. In most cases, these experiences can be traumatic to both the firefighter and the survivor (May & Wisco 2016:233). The constant interaction with such traumatic events have a repetitive negative experience which does not only affect OFRs, but also affects their loved ones such as families, friends and colleagues. Therefore, the work of OFRs can be emotionally and physically demanding, dangerous and more often personally heart-breaking and draining (Anderson et al. 2018:23).

Because of the devastating circumstances of their work environment, they are at a higher risk of facing health problems such as PTSD, alcohol abuse, depression and suicide. It has been demonstrated in other studies that after the disaster event, there is higher rates of

stress disorders, PTSD and depression in OFRs that last for months and years (Haugen et al. 2012:370).

Brooks et al. (2017:13) found that exposure to disaster or a traumatic event on its own is a risk factor for firefighters. Factors such as stress, mental illness, well-being, resilience and personal growth are some of the factors that determine the psychological outcomes for firefighters who are deployed to help victims in the aftermath of a disaster. The intensity of the disaster or a traumatic event and the proximity to the epicentre were linked to the higher levels of mental health issues for firefighters.

Furthermore, traumatic events such as dealing with corpses and individuals who were badly injured led to the possibility of developing alcohol problems, symptoms of fatigue, depression, anxiety, stress and PTSD, which had an impact on the mental state of the firefighters as OFRs (Brooks et al. 2017:1). In addition, traumatic events may have an impact on the behaviour of firefighters as they may become impatient and display anger outbursts and emotional reactivity in their daily lives (feeling like a failure and sadness). Their cognitive processes are also affected, such as information processing and loss of memory (Andersen et al. 2015:1).

Likewise, some of the risk factors that elevated the level of stress among firefighters during disasters included work circumstances that required them to work long hours in demanding or unfamiliar circumstances, not prioritising taking vocational leave to rest, insufficient job-related information, being given extra work to do, poor leadership, lack of immediate support from the employer and lack of interagency agreement. Working in such circumstances led to mental distress, fatigue, health-related complaints and job dissatisfaction (Brooks et al. 2017:7). According to Ngope (2018:69), firefighters in South Africa are experiencing occupational stress such as long working hours and within the Tshwane Metropolitan Municipality, firefighters are required to work 84 hours per week and these shifts are common.

Based on the discussions it is not startling that trauma exposure is connected to mental health problems, which include substance abuse, depression, suicide and PTSD. A study conducted by Katsavouni et al. (2016:34-33) showed that among 3 000 firefighters who had PTSD symptoms, more were likely to report injuries as a result of work, unlike their colleagues who did not have PTSD.

The mental health of an individual is important. The WHO (2018) defines health as a state in which there is complete mental, social, and physical well-being and it is not simply the absence of a disease or illness. Therefore, mental health follows when the person is able

to recognise their own abilities, work productivity, coping with stress and their contribution to the community. Mental health is a significant element of the total health of the individual and contributes to the quality of lives. Moreover, the presence of positive mental health can act as a shield towards the stressors of everyday life and can also decrease the risk of the occurrence or development of mental illness (WHO 2018).

According to Heyman et al. (2018:16), individuals who have conditions such as substance abuse, depression and PTSD, are under immense suffering and this affects their immediate relationships with families and friends. The suffering experienced by humans are enough to justify the importance of putting attention to the increase and prevalence of mental health problems among the OFR community, including firefighters. When considering the impact on the individuals and the ignorance of the society in relation to these issues, we have an understanding that mental health problems can be treated; however, without treatment it can cause limitations on how the individual functions. In general, communities rely on the decision-making skills, intuition and energy that OFRs pose; therefore, untreated mental health problems can put pressure on these capabilities of OFRs such as firefighters.

In the following discussion the effects of traumatic events such as PTSD, depression, alcohol abuse and suicide will be unpacked. It describes how these identified mental problems affect firefighters.

3.6.1 Firefighters and post-traumatic stress disorder

The DSM-5 describes PTSD as a condition that occurs as a result of exposure to actual or threatened serious injury, death, threatened death, or actual or threatened sexual violence (APA 2013). The person suffering from PTSD may continuously re-experience the event in the form of nightmares and flashbacks, and the general functioning of the person is impacted by a number of symptoms such as sleeping problems, lack of concentration, hopelessness, feeling ashamed, irritability, feelings of isolation (National Institute for Mental Health 2015).

The development of PTSD depends on the type of trauma, the frequency of exposure and appraisal of trauma, for instance, if trauma is not perceived as traumatic, then few reaction symptoms will develop. However, when comparing men and women across the lifespans, PTSD is more prevalent in women than in men (APA 2013). It is speculated that women compared to men are more likely to experience traumatic events (APA 2013).

Studies that investigated PTSD among firefighters have each concluded that the rate of PTSD is higher for firefighters than for civilians, irrespective of their geographic locations or

regions, such as urban or rural, paid versus volunteer status and ethnicity (Arbona & Schwartz 2016:507-522; Wagner & O'Neill 2012:318). OFRs are also susceptible to other psychiatric challenges such as suicidal thoughts and behaviour (Stanley et al. 2016:38). About 30% of OFRs do develop mental health conditions such as PTSD compared to the 20% in the general population (SAMHSA 2018:1).

Similarly, Metcalf (2020:22) stated that the prevalence PTSD is common among firefighters and firefighters experience traumatic stress mostly after the death of a colleague in line of duty, and during emergency response that includes mass casualties, death, or injury of a child. PTSD symptoms presented in firefighters may have negative effects such as job dissatisfaction, increase in absenteeism or incompetence and dysfunctional relationships. In the absence of intervention services and coping skills, firefighters can be exposed to harmful working conditions that causes major health risks such as physical illnesses, substance abuse or PTSD (Miyagishima 2020:13).

On the contrary, in a study conducted by Nkomo (2016:65) in South Africa, it was revealed that work-related stressors could not indicate a significant effect on the development of PTSD. It was further indicated that even though firefighters displayed symptoms of PTSD, perceived life threats was not the cause. Firefighters that participated in the study did not perceive their duty related to traumatic stressors as life threatening. Therefore, the perceived life threat is not seen as a risk factor for the development of PTSD among career firefighters. Firefighters as OFRs have normalised their experience to traumatic events and have developed psychological resilience (Nkomo 2016:65).

Access to mental health services can be challenging for firefighters due to their different backgrounds. Their geographic location plays a role in how they access mental health services. For some firefighters that live in urban areas, it can be easy to access mental health services, while those who live in remote areas find it difficult to access these services. The cultural backgrounds, the stigma of mental health and attitudes towards mental health exist within the firefighter community and this can impact the chances of seeking mental health services or treatment. When comparing paid firefighters with volunteer firefighters, it can be concluded that paid firefighters are more capable of accessing mental health services through their employment companies than volunteer firefighters (Heyman et al. 2018:13). Based on the research conducted by different authors, it is clear that these men and women are faced with immense responsibilities to ensure that their communities are safe, while their mental health is compromised.

3.6.2 Firefighters and depression

In a study conducted by Oosthuizen and Koortzen (2007:56) on firefighters working in the metropolitan municipalities of South Africa, firefighters expressed thoughts of concern that were associated with depression. Firefighters had elevated levels of stress due to career and social matter. Shift work contributed to the level of stress as it affected their family relationships, such as marriages. Most studies conducted in relation to depression on firefighters are based in international countries. There are no studies indicating the level of depression among firefighters in South Africa. Most South African authors that conducted studies with firefighters used international sources to substantiate their studies.

The APA (2013) described depression as a mood disorder that has negative effects on the individual's physical, psychological and cognitive functioning. Symptoms or experiences of depression include persistent emptiness, sadness, irritability, loss of interest, and fatigue that can result in sleeping too much, or insomnia, multiple aches, pains and cognitive difficulties. The APA (2013) found that the twelve-month prevalence of major depressive disorder among women is one and a half to three times higher than for men. Therefore, the depression rate in women firefighters could be attributed to the social pressure that they experience while working within the male-dominated profession (Jahnke et al. 2012:6).

In firefighters, depression is reported to be common as studies found various rates and severity of depression. Stanley et al. (2017:13-14) compared volunteer and employed firefighters' rates of depression and it was found that there is an elevated rate of depression in volunteer firefighters compared to employed or career firefighters. These elevated rates of depression in volunteer firefighters were caused by structural barriers to mental health care, such as access to mental health care services due to high cost and lack of available resources. The researchers further observed that competing demands for volunteer firefighters such as having a separate job create stress vulnerabilities that contribute to the development of exacerbation of behavioural health conditions (Stanley et al. 2017:16). This specific study of volunteer and career firefighters was conducted in the USA with 525 firefighters.

Furthermore, factors such as tight recruitment systems and screening processes followed in the fire department organisations to recruit volunteers can also contribute to the differences in the levels of behavioural health symptoms between the career and volunteer firefighters. Similarly, in another study conducted by Haddock et al. (2017:632), about 22.2% of female career firefighters were at risk of depression, while 38.5% of the female volunteer firefighters were at risk of depression.

3.6.3 Firefighters and alcohol abuse

The use of alcohol around the world, including South Africa, is culturally and socially acceptable. Whereas alcohol use disorder has been a common problem globally. Several factors characterise alcohol use disorder, which include drinking more than intended, inability to voluntary stop drinking, when a person drinks even if they feel worse, and drinking in such a manner that it makes the person sick to the point it negatively impacts their immediate relationships, jobs and home (APA 2013). Moreover, the use of alcohol and other related disorders are more prevalent among men than women. Therefore, the excessive use of alcohol contributes significantly to suicidal behaviour (APA 2013).

As indicated that alcohol is socially and culturally accepted within our social setting, this notion is not different from the firefighters' community. According to Carey et al. (2011), both female and male firefighters presented higher rates and even hazardous drinking which was 58% to 14%, respectively. In a study in the USA conducted by Haddock et al. (2012:661), it was found that firefighters used alcohol consumption as a way of coping with the effects of repeated exposure to trauma and work-related stress. On that note, it has been reported that the prevalence of alcohol use within the fire and rescue departments is higher than that of the general population, and this is as a result of roughly 50% of firefighters who have had episodes of binge drinking that contributed to poor health outcomes (Haddock et al. 2012:663).

In another study conducted by Haddock et al. (2017:636) on drinking patterns among female firefighters in United States Fire Service, it was found that 40% of the reported binge drinking during the previous month and 16.5% of female firefighters who used alcohol, screened positive for problem drinking behaviours. Furthermore, it was found that 61% of women firefighters reported having had a drink within the past three days compared to the women in the general population (Haddock et al. 2017:636). Within the fire and rescue departments, alcohol is used as a coping and social vehicle (United States Fire Administration 2019:27).

It is important to highlight the gaps in South African literature related to firefighters' uses of alcohol. Within the fire departments in South African there has not been a specific research that focused on the alcohol patterns of firefighters. The literature used in this study is predominately based on the USA and other countries.

3.6.4 Firefighters and suicide

According to Oosthuizen and Koortzen (2007), South African firefighters have expressed suicidal thoughts such as ending their lives. Similarly, an estimation of one million adults makes a non-fatal suicide attempt and about eight million adults experience serious thoughts of suicide annually (Crosby et al. 2011:1). Suicide is not a diagnose but rather an act that is usually as a result of distress that overwhelms the individual's ability to cope (American Foundation for Suicide Prevention 2018). Suicide, in most cases, co-occurs with mental health issues, such as PTSD, depression, eating disorder, bipolar disorder, alcohol and substance abuse and certain personality disorders. The rate of suicide has been seen within the general population of the USA where 40 000 individuals die annually due to suicide (Centers for Disease Control and Prevention 2015).

Firefighters are also more likely to think about and attempt suicide than people in the USA as a whole. In relation to suicide attempts and ideations, it has been reported that suicidal ideation and attempt in firefighters are at a higher rate compared to the general population (Stanley et al. 2016:8). The current figures of about 1 027 male and female employed and retired firefighters show that the prevalence estimates of suicidal ideation, plans and attempts were 46.8%, 19.2% and 15.5%, respectively as compared to lifetime rates of ideations, plans, and attempts of 13.5%, 3.9% and 4.6% among the general population (Stanley et al. 2016:8). Furthermore, in a national sample of firefighters, current PTSD symptoms were found to be associated with a 5.2% higher odds of attempting suicide during their firefighting careers (Stanley et al. 2017:239).

3.6.5 The effect of Covid-19 on firefighters

The world has been facing a global pandemic (Covid-19) that placed pressure on the distribution of services and resources (Nyashanu et al. 2020:1). The coronavirus pandemic began first in Wuhan, China, in December 2019. The virus started to spread all around the world and this happened in a short period of time. The numbers of infected persons started to rise, including the mortality rate. Based on the increasing numbers of mortality and morbidity, the WHO declared Covid-19 as a global pandemic (Nyashanu et al. 2020:1).

According to Hayens et al. (2021), Covid-19 has placed pressure on the fire service personnel to achieve their organisational and operational goals. Firefighters had to face constant changes on their incident action plans, protocols and procedures and this had an impact on their stress levels. Covid-19 had related stressors such as changes in Covid-19 regulations at the fire stations, pressure from leadership to adhere to the changed rules, stress on isolation at the fire station, failure to follow rules, inconsistent leadership in

enforcing rules and negative impact on the station culture. Fire stations are social places for firefighters, they get the opportunity to socialise with their co-workers and even share meals together. Therefore, social isolation was one of the biggest contributors to poor station culture (Hayens et al. 2021).

In 2020, during the pandemic, 100 firefighters in South African were deployed to Canada to assist in preventing the spread of blazing wildfires that raged in the city of Manitoba. Two firefighters from the 100 deployed tested positive for Covid-19 during the deployment in Canada. These two firefighters, including their 12 close contacts, had to self-isolate. It was reported that the two firefighters recovered after a period of self-isolation and returned to assist with the firefighting in Canada (Hempel 2021).

The studies conducted proves that firefighting as an occupation is stressful. Firefighters are daily exposed to traumatic events. Rescuing injured people or witnessing a child's death can have an impact on the psychological functioning of a firefighter. It is indicated that some resort to alcohol as a coping mechanism and others commit suicide as they cannot deal with the impact of these traumatic events. Because of a lack of counselling services or any trauma-related interventions, firefighters can suffer depression and even be diagnosed with PTSD. Therefore, these men and women need support and effective interventions to help them cope and function optimally in their workplaces. Covid-19 also had an impact in the fire stations as firefighters had to adhere to the constant changes of Covid-19 rules and station cultures. This had an impact on their stress levels.

3.7 DEBRIEFING AS A PROCESS OF INTERVENTION AFTER TRAUMATIC EVENTS

3.7.1 History and essential concepts of debriefing

It should be noted that debriefing as a term is derived from the full concept of CISD. It is important to highlight this as the word *debriefing* is used by many in the world and their meaning may be different and does not equate to CISD. CISD was introduced in the 1980s as a tool to manage the psychological effects of traumatic or critical incidents faced by emergency workers such as firefighters, police officers, and paramedics (IAFF Centre of Excellence Staff 2020:1). CISD is one of the many crisis intervention methods or techniques that are included within the umbrella of the Critical Incident Stress Management (CISM) programme (Mitchell & Everly 1997:267).

This is a unique intervention that was developed by Jeffrey T. Mitchell in 1974. This type of psychological intervention, called *debriefings*, was used by the law enforcement, hospital

personnel and the military. However, no one had detailed the actual steps of the debriefing process. During the 1980s, Mitchell then implemented his first application of a formal CISD process after a massive incident. This incident was about a Washington air crash that happened in 1982, which resulted in 76 fatalities. Police, disaster managers, paramedics and firefighters who voluntarily attended debriefings reported that it was a helpful process (Hokanson & Wirth 2000:252).

Paton et al. (1998) described debriefing as prevention as it aims to decrease reactivity of the individual to an event after the traumatic event has occurred. The main objectives of CISD are to mitigate and prevent the long harmful effects of work-related trauma such as PTSD and other related trauma effects (Hokanson & Wirth 2000:252). Furthermore, debriefing enhances the ability of emergency workers to resist stress reaction, builds resiliency from a traumatic event, encourages recovery and promotes optimal functioning (Mitchell & Everly 1995:268).

Through the use of CISD, stress can be reduced, and group cohesion and unit performance can be restored. CISD provides an opportunity for screening in order to identify group members that might benefit from other additional support services or be referred to other professional care. Debriefing as process should not be used as therapy and should not be used as a replacement for psychotherapy. Through CISD, supportive, crisis-focused discussions of a traumatic event, which is mostly called *critical incident*, can be facilitated (Mitchell & Everly 1997:270).

There are certain conditions that constitute the application of the CISD process. First, CISD was basically developed for small groups that experienced and were exposed to the same traumatic event. Second, the group participants must have similar interests or should have experienced the same traumatic event. Third, debriefing should not be done when members are busy in the event or situation, it can only be done post the incident. Last, it is important that group members should participate in the debriefing process when they are ready, and not distraught or fatigued (Mitchell & Everly 1995:270).

CISD link to the theoretical framework of this study, which is the WTM. The aim of the WTM is to address the unique needs of trauma survivors. It is mainly used for survivors of traumatic events. Firefighters are survivors of traumatic events; therefore, they need some of intervention so that the effects of PTSD, depression, alcohol abuse or suicide can be prevented. The WTM model was mainly designed to treat PTSD and traumatic stress conditions in South Africa. These intervention tools are similar as they both have a goal to mitigate the effects of traumatic incidents on people, including emergency workers such as firefighters.

3.7.2 When to debrief

Debriefing should be done within 24 to 72 hours after a traumatic event has occurred (Mitchell & Everly 1995:272). It allows affected individuals to ventilate their emotions in a natural way. Hokanson and Wirth (2000:255) named five potential traumatic events that warrants debriefing:

- Incidents that involve multiple casualties.
- Major disasters such as floods, fires and volcanos.
- Death or suicide of a department member in line of duty.
- Any situation or incident that the incident commander feels should require CISM team intervention.
- Witnessing a death of a child that was caused either because of neglect or violence.

3.7.3 Who should facilitate debriefing?

According to Mitchell and Everly (1995:274), not any person can conduct or facilitate debriefing. This process specifically requires a trained team that consists of two to four persons. The number of facilitators will be determined by the size of the group, for instance there should be one team member for every five to seven group participants. The team consists of mental health professionals and peer support personnel such as firefighters, police officers, military personnel, and paramedics. It should be noted that a minimal team is two people, even when the groups are small. A peer in this context refers to a person who is from the same profession or who share the same background as the group members.

One of the special traits of CISD is that peer support personnel that are trained in CISM should work together with mental health professionals when providing debriefing to personnel from the fire service, law enforcement, military, emergency medical and other professionals (Mitchell & Everly 1997:274). For example, a chosen CISM trained fire personnel should work with firefighters to provide debriefing.

3.7.4 Stages in debriefing

The seven stages of CISD are related to the components of the WTM as they both seek to promote recovery from managing trauma. The CISD stages and the WTM components are psychoeducational, and they allow the client to express their traumatic experiences through different sessions. This section discusses these CISD stages as to give an understanding on how debriefing is conducted.

CISD is a seven-step process that is structured and psychoeducational by nature. The steps are arranged in a particular order for the purpose of facilitating the transition of the group from the cognitive domain to the effective domain and back to the cognitive again. The stages can take about one to three hours to complete. In order to manage some of the emotional content that may arise in the group, the team members must be well trained. The seven steps, which will be briefly discussed, are introduction, facts, thoughts, reactions, symptoms, teaching, and re-entry (Everly & Mitchell 1995:278).

❒ Step 1: Introduction

In this step, the focus is on rapport building where team members introduce themselves and the debriefer describes the purpose of the meeting. The rules of engagement, such as confidentiality and voluntary participation will be outlined in this session to allow participants to be confident in the discussions. The group members will be given the opportunity to state their expectations. The debriefer will use this stage as an opportunity to explain to the participants the aim of CISD (Everly & Mitchell 1995:279).

❒ Step 2: Facts

The fact phase encourages participants to focus on what happened during the traumatic event. This step encourages participants to talk and start relating their stories in detail and to give a picture of what happened during the incident. It should be noted that the fact step is not the essence of the CISD. More critical parts are expected to come. It is important to give each participant the chance to speak, which will ease the anxiety and even give the group a sense of ownership over the group discussions. One of the common questions that is first asked in the fact phase is: “Can you relate to the team members what exactly happened during the incident?” Every person will be given an opportunity to talk if they wish to do so (Everly & Mitchell 1995:280).

❒ Step 3: Thoughts

After the participants have related their stories of the event based on their experiences, the debriefer can ask questions that concern their thoughts. What is interesting about this step is that the participants can move from the factual world outside themselves to a closer look at their own experiences. They can do this without necessarily showing their emotions. It is important for the debriefer to constantly monitor or be alert of any reactions that participants may show during this stage. Possible emotions that may be projected by participants can be anger outbursts or crying. Participants can show these emotions towards themselves or other group members (Everly & Mitchell 1995:280). The main aim for the debriefer is to

focus on the decision-making and thought process of participants. In this stage, participants can be asked to give a description of their most prominent or first thought during the incident.

❒ Step 4: Reaction

This stage is regarded as the heart or core of debriefing. More about the incident can be explored by the participants. The focus is on the impact the incident had on each participant. More emotions, such as anger, loss, frustration, confusion, sadness and hurt, can emerge in this stage. The question that can trigger these responses is: “What was the very worst thing about the incident for you personally?” and “If you can be given an opportunity, which part of the incident can you erase?” (Everly & Mitchell 1995:280). It should be noted that this stage can take more than 40 minutes as it requires patience from all group members. As the group runs out of issues and concerns that they wish to express, they can move to a symptom stage which follows below (Everly & Mitchell 1995:280).

❒ Step 5: Symptoms

The quietness of the group members will allow the debriefer to continue into the symptom stage. This is yet another transitional stage and it takes the participants back to the cognitive discussion, where the focus is on their mental capacity of the incident. The participants are then redirected to consider the emotional, physical, and behavioural symptoms that they experienced (Plaggermars 2000:85). Some of the participants may be willing to share their experiences because they may think they are delusional. The debriefer’s goal in this step is to restore the thoughts of the participants to the level where they can calm down and return to their normal functioning. In the event where participants show signs of pain or suffering that may indicate early signs of PTSD (Everly & Mitchell 1995:280). When the debriefer allows the participants to discuss these symptoms, they can be normalised, and this can help to reduce their intensity and frequency.

❒ Step 6: Teaching

This is an interesting stage where the debriefer equips group members on how to deal and cope with symptoms. The debriefer can educate participants on stress management and coping techniques to decrease the impact of stress in the future. Participants can be informed of possible symptoms that might arise and how to deal with them immediately (Everly & Mitchell 1995:280). Moreover, to seek more professional help if these symptoms increase over time or if they lose their ability to function at home or at work. In an instance where the debriefing is conducted due to the suicide of a colleague, then suicide should be the topic of the discussions (Everly & Mitchell 1995:280). This will allow participants to be

well prepared and equipped for any similar incidents that may occur in the future. The debriefer must share different resources available (employee health and wellness or social workers' contact numbers) that can be accessed when symptoms increase or cannot be controlled.

❒ **Stage 7: Re-entry**

This can be referred to as a termination stage, where the debriefer use the stage to conclude the session. In this stage, the focus is on reflecting on what the group members with the debriefer focused on in the previous sessions, as well as to allow participants to indicate their experiences and whether the debriefing process was effective. The participants can ask final questions and even get more clarity of the previous discussions. The debriefer will use the last stage to share information, make referrals to other service providers if needed. Furthermore, to encourage the participants to continue to build meaningful relationships, so that they can strengthen their daily functioning (Everly & Mitchell 1995:280).

It is important that follow-up should be done after the implementation of the CISD. This will allow the debriefer, or any other CISD team, the opportunity to know the effectiveness of debriefing on the emergency workers, as well as to determine whether debriefing is the best intervention method to be used after exposure to traumatic or critical events. Referrals should be done to other counsellors, such as a psychologist, when the symptoms are re-occurring and in an instance where the individual cannot manage the symptoms even after the debriefing sessions.

3.7.5 Limitations of debriefing

The use of CISD has been popular since it was developed by Mitchell in the 1970s. However, researchers around the world had different experiences of the CISD process. Some considered it as a helpful process, while others questioned its efficacy and deemed it to be a harmful process towards emergency workers. The following are some limitations that are mentioned by other researchers:

According to Regehr (2001:94), debriefing cannot reduce the symptoms of PTSD and even the possibility of vicarious traumatisation of participants. It is important that crisis workers who use debriefing should be aware of this finding. The information shared during the debriefing sessions can be overwhelming to the participant as other participants may describe their traumatic experiences in detail. It should be noted that individuals who form part of debriefing are vulnerable due to their own traumatic experiences; therefore, hearing other experiences of their colleagues may elevate their stress levels.

During the debriefing process, individuals may be flooded with more gruesome material, which may add to their symptoms or intrusion and traumatic imagery. Other risk factors can be the inability of the counsellor or debriefer to screen and assess individuals who may have vulnerabilities such as concurrent life crises, difficult life histories, mental health problems or even comorbid substance abuse. Based on these risk factors, it may seem that the debriefer should not encourage detailed description during the reaction stage (Regehr 2001:94-95).

Barboza (2005:64) is of the opinion that CISD as an intervention may prevent the individual to seek social support from family and friends as they may think that debriefing has provided sufficient help to them. Furthermore, the debriefing may discourage or even replace the existing supportive culture where colleagues share thoughts among each other. Moreover, Rabstejnek (2014:6) mentioned that the use of CISD may cause secondary traumatisation, medicalise normal distress and may activate a sense of shame for the individual.

3.8 PRACTICAL IMPLEMENTATION OF DEBRIEFING WITHIN THE FIRE DEPARTMENTS

The use of debriefing in South African fire departments has not been documented. The researcher conducted an extensive search of articles or sources of literature that describe the use of debriefing in the South African context. However, nothing was found, and based on this, the researcher had to rely on international sources to describe the practical implementation of debriefing within the fire departments.

Fire departments around the world respond to many incidents that cause employees such as firefighters to often be emotionally involved and this requires some form of critical incident interventions such as debriefing (Vaughan 2006:10). The fire department also refers to debriefing as a post-incident analysis process which allow fire personnel to give an overall experience of the call they responded to (Van Doren 2007:1). Debriefing in this instance is regarded as one of the most effective tools for change as it assists the authorities within the fire service or departments to determine what is going on inside a firefighter's mind after an incident. The employer can further use debriefing to identify mentorship or training issues and limitations of equipment (Van Doren 2007:1).

The International Association of Firefighters (IAFF 2016) emphasised the importance of understanding the physical and behavioural effects that is accompanied by the occupation of firefighters. It further encourages the employer to ensure that firefighters are safe so that they can be able to keep their communities safe. The IAFF (2016) further provides support and assistance to members of the fire service and victims of fire in the USA and Canada.

The Surrey Fire and Rescue Service is based in England, and it provides services to the county of Surrey. According to them, debriefing must be arranged for any incident in which there is a high probability that fire service personnel will be negatively affected by an incident (Surrey Fire Service Operational Guidelines 2012:4). Similarly, Van Straten (2019:279) stated that due to shift work and long working hours, debriefing should be conducted after major incidents have occurred. This is crucial as it will help firefighters to process these experiences and even be protected against the long-term effects of trauma. The Surrey Fire Service Operational Guidelines (2012:5) stated that debriefing should be conducted when fire personnel perceived the critical or traumatic incident they worked on as out of the ordinary or severe.

3.8.1 Procedures for initiating debriefing within the fire departments

The following are some of the examples of traumatic incidents that need interventions (Vaughan 2006:31). Based on the above-mentioned examples it is important that debriefing should be initiated within 24 to 72 hours:

- Drownings that involve children.
- Being involved in an incident that affects one of the crew members intensely and they may need confidential support.
- Violence or death of a child.
- An incident that is surrounded with profound emotions.
- Mass casualty incidents such as airplanes or bus accidents.
- Serious motor vehicle accidents that caused injury or death to a civilian.
- Loss of life of a patient following extraordinary and prolonged expenditure of physical and emotional energy during rescue efforts by fire department personnel.

Vaughan (2006:37) stated that the incident commander, company officer and the CISD team should be responsible for identifying key incidents that warrant intervention. Where an incident has been identified as a critical incident, then a request for debriefing should be done to either the fire captain, deputy chief or to the CISD team member. The request should be done as soon as possible to avoid delay in providing intervention. Moreover, Van Doren (2007:3) indicated that the safety officer or incident commander are eligible to facilitate debriefing based on the knowledge and understanding of the purpose of debriefing. They should also be able to maintain confidentiality and trust throughout the process. A CISM team member should be assigned to lead debriefing after a comprehensive assessment of the incident has been done. It will be the responsibility of a CISM team

member to refer cases to a mental health professional for more intervention (Surrey Fire Service Operational Guidelines 2012:5).

Van Straten (2019:279) recommended that debriefing should be done after each shift. The call centre should notify the therapist or person responsible for providing debriefing about the incidents that firefighters responded to. Immediately after the therapist has been informed, they can identify concerns and then the firefighter can be called for debriefing. In this regard, debriefing can be compulsory and the firefighter in question will not be regarded as weak. To prevent the further impact of traumatic events on firefighters, it should be made compulsory that firefighters should consult a therapist regularly, more specifically on a monthly basis. A file should be open for each firefighter that makes consultation to prevent labelling or discrimination (Van Straten 2019:279).

3.8.2 Other forms of debriefing approaches that can be taken post-incident in the fire departments

The National Operational Guidance Programme – Good practice guide for fire and rescue (National Fire Chiefs Council [NFCC], 2019:15) discusses debriefing approaches that are conducted after an incident in the fire departments. These approaches are operational debriefing, incident debriefing and formal debriefing. It is important to mention these approaches as these debriefing approaches are not necessarily based on CISD or the WTM; however, they are a holistic approach to develop, monitor and improve the operations within the fire departments. The researcher saw it appropriate to mention these debriefings as they form part of the daily routines of the fire service profession. These approaches are used in the USA.

- **Operational debriefing**

The operational debriefing give the fire departments the opportunity to review the process with the intention to improve continuously. The members of the service are responsible to conduct this debriefing after an incident or a training exercise. Through operational debriefing, a link between the performance of individuals, the performance of policies and procedures, the performance of teams, including the performance of the fire and rescue service, can be created. This will assist in meeting the objectives within the fire departments (NFCC 2016:15).

In the process of debriefing an event, the main focus during the operational debriefing is to identify the development needs of the individual and team training and to identify operational learning and confirm good practice. It further confirms whether policies and practices are

effective and relevant within the fire departments. In addition, it also assesses the competence of the staff and conduct quality assurance (NFCC 2019:15).

Operational debriefing should be conducted in an open and constructive manner. The outcomes of these debriefing processes should be analysed, collated, shared and actioned throughout the process of the service. The person who is appointed to conduct these debriefings should have appropriate skills, knowledge and understanding on the existing governance arrangements. Through these skills and knowledge, the appointed individual will be able to promote organisational and experiential learning. It will further ensure that the service, welfare, and health provided to the staff and the public is of a higher standard (NFCC 2019:15).

❒ Incident debriefing

An incident debriefing is conducted at the scene after firefighters conclude their operational involvement and record the issues and key outcomes. The officers are responsible to conduct such debriefings. It should be noted that the staff can be debriefed even after any incident. During these debriefings, other emergency workers such as police officers or paramedics can form part of the discussions. The incident commander is responsible for notetaking of all what was discussed; this will help to improve future debriefings. The incident debriefing allows the individual to reflect on what happened during the incident or event. The areas that can be of importance are the task performance, team performance, individual performance and strategies that were used, and their effectiveness. Furthermore, the discussion can be based on hazards and risks that were identified during these events, including evaluation of control measures (NFCC 2019:15).

❒ Formal debriefing

Formal debriefings are needed, provided the organisation needs to learn on the procedures, health and safety, and equipment. These are intense debriefings that require adequate time, a special day, and preparation. Ideally, formal debriefings should be conducted four weeks after the incident. During these debriefings, it is the responsibility of the commander officer to decide if support is required from the senior officer or the manager. The support needed is based on the completion of the formal debriefing report. To avoid role conflicts, people that are involved in the formal debriefings should be assigned specific roles. For instance, there should be a debriefing organiser who will be responsible to arrange the debriefings and assist in gathering all information needed (NFCC 2019:15). The personnel that can be invited to the debriefing, if necessary, are fire investigation officers, fire safety officers, fire control operators, district trainers, ambulance officers and a health and safety adviser.

These debriefings give a picture of the other processes that are followed in the fire departments to ensure that fire personnel understand their roles and operational task. However, these debriefing approaches are not related to CISD or WTM. They are standard procedures that allow fire departments to improve their services and operational task.

3.9 EFFECTIVENESS OF DEBRIEFING WITHIN THE FIRE DEPARTMENTS

3.9.1 Views of firefighters in relation to debriefing

The studies used in relation to the effectiveness of debriefing within the fire department are internationally based due to a lack of studies conducted within the South African context. The researcher thus had to refer to international studies to describe the effectiveness of debriefing in the fire departments.

Fire departments provide numerous trainings and procedures, for example wearing of protective gears and operating apparatus that are used to put out structural fires, which are aimed at the physical health of the firefighters. Firefighters are required to form part of these procedures. Firefighters do not question these procedures as they are automatic. In this regard, it is important that their emotional and psychological health should also be automatic and be prioritised (Hokanson & Wirth 2000:255).

According to Van Straten (2019:145), attendance of debriefing by OFRs has been rather an unpopular method. There is resistance from OFRs in attending debriefing. Stigma and shame in the workplace creates a barrier for OFRs, such as firefighters, to seek help (Heyman 2018:28). Other firefighters fear victimisation by the employer or authorities or even to be seen as weak by fellow workers or not in control of their emotions. The other concern that OFRs have is that debriefers, chaplains or counsellors do not have an understanding of what they are going through (Van Straten 2019:145).

Likewise, Brooks et al. (2019:3) showed the results of emergency workers such as firefighters who participated in the study, where some of these participants indicated that they were not motivated to approach their employers when they experience any psychological trauma. They were not confident enough to approach their employers, had lack of awareness on the available support, not being aware of mental health services provided by their employers, and some had concerns about confidentiality, while others felt that admitting their mental health will impact their career and being labelled as incompetent.

In the same study conducted by Brooks et al. (2019:3), that participants that worked in commercial organisations reported that their organisations have trained them on procedures to follow during emergency cases; however, they never received training on

psychological issues. The training they receive is often based on the physical aspects of how to rescue people from burning buildings. The organisations do not train these emergency workers around the impact of traumatic work on their mental health. Some of the participants strongly believed that their employers do not prepare ahead for psychological distress and this is caused by the fact that the employer does not appreciate the psychological impact of traumatic events (Brooks et al. 2019:4).

3.9.2 Is debriefing helpful to firefighters as official first responders?

The effectiveness of debriefing can only be evaluated through the feedback that is given by firefighters. The researcher acknowledges that the data presented by Hokanson and Wirth (2000) is older. However, this information had to be used due to limited literature in relation to the effectiveness of debriefing within the fire departments in South Africa. A study conducted by Hokanson and Wirth (2000:255) in the Los Angeles County fire department, presented data that showed the responses of firefighters in relation to their experiences of CISD. Firefighters that formed part of the debriefing process found it to be helpful and recovered significantly, compared to those who were not debriefed. Those who received debriefing even recommended it to their colleagues (Hokanson & Wirth 2000:255).

The results indicated that 39% of debriefed participants reported a decrease of symptoms within 24 hours post debriefing (Hokanson & Wirth 2000:255). It should be noted that debriefing should be done within 24 to 72 hours after a traumatic event has occurred (Mitchell & Everly 1995:3-5); therefore, this falls within the expected period. Twenty-nine percent of the non-debriefed participants reported a decrease of symptoms within the same period of time. About 17% of the debriefed group experienced a reduction on symptoms within 25 to 72 hours and 18% within a week (Hokanson & Wirth 2000:256).

In a recent study conducted by Spoons (2018), it was discovered that from the 27 firefighters who participated in CISD, only about five percent found it to be helpful. Some of the firefighters reported that they were not comfortable to share their challenges, feelings or perception with their co-workers. Others felt that during the debriefing process, they felt like they were forced or pressured to share their emotions with their co-workers.

3.10 INTERVENTION SERVICES USED IN THE FIRE DEPARTMENT TO HELP FIREFIGHTERS DEAL WITH TRAUMA

In South Africa, the firefighting services are the function of the local municipality, which means firefighters are employed from the local municipalities. These functions are concurrent with the provincial and national legislative competence according to Schedule 4,

Part B, of the South African Constitution (as cited by the South African National Disaster Management Centre 2020:29). In South Africa, the municipalities have a worksite programme called employee assistance programme (EAP). The EAP is designed to help the organisation and its employees to make an early identification of performance and personal problems (Metcalf 2020:31).

The EAP practitioners include professionals such as psychologists, nurses, substance abuse counsellors and professional counsellors (Metcalf 2020:31). Through the EAP programme, practitioners are able to assess their employee problems, determine how these problems affect their workplace and their ability to function. EAP practitioners consult other stakeholders within the organisation in order to assist the employees. These stakeholders include employee relations, unions and management. The collaborations allows the EAP to work with these stakeholders to ensure that troubled employees are assisted, address matters that affect the work-life of employees and improve the work environment (Green 2012).

Peer support programmes have been identified as one of the effective standards of practice within the emergency service. This type of standard practice has been helpful to employees as they can share their struggles with their fellow employees. Research shows that employees prefer to talk among each about the traumatic events that they worked on. This form of relationship allows them to be free and relate to each other (SAMHSA 2018:12).

3.11 CHAPTER SUMMARY

Firefighting is a recognised profession within South Africa and around the world. Different learning institutions around the world accredited this profession. Firefighters are regarded as OFRs, as immediately after the occurrence of a disaster, first responders are the first to be called to action and respond first to the needs of the communities affected. The type of work firefighters do exposes them to trauma as their calls are traumatic. Responding to structural fires, extraction of the injured and corpses can be traumatic to firefighters. This can impact their psychological well-being and can result in mental health illnesses such as PTSD, depression, suicide and alcohol abuse. The importance of mental health services and intervention was emphasised.

Therefore, to deal with the mental health illness, an intervention tool such as the CISD is used to mitigate and manage the psychological effects of traumatic or critical incidents faced by emergency workers such as firefighters. CISD relates to the WTM as they both focus on survivors of trauma caused by traumatic events. Debriefing is not used as therapy or replacement for psychotherapy. Debriefing is a comprehensive process that has seven

steps that are structured and psychoeducational by nature. The steps are arranged in a particular order for the purpose of facilitating the transition of the group from the cognitive domain to the affective domain and back to the cognitive again.

Different fire departments in the world make use of CISD as a tool to assist authorities within the fire service or departments to determine what is going on inside a firefighters mind after a traumatic incident. The researcher did not find literature that shows the use of CISD in the South African fire and rescue departments. The use of debriefing has been seen as an unpopular method. Some firefighters showed some resistance to attend debriefing due to different factors such as stigma, fear of victimisation or lack of support from the employer. Others who attended debriefing deemed it as an effective tool as they saw significant recovery of trauma-related symptoms.

Fire departments in South Africa have been using other support services developed by the employer, which are the EAPs. EAP practitioners work with other stakeholders within the organisations to address the needs of employees and ensure that they receive adequate mental health services.

Chapter 4
RESEARCH METHODOLOGY

4.1 INTRODUCTION

This chapter provides detailed descriptions of the research as a process, philosophical worldviews, research approach, research design, population and sampling, and data collection tools that were used in this study. Furthermore, the focus is on describing how data was analysed, the validity and reliability of the presented data, limitations and delimitations of the study and ethical considerations.

4.2 RESEARCH

Leedy and Ormrod (2005:2) described research as a systematic process that allows the researcher to collect, analyse and interpret data for the purpose of increasing knowledge and understanding of a specific phenomenon that is of interest and concerns others. Through research, problems that are encountered daily can be solved. Similarly, Sauders et al. (2009:4) defined research as a systematic way of discovering new things in order to increase your knowledge. These research definitions indicate that research requires proper planning and direction. The researcher followed a specific process to collect, analyse and interpret information that was collected through the in-depth interviews with SPM firefighters.

4.2.1 Research process

Research by its nature is seen as a repeated process also known as cyclical (Leedy & Ormrod 2005:7). The existence of research is based on the problem that needs to be solved. The problem identified is that firefighting as a profession is physically and psychologically demanding and firefighters are exposed to horrific or traumatic events that affect their mental health. The research process assisted in identifying gaps in relation to debriefing measures within the fire and rescue departments, specifically in the SPM. It should be noted that research is rarely conclusive (Leedy & Ormrod 2005:7).

The research cycle adapted from Leedy and Ormrod (2005:8) gives a detailed description of the research cycle. The research process is depicted in Figure 4.1.

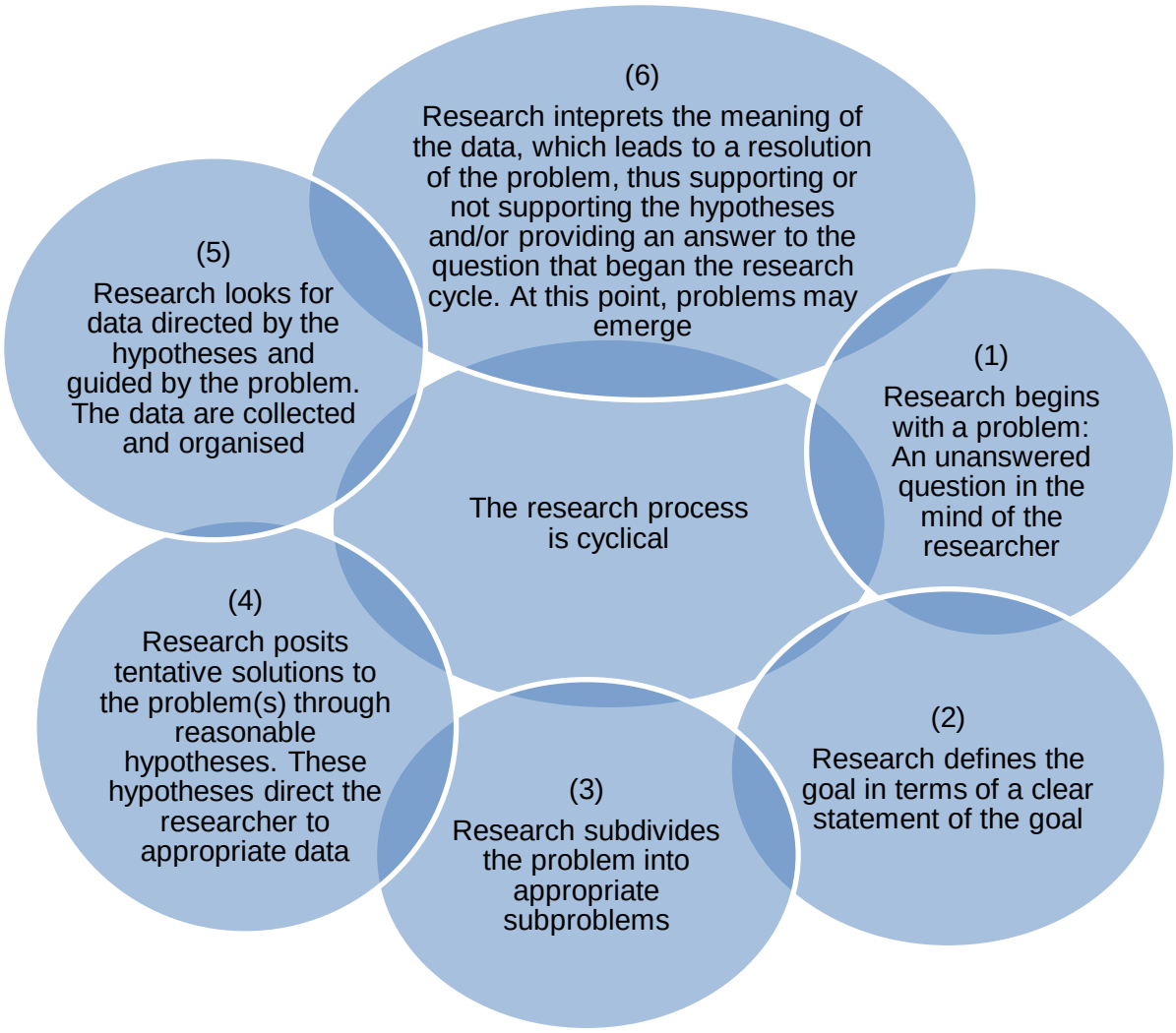

Figure 4.1 Research process (Adapted from Leedy and Ormrod 2005:7)

The researcher used the research process as a compass to direct this study to the path of research. Once the problem was identified, the plans such as research questions and objectives were set. The research questions and objectives guided the researcher to conduct qualitative data collection and to analyse the process.

4.2.2 Philosophical worldviews

According to Creswell (2014:35), philosophical worldviews influence the practice of research and it is therefore important to identify them. Qualitative researchers use two main major research philosophies that are critical and interpretive or constructivist (Leavy 2017:129). In this study, the researcher used the constructivist/interpretive worldview as it allows individuals to seek meaning and understanding of the world and environment they live and work in.

Through the application of the constructivist worldview, the researcher was able to address the process of interaction among individuals (Creswell 2014:37). Leavy (2017:129) indicated that researchers who work with this worldview are drawn to the people's patterns of interaction and the interpretive process by which they assign meanings to situations and events. Furthermore, the constructivist worldview allows the researcher to understand the cultural and historical settings of participants. A researcher uses this worldview to prioritise the individuals' subjective understandings and many meanings in the research process (Leavy 2017:129). The main goal of the researcher, is therefore, to make sense of the meanings that others attach to their world (Creswell 2014:37).

Through the constructivist worldview, the researcher was able to obtain the views and experiences of firefighters in relation to debriefing measures provided to them.

4.2.3 Research approach

There are three approaches to research which are qualitative, quantitative and mixed methods. These research approaches give the researcher plans and procedures to follow for the purpose of conducting a research. These procedures and plans allowed the researcher to make a decision on which research approach to be used for this study. The decision taken by the researcher was informed by the constructivist worldview that the researcher applied to the study (Creswell 2014:31). It included procedures of enquiry (known as research designs) and relevant research methods of collecting, analysing and interpretation of data. The nature of the research problem also influenced the selection of the research approach.

For the purpose of this study, the researcher chose a qualitative research approach. According to Burns and Grove (2001), researchers use qualitative research to obtain answers by examining how individuals occupy different social settings and how they function in such settings. Similarly, Maree (2016:53) was of the opinion that researchers who are using a qualitative research approach focus on how people interact with their surroundings through daily activities such as gestures, cultural practices, rituals, roles and social structures. Moreover, in qualitative research the researcher gets the opportunity to explore and understand the meaning individuals or groups place to their human or social problem, circumstances, activities, people and objects (Leavy 2017:124).

A qualitative research approach was relevant to this study as the researcher had the opportunity to explore the experiences of firefighters and understand how they function within their working environment. Through the interaction with each firefighter, the researcher was able to understand the role of firefighters in the society and the significance

of firefighting as a profession. The researcher also used this approach to explore the type of debriefing measures available within the SPES.

It should be noted that this research study was predominately qualitative, whereas the quantitative approach was used in gathering the socio-demographics of participants. De Vos et al. (2011:66) described a quantitative approach as an approach that allows the researcher to obtain data in a systematic and standardised manner.

4.3 RESEARCH DESIGN

Research design is described as an overall framework for data collection (Leedy & Ormrod 2005). According to De Vos et al. (2011), it is important that design plans must be put in place in order to understand how data will be collected and analysed. Plans for identifying research sites and selecting participants or subjects should be put in place. The evidence or information collected will make it possible for the researcher to answer the research questions (De Vos et al. 2011).

An exploratory research approach was used in this study in order to gain insight and clarity about the research problem at hand. The main aim of an exploratory study is to unpack knowledge that is not fully known (Welman & Kruger 2005:51). Extensive research has been done on the working experiences of firefighters; however, there are insufficient studies on the application of debriefing in the fire service departments, especially in South Africa. An exploratory study allows the researcher to collect and receive information on the personal histories and experiences of participants based on their daily encounters in their work environments (Welman & Kruger 2005:51).

Furthermore, through exploratory research, the researcher is able to provide new knowledge on matters that have been previously overlooked. This can be done through the active involvement of the researcher (Reiter 2017). Therefore, exploratory research was used in this study to explore more on debriefing measures and other mental health services provided to firefighters in the SPES. Through the interaction with firefighters, the researcher was able to gain new insight into the perceptions of firefighters regarding the type of debriefing provided to them.

4.4 RESEARCH POPULATION AND SAMPLING

Population refers to the study of objects and consists of groups, individuals, organisations, events and human products (Welman & Kruger 2005:52). The population of this study was firefighters employed at the SPES within the SPM. Non-probability sampling was used in

this study, focusing on purposive sampling. According to Babbie and Mouton (2007), purposive sampling is a form of non-probability sampling that is mainly based on the judgement of the researcher, of which the sample consists of elements that are the most representative or characteristic of the population.

Ritchie et al. (2013:222) pointed out that in purposive sampling, participants of a sample are selected with the aim to represent a specific group, organisation, event, an occurrence of any nature and are based on specific criteria. In purposive sampling the researcher ensures that participants understand the purpose of the study. It is important that the researcher should choose people that are willing to participate based on their expertise, knowledge or experience (Etikan et al. 2016). Qualitative research uses non-probability sampling as it does not require a sample size that is statistically formulated (Maree 2016:197).

The sample group of this study was firefighters employed at SPM within the SPES. It was important for the researcher to know the organisational structure of the SPES as this helped in deciding who would form part of the study. The SPES employs 60 firefighters, including their respective authorities, and from the 60 firefighters only 15 participants were selected. The chief fire officer, three station commanders, one employee from the operations and training unit, including ten firefighters participated in the study.

The researcher chose 15 firefighters based on their availability and different working shifts. Other firefighters had to come from other offices, such as Ritchie, which is one of the three fire stations in the SPM. The study included both male and female firefighters. All 15 participants that were sampled were willing and voluntarily participated in the study. There were only three female firefighters in the SPES and the rest were men. Only two females were willing to be part of the study. In South Africa, the firefighting profession is still a predominately male-dominated profession, only about four percent of women are firefighters (McCoppin et al. 2018).

4.5 DATA COLLECTION TOOLS

In qualitative research, the main mode of collecting information or data is through interviews. Information is collected through one-on-one interaction of the researcher with the specific group of people or individuals that are in possession of the information needed to complete the study or research project (DePoy & Gilson 2008:108). The study used a qualitative research method obtained through in-depth interviews. (See Appendix B for the interview questions.) Maree (2016) defined qualitative interviews as measures used to understand the frame of reference of the individuals and also enter their world by getting a perspective

on how they view life, making sense of their daily experiences and exploring their world before explanations that are scientific. For clarifying and analysing of data, this study made use of semi-structured interviews, which requires the researcher to have one-on-one interaction with the participants.

Firefighters are exposed to horrific scenes during their response and rescue work and this type of work is traumatic. The information shared by firefighters was sensitive and personal. Therefore, in-depth interviews were relevant to this study as they allowed firefighters to have one-on-one interaction with the researcher. Through this mode of data collection, the researcher managed to explore more on the type of work firefighters do and the type of debriefing provided to them. The researcher, as a professional social worker, used the skills of rapport building to assist firefighters to talk freely and they were constantly assured of confidentiality. This allowed each firefighter to comfortably share their experiences with freedom and confidence.

The interviews were held in a private room and Covid-19 regulations were observed. The researcher and the firefighter wore masks, sanitised and kept social distancing. The data was collected through 30–45 minute interviews that were done over the duration of two weeks.

4.6 DATA ANALYSIS

Veal (2011) stated that in a qualitative data evaluation, the researcher analyses data by means of arranging it into groups on the premise of themes, concepts or comparable functions. Veal (2011) came up with new concepts, formulated conceptual definitions, and examined the relations among the concepts. In a qualitative study, information is analysed by grouping and figuring out similar themes, quotes and observations and thereafter coding them (Struwig & Stead 2001:15).

The researcher analysed the collected data by making use of thematic analysis. Braun and Clarke (2006:79) defined thematic analysis as a data analysis method in phenomenological inquiry that comprises of data from interviews with participants to find different types of experiences, which are visible from the participants' perspectives. Thematic evaluation as an independent qualitative descriptive method is mostly defined as a technique that is used to analyse, identify, and report patterns in the data (Braun & Clarke 2006:79).

In order to answer the main questions that the study aims to answer, the data needs to be analysed. Data has to be broken down; themes should be identified and be prepared into categories. It is important that the researcher identify the links and patterns with and inside

categories. The researcher will then interpret the findings of the study by these styles and connections and then ensure that the information is summarised in accordance with the given themes (de Vos, 2011:402).

The researcher transcribed in sufficient detail every response that each participant gave during the one-on-one interviews. In order to understand and get a sense of what each participant said, the researcher had to read and reread through all the transcriptions. The researcher had to carefully evaluate the meaning of words used by the participants. It was important to do this as the researcher had to be attentive to the words and phrases that were spoken in the vocabulary of the participant and the meaning thereof.

The researcher had to identify various themes and code those encountered by means of a line-by-line analysis of every interview transcription. In order to formulate topics or themes into categories the researcher had to find the most descriptive wording for each theme. A list of all similar themes were grouped together for the purpose of decreasing the number of categories. Themes were reduced as codes and the codes were transcribed next to the relevant sections of the transcriptions. To prevent duplication, the researcher decided on abbreviating each category and alphabetised the codes. Every data that belonged to each category had to be placed together and a preliminary analysis was performed. Finally, the researcher re-examined the existing transcriptions to assess whether it was necessary to recode them.

This study was predominately qualitative with minor quantitative research. Therefore, quantitative data, which was mainly socio-demographics, was analysed through Microsoft Excel.

4.7 DATA VALIDITY AND RELIABILITY

Kelliher (2011) observed that in order to give a clear understanding to the reader, the researcher should explain the meaning of the experience that is studied, since qualitative research is solely dependent on the presentation of a strong descriptive study. Therefore, for validity reasons, the researcher ensured that the tools and processes utilised for data collection were included in the final document and made available and open for introspection.

According to Maree (2016:124), demonstration on reliability is through research design and the implementation thereof, the assessment of the project and finally, a detailed operational gathering of data. This study documented the collection of data and the analysis of

processes in order to ensure reliability so that the reader will understand how the investigator obtained and examined the data.

4.8 LIMITATIONS AND DELIMITATIONS OF THE STUDY

4.8.1 Limitations

In order to compile Chapter 3, the literature review, the researcher had to find literature that was relevant to the study. During the search, the researcher could not find South African-based studies that describe the use of debriefing with the firefighters in South Africa. This was a limitation as the researcher had to rely on international literature to explain the impact of traumatic work on firefighters and the use of debriefing as an intervention tool thereof.

Firefighters in SPES work in shifts and they respond to emergency calls at any time of the day. Therefore, the researcher had to conduct in-depth interviews based on the provided schedule and availability of the firefighters. Firefighters that gave consent to participate in the study were not all based at the Kimberley station. Five participants had to travel from Ritchie which is 30 km from Kimberley. The researcher, therefore, could not always conduct the interviews on the agreed time or dates. This prolonged the data collection process. During the interviews, some of the participants had to respond to emergency calls and the researcher had to wait until the firefighters arrived from the scene or schedule the interview for another day.

In order to allow the data collection process to continue, the researcher had to respect the type of work firefighters do and the organisation's procedures. The researcher remained calm and patient until the data collection process was completed.

4.8.2 Delimitations

The participants were initially reluctant to participate in the interviews as they were afraid of victimisation or stigmatisation. However, the researcher assured each one of the participants that the information collected was for academic purposes and they would not be identifiable. None of the names of the participants were mentioned in the data analysis as all remained anonymous. The sample was small; therefore, the findings of the study are not large enough to be generalised to a broader profession. There was no need for counselling as the participants showed a sense of strength and boldness during the interviews.

4.9 ETHICAL CONSIDERATIONS

4.9.1 Avoidance of harm

According to De Vos et al. (2011:115), the most important ethical rule in conducting social research is to ensure that it does not bring any harm to participants. In order to ensure the credibility and validity of the study, the General/Human Research Ethics Committee gave approval to the researcher to conduct the study (see Appendix A). They also validated the interview guide and consent forms used for the purpose of data collection. The mayor approved that the researcher could conduct the study in the SPM with the firefighters at the SPES. Covid-19 regulations were adhered to, such as sanitising of hands, chairs and table, keeping social distancing and wearing of a mask to prevent the spread of the virus.

Briefing the firefighters about the purpose of the research was important as it allowed each one of them to be at ease. Based on the professional experience of the researcher as a social worker, outlining of the purpose of any meeting or engagement with an individual is part of rapport building. The researcher observed any emotions and feelings that were displayed by the participant to prevent the participant from re-experience trauma. Participants answered questions with boldness and strength. Therefore, it was not necessary for the researcher to provide or make referrals for counselling.

4.9.2 Voluntary participation

Participants should not feel compelled or forced to be part of the research study, their participation must be voluntary (De Vos et al. 2011:116). The researcher guaranteed every participant before the interviews were conducted that participation would not be forceful and they had the right to withdraw from the project if they felt forced to participate. Every firefighter was allowed to voluntarily participate in the research project without being forced or manipulated to participate. All firefighters that formed part of the study made a conscious decision to form part of the research project (see appendix C).

4.9.3 Informed consent

It remains the responsibility of the researcher to ensure that every person who forms part of the study receives the respect to decide or choose what will or will not happen to them (De Vos et al. 2011:117). The researcher received permission from the mayor of the SPM, which is the municipality that employs firefighters. (See Appendix D.) The chief fire officer at the SPES assisted in organising firefighters that were interested in forming part of the

study. Every participant completed a consent form that explained the purpose of the study, its objectives and the expected period of interviews. (See Appendix C.)

4.9.4 Confidentiality

The aspects of anonymity are of importance as the identity of the participants will not be revealed (De Vos et al. 2011:119). The researcher ensured that the privacy of all participants is maintained and remained anonymous when data was presented. The information shared by participants was kept as confidential and none was shared with their authorities.

4.10 CHAPTER SUMMARY

Research is a systematic process that allowed the researcher to collect, analyse and interpret data for the purpose of increasing knowledge and understanding of a specific phenomenon which interest and concerns others. Through this process, the researcher was able to choose a qualitative approach as the relevant approach for this study. Through the constructivist worldview, the researcher was able to obtain the views and experiences of firefighters in relation to debriefing measures provided to them. The study was approved by the General/Human Research Ethics Committee and this allowed the researcher to continue freely with the study. The Mayor of the SPM gave written approval that the study could be conducted with firefighters at the SPES. All participants that formed part of the study gave consent. The researcher ensured that data was collected and analysed as expected.

Chapter 5
DATA PRESENTATION, INTERPRETATION AND DISCUSSION OF THE RESULTS

5.1 INTRODUCTION

This chapter aims at providing the results of the in-depth interviews conducted with firefighters within the SPES. The interview guide was divided into two sections. Section A focused on gathering the socio-demographics of the participants and Section B was based on the information related to debriefing measures provided for firefighters. The researcher used qualitative data as the main approach for collecting data with minor quantitative data to collect the socio-demographics of the participants. The following information is interpreted and discussed based on the results from the interviews. The interviews were conducted with fifteen respondents. Each participant was given a number to protect their identities. This also allowed the researcher to maintain confidentiality.

5.2 SECTION A: SOCIO-DEMOGRAPHICS OF PARTICIPANTS

This section comprises of eight questions that focused on understanding the age, gender, marital status, race, home language, level of education, religion, role in the organisation and years of service as a firefighter.

5.2.1 Age, education, position in the fire department and years of service

Table 5.1 presented indicates the correlation between the age, level of education, position in the fire department and years of service. Fifteen participants formed part of the study. The age of the participants ranged from the youngest being 35 years to the oldest being 64 years old. The level of education of the participants indicated that all fifteen participants completed Grade 12. Fourteen of the participants had obtained a Firefighter 1 and 2 qualification, whereas Participant 1 was a reservist firefighter. Firefighters 11 and 13 had further education: a diploma and an honours degree. The results presented, further shows that most participants' position in the fire department were that of a firefighter, with one reservist firefighter, one leading firefighter, two station commanders and a chief fire officer. The years of service as a firefighter ranged from two years to 47 years.

Table 5.1 Participants' age, level of education, role in the fire department and years of service

Partici-pant	Age	Level of education	Position in the fire department	Years of service as firefighter
1	55	Grade 12, Firefighter 1 and 2 Diploma	Station commander	33
2	44	Grade 12, Firefighter 1 and 2, Higher Certificate	Leading firefighter	24
3	52	Grade 12, Firefighter 1 and 2	Firefighter	25
4	43	Grade 12, Firefighter 1 and 2, Hazmat operations and level 3 first aid	Firefighter	18
5	45	Grade 12, Firefighter 1 and 2, Hazmat operations	Firefighter	12
6	48	Grade 12, Firefighter 1 and 2, Hazmat operations	Firefighter and fire instructor	18
7	41	Grade 12, Firefighter 1 and 2, Hazmat operations	Firefighter	18
8	44	Grade 12, Firefighter 1 and 2, Hazmat operations	Leading firefighter	23
9	42	Grade 12, Firefighter 1 and 2	Firefighter	10
10	46	Grade 12, Firefighter 1 and 2, Hazmat operations and fire instructor	Leading firefighter/ operational	25
11	64	Grade 12, Degree, Honours	Chief fire officer	47
12	64	Grade 12, Firefighter 1 and 2	Firefighter	25
13	40	Grade 12, Firefighter 1 and 2, Hazmat operations 2, Pump operations and instructor	Firefighter	15
14	35	Grade 12	Reservist firefighter	2
15	49	Grade 12, Firefighter 1 and 2, Diploma	Acting station commander	29

Source: Field Survey (2021)

The findings of the research correlates to the study conducted by Newman (2019) that in order to study in the firefighting profession in South Africa one has to be from the ages of 18 years but not older than 45 years. It is required that all applicants should have Grade 12. Within the firefighting profession, volunteers are known as reservist firefighters. Newman (2019) further stated that firefighters can study further in the field of firefighting in order to be promoted to other ranks such as platoon commander, station commander and chief fire officer.

Furthermore, the study conducted by Tull (2020) confirmed that some of the risk factors may put firefighters at a risk of developing mental health illnesses such as PTSD. Risk factors such as starting to work at a younger age, long service in the fire service and holding a higher rank such as supervisor can heighten your risk of developing mental health illnesses. The constant interaction with such traumatic events have a repetitive negative

experience on the psychological functioning of OFRs such as firefighters. Other firefighters, based on their years of service, may develop maladaptive coping mechanisms such as substance and alcohol abuse (Brooks et al. 2017). The study by Haddock et al. (2012:663) concurs with the findings as it indicates that firefighters consume alcohol to cope with the effects of repeated exposure to trauma.

The study conducted by Maabela (2015:61) confirms that the WTM is an effective model for both men and women who come from different cultural backgrounds and age groups. In this regard, the WTM concurs with the findings as it is envisioned to benefit firefighters within the SPM as they come from different backgrounds and different demographics. On this basis, the WTM will be helpful in assisting firefighters to deal with and even manage similar historical and previous traumatic experiences. According to Hajiyiannis and Roberts (1998:9), clients can benefit from the WTM, irrespective of the strengths or weaknesses they possess. They do not necessarily have to be psychologically minded or even sophisticated individuals. This means firefighters with lower or higher ranks, with short or long experience and young or older age will benefit from the WTM.

5.2.2 Gender

The findings presented Figure 5.1 reveal that 84% males participated in the study and only 16% were females.

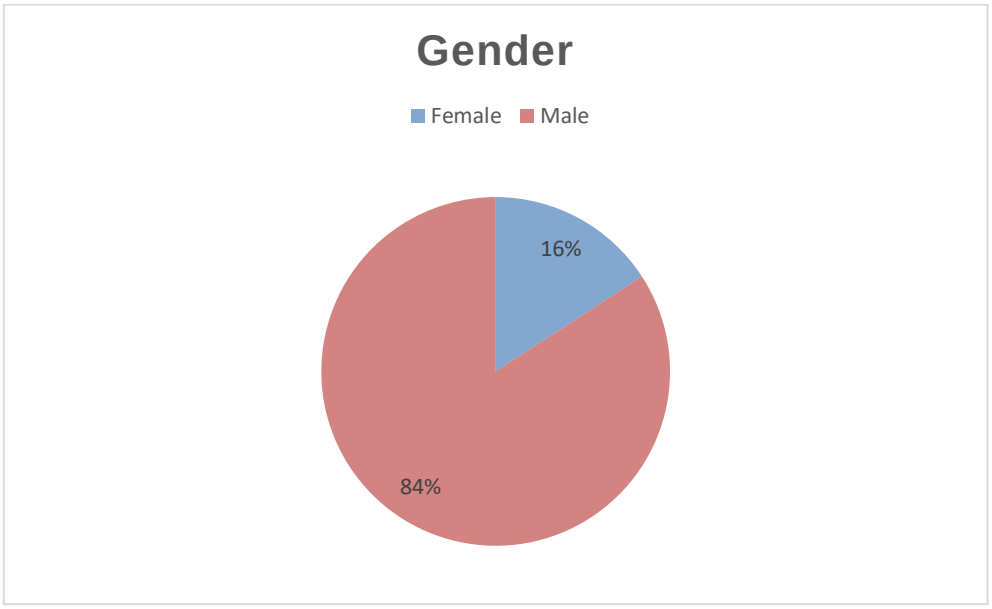

Figure 5.1 Gender of participants (Source: Field survey 2021)

Firefighting is a male-dominated profession, as less than five percent of employed firefighters are women (Talbot et al. 2021). In South Africa, women are not sufficiently

represented within the firefighting profession as society still believes that firefighting is not a suitable occupation for women (Sezoe, 2021). A possible reason for this can be that more males are employed as firefighters compared to females, as the firefighting profession is regarded as physically and emotionally demanding. The number of females are low as there were only three females firefighters employed within the SPES (SPM IDP, 2017-2022).

Moreover, the APA (2013) found that the twelve-month prevalence of major depressive disorder among women is one and a half to three times higher than for men. Therefore, the depression rate in women firefighters could be attributed to the social pressure that they experience while working within the male-dominated profession (Jahnke et al. 2012:6).

5.2.3 Marital status

Based on the results presented in Figure 5.2, the majority of the participants (78%) were married, 15% divorced and 7% were single.

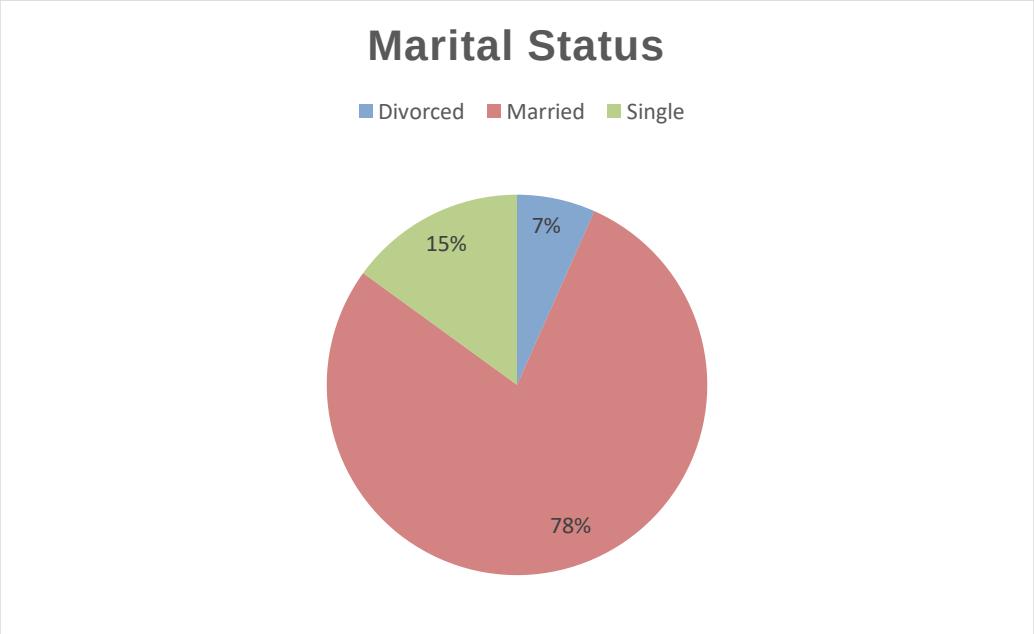

Figure 5.2 Marital status (Source: Field survey 2021)

This demographic is important as it indicates that firefighters are part of a family system. Their work experiences may have an impact on their daily relationships. In a survey conducted in South Africa by Joubert (2012), firefighting appeared to be the most stressful job and this causes firefighters to consistently deal with a substantial amount of pressure and strain on their daily relationships such as family, marriages or friends. However, in this study it seems that firefighters' partners were a support for them and they were able to maintain a good marital relationship, despite their stressful environment.

5.2.4 Race

The results presented in Figure 5.3 depicts the race of the participants, where 37% of participants were Coloureds, 31% African and 32% White.

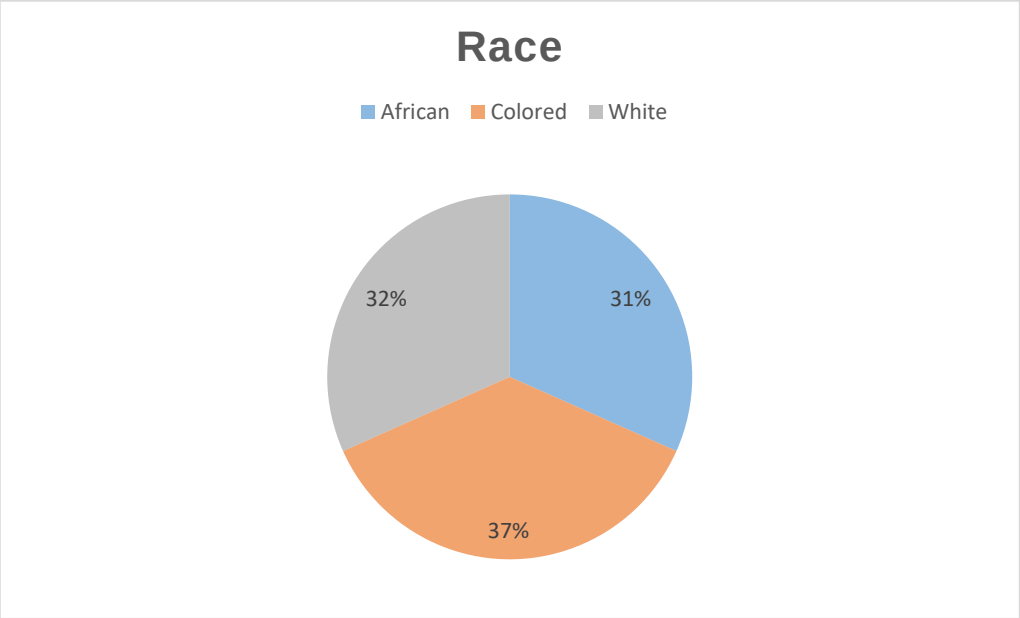

Figure 5.3 Race (Source: Field survey 2021)

The Coloured race (mixed race) is predominately found in the Northern Cape Province in South Africa (SPM IDP 2017–2022:19). Therefore, the majority of the employed Coloured firefighters may be due to the high numbers of Coloured people in the Northern Cape. The Employment Equity Act 55 of 1998 (RSA, 1998) promotes equity within the workplaces and declares that any persons of all races have the right to employment in South Africa. Therefore, the SPM has employed firefighters from different races, which is in accordance with the Employment Equity Act 55 of 1998.

5.2.5 Home language

The findings shown in Figure 5.4 indicate that the majority of the participants (69%) spoke Afrikaans as their home language; 14% of the participants spoke English, whereas 17% of participants spoke Setswana.

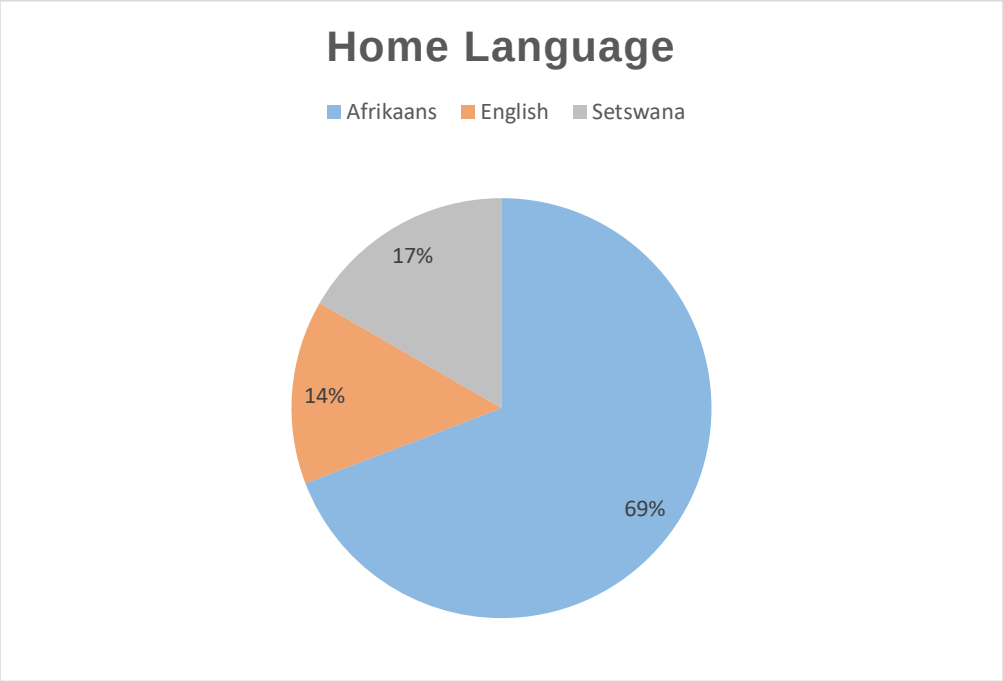

Figure 5.4 Home language (Source: Field survey 2021)

Afrikaans is the home language of most residents in the SPM (SPM IDP 2017–2022:19). Although the participants spoke different languages, they could all understand English, therefore, the interviews were conducted in English.

5.2.6 Religion

The results as shown in Figure 5.5 revealed that 97% of the participants were Christians and only three percent Islam.

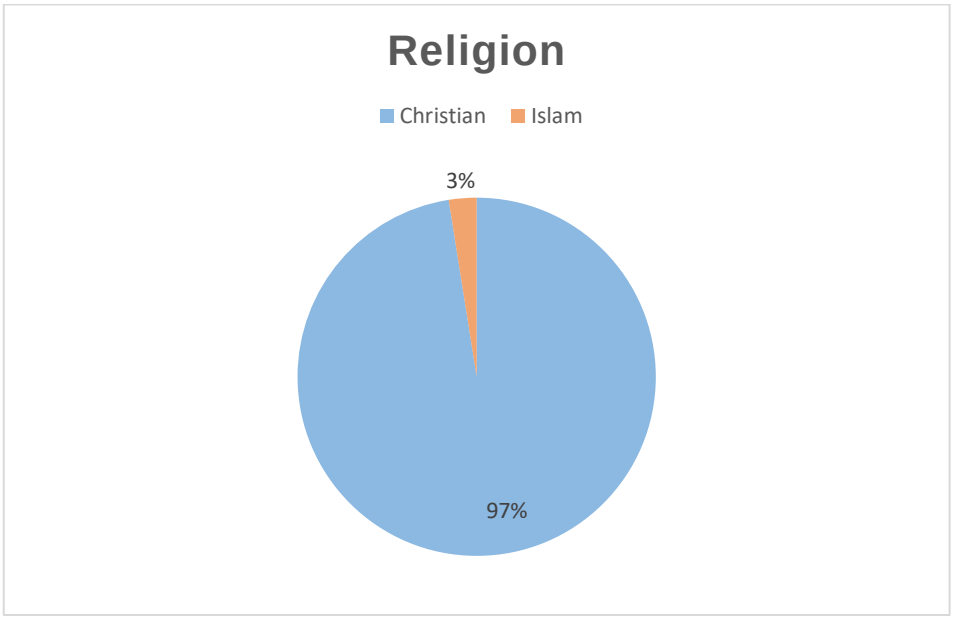

Figure 5.5 Religion (Source: Field survey 2021)

This findings concurred with the study conducted by Metcalf (2020), which states that religion can be viewed as a form of support in reducing the effects of stress or trauma in an individual's life. According to Van Straten (2020:264), the occupation of OFRs such as firefighters draws individuals with high levels of resilience, therefore the ability to recover from stress requires resilience in order to cope. Furthermore, the WTM confirmed that it is crucial that the trauma counselor be able to respect the client's experiences and beliefs and that the counsellor should use these beliefs and experiences to guide and assist the client in deriving some form of meaning from the traumatic event. This should be done in such a way that it produces some future perspective and hope (Eagle 1998:143).

In conclusion, the socio-demographics presented in Section A allowed the researcher to provide the background details of the participants.

5.3 SECTION B: INFORMATION RELATED TO DEBRIEFING MEASURES PROVIDED FOR FIREFIGHTERS

In this section, the researcher explored more on the type of work firefighters do and the type of debriefing provided to them. The researcher, as a professional social worker, used rapport building skills to assist firefighters in talking freely and constantly reassured them confidentiality. This allowed each firefighter to comfortably share their experiences with freedom and confidence. The interview questions and the responses assisted in answering the research objectives and questions of the study (see Appendix B).

5.3.1 Participants' understanding of debriefing

Based on the responses provided by the participants, it can be noted that the majority (N=15) had a general understanding of debriefing. Participants 1, 2, 3, 4, 5 and 6 described debriefing as follows:

> ***Participant 1:*** *Debriefing means coming back from a heavy call and the whole staff talks about it, look at the emotional state and the functioning of the equipment. This is done immediately after the call.*
>
> ***Participant 2:*** *Within the fire service we refer debriefing as post-mortem. A proper investigation at the event where we look at the impact of the event on the firefighters. The focus is on their safety and emotional well-being. We identify those who are in distress. No one is forced to form part of the debriefing process.*
>
> ***Participant 3.*** *Debriefing is a process used to identify operations in terms of personal fitness and mental fitness. It is a holistic approach to understand the impact of the traumatic scene on individual's emotions, feelings and psychology. Through debriefing, operational activities are evaluated.*

Participants 4: *Debriefing is when something happened during a scene (such as witnessing a death of a child or colleague) and your mind-set is still there. You are then given the opportunity to speak about what happened and you are referred for counselling. This allows you to speak about the traumatic scene and how it affected you.*

Participant 5: *Debriefing is a support that you get and it is similar to counselling. If something happened that is traumatic, then you are allowed to talk about it so that your state of mind can be assessed for further referrals.*

Participant 6: *There are different types of debriefing, such as debriefing about the scenario and what needs to be done to better the service that was provided to people. After being busy with fire drills at the fire station, then we will have debriefings to smooth out lack of knowledge in understanding the work that has been done. Debriefing also includes positive criticisms in order to be more vigilant and sharper.*

These findings concur with a description of debriefing provided in the study of Paton et al. (1998), which describes debriefing as prevention, as it aims to decrease reactivity of the individual to an event after the traumatic event has occurred. Debriefing is done after a traumatic call, and it allows affected individuals to ventilate their emotions in a natural way (Hokanson & Wirth 2000:255). As mentioned by Participants 3 and 6, debriefings also mean "debriefing the scenario" and "operational activities", and based on these responses it indicates that the fire department focused more of operational and scenario debriefing than on the emotional well-being of the firefighters. These responses are confirmed by the NFCC (2019:15) that there are operational debriefings within the fire departments which focus on the performance of the teams, performance of individuals and performance of policies and procedures. The participants, therefore, viewed debriefing as a process where individuals are given the opportunity to relate their emotions after a scene they responded to. It is an opportunity to speak about what happened at the scene and evaluate operational activities.

5.3.2 Nature of occupation of firefighters at the Sol Plaatje Municipality

All (N=15) participants indicated that as firefighters they work in a variety of traumatic events on a daily basis, such as "removal of trapped bodies in motor vehicles, picking up of the remains of corpses, preventing destruction of properties, removing corpses after individuals committed suicide, rescuing of people affected by floods or structural fires". The participants also mentioned that they "check pumps and vehicles, and ensure that their working equipment is safe".

These findings relate to a study conducted by Deppa (2015:6) that stated that the profession of firefighting has expanded, as firefighters are not only limited to responding to fire calls; however, they rescue people who are trapped in vehicles and structures that can collapse. Firefighters respond to other environmental disasters and to almost all other non-security

related incidents (Deppa 2015:6). Firefighters in South Africa are exposed to different types of operational incidents that require them to work in stressful situations. These operational tasks include extensive crawling of ventilation roofs or walls using hand or power tools, hose line operations, rescue operations, carrying heavy objects, forcible entry and other emergency response actions (Ngope 2018:69).

5.3.3 Exposure to traumatic events

The results indicated that the firefighters experienced trauma in their line of duty. All (N=15) the participants confirmed that their work exposed them to multiple traumatic events that had a negative impact on their daily functioning. Participant 4 shared that a call they responded to was heart-breaking:

> *Yes, I have been involved in many calls that were traumatic. I had to respond to a medical call where people fought and stabbed each other with knives. I tried to stop the bleeding but unfortunately I could not rescue the life of that young man. He eventually died in my arms. This was heart-breaking but I had to just be strong as it is my work.*

Participant 5 shared that the traumatic call affected his mental functioning as he was admitted in a mental health hospital:

> *Yes, I responded to a call that involved a truck and a motor vehicle that collided head on. The accident was bad, I had to rescue corpses of children and their families. This had a huge impact on my mental health and I had to be in a mental health hospital for a period of nine months.*

Participant 8 could not sleep for multiple days and did not receive any debriefing after the traumatic event:

> *Yes, I responded to a shack fire call, where we found a mother with her children badly burnt to death. It was horrible because it involved children. I could not eat for few days as I kept seeing the burned corpses when I close my eyes. I did not receive any debriefing after this call.*

Participant 14 indicated that he got hurt physically during a call and he did not receive counselling at the time:

> *Yes, we responded to fire related incidents such as oil spills and explosions. We had to rescue people injured and dead. In the process I got hurt, my whole knee was dislocated and I was booked off for six to eight weeks. Those days we were not getting counselling or debriefing. We decided to have a peer counselling. In the 20-25 years that I have been employed, counselling has not been effectively implemented.*

These findings concur with a study conducted by Hokanson and Wirth (2000) that stated that traumatic events such as witnessing a death of a child or incidents that involve multiple causalities warrant debriefing. From the responses mentioned above, it however, seems that debriefing had not materialised. Therefore, debriefing should be prioritised for all firefighters who were exposed to these traumatic events. Furthermore, it is confirmed in a study conducted by May and Wisco (2016:233) that firefighters regularly experience psychological and physical trauma as they respond to natural disasters, death, accidents, fires and shootings. This is because they are the first to arrive at the scene to help survivors of these events. In most cases, these experiences can be traumatic to both the firefighter and the survivor (May & Wisco 2016:233).

In this regard, it was confirmed in a study conducted by Sibisi (1999:12) that in order to effectively address the firefighter's distress, the WTM is an important model as it promotes the recognition of both cognitive and behavioural impact of trauma in facilitating the trauma management process. In this regard, the WTM provides an effective trauma management resource that is necessary to address subjective elements of trauma and PTSD (Sibisi, 1999:12). Therefore, an effective trauma management programme is necessary, more specifically in the context of fire and rescue departments. In these departments, firefighters are constantly exposed to and experience trauma in their line of duty. In this regard, a comprehensive approach is needed to effectively manage the impact of trauma.

5.3.4 Ability of professional counsellor at the Sol Plaatje Municipality

The majority of the participants (N=13) indicated that they were aware of a counsellor appointed at the SPM; however, they did not know the EAP practitioner in person:

> *Yes, we have an Employee Assistance Practitioner and workers who suffer from psychological distress are referred to him. It would be great if this person can be visible at all times.*

Participant 2, 4, 6 and 7 indicated that they were unaware of the counsellor appointed to provide debriefing. Participant 2 heard that there was someone but never saw the counsellor coming to offer counselling:

> *I heard there is someone at the SPM; however, for the years I have been employed as a firefighter, I never saw him at the Sol-Plaatje Emergency Service coming over to offer counselling services.*

Participant 4 heard of someone at the SPM; however, it took months to get an appointment:

> *No, I do not know of any counsellor, I heard there is someone at the SPM who can provide counselling but it takes months to get an appointment.*

Participant 6 said they did not know such a person:

> *No, we do not have such a person and I do not know of such a person.*

Participant 7 said they were not formally informed about such a person:

> *At the moment I cannot say "yes" as we have not been formally informed about such a person. Usually, we provide debriefing amongst ourselves as firefighters and if there is person who needs help with inform the Station Commander.*

Based on the responses provided it can be concluded that even though the participants knew about a professional counsellor responsible for debriefing, they did not know who that person was. This is a concerning finding as it means the services of EAP needs to be marketed and promoted to the SPES. Therefore, it is important that firefighters should be introduced to the appointed counsellor at the SPM. The counsellor should promote the services through awareness programmes. The study conducted by Metcalf (2020) highlighted the importance of creating awareness and education on stress and coping mechanism for firefighters.

5.3.5 Firefighters' awareness of debriefing measures available after working or being exposed to traumatic events

Based on the following responses provided by the participants, it shows that the majority (N=13) were aware of debriefing measures provided to them and they indicated some dissatisfaction. Participant 3 indicated that debriefing was not conducted on all calls and specific hours:

> *Yes, I am aware as debriefing meetings are conducted when firefighters raise concerns that they need professional help. However, debriefing is not done on all calls and it is conducted within 48 hours.*

Participant 8 was aware and it happened within 72 hours:

> *Yes, I am aware as we have one-on-one sessions with the Station Commander; it happens within 72 hours.*

Participant 9 indicated that other fire stations such as Ritchie did not receive debriefing:

> *Yes, I am aware, debriefing is done but not on a regular basis because substations such as Ritchie do not receive debriefing.*

Participants 7 and 10 indicated that they were not aware of the debriefing measures provided to them:

No, I am not aware of debriefing measures provided to me as a firefighter, I only know when we are called for mistakes we did.

No, we do not receive any debriefing, it was only done when a firefighter passed away.

Based on the provided responses, it can be noted that the participants were aware of the debriefing; however, they had dissatisfaction with the process of debriefing. Some firefighters received debriefings, while others did not. The Surrey Fire Service Operational Guidelines (2012:5) stated that it is important that debriefing should be initiated within 24 to 72 hours and a CISM team be assigned and conduct a comprehensive assessment. Van Straten (2019:279) also suggested that due to shift work and long working hours, debriefing should be conducted after major incidents have occurred. This is crucial as it will help firefighters to process these experiences and even be protected against long-term effects of trauma.

The WTM can be a useful tool to be used as it helps in managing trauma within the SPES. The WTM is comprehensive and has a clear structure for addressing the concerns and unique needs of trauma survivors such as firefighters (Hajiyiannis & Robertson, 1999).

5.3.6 Firefighters' need for debriefing

The responses provided by participants indicated that the majority did not request debriefing after working in traumatic work. Participants 1, 4, 8, 9, 10, 11 and 14 indicated that they did not request debriefing as they preferred to manage their own problems through creating coping mechanisms such as:

taking sleeping pills, praying, playing sport, sleeping with a light on, delete the traumatic scene from my mind, talking to my wife who is a social worker who understand better, or joking around with fellow firefighters about the traumatic scene.

Participants 2, 6 and 7 indicated that they requested for debriefing; however, "the authorities did not respond to the request" and "authorities did not initiate debriefing". Two participants requested and received debriefing and they indicated it was effective:

Participant 7: *Yes I reported to the station commander who allowed me to relate my emotions regarding that traumatic call.*

Participant 13: *Yes I did seek counselling when I started as a firefighter. I approached the management and they organised a counsellor who provided me with three sessions. I felt much better after attending these sessions.*

The reason for not requesting debriefing may be based on the participants' cultural backgrounds, stigma of mental health and attitudes towards mental health that exist within

the firefighter community. This can impact the chances of seeking mental health services or treatment (Heyman et al. 2018:13). It was confirmed in a study conducted by Spoons (2018:2) that from the twenty 27 firefighters who participated in CISD, only about five percent found it to be helpful. Some of the firefighters reported that they were not comfortable to share their challenges, feelings or perceptions with their co-workers or authorities. The lack of assistance when they requested debriefing might be a reason why some participants decided to resort to other coping mechanisms.

Furthermore, there are different coping mechanisms that can be developed by trauma survivors. Religion can be one of them; as stated by one of the participants, they prefer to pray in order to deal with trauma effects. According to Eagle (1998:143), the WTM confirms the findings of the study as firefighters can be assisted to find meaning out of a traumatic event. The firefighters can be engaged on their belief systems, moreover on their political, existential or even spiritual level. This will assist the trauma counsellor to understand the reason behind the firefighters' interests in finding meaning to their traumatic experiences. The WTM further indicates that the client (firefighter) can be encouraged to seek meaning using their existing support systems such as pastors or healers. The WTM further encourages clients (firefighters) to build and maintain meaningful relationships that will be fundamental to the adherence of therapy sessions, and adherence to trauma intervention measures to deal with trauma symptoms.

Eagle (1998:139) further confirmed that clients such as firefighters can displace and repress their trauma symptoms. During life-threatening situations, people tend to suppress or hold back any feelings that are caused by a traumatic event. This can be done through the maladaptive coping mechanism mentioned by participants of sleeping with a light on or deleting traumatic events from their minds. Therefore, the WTM encourages trauma counsellors to allow the client (firefighter) to get the confidence to express their feelings and fantasies without feeling ashamed or embarrassed (Eagle, 1998). Firefighters that use maladaptive coping mechanisms should be educated and encouraged to replace negative coping mechanisms with positive coping mechanisms such as relaxation techniques, exercising and engaging in positive relationships.

5.3.7 Ensuring the mitigation of trauma through debriefing measures

The majority of participants (N=14) indicated that it is the responsibility of the station officer, also called station commander, to ensure that debriefing is provided. A few indicated that the divisional officer or chief fire officer should ensure that debriefing is provided:

Participant 2: *The station officer allows us to have discussions and there he will decide who needs professional help.*

Participant 3: *The divisional officer, safety officer, station commander, chief fire officer.*

Participant 4: *The station officer makes recommendation to the divisional operational officer and the chief fire officer makes further arrangements.*

Participant 6: *The station commander gets a report from a firefighter and then report to the divisional officer of operations who then reports to the chief fire officer.*

The answers provided by the participants were not clear as they gave different names of the person who should ensure that firefighters are provided with debriefing. In a study conducted by Mitchell and Everly (1995:4-7) it was indicated that not just any person can conduct or facilitate debriefing. Furthermore, Van Doren (2007:3) indicated that the safety officer or incident commander are eligible to facilitate debriefing, based on the knowledge and understanding of the purpose of debriefing. This study of Van Doren (2007:3) gave clarity on the confusion provided through the answers of the participants. Therefore, the researcher suggests that it should be made clear to the firefighters who is responsible to ensure that debriefing is provided.

5.3.8 Employer's role in promoting and maintaining official first responder's mental health

Based on the responses provided by the participants, the majority indicated that the employer does not prioritise or play a role in ensuring that debriefing is provided to them as firefighters. While Participants 2 and 4 indicated that the chief fire officer makes referrals of individuals who seek counselling to the appointed EAP professional based at the SPM, some of the other participants commented as follows:

Participant 1*: No, the employer has not prioritised the debriefing. There is no policy that indicates that firefighters should go for debriefing.*

Participant 2: *The employer ensured that as they receive referrals from the chief fire officer, they provide a nurse and counsellor for any firefighter who needs counselling or medical help.*

Participant 5: *If you do not report your feelings about incidents in general, then no measures are put in place by the employer [SPM].*

Participant 6: *The employer does not ensure that I receive debriefing. They only take you seriously when you display serious health problems.*

Participant 7: *Our chief fire officer always encourages us to seek help from the appointed EAP at the SPM.*

Participant 8: *The employer does not prioritise debriefing. I think it will be good if the employer can include psychological training when new firefighters are being trained.*

Participant 10: *I feel the employer does not care because they do not ensure that our management conducts debriefing. I believe there should be someone based at Sol Plaatje Emergency Service who is responsible for debriefing.*

Participant 11: *They do not take part in initiating debriefing or encouraging it, unless you request for help. It should not be this way; they should ensure we are motivated to attend debriefing.*

These findings concur with the study conducted by Metcalf (2020), which stated that there appears to be insufficient support from management, poor decision-making by commanders in operational situations and lack of time to debrief past incidents. This heightens stress levels to firefighters and have a negative influence on their work (Metcalf 2020).

In order to ensure that the employer prioritise debriefing, Van Straten (2019) recommended that debriefing should be done after each shift. The call centre should notify the therapist or person responsible for providing debriefing about the incidents that firefighters responded to. Immediately after the therapist has been informed, then they can identify concerns and then the firefighter can be called for debriefing. In this regard, debriefing can be compulsory and the firefighter in question will not be regarded as weak. To prevent further impact of traumatic events on firefighters, it should be made compulsory that firefighters should regularly consult a therapist, more specifically on a monthly basis. A file should be opened for each firefighter that makes consultation to prevent labelling or discrimination (Van Straten 2019:279).

These interventions will assist the employer to be fully involved in ensuring that debriefing is provided to firefighters. The employer can make recommendations to the policy developers to include mental health services in the existing legislation of South Africa that guide the work of firefighters, such as the Fire Brigade Service Act 99 of 1987 and its amendments, the Disaster Management Act 57 of 2002 and South African National Disaster Management Framework of 2005.

Employer support is important towards the workers' perceptions of their work environment; therefore, it is important that firefighters should have the ability to recognise the support rendered by the SPM. Through adoption and implementation of the WTM, it is possible to see feelings of appreciation shown by firefighters and further enabling the process of traumatic experiences in a safe and supportive environment (Maabela 2015:62).

5.4 SUMMARY OF FINDINGS

During the interviews, the researcher worked with participants from different socio-demographics. Participants were male and female firefighters, from the ages of 35 to 64 years, with different home languages such as Setswana, Afrikaans and English. The participants were from different racial groups such as Black, White and Coloured. All participants had completed their matric and a couple have also obtained a diploma or an honours degree. Fourteen of the participants qualified as firefighters and held positions in the fire department as a firefighter, with one reservist firefighter, one leading firefighter, two station commanders and a chief fire officer. The years of service as a firefighter ranged from two years to 47 years.

The results indicated that firefighters are exposed to traumatic events in their line of duty, irrespective of their socio-demographics. Both males and females are expected to work in the same traumatic incidents. The participants indicated that they worked in and were exposed to traumatic events such as removal of burned corpses of children and their families, individuals stabbed who died in their arms while trying to rescue them, removal of a dead body due to suicide, motor accidents that involved children, shack or structural fires where lives were lost and oil spills and explosions that caused physical harm to the firefighter.

These types of traumatic incidents that the participants responded to were described as heart-breaking, while others said it affected their mental health. These responses indicated that the type of work can be traumatic as some were mentally affected by these traumatic events. These findings indicate that being employed as a firefighter has many challenges. It is evident that the profession of firefighting is emotionally and physically demanding, dangerous and more often personally heart-breaking and draining. The results of the research indicated that the type of traumatic calls the participants responded to, warrants debriefing and other trauma interventions such as the WTM. These trauma interventions will focus on mitigating and preventing the effects of trauma on OFRs such as firefighters.

The WTM has been regarded an effective model for both men and women who come from different cultural backgrounds and age groups. In this regard, the WTM concurs with the findings as it is envisioned to benefit firefighters within the SPM as they come from different backgrounds and different demographics. On that basis, the WTM, together with the debriefing (CISD), will be helpful in assisting firefighters to deal with and even manage similar historical and previous trauma experiences. Firefighters can benefit from the WTM, irrespective of the strength or weaknesses they possess. They do not necessarily have to be psychologically minded or even sophisticated individuals. This means firefighters with

lower or higher ranks, with short or longer experience, and young or older age will benefit from the WTM. It should be mentioned that the WTM has not been used with OFRs such as firefighters; therefore, the use of this model might be new to the EAP practitioner or other counselors appointed at SPM.

Through the literature review and empirical study, the researcher was able to answer the research questions and meet the following objectives:

5.4.1 To determine the existence and availability of debriefing measures aimed at reducing the effects of trauma on firefighters employed at the Sol Plaatje Emergency Service

The findings of the study revealed that the majority of firefighters that formed part of the study had an understanding of debriefing and were aware of debriefing measures available in the SPES. However, the participants had a dissatisfaction with the process of debriefing. Some raised concerns of debriefings not conducted within 48 hours, and a fire station such as Ritchie did not receive any debriefings, and debriefings not conducted after all traumatic calls. Some firefighters received debriefings, while others did not. In order to address these discrepancies, studies indicated that it is important that the process of debriefing should be followed by the employer. Debriefing should be conducted for all firefighters involved in traumatic events and it should be ensured that debriefing is done within 24 to 72 hours after a traumatic event. Firefighters work in different shifts; therefore, in order to address the issue of firefighters in other fire stations not receiving debriefing, it is important that the employer should ensure that debriefing is conducted after major incidents.

5.4.2 To determine whether the firefighters are accessing debriefing intervention services within their employed departments in the Sol Plaatje Municipality

The findings revealed that most of the participants were aware of the debriefing measures available to them. However, the majority of participants indicated that they did not request for debriefing services even when the traumatic event had an impact on their mental and physical health. The participants relied on various coping mechanisms, such as prayer, sleeping with a light on, talking to a wife, playing sport, taking sleeping pills or talking with fellow colleagues. These coping mechanisms were used by participants to deal with the effects of trauma. The lack of encouragement from authorities also came out as a reason not to seek help. It was therefore evident from the research findings, that the participants felt they did not need debriefing to reduce the effects of stress caused by these traumatic events. Stigma and other factors such as shame, guilt and fear of victimisation may have been the driving force behind the reason of not requesting debriefing. The lack of

encouragement, involvement and awareness from management contributed to firefighters not being interested in debriefing.

The results of the findings concurred with various studies that indicated that firefighters can be at risk of developing PTSD and other mental health illnesses, due to other risk factors. The risk factors mentioned, were starting to work at a younger age, long service in the fire service and holding a higher rank. Firefighters that are experienced may develop maladaptive coping mechanisms, such as alcohol abuse, to cope with the effects of repeated exposure to trauma.

Through the use of the WTM, it was noted that trauma counsellors will be able to use the existing healthy coping mechanisms or support systems mentioned by participants, such as prayer and family. The counsellor can help the firefighter to find meaning out of a traumatic event using their existing support systems such as friends and families. Firefighters can be engaged on their belief systems, moreover on their political, existential or even spiritual level. The participants indicated that they were part of different religious backgrounds and are part of a family system. Therefore, the WTM encourages trauma counsellors to encourage firefighters to build meaningful relationships that will encourage them to seek professional help after being exposed to traumatic events.

Other participants suppressed their trauma symptoms through taking sleeping pills, sleeping with a light on or deleting the traumatic scene out of their minds. These types of coping mechanisms might not be effective in the future as they are temporary. Firefighters that use maladaptive coping mechanisms should be educated and encouraged to replace negative coping mechanisms with positive coping mechanisms such as relaxation techniques, exercising and engaging in positive relationships.

5.4.3 To determine the effectiveness of the available debriefing measures for firefighters in the Sol Plaatje Municipality

The debriefing measures provided seems not to be very effective, as some of the participants were not aware of the EAP services. They did not know who the EAP professional was and when they requested debriefing, they did not receive it. They, therefore, drew on their own resources (such as a partner) and coping mechanisms (such as sleeping with a light on).

5.4.4 To determine the level of employer support in ensuring that each firefighters receive debriefing after working in traumatic event

The research findings further indicated that there was a low level of employer support and there was an appointed EAP practitioner at SPM to provide mental health services. However, the majority of the participants did not know exactly who the professional person was. This information is concerning; it is important that mental health services should be promoted and awareness campaigns should be prioritised. Some participants even mentioned that there were no policies that stated the importance of debriefing, while others felt the employer did not care or prioritise their emotional state. The many responses provided by the participants indicated that the employer was not actively involved in ensuring that debriefing was prioritised in the SPES.

Studies recommend that the employer should ensure that debriefing is conducted after each shift, which will allow station commanders of other fire stations in the SPM to ensure that debriefing is provided to all firefighters that are involved in a traumatic events. Counsellors such as the EAP practitioner should be immediately informed about firefighters that responded to a traumatic event. This will allow the EAP practitioner to conduct a comprehensive assessment that will include concerns about a traumatic event, and based on the nature of the assessment, the counsellor can arrange debriefing after the traumatic call. It is recommended that firefighters should consult the therapist regularly to prevent further impact of traumatic events.

The support provided by the employer has the ability to change the perception of the workers in terms of their work environment. Therefore, firefighters should recognise mental health support from SPM as the employer and management at SPES. The appointed EAP practitioner can adopt and implement the WTM as the feelings of appreciation will be shown by firefighters, which will enable the process of traumatic experiences in a safe and supportive environment. It should be noted that the WTM can be used by apprentice counsellors and mental health practitioners that are qualified in the field. Therefore, through the application of the model, the EAP practitioner will be able to incorporate different counselling and therapeutic styles, irrespective of their different education, training and orientations.

The participants mentioned that there are no policies that indicate the use of debriefing. This proves that there is a gap in the existing legislation that guides the work of firefighting in South Africa. Therefore, the debriefing, when incorporated with the WTM, will assist the employer to be fully involved in ensuring that trauma interventions are provided to firefighters. Mental health services should be included in these existing legislation, such as

Fire Brigade Service Act 99 of 1987 and its amendments, the Disaster Management Act 57 of 2002, and South African National Disaster Management Framework of 2005.

5.5 CHAPTER SUMMARY

In this chapter the main findings of the empirical study were discussed by using the responses provided by participants during the interviews. The chapter was divided into two sections: Section A, which focused on the socio-demographic characteristics of the participants, and Section B, which focused on the responses of debriefing measures. The participants had an understanding of what debriefing was and were aware of the debriefing measures available in SPM, which mostly focused on operational aspects. It is, however, questionable if debriefing services are really available as some participants reported that they had requested for debriefing, but did not receive the required assistance. The work of firefighting is physically and psychologically demanding and this was confirmed through the responses provided by the participants.

The participants confirmed that the traumatic incidents they respond to are heart-breaking and have affected their mental health, which led to one participant being hospitalised at a mental hospital. The findings confirmed that the participants had an idea that the counsellor might be available, but they had no certainty about who the person was and the protocol to receive assistance. The majority of the participants have not sought for debriefing, even though they were exposed to traumatic events. They chose to resort to their own coping mechanisms to deal with the trauma. Employer support was a concern to most of the participants as they were of the opinion that the employer did not prioritise debriefing for firefighters employed at SPM.

The WTM, together with debriefing measures, can be effective trauma intervention tools to mitigate and prevent the effects of trauma symptoms on OFRs such as firefighters. Through the use of the WTM and debriefing it was noted that trauma counsellors will be able to use the existing healthy coping mechanism or support systems mentioned by participants, such as prayer and family.

Chapter 6
CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

In this concluding chapter, the researcher discusses the final conclusions and recommendations that resulted from the study.

6.2 STUDY CONCLUSION IN RELATION TO THE FINDINGS

The researcher unpacked the literature from different international and national sources to address the research problem. Firefighting is regarded as the most stressful profession in South Africa (Joubert, 2012). In this regard, firefighters are exposed to traumatic events as part of their job and this has an impact on their emotional and psychological functioning. Chapter 1 gave a brief explanation on the research problem and the significance of the study.

Chapter 2 focused on discussing the theoretical framework underpinning the study, as well as legislation applicable to the firefighting profession. The study found that the WTM can be used as an intervention tool for trauma management; it can assist in facilitating the formulation of intervention guidelines for the purpose of managing trauma within the SPES. The WTM has been developed in South Africa for survivors of traumatic events; however, it has not been used for OFRs such as firefighters. Firefighters are survivors of traumatic events; therefore they need trauma intervention so that the effects of PTSD, depression, alcohol abuse or suicide can be prevented. The WTM model was mainly designed to treat PTSD and traumatic stress conditions in South Africa. CISD links to the theoretical framework of this study. These intervention tools are similar as they both have a goal to mitigate the effects of traumatic incidents on people, including emergency workers such as firefighters. Therefore, the WTM can be used as a model to do debriefing. Chapter 3 mentioned the strengths and limitations of the CISD and WTM as tools of trauma intervention.

The researcher found a gap in the legislation provided to guide the fire departments in South Africa. The Fire Brigade Service Act 99 of 1987, and its amendments, do not mention the importance of providing mental health services to firefighters. The Act only focuses on the legal and operational requirements of firefighting. The Disaster Management Act 57 of 2002 is a significant act that guides South Africa in terms of the management of disasters that

occur. The act, however, does not mention mental health intervention services to OFRs such as firefighters. The study sought to assist in finding directives to mitigate the identified legislative gap.

Chapter 3 provided a detailed explanation on the identified research problem. Literature was explored based on the work of firefighters, the trauma they experience through their work, debriefing as an intervention tool within various fire departments, and its implementation. Due to a lack of studies conducted within the South African context, the researcher had to rely on and make reference to international studies to describe the impact of traumatic events on firefighters and the use of debriefing as an intervention tool in the fire departments. Debriefing has been described as an effective tool through various studies, while other studies indicated that it was not effective.

The research objectives and questions of this study guided the researcher in ensuring that the purpose of the study is fulfilled. The research objectives were reached and in Chapter 5, the research questions were answered. Section B described the responses of participants in relation to debriefing. The findings indicated that there are existing debriefing measures in the SPES that mainly focused on procedural debriefing. Although the majority of the participants indicated that they were aware of the debriefing services, a significant number of participants indicated that they did not request for debriefing services even though the traumatic event had an impact on their mental and physical health. The lack of encouragement from authorities came out as one of the reasons not to seek help.

The participants relied on various coping mechanisms such as prayer, sleeping with a light on, talking to their partner, playing sport, taking sleeping pills or talking with fellow colleagues. These coping mechanisms were used by participants to deal with the effects of trauma. Some of these coping mechanisms may be considered as maladaptive strategies as they are temporary and would only suppress trauma symptoms. Through the use of debriefing and the WTM, firefighters can be educated on the use of positive coping mechanisms such as relaxation techniques, exercising and building meaningful relationships.

The support provided by the employer has the ability to change the perception of the workers in terms of their work environment. Therefore, firefighters should recognise mental health support from SPM as the employer and management at SPES. The appointed EAP practitioner can adopt and implement the WTM, as the results indicated that the model is relevant to assisting South African OFRs in reducing traumatic symptoms and improving their mental health.

6.3 RECOMMENDATIONS

6.3.1 Recommendation from participants

The participants recommend that debriefing should be prioritised by the SPM employer. There should be policies that state the use and importance of debriefing as a mental health intervention tool. Debriefing should be provided after all traumatic calls and it must be done regularly. The appointed counsellor, also known as an EAP practitioner, should be visible to firefighters and promote the services at the SPES.

6.3.2 Recommendation from the researcher

❒ **Preparedness measures**

The SPM should ensure that preparedness measures are put in place to prioritise the mental health of firefighters employed within the SPES. Debriefings and mental health trainings should be provided regularly to mitigate the effects of trauma on firefighters. It is important that the SPM should ensure that proper assessments are done before new recruits assume their roles as firefighters. This will assist in terms of ensuring that the personalities and mental health of firefighters are optimal to handle any work-related stress. The appointed EAP can be introduced to the firefighters and the services of EAP be promoted. Awareness programmes be conducted to educate firefighters on the effects of traumatic events, seeking help from management and trauma counsellors. It is important that the management team of SPES should be trained on the importance and relevance of the WTM and CISD (debriefing), so that they understand the functioning of these trauma management tools. Debriefing should be made mandatory rather than voluntary and this can be done through proper education and awareness campaigns.

❒ **Policy and legislation**

Education and training of officials, such as firefighters and policymakers within the national and provincial organs of the state, are emphasised in the South African National Disaster Management Framework (2005:109). It is stated that the national and provincial organs of the state should have substantial budgets to ensure that training of officials for disaster risk management is conducted. Therefore, a budget should be allocated to developing and improving legislation for mental health of OFRs such as firefighters. The results of the findings indicated that there is a need for policies that prioritises the mental health of firefighters.

The Fire Brigade Service Act 99 of 1987, and its amendments, should be revisited, and the mental health of firefighters should be prioritised. Trauma intervention tools such as the WTM and CISD can be used by counsellors and EAP practitioners to sufficiently assist firefighters dealing with the effects of traumatic events.

- **Future research**

It would be valuable to conduct broader studies as this research results cannot be generalised and literature is limited. The research may also be expanded to other fire departments from different provinces in South Africa, to determine whether debriefing measures are being implemented and the effectiveness thereof.

6.4 CONCLUSION

The firefighting profession is physically and psychologically demanding, due to the various calls they respond to, such as motor accidents, wild and structural fires. The horrific or traumatic events firefighters are exposed to can adversely affect their mental health. The WTM assisted to theoretically explain the traumatic experiences firefighters encounter in the line of duty and possible interventions to mitigate the negative mental health effects through adequate debriefing measures. Therefore, their mental health should be prioritised in South Africa by amending the current legislation that guide the work of firefighting. The SPM employer should prioritise the mental health of firefighters to ensure that they are able to deal with trauma symptoms.

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Appendix A

APPROVAL FROM THE GENERAL/

HUMAN RESEARCH ETHICS COMMITTEE

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

UFS
UV

GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

23-Feb-2021

Dear Mrs Mmapula Bessie

Application Approved

Research Project Title:
AN ANALYSIS OF DEBRIEFING MEASURES FOR FIREFIGHTERS AS OFFICIAL FIRST RESPONDERS IN SOL PLAATJIE MUNICIPALITY, NORTHERN CAPE, SOUTH AFRICA.

Ethical Clearance number:
UFS-HSD2020/1707/232

We are pleased to inform you that your application for ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. We request that any changes that may take place during the course of your study/research project be submitted to the ethics office to ensure ethical transparency. furthermore, you are requested to submit the final report of your study/research project to the ethics office. Should you require more time to complete this research, please apply for an extension. Thank you for submitting your proposal for ethical clearance; we wish you the best of luck and success with your research.

Yours sincerely

Dr Adri Du Plessis
Chairperson: General/Human Research Ethics Committee

AdPlessis

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South Africa

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Appendix B
RESEARCH INTERVIEW GUIDE

DATA COLLECTION INSTRUMENT:
INTERVIEW GUIDE FOR FIREFIGHTERS IN SOL PLAATJE MUNICIPALITY

STUDY TOPIC:
AN ANALYSIS OF DEBRIEFING MEASURES FOR FIREFIGHTERS AS OFFICIAL FIRST RESPONDERS IN SOL PLAATJE MUNICIPALITY, NORTHERN CAPE, SOUTH AFRICA

I am Mmapula Kgomotso Emmah Bessie, student at DiMTEC at the University of the Free State studying towards a master's degree in Disaster Management. The study aims to analyse the debriefing measures for firefighters as official first responders in Sol Plaatje Municipality. The participants that will form part of the study are firefighters that are employed at the Sol Plaatje Emergency Service and who are constantly working in traumatic events. The study will include the management of the Sol Plaatje Emergency Security, namely the Fire Chief Officer, station commanders and an employee from the operations and training unit.

During the interview, the questions that will be asked will be based on the type of debriefing measures or any other intervention services that firefighters receive after they worked or were exposed to traumatic events. It is important to note that the information that each participant will share will be used to provide guidelines on debriefing techniques that can be used in future and further for improving the existing debriefing measures provided within the Sol Plaatje Emergency service.

During the interviews the Covid-19 regulations will be adhered to. The researcher and the participant will wear a mask, hands and chairs will be sanitized and social distancing will be maintained.

Information and answers provided by the participant will be kept confidential and it will not be shared with anyone. The privacy of each participant will be guaranteed and the aspect of anonymity will be upheld as the identity of the participants will not be revealed.

The participation is voluntary and no participant is forced to answer questions that make them uncomfortable. In the event the participant's feels traumatized during the interviews then counselling will be provided to deal with any emotions that arises. The interview is not expected to take more than 50 minutes.

Semi-Structured interviews

The researcher will ask the following questions, which are divided in Section A and B:

SECTION A: SOCIO-DEMOGRAPHICS

The researcher will ask the following question:

1. Age ……..

2. Gender
   - ☐ Male
   - ☐ Female

3. Marital status
   - ☐ Single
   - ☐ Married
   - ☐ Widowed
   - ☐ Divorced

4. Race
   - ☐ African
   - ☐ Coloured
   - ☐ White
   - ☐ Asian

6. Home language
   - ☐ English
   - ☐ Afrikaans
   - ☐ Setswana
   - ☐ Sesotho
   - ☐ Xhosa
   - ☐ Swati

	Sepedi
	Ndebele
	Zulu
	Venda
	Tsonga

6. Level of education

	Grade 12 or Grade 10
	Higher certificate
	Diploma
	3-4 year degree
	Honours/Master's/PhD
	Other: ……..

7. Religion…….

8. Role in the organisation…….

9. Years of service as a firefighter ……..

SECTION B: INFORMATION RELATING TO DEBRIEFING MEASURES PROVIDED FOR FIREFIGHTERS

The researcher will ask the following questions in relation to debriefing measures:

1. What do you understand about debriefing?

   ……
   ……
   ……..
   ……..

2. Describe the nature of your occupation as a firefighter

   ……
   ……
   ……..
   ……..

3. Have you been exposed to traumatic events in line with your duty (If Yes specify the traumatic events)

……
……
……..……..
……..

4. Is there a professional counsellor based at your organisation who provide you with debriefing after working in a traumatic events? If yes provide the details of the professional.

……
……
……..……..
……..

5. Are you aware of any debriefing measures that are provided to you as a firefighter after working or being exposed to traumatic events in your organisation (If yes, what are those debriefing measures)

……
……
……..……..
……..

6. Have you personally requested to be provided with debriefing after working in traumatic events? Yes ____ or No ____

6.1 If you answer is yes, please motivate:

……
……
……..……..
……..

6.2 If your answer is no, please state why you did not receive counselling or debriefing:

……
……
……..……..
……..

7. Who is responsible to ensure that you as a firefighter are provided with debriefing measures after every traumatic event you worked on to deal with any trauma you experience?

……
……
……..……..
……..

8. What is the role the employer in ensuring that you receive debriefing immediately after working in a traumatic event? For instance, does he/she refer you to a designated counsellor?

……
……
……..……..
……..

END OF THE INTERVIEW QUESTIONNAIRE!!

THANK YOU FOR YOUR PARTICIPATION AND ASSISTANCE

Appendix C
RESEARCH STUDY INFORMATION LEAFLET
AND CONSENT FORM

RESEARCH STUDY INFORMATION LEAFLET AND CONSENT FORM

DATE: October 2020

TITLE OF THE RESEARCH PROJECT:

AN ANALYSIS OF DEBRIEFING MEASURES FOR FIREFIGHTERS AS OFFICIAL FIRST RESPONDERS IN SOL PLAATJE MUNICIPALITY, NORTHERN CAPE, SOUTH AFRICA.

PRINCIPLE INVESTIGATOR/RESEARCHER(S) NAME(S) AND CONTACT NUMBER(S):

Mmapula Kgomotso Emmah Bessie

Student number: 2007126465 Cell: 060 978 7988

DEPARTMENT AND FACULTY AND

Disaster Management Training and Education Centre
Natural and Agricultural Sciences

STUDY LEADER(S) NAME AND CONTACT NUMBER

Ms Mariëtte Joubert

Contact numbers: 083 204 9582

Email address: mmvstraaten@gmail.com

WHAT IS THE AIM / PURPOSE OF THE STUDY?

This study aims to analyse the debriefing measures that are provided for firefighters in the Sol Plaatje Municipality. Through achieving the following objectives of this study:

To determine the existence and availability of debriefing measures that are aimed at reducing the effects of trauma on firefighters employed at the Sol Plaatje Emergency Service.

Whether firefighters are accessing debriefing intervention services within their employed departments in the Sol Plaatje Municipality.

The effectiveness of these debriefing measures for firefighters in the Sol Plaatje Municipality.

The level of employer support in ensuring that each firefighter receive debriefing after working in a traumatic event.

WHO IS DOING THE RESEARCH?

My name is Mmapula Kgomotso Emmah Bessie and I am a registered Social Worker employed at Department of Social Development and currently a master's student at the University of the Free State. As a professional Social Worker and a disaster management student I decided to do research on Firefighters as Official First Responder as their work is physically and psychologically demanding. The pressure of their work and the type of services they render to the communities can have a major impact on their mental health as they work in traumatic events. Therefore, it is important that they receive debriefing measures and other mental health interventions to ease mental health illnesses such as Post Traumatic Stress Disorder, depression and substance abuse.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

The study has not received ethical approval as the student is still on the process of application for ethical clearance at the University of the Free State.

WHY ARE YOU INVITED TO TAKE PART IN THIS RESEARCH PROJECT?

You are invited to take part of this research as a firefighter working at Sol Plaatje Emergency Service as it is a recognized organization within the Sol Plaatje Municipality that provides fire and rescue services. It employs a large number of firefighters in the whole province of Northern Cape. Firefighters within this organization respond to a number of incidents such as structural, wildfires, vehicle extrication, confined space rescues, hazardous chemical spills and high-angle. Some of these incidents or events can be traumatic and affect the mental health of firefighters thus a need for debriefing services is needed within the organization.

WHAT IS THE NATURE OF PARTICIPATION IN THIS STUDY?

You will be given the opportunity to share the nature of your work and how it impacts your daily functioning. During the interview, the questions that will be asked will be based on the type of debriefing measures or any other intervention services that you as a firefighter receive after working or exposed to traumatic events. You will also provide information on the debriefing measures that you are provided at Sol Plaatje Emergency Services. Semi-structured interviews will be used as a mode of data collection. The duration of the interview is expected to take only 50 minutes. During the interviews if you feel uncomfortable to answer questions you are more than welcome not to answer the question. In the event the

questions reminds you of a traumatic event and the emotions you felt, the researcher will allow you to take time and resume to the interviews when you feel safe to do so.

CAN THE PARTICIPANT WITHDRAW FROM THE STUDY?

Please note being in this study is voluntary and you are under no obligation to consent to participation. You are free to withdraw at any time and without giving a reason. Your answers to the questions asked during the interview will not affect or influence your work as a firefighter. Be aware that Covid-19 regulations will be upheld for your own safety during interviews. You are required to wear a mask, sanitise hands and keep social distancing of one meter.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

Your presence in participating in this research will contribute immensely as the information provided will be used to provide guidelines on debriefing techniques that can be used in the future and further for improving the existing debriefing measures provided within the Sol Plaatje Emergency service. Your names or any form of identification will be kept confidential. The study leaders, transcriber and Research Ethics Committee will have access to the data. These individuals will maintain confidentiality through signing of a confidentiality agreement. It is important to note that answers provided by you will be reviewed by people who are responsible for making sure that research is done properly, including the transcriber, external coder and members of the Research Ethics Committee.

WHAT IS THE ANTICIPATED INCONVENIENCE OF TAKING PART IN THIS STUDY?

Please note that during the interviews you might feel a form of emotional discomfort and the questions might remind you of your previous traumatic experiences. The researcher will thoroughly inform you about the purpose of the research and the possible emotional discomfort due to the questions that will be asked during the interviews. To avoid any possible harm that could result from the interviews conducted you will be provided with counselling intervention services. The researcher is a registered Social Worker who is qualified and eligible to provide any form of trauma counselling to survivors of trauma, as such counselling will be provided should there be a need. Referrals will be done to other trauma counsellors if a need arises.

WILL WHAT I SAY BE KEPT CONFIDENTIAL?

The researcher will maintain the confidentiality of the information provided by you. Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be a fictitious code number or a pseudonym and you will be

referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings. Your answers may be reviewed by people responsible for making sure that research is done properly, including study leaders, transcriber, external coder, and members of the Research Ethics Committee. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records. The data provided by participants will be used anonymously in research reports, journal articles or even conference presentations. The report of the study will be submitted for publication, but individual participants will not be identifiable in such a report.

HOW WILL THE INFORMATION BE STORED AND ULTIMATELY DESTROYED?

The researcher will take all written information provided by you during interviews and it will be stored in a lockable cabinet. Electronic information will be stored on a password protected computer .The information will be helpful for future academic purposes. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. When information is no longer needed then the researcher will shred it so that no one will be able to use it or even access it. Your confidentiality should be maintained at all times.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICPATING IN THIS STUDY?

Please note you will not receive any form of payment for participating in the study. However, refreshments such as water in a sealed water bottle will be given to each participant during the interview session.

HOW WILL THE PARTICIPANTS BE INFORMED OF THE FINDINGS / RESULTS OF THE STUDY?

If you are interested on the final research findings, and require any information please contact Mmapula Kgomotso Bessie on 060 978 7988 and email address: kgomotsobessie88@gmail.com. Should you have concerns about the way in which the research has been conducted you may contact the following study leaders Ms Mariëtte Joubert on 083 204 9582, email address mmvstraaten@gmail.com.

Thank you for taking time to read this information sheet and for participating in this study.

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet. I have had sufficient opportunity to ask questions and am prepared to participate in the study. I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable). I am aware that the findings of this study will be anonymously processed into a research report, journal publications and/or conference proceedings.

I agree to the recording of the *insert specific data collection method*.

I have received a signed copy of the informed consent agreement.

Full name of participant:

_____

Signature of participant: _____ Date: _____

Full name(s) of researcher(s):

_____

Signature of researcher: _____ Date: _____

APPENDIX D

APPROVAL LETTERS TO CONDUCT RESEARCH AT SOL PLAATJE MUNICIPALITY

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA
UFS UV

REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Dear *Mr Boy Dhluwayo*
Acting Municipal Manager of Sol Plaatjie Municipality

I am doing research and would like to request permission to conduct my research at the *Sol Plaatjie Emergency Service.*

TITLE OF THE RESEARCH PROJECT

AN ANALYSIS OF DEBRIEFING MEASURES FOR FIREFIGHTERS AS OFFICIAL FIRST RESPONDERS IN SOL PLAATJIE MUNICIPALITY, NORTHERN CAPE, SOUTH AFRICA.

PRINCIPLE INVESTIGATOR / RESEARCHER

Mmapula Kgomotso Emmah Bessie *2007126465* *060 978 7988*

FACULTY AND DEPARTMENT:
Faculty of Natural and Agricultural Sciences
Disaster Management Training and Education Centre for Africa

STUDYLEADER(S)
Ms Mariëtte Joubert (Promotor)
Contact number 083 204 9582
Email vanstraatenmm2ufs.ac.za

Dr Annelene van Straten (Co-promotor)
Contact number 073 878 4461
Email vanStratenA@ufs.ac.za

The study aims to analyse the debriefing measures for firefighters as official first responders in Sol Plaatjie Municipality.

My name is Mmapula Kgomotso Emmah Bessie and I am a registered Social Worker employed at Department of Social Development and currently a master's student at the University of the Free State. As a professional Social Worker and a disaster management student I decided to do research on Firefighters as Official First Responder as their work is physically and psychologically demanding. The pressure of their work and the type of services they render to the communities can have a major impact on their mental health as they work in traumatic events. Therefore, it is important that they receive debriefing measures and other mental health interventions to ease mental health illnesses such as Post Traumatic Stress Disorder, depression and substance abuse.

The study has not received ethical approval as the student is still on the process of application for ethical clearance at the University of the Free State.

The researcher invites the Sol Plaatjie Emergency Service to be part of this research project as it is a recognized organization within the Sol Plaatjie Municipality that provides fire and rescue services. It employs a large number of firefighters in the whole province of Northern Cape. Firefighters within this organization respond to a number of incidents such as structural, wildfires, vehicle extrication, confined space rescues, hazardous chemical spills and high-angle. Some of these incidents or events can be traumatic and affect the mental health of firefighters thus a need for debriefing services is needed within the organization. The information about this specific organization was obtained from the manager of Disaster Management Unit at Frances Baard District Municipality. The website of Sol Plaatjie Emergency Service was also used as a guiding tool.

The participants will be sampled from 60 firefighters that are employed at Sol Plaatjie Emergency Service, including their respective authorities. Therefore 15 participants will be selected which include 10 firefighters, Chief fire officer, three station commanders and one employee in the operations and training unit within the Sol Plaatjie Emergency Service. It is important that the chief fire officer is involved in the study for the purpose of representing management as a support system.

Firefighters as participants in this study will be given the opportunity to share the nature of their work and how it impacts their daily functioning. During the interview, the questions that

will be asked will be based on the type of debriefing measures or any other intervention services that firefighters receive after they worked or were exposed to traumatic events. They will also provide information on the debriefing measures that they are provided with at Sol Plaatjie Emergency Services. Information that will be shared by firefighters is personal and sensitive therefore, the researcher chose semi-structured interviews as a mode of data collection. This will allow each fire fighter to tell their daily experiences with freedom, privacy and confidentiality. The researcher will also be able to unpack the experiences that fire fighters encounter in their work environment even private lives.

During the interviews the Covid-19 regulations will be adhered to. The researcher and the participant will wear a mask, hands and chairs will be sanitized and social distancing (1 meter spacing) will be maintained. Information and answers provided by the participant will be kept confidential and it will not be shared with anyone. The privacy of each participant will be guaranteed and the aspect of anonymity will be upheld as the identity of the participants will not be revealed. The participation is voluntary and no participant is forced to answer questions that make them uncomfortable. The interview is not expected to take more than 50 minutes.

This study will benefit firefighters as the information provided will be used to provide guidelines on debriefing techniques that can be used in the future and further for improving the existing debriefing measures provided within the Sol Plaatjie Emergency service. The participation of each firefighter will be kept confidential.

The identified discomfort in this study might be re-experiencing of trauma symptoms caused by traumatic events by firefighters. Participants might show different emotions during the interview session, expected emotions may be crying, refusing to talk, anxiety and nervousness. The researcher will thoroughly inform participants about the purpose of the research and the possible emotional discomfort due to the questions that will be asked during the interviews. To avoid any possible harm that could result from the interviews conducted participants will be provided with counselling intervention services. The researcher is a registered Social Worker who is qualified and eligible to provide any form of trauma counselling to survivors of trauma, as such counselling will be provided should there be a need. Referrals will be done to other trauma counselors if a need arises for long term intervention services.

The researcher will maintain the confidentiality of the information provided by participants. This will be done through assuring that the names of the participants will not be recorded anywhere and no one will be able to identify them. No one will be able to connect participants to the answers that they provide. Answers provided by participants will be given a fictitious code and the participants will be referred to in this way in the data or any publications. The study leaders, transcriber and Research Ethics Committee will have access to the data. These individuals will maintain confidentiality through signing of a confidentiality agreement. It is important to note that answers provided by participants will be reviewed by people who are responsible for making sure that research is done properly, including the transcriber, external coder and members of the Research Ethics Committee. Otherwise records that identify participants will be available only to people working on the study, unless participants give permission for other people to see the records. The data provided by participants will be used anonymously in research reports, journal articles or even conference presentations. The report of the study will submitted for publication, but individual participants will not be identifiable in such a report.

The researcher will take all written information provided by participants during interviews and it will be stored in a lockable cabinet. Electronic information will be stored on a password protected computer .The information will be helpful for future academic purposes. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. When information is no longer needed then the researcher will shred it so that no one will be able to use it or even access it. Confidentiality of participants should be maintained at all times.

They will be no compensation during the interview, however refreshments such as water in a sealed water bottle will be given to each participants to prevent sharing for the purpose of adhering to Covid-19 regulations.

If participants are interested on the final research findings, please contact Mmapula Kgomotso Bessie on 060 978 7988 and email address: kgomotsobessie88@gmail.com. In an event that participants have concerns about the conduct of the researcher, they may contact the following study leaders Ms Mariëtte Joubert on 083 204 9582, email address vanstraatenmm@2ufs.ac.za and Ms Annelene van Straten on 073 878 4461, email address vanStratenA@ufs.ac.za

Yours sincerely

Mmapula Kgomotso Emmah Bessie

Approved by:

BOY DHLAMINI

Print your name and title

SOL PLAATJE MUNICIPALITY
15 DEC 2020
OFFICE OF THE MUNICIPAL MANAGER

Signature .....

Date 15/12/2020.

APPENDIX E
EDITORIAL LETTER

PO Box 38917
Langenhovenpark 9300

082 635 0214
technicalediting.dora@gmail.com

28 January 2022

CONFIRMATION OF EDITING AND PROOFREADING

I hereby confirm that I have done the technical layout and language editing for the following master's dissertation:

Student:	Mmapula Kgomotso Emmah Bessie
Student number:	2007126465
Title:	An analysis of debriefing measures for firefighters as official first responders in Sol Plaatje Municipality, Northern Cape, South Africa
Degree:	Master of Disaster Management
University:	University of the Free State

My work for the student included the technical layout of the document on a specific Microsoft Word template that I created for the student. I checked all acronyms and abbreviations for consistent use in the text. Language editing included grammar, punctuation, spelling, and sentence structure. I tried to keep as much as possible of the student's own writing style, while making sure that the student's intended meaning was not altered in the process. All amendments were tracked with the Microsoft Word track changes feature. The student thus had the option to accept or reject the changes.

I also cross-checked the list of references making sure that dates, spelling, and names used in the text are consistent with those listed in the reference list. I also Googled the references where necessary and added URLs and DOI numbers where possible. The student was notified of references that were not included in the reference list.

I have more than 40 years of experience in typing, editing, and proofreading for postgraduate students from universities all over South Africa. I gained my experience during the years I was typing student dissertations and theses and while working at different departments at the UFS from 1978 to 1981 and again from 1998 to 2014. I also assisted in compiling a document on technical layout and referencing methods for the Centre for Environmental Management (CEM) and have presented guest lectures on referencing methods to postgraduate students at CEM and the Department of Urban and Regional Planning at the UFS.

Disclaimer: The ultimate responsibility for accepting or rejecting the amendments and recommendations made by means of track changes rests with the student. The editor cannot be held responsible for any

changes in terms of the format and style due to subsequent additions or deletions to the document, or any language issues that may have emerged as a result of subsequent amendments to the text.

Yours sincerely

Dorathea (Dora) du Plessis
Technical & Language Editor