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DEATH AND DYING: WHAT ARE THE PSYCHOLOGICAL
CONSEQUENCES FOR EMERGENCY MEDICAL CARE PERSONNEL IN
THE CAPE TOWN METROPOLE?

by

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DECLARATION

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DEFINITION OF KEY TERMS

Advanced airway management: 'The facilitation of breathing by means of advanced airway adjuncts, such as endotracheal intubation'.

Advanced life support (ALS): 'The provision of advanced-level care by paramedics' (Sanders, 2001:1550).

Automated external defibrillators (AED): 'A device used in cardiac arrest to perform a computer analysis of the patient's cardiac rhythm and deliver defibrillatory shocks when indicated' (Sanders, 2001:1553).

Basic life support (BLS): Basic treatment and first aid provided until more advanced medical help arrives.

Cardio-pulmonary resuscitation (CPR): An emergency procedure for life support, consisting of artificial respiration and manual external cardiac massage (Sanders, 2001: 1556).

Coping: 'Both overt and covert behaviours that are taken to reduce or eliminate psychological distress or stressful conditions' (Fleishman, 1984:229).

Critical incident: 'An incident that is sufficiently disturbing to overwhelm or threaten to overwhelm the individual's usual method of coping' (Alexander & Klein, 2001:76)

Do Not Resuscitate order (DNR): 'A medical order to provide no resuscitation to individuals for whom resuscitation is not warranted i.e. terminal ill patients.'

Emergency Medical Services (EMS): 'A national network of services coordinated to provide aid and medical assistance from primary response to definitive care; it involves personnel trained in rescue, stabilization, transportation, and advanced treatment of traumatic or medical emergencies'(Sanders, 2001:1564).

Fibrinolysis: The administration of an intravenous drug to restore perfusion of the heart tissue.

Health Professions Council of South Africa (HPCSA): Medical regulating body of South Africa. All medical practitioners have to register with the board and adhere to the stipulated laws.

Intermediate life support (ILS): The level between basic life support and advanced life support.

Intravenous perfusion: 'Introducing fluids with a needle into a vein'(Sanders, 2001: 1573).

Manual defibrillator: 'A device used to depolarize fibrillating myocardial cells, thus allowing them to repolarize uniformly' (Sanders, 2001: 1561).

Needle cricothyrotomy: 'An advanced airway procedure that provides high-volume / high-pressure oxygenation of the lungs through cannulation of the trachea just below the glottis' (Sanders, 2001: 1595).

Needle thoracentesis: 'Puncturing of the pleural space with a needle' (Sanders, 2001: 1594).

Posttraumatic Stress Disorder (PTSD): 'A psychiatric disorders consisting of physiological and psychological responses, resulting from exposure to an event or events involving death, serious injury, or a threat to physical integrity' (American Psychiatric Association, 2004:7).

Rapid sequence intubation: 'An airway management technique that involves the almost simultaneous administration of a potent sedative agent and a neuromuscular blocking agent for the purposes of endotracheal intubation' (Sanders, 2001: 1587).

Synchronized cardioversion: Restoring the heart's natural rhythm by applying an electrical shock that is synchronized with the heartbeat.

Transcutaneous pacing: 'The use of an artificial pacemaker to substitute the natural pacemaker of the heart when it is blocked or dysfunctional'(Sanders, 2001:1595).

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ABSTRACT

Studies that have been conducted on EMS personnel and their coping mechanisms have focused mainly on disaster situations and the prevalence of post-traumatic stress disorder, while exposure to critical incidents of a smaller magnitude on a day-to-day basis has not received much attention. The research that has been done has primarily been conducted in Western developed countries.

Little empirical work in this area has been done in South Africa. There is almost no information about what impact exposure to traumatic events has on EMS personnel on a normal shift system in our local contexts. We also know very little about the coping mechanisms EMS personnel employ to manage this regular feature of their working lives

In an attempt to rectify this dearth of data this study aimed to investigate coping mechanisms used by EMS personnel in the Cape Town Metropole following exposure to daily or routine traumatic events. A total of 189 respondents from three EMS services in the Cape Town Metropole completed a questionnaire, containing close-ended quantitative questions. This was followed up by a semi-structured interview in order to get greater insight using in-depth qualitative data.

The most significant results of this study indicate that EMS personnel find dealing with seriously injured children more traumatic. They experience avoidance symptoms after exposure to a traumatic incident and apply emotion-focused coping to help them deal with their emotions. They also indicate that they have received very little or no training to prepare them for the emotional effects of traumatic incidents or how to deal with the bereaved family, and feel that their company debriefing and support structure is inadequate.

CHAPTER 1

INTRODUCTION

Traumatic incidents, death, and patients dying in their care form a significant part of the personnel of Emergency Medical Services (EMS) daily routine (Regehr, Goldberg & Huges, 2002:505; Vettor & Kosinski, 2000:217). As an inherent part of their work, EMS personnel are continuously exposed to human pain and suffering, because the essential nature of their work is to respond to emergencies and traumatic events. While they are technically skilled in a variety of techniques to attend to human medical emergencies, they are less equipped to manage the underlying psychological and emotional pressures of dealing with the struggle between life and death. This struggle they confront on a daily basis as an inherent requirement of their job. Despite the fact that they have no professional training in trauma counselling, they often have to console the bereaved family, as well as cope with the psychological affects that these events have on their own life (Beaton et al., 1999:293).

Research suggests that EMS personnel experience many reactions after exposure to a traumatic event (Clohessy & Ehlers, 1999:256; Dyregrov & Mitchell, 1992:10; Haslam & Mallon, 2003:278; Jonsson & Segesten, 2004:219; Regehr, Goldberg & Huges, 2002:508), all of which is discussed in detail later on in this chapter. Such exposure can lead to a reduction in productivity and effectiveness and, possibly, the prevalence of post-traumatic stress disorder (PTSD) and burnout (Kriek, 2008:26).

Admitting to being emotionally affected by traumatic incidents is difficult for EMS personnel as it leads to them being perceived by their peers as not tough enough for the job (Wagner, 2005:2). This is further complicated by the fact that they are expected to live up to the general public's view of them as life-savers, causing them to have high expectations of themselves.

Anecdotally, the attitude of 'No one dies on my watch' is common among EMS personnel. This is something that they cannot guarantee, the boast puts extra pressure on them as caregivers and having to pronounce a patient dead would be the equivalent of failure for many (Smith-Cumberland & Feldman, 2005:184). Research suggests that EMS personnel often suppress their emotions and feelings so as to live up to this image of them being strong and resilient. They, therefore, do not seek help (Alexander & Klein, 200:78; Haslam & Mallon, 2003:282).

International studies focus mainly on EMS personnel's reactions to large scale disasters. Although small scale, research has been conducted on incidents of a less significant magnitude and reported that EMS personnel use different coping mechanisms to deal with their feelings after they are exposed to smaller traumatic incidents. These incidents include road traffic accidents, incidents involving children, dead bodies, cot death, burns patients, suicides and mass casualties (Alexander & Klein, 200:78; Bennet et al., 2005:220; Chang et al., 2008:164; Clohessy & Ehlers, 1999:252; Folkman et al., 1986:993; Folkman & Moskowitz, 2004:752; Kriek, 2008:28). Regehr, Goldberg and Huges (2002) reported that inter alia, personnel could experience post-traumatic stress and depressive symptoms, and were, for example, most profoundly affected by the lonely death of an elderly person, the suicide of a desperate individual or the death following abuse of an innocent child. They described some of the coping mechanisms used by emergency personnel: these being the conscious distancing of themselves from the victims or their families; making use of support networks, focusing on the positive aspects of their own lives, being affectionate towards their own family members, to mention a few.

Costa and McCrae (1992:660), Jonsson and Segesten (2004:216), Marmar et al. (1996:102), Regehr, Hill and Glancy (2000:339), and Vettor and Kosinski (2000:224) also argue that the coping strategies EMS personnel use depend on their different personality characteristics.

Although previous studies have examined the relationship between traumatic events and PTSD symptoms, as well as the psychological effects of trauma, few studies have investigated the EMS worker's perceived coping mechanisms and attitude towards death and dying on a normal day-to-day shift system (Chang et al., 2008:164; Jonsson & Segesten, 2004:215; Smith-Cumberland & Feldman, 2005:184). Little information is available about the experience of, and coping mechanisms employed by EMS personnel after exposure to daily critical incidents (Haslam & Mallon, 2003:278).

1.1 Background: Cape Town Emergency Medical Services

This chapter aims to contextually describe the case study (in this case, the Cape Town Emergency Medical Services), and provide an overview of the research problem and purpose of the study.

1.1.1 Emergency Medical Services in the Cape Town Metropole

The global goal of Emergency Medical Services (EMS) is to provide a high level of care to the critically ill and injured patient (Aguilera, Cabanas & Machado, 2010:125). Every country has different protocols and regulations governing the scope of practise within their individual laws. The regulating body in South Africa which governs all medical professionals is the Health Professionals Council of South Africa (HPCSA). The South African National Health Act, no. 61 of 2003, stipulates that everyone has the right to have access to health care services. It is therefore essential to have an EMS system with well-trained and qualified personnel who can recognise, treat and transport patients to facilities where definitive care can be given.

EMS personnel in South Africa are trained to deal with critically ill patients, whether rescuing them from burning buildings, extricating someone from a car wreck, dealing with a suicide victim, or tending to a patient who has been assaulted (Regehr, Goldberg & Huges, 2002:505). It should also be noted that EMS personnel do not only respond to emergency calls, but they also care for stable as well as non-stable patients being transported between two medical facilities (Department of Emergency Medical Care, 2010). It is their responsibility to gain access to the patient, render advanced life support care and transport the patient to an appropriate medical facility (Department of Emergency Medical Care, 2010), thereby forming a vital link in the patient's survival.

In the Cape Town Metropole, EMS personnel work in shifts, these being an average of fifteen 12-hours shifts per month. They are divided up into teams of two to a vehicle, although at the private EMS services, advanced life support (paramedic) staff work alone on a response vehicle to render support to the ambulance crews, consisting of one intermediate life support (ILS) and one basic life support (BLS) provider. Crew members form a close working relationship because they often have to depend on each other in dangerous situations. Each crew is stationed at one of several bases around the area, and is dispatched on calls from there. When the crew arrives on scene, the responsibility for the management of the situation, the co-ordination of a scene as well as the treatment of the patient is automatically the responsibility of the highest qualified medical personnel (Louria, 2005:3).

1.1.2 EMS training and qualifications

EMS systems vary worldwide, but in general, the level of patient care falls into one of three categories: basic life support (BLS), intermediate life support (ILS) or advanced life support (ALS) (Campbell & Campbell, 2010:135; Dalbock, 1996:120).

All EMS personnel within South Africa have to be registered practitioners with the Health Professions Council of South Africa, and are thereby subject to the laws, scope of practice, and disciplinary procedures of this regulating body (Dalbock, 1996:120; MacFarlane, Van Loggerenberg & Kloeck, 2005:146).

BLS providers are trained to provide basic life support after a 1 month training course (Campbell & Campbell, 2010:135). ILS practitioners are the next level (Campbell & Campbell, 2010:135). They undergo a four-month training programme, which, in addition to the BLS protocols, the ILS scope of practice allows for more skills to be performed at a higher level of responsibility and care. However, ILS practitioners are still limited by these protocols, and should patient care exceed their scope, ALS will need to be called in for further assistance, based on the patient's needs.

The different scope of practise is summarized in Table 1 (Capabilities of Emergency Care Providers, 2011).

Table 1

EMS Scope of practice

CAPABILITY	BLS	ILS	CCA/N.DIP	ECT	BTECH
Airway Management					
Finger sweep	√	√	√	√	√
Head-tilt-chin lift	√	√	√	√	√
Jaw-thrust	√	√	√	√	√
Suctioning of the airway	√	√	√	√	√
Airway obstruction removal techniques	√	√	√	√	√
Use of Magill's forceps		√	√	√	√
Oropharyngeal airway insertion	√	√	√	√	√
Nasopharyngeal tube airway insertion		√	√	√	√
Cricoid pressure		√	√	√	√
Orotracheal intubation			√		√
Nasotracheal intubation			√		√
Blind nasotracheal intubation			√		√
Digital endotracheal intubation			√		√
Retrograde intubation			√		√
Supraglottic and extraglottic airway devices insertion			√	√	√
Orogastric tube insertion			√	√	√
Nasogastric tube insertion			√	√	√
Needle cricothyroidotomy		√	√	√	√
Surgical cricothyroidotomy			√		√
Rapid sequence intubation, only with capnography & ventilator					√
Oxygenation and Ventilation					
Oxygen therapy	√	√	√	√	√
Nebulization (medicated)		√	√	√	√
Use of pulse oximetry		√	√	√	√
Needle thoracentesis		√	√	√	√
Bag valve mask ventilation	√	√	√	√	√
Bag valve tube ventilation	√	√	√	√	√
Mechanical ventilation			√		√
Use of PEEP			√	√	√
Use of capnography			√	√	√

CAPABILITY	BLS	ILS	CCA/N.DIP	ECT	BTECH
Circulatory Management					
Blood pressure measurement	√	√	√	√	√
Peripheral intravenous cannulation - ≥ 8 year old		√	√	√	√
Peripheral intravenous cannulation - all age categories			√	√	√
External jugular vein cannulation			√	√	√
Femoral vein cannulation			√		√
Intra-osseous insertion			√	√	√
Umbilical vein cannulation			√	√	√
Fluid administration		√	√	√	√
Intravenous drug administration			√	√	√
Intraosseous drug administration			√	√	√
Subcutaneous drug administration		√	√	√	√
Intramuscular drug administration			√	√	√
Endotracheal tube drug administration			√		√
Drug infusions and use of infusion devices			√		√
Use of syringe drivers			√		√
Use of non-invasive blood pressure monitors		√	√	√	√
External haemorrhage control including use of tourniquet	√	√	√	√	√
Use of pneumatic anti-shock garment - legs only		√	√	√	√
Use of pneumatic anti-shock garment - entire			√		√
Automated external defibrillation (AED)	√	√	√	√	√
Manual defibrillation (asynchronous)		√	√	√	√
Synchronised cardioversion			√		√
Vagal manoeuvres			√		√
Central line management			√		√
Transcutaneous cardiac pacing			√		√
3 Lead ECG monitoring		√	√	√	√
12 Lead ECG monitoring			√		√
Fibrinolysis					√
ECG Rhythm Analysis					√
Normal sinus rhythm		√	√	√	√
Sinus bradycardia		√	√	√	√
Sinus tachycardia		√	√	√	√
Ventricular fibrillation		√	√	√	√
Ventricular tachycardia		√	√	√	√
Asystole / PEA		√	√	√	√
All other emergency cardiac dysrhythmias			√		√

CAPABILITY	BLS	ILS	CCA/N.DIP	ECT	BTECH
Obstetric Management					
Normal vaginal delivery	√	√	√	√	√
Prolapsed cord management	√	√	√	√	√
Breech delivery management (scope specific)	√	√	√	√	√
Mal presentations management (scope specific)	√	√	√	√	√
Preterm labour management (scope specific)	√	√	√	√	√
Obstructed labour management (scope specific)	√	√	√	√	√
Fundal massage	√	√	√	√	√
Bimanual compression	√	√	√	√	√
Tocolysis			√		√
General			√		
CPR (adult, child, infant & neonate)	√	√	√	√	√
Patient clinical assessment	√	√	√	√	√
Vital sign assessment	√	√	√	√	√
Finger prick and blood glucose measurement	√	√	√	√	√
Cervical spinal clearance			√	√	√
Application of cervical collar	√	√	√	√	√
Application of head blocks	√	√	√	√	√
Application of spider harness	√	√	√	√	√
Spinal immobilization using scoop stretcher & long spine board	√	√	√	√	√
Spinal immobilization using an extrication device	√	√	√	√	√
Application of splints including the traction splint	√	√	√	√	√
Application of vacuum mattress		√	√	√	√
Use of stretchers	√	√	√	√	√
Urinary catheterization			√	√	√
Basic wound care and application of dressings	√	√	√	√	√
Suturing		√	√		√
Declaration of death: withdrawal of resuscitation efforts		√	√	√	√
Declaration of death: withholding resuscitation	√	√	√	√	√
Administration of medication as per HPCSA protocol	√	√	√	√	√
General patient inter-facility transfer	√	√	√	√	√
Intensive care transfer			√		√
Neonatal transfer (non-intubated patient)		√	√	√	√
Neonatal intensive care transfer			√		√

There are a number of qualifications at the ALS level that are recognised by the HPCSA, namely the Critical Care Attendant (CCA), Emergency Care Technician (ECT), National Diploma (N.Dip) Emergency Medical Care and the Bachelor of Technology (B.Tech) Emergency Medical Care. These four advanced life support practitioner levels each have their own scope of practice, with the ECT having the lowest practice recognised with study duration of two years.

The CCA undergoes nine months of training at a college, whereas N.Dip. (three years) and B.Tech. (one to two years post N.Dip graduate) qualifications are of a longer duration (Campbell et al., 2010:135). The ECT, N.Dip and B.Tech programmes are taught at specific universities of technology in South Africa. Recently, the three year N.Dip programme is being phased out and replaced by the fulltime four year Bachelors in Emergency Medical Care (BEMC) programme.

These programmes teach subjects such as anatomy and physiology, rescue, emergency medical care, chemistry, physics, primary health care, law, personal health and wellness, pharmacology, pathology, communications, management, educational techniques and research methodology (Louria, 2005:19).

The different EMS qualifications are summarized in table 2.

Table 2

EMS Qualifications

TRAINING	BLS	ILS	CCA	ECT	NDIP	BEMC	BTECH
Duration of study	1 month	4 months	9 months	2 years	3 years	4 years	2 years post N.Dip graduate
Institution	College	College	College	University	University	University	University

It is because of this high level of education as well as the practical experience and exposure these EMS personnel gain on the road and in hospital units, that South African paramedics have been classified as amongst the best in the world (MacFarlane, Van Loggerenberg & Kloeck, 2005:146). Further, South African ALS paramedics are registered as independent practitioners with the HPCSA, which allows them to administer medications within their scope of practice without a doctor's permission. The growth of and development in the field has been made possible because EMS personnel are able to practice as independent practitioners.

Certain skills (pre-hospital fibrinolysis and rapid sequence intubation) are techniques that fall only within the B.Tech. EMC scope of practice (Campbell & Campbell, 2010:135; HPCSA Professional Boards: Emergency Care, 2011). The only practitioners allowed participating in the B.Tech programme are qualified National Diplomates. Once a B.Tech EMC degree has been obtained, further studies can include a Master of Science degree in Emergency Medical Care (MSc.) or a Masters of Philosophy degree in Clinical Emergency Care (MPhil.) at selected universities, with the choice to complete a Doctor of Philosophy (PhD) (Division of Emergency Medicine, 2011).

As can be seen above, the training given is largely focused on technical and paramedical skills and the EMS personnel are not trained in counselling skills and mechanisms designed to assist the direct or indirect victims of medical emergencies.

1.1.3 EMS employment

EMS personnel in the Cape Town Metropole are either employed by the provincial (public) service or by one of the number of private EMS companies, such as ER24 and Netcare 911, which are based from the private hospitals in the area. The public service falls under the directorate of EMS at the National Department of Health in Pretoria (Wallis, Garach & Kropman, 2008:70) and is divided into four divisions, namely northern-, southern-, western- and eastern division.

1.1.4 EMS mode of transport

Whether in the private or public health sector, EMS personnel utilise the same mode of transport for their patients. Patients are generally transported by road, although rotary-wing or fixed-wing aircrafts are available for seriously ill or injured patients or those who have to be transported over long distances.

Strict criteria are applied to all patients requiring aero-medical transportation, as the resources available in this field are limited and cost implications are high. Aero-medical services in Cape Town are mainly rendered by the Red Cross Air Mercy Service (AMS), a non-profit organisation (AMS,2011). ER24 has however, partnered with Discovery, allowing for the Helicopter Emergency Medical Services (HEMS) to provide a twelve hour day light rotary wing service, manned by two ALS paramedics (Medicopter HEMS, 2011). Both services operate from Cape Town International Airport.

1.2 The Cape Town Metropole

The Cape Town Metropole is positioned on the southern part of the Western Cape Province and covers a geographical area of 2 479 km² (City of Cape Town Socio-Economic Profile (November 2006), 2011). In the 2007 census, Statistics South Africa reported a population of around 3 497 097 people in the area (Community Survey, 2007: Basic Results Municipalities, 2011).

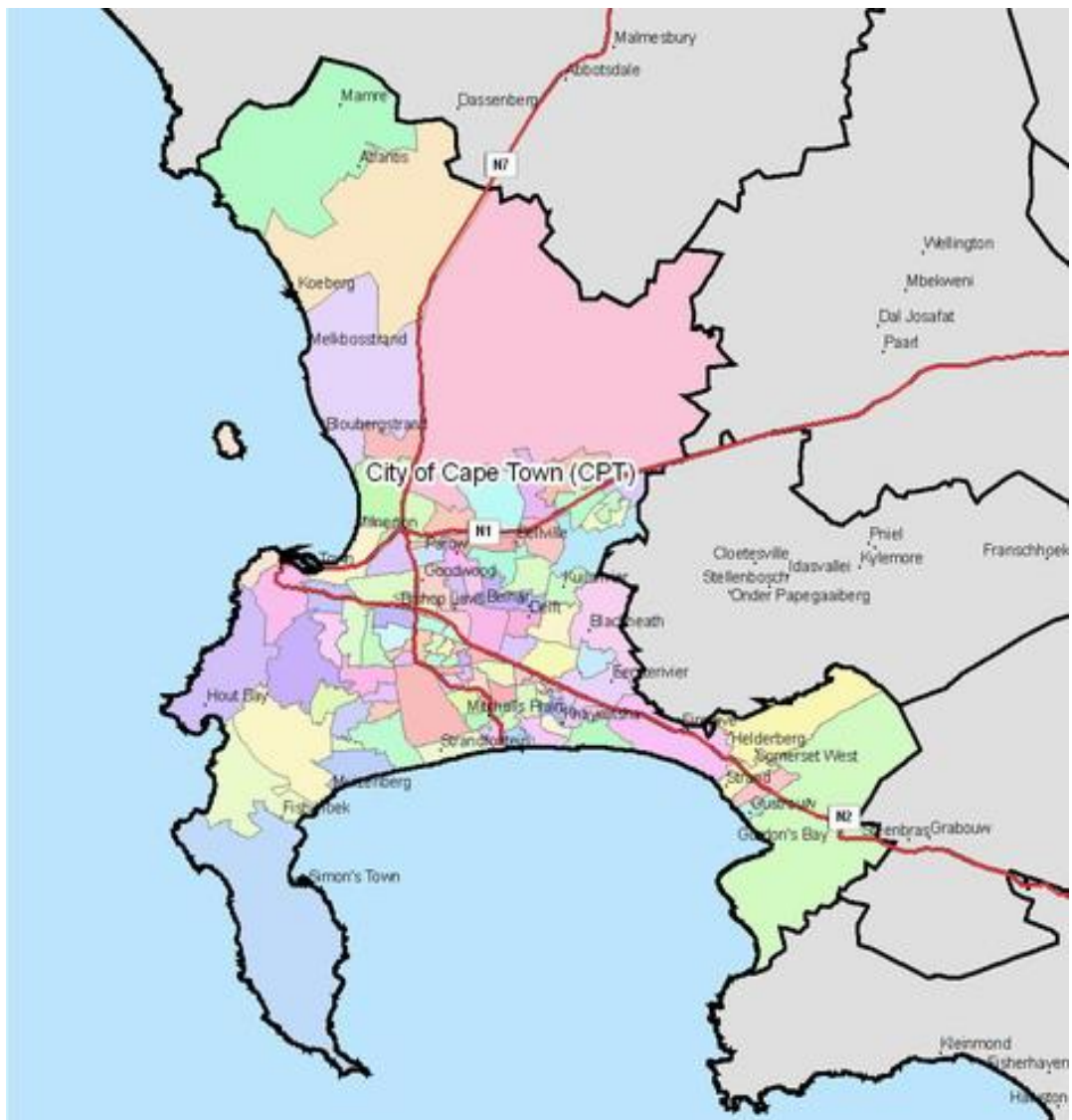


Fig. 1 Map of Cape Town Metropole

1.2.1 Burden of Disease in the Cape Metropole

Poverty, health issues and crime are some of the major challenges for this area (City of Cape Town Socio-Economic Profile (November 2006), 2011).

The addiction to the drug methamphetamine, also known as Tik, plays a major role in contributing to the high rates of violent crime and HIV/AIDS (Kapp, 2008:193), with a major increase in drug-related crimes between 2001 and 2005 (City of Cape Town Socio-Economic Profile (November 2006)).

Further, in a Burden of Disease study, the 2001–2006 data show that HIV-related mortality was the leading cause of premature mortality in Cape Town, and that Tuberculosis (TB) remains the third (Groenewald et al., 2008:24). These figures changed and in 2008, Tuberculosis became the leading cause of natural deaths, with HIV-related deaths ranked ninth (Statistics South Africa, 2008).

Despite the dramatic increase in deaths due to HIV/AIDS between 2001 and 2004, deaths due to non-natural causes (i.e. violence and injuries) continue to contribute to premature mortality among Capetonians (Groenewald et al., 2008:21). The most common causes of injury in Cape Town in 2006 were homicide, accounting for 14.4% of premature mortality in the city, road traffic injuries (5.3%), other unintentional injuries (3.2%), suicide (2.1%), fires (1.7%), and other transport (0.7%). Combined, these injury deaths accounted for 37.9% of premature mortalities among males and 12.8% among females (Groenewald et al., 2008:24). Further, city-level comparisons from the National Injury Mortality Surveillance System (NIMSS) indicate that the proportion of deaths due to homicide in Cape Town and Durban are significantly higher than those in Johannesburg and Pretoria. (Groenewald et al., 2008:24)

Due to the burden of disease and socio-economic realities, (Groenewald et al., 2008:24), EMS personnel are exposed to traumatic incidents, death, and patients dying in their care on a daily basis. No local data relating to the effect of such exposure on EMS personnel is, however, available, and as will be seen below in Chapter Two, studies on EMS personnel's response to critical incidents have been conducted mainly in the developed world, such as the United Kingdom (Ward, Lombard & Gwebushe, 2006:226).

1.3 Rationale for the study

EMS plays a vital role in any society, but especially in a country with a burden of disease such as South Africa's. Injury mortality rates in South Africa are approximately six times higher than the global average (Groenewald et al., 2008:24).

A study that was conducted in the Western Cape found that a higher prevalence of exposure to critical incidents and general psychopathology, especially anxiety and depression, were found among these EMS personnel compared to those in developed countries (Ward, Lombard & Gwebushe, 2006:226). Because of this high exposure to traumatic incidents, research has reported that EMS personnel experience different reactions, such as work stress-related symptoms (Clohessy & Ehlers, 1999:256; Dyregrov & Mitchell, 1992:10; Haslam & Mallon, 2003:278; Kriek, 2008:26; Regehr, Goldberg & Huges, 2002:508). These reactions are discussed in detail in the literature review chapter, below.

After a thorough review of the literature, the overwhelming majority of research studies have focused on the coping mechanisms used by EMS personnel in disaster situations (Andersen, Christenson & Petersen, 1991; Armstrong, O'Callahan & Marmar, 1991; Chang et al., 2003, 2008; Durham, McCammon & Allison, 1985; Dyregrov, Kristofferson & Gjestad, 1996; Epstein, Fullerton & Ursano, 1998; Erslund, Weisaeth & Sund, 1989; Fullerton, Ursano & Wang, 2004; Marmer et al., 1996; McCammon et al.,

1988; McFarlane, 1986; North et al., 2002; Ozen & Sir, 2003; Perrin et al., 2007; Raphael, Singh & Branbury, 1983-84;

Raphael, Meldrum & Mcfarlane, 1995; Smith et al., 2005; Steward et al., 2004; Ursano et al., 1995, 1999; Vogel et al., 2004; Wagner, Heinrichs & Ehlers, 1998).

Most of these studies, concentrated on PTSD and burnout after a major disaster or emergency (for example earthquakes, tsunamis and incidents like September 11, 2001) (Chang et al., 2008:164; Jonsson & Segesten, 2004:215; Smith-Cumberland & Feldman, 2005:184). Very little research has been done, however, on the relationship between EMS personnel's exposure to critical incidents and the coping mechanism utilised on a day-to-day shift system.

Little information is available about the physiological reactions and coping mechanisms of EMS personnel after exposure to daily critical incidents (Clohessy & Ehlers, 1999:252; Haslam & Mallon, 2003:278; Regehr, Goldberg & Huges, 2002:505; Van der Ploeg & Klebber, 2003:i40). This lack of information can be due to the unique nature of the job of the EMS personnel (Cicognani, Pietrantonio & Prati, 2009:452). Their tasks and constant exposure to trauma makes studying their coping mechanisms a methodological and theoretical challenge (Beaton et al., 1999: 294).

This dearth of information globally is as apparent in the South African context. Almost no research has been conducted on South African EMS personnel exposure to traumatic events in related coping mechanisms. Studies that have been conducted in other countries suggest that EMS workers develop symptoms after exposure to a traumatic event. As described earlier, these studies have been conducted after a disaster situation and focuses on diagnosing PTSD, and not on the coping mechanisms EMS workers use after exposure to critical events on a daily shift system. Given the burden of disease, lack of training and constant exposure to traumatic events, there is good reason to investigate the current coping strategies of local EMS personnel as they engage in their daily routine shift work. This study focuses exclusively on EMS personnel in the Cape Town Metropole.

The rationale for the study is based on the following observations:

The existing research on EMS personnel's coping mechanisms has been based on:

1. Exposure to disaster situations
2. Focusing and diagnosing PTSD and burnout, and not on the coping mechanisms EMS personnel apply
3. International studies

The literature is limited in that it did not adequately:

1. Research the relationship between EMS personnel's exposure to critical incidents and the coping mechanisms utilised on a day-to-day shift system.
2. Study the coping mechanisms of South African EMS personnel

1.4 Aim of the Study

The aim of this study is to investigate coping mechanisms used by EMS personnel following exposure to daily or routine traumatic events.

1.5 Research objectives

In pursuit of the aim, the main objectives are:

- to collect information from the EMS personnel (by means of questionnaires and semi-structured interviews) to determine
 - what critical incidents affect them the most
 - what reactions they experience after exposure to a critical incident
 - what coping mechanisms they use

- what services should be offered to help staff cope with these effects
- what education interventions could be considered to address this lacuna.
- to make recommendations to EMS services and management on best practice support mechanisms for affected staff.

1.6 Summary

As mentioned before, EMS personnel in the Cape Town Metropole are exposed to traumatic incidents on a regular basis. Research conducted elsewhere has shown that such individuals apply certain coping methods after this exposure.

Most of the studies, however, focus on disasters and the prevalence of PTSD, while exposure to critical incidents of a smaller magnitude on a day-to-day basis has not received much attention from researchers. While coping mechanisms employed by EMS personnel abroad have been examined, there is dearth of information on what paramedics in the Cape Town Metropole experience.

This study aims at addressing this in relation to EMS personnel working in the Cape Town Metropole, and to establish what emotions they experience after witnessing a traumatic event, what coping measures they use to counter these emotions, and what support structures are in place to help them deal with them.

In the following chapters, different aspects of the study are presented:

Chapter 2, literature review, argues the importance of the study by exploring and linking literature dealing with the symptoms and reactions EMS personnel experience after being exposed to a critical incident as well as what coping mechanisms they use to counteract the psychological effects.

Chapter 3, methods, describes and validates the research design and methods which was applied to gather, analyse and interpret the data necessary for this study. The methods of how the data was collected are explained, including measures taken to address issues of validity and reliability in the study.

Chapter 4, findings, reports the quantitative and qualitative findings of this study.

Chapter 5, discussion, interprets the findings stemming from the analysis of the data and how it links to other studies.

As it is good practice in qualitative research to incorporate the last section, chapter 6, conclusion, consists of the researcher's reflection, recommendations, limitations of the study and summary.

University of Cape Town

CHAPTER 2

LITERATURE REVIEW

This chapter reviews the literature as it pertains to EMS personnel's reactions and coping mechanisms when exposed to critical events and death and dying. It also reviews research that has looked at how other medical professionals experience death and dying and how their coping mechanisms compare with those used by EMS personnel.

On a normal shift system, EMS personnel are repeatedly exposed to paediatric death and trauma, gruesome incidents, dead bodies, suicides and mass casualties (Beaton et al., 1999:293). They are technically highly skilled and trained to deal with critically ill patients (Regehr, Goldberg & Huges, 2002:505). ALS paramedics have the authority to decide whether to start a resuscitation, when to stop Cardio-pulmonary Resuscitation (CPR) and at a mass casualty incident, which patient to resuscitate according to the triage colour code (Smith-Cumberland & Feldman, 2005:185).

Due to media exposure, especially television programmes such as Rescue 911 and Red Alert, EMS personnel are seen to be lifesavers in the eyes of the public, heroes who defeat death. EMS workers, consequently, form high expectations of themselves, and see themselves as failures, should a patient die in their care (Smith-Cumberland & Feldman, 2005:184).

Most of the available literature is based on research that was done on EMS personnel after exposure to a disaster (Andersen, Christenson & Petersen, 1991; Armstrong, O'Callahan & Marmar, 1991; Bilal et al., 2007; Chang et al., 2003, 2008; Durham, McCammon & Allison, 1985; Dyregrov, Kristofferson & Gjestad, 1996; Epstein, Fullerton & Ursano, 1998; Erslund, Weisaeth & Sund, 1989; Fullerton, Ursano & Wang, 2004; Marmer et al., 1996; McCammon et al., 1988; McFarlane, 1986; North et al., 2002; Ozen & Sir, 2003; Perrin et al., 2007; Raphael, Singh & Branbury, 1983-84, 1995;

Smith et al., 2005; Steward et al., 2004; Ursano et al., 1995, 1999; Vogel et al., 2004; Wagner, Heinrichs & Ehlers, 1998).

These studies focused mainly on EMS personnel's exposure to mass casualties and disasters and the psychological trauma thereof i.e. stressors, the consequences of these stressors, risk factors, symptoms and their coping strategies. The research does not focus on the incidents they are exposed to or their coping mechanisms on a normal day-to-day shift system. Everyday operational incidents such as road traffic accidents, suicides or cot deaths can be just as traumatic as a scene where mass casualties have to be treated (Clohessy & Ehlers, 1999:252; Regehr, Goldberg & Huges, 2002:505; Van der Ploeg, 2003:i40).

Although the above-mentioned studies researched the relationship between traumatic events and PTSD symptoms, as well as the psychological effects of trauma, few studies have investigated the EMS worker's coping mechanisms and attitude specifically towards death and dying (Chang et al., 2008:164; Jonsson & Segesten, 2004:215; Smith-Cumberland & Feldman, 2005:184).

2.1 Description of a critical incident

A critical incident is defined as 'an incident that is sufficiently disturbing to overwhelm or threaten to overwhelm the individual's usual method of coping' (Alexander & Klein, 200:76). Cicognani, Pietratoni and Prati (2009:450) describes it as 'an event that has a stressful impact sufficient enough to overwhelm an individual's sense of control, connection and meaning in his/her life'.

Trauma can either be direct or indirect, the latter also being referred to as secondary trauma (Kirby, Shakespeare-Finch & Palk, 2011:2). Direct trauma can be illness, injury, bereavement or rape. Secondary trauma refers to 'the emotional duress experienced by persons having close contact with a trauma survivor' (Holland, 2008:14). The symptoms for secondary trauma are similar to those of PTSD, although the person will not develop PTSD.

A critical incident can either be a single or a series of events (Donnelly & Siebert, 2009:426). These incidents include multiple casualties, violence, injury and mutilation (Regehr, Goldberg & Huges, 2002:505; Vettor & Kosinski, 2000:217). The critical incident stressors which have been identified the most in the literature include serious injury or death of a fellow colleague or that of a patient, the death of a child, when a patient dies after a prolonged rescue attempt, (Donnelly & Siebert, 2009:426), mass incidents, road traffic accidents, fires, murder scenes, violent crimes, when the patient is dead on arrival and burns patients (Smith & Roberts, 2003:75).

There is a large body of literature suggesting that dealing with seriously injured or dead children seems to affect EMS personnel more than other calls (Alexander & Klein, 2001:78; Bennett et al., 2005:222; Clohessy & Ehlers, 1999:253; Haslam & Mallon, 2003:278; Regehr, Goldberg & Huges, 2002:507; Van der Ploeg & Kleber, 2003:i44). These incidents specifically affect EMS personnel because they often are parents, grandparents, uncles or aunts themselves and can therefore identify with the injured child and imagine that it could have been one of their own (Dyregrov & Mitchell, 1992:14).

Other incidents that EMS personnel classify as disturbing and stressful are when patients die in their care, multiple casualties, suicides (Regehr, Goldberg & Huges, 2002:507), dead bodies (Bennett et al., 2005:222; Haslam & Mallon, 2003:278), sad and hopeless patients (Van der Ploeg & Kleber, 2003:i44), cot deaths and burn patients (Bennett et al., 2005:222).

Death notifications and dealing with the bereaved family are particularly stressful. This may be because EMS personnel do not receive enough training to deal with the psychological aspect of death (Regehr, Goldberg & Huges, 2002:507; Ward, Lombard & Gwebushe, 2006:230). Textbooks and other training materials contain very little information on the topic, as the curriculum inevitably focuses on saving lives and allows for a minimum time spent on death and dying (Smith-Cumberland & Feldman, 2005:185).

To best describe the methods of coping, Jonsson & Segesten classified the traumatic incident EMS personnel experience into three categories, namely the pre-trauma, mid-trauma and post-trauma experience (Jonsson & Segesten, 2004:218).

The pre-trauma experience is the mental preparation required from when the crew receive the call information to their arrival on the scene. Each crew will use a past experience to create a mental picture of the scene and what could possibly be expected on arrival. This allows it to initiate an understanding of potential pitfalls of specific objectives that need to be achieved in order to move on to the next category: the mid-trauma experience.

The mid-trauma experience occurs from the moment when the crew arrives on scene to patient handover. The one pitfall of the pre-trauma experience could be that the mental picture formed may differ vastly from the reality of the scene, potentially leaving the crew to feeling overwhelmed. The crew may identify with the patient or fear failure, both of which contribute to the stress surrounding the mid-trauma experience.

The final stage, as suggested by Jonsson & Segesten, being the post-trauma experience, is the time when the crew will reflect on the call, more specifically if the attempt to help or save the patient failed. The crew will deal with mixed feelings of rejection, frustration, confusion, sadness, resentment, bitterness, guilt, humiliation, helplessness as well as a sense of being out of control. All of which may need to be dealt by each individual person utilising their own individual form of coping. Mostly, these feelings are dealt with by means of inner dialogue or talking to fellow colleagues (Jonsson & Segesten, 2004:219).

Studies on EMS personnel's exposure to critical incidents and the problems associated with it, has mainly been conducted in the developed world, such as Scotland and the United Kingdom (Ward et al., 2006:226). In one of few studies conducted locally, Ward et al. found that a higher prevalence of exposure to critical incidents and general psychopathology were found among these EMS personnel compared to those in developed countries. This should be of concern to management who need to implement strategies and proper intervention to alleviate symptoms of PTSD, anxiety and depression. This implementation should be a top priority (Ward, Lombard & Gwebushe, 2006).

2.2 Posttraumatic Stress Disorder

It will be seen that although the majority of the literature refers to the prevalence of PTSD in EMS personnel, this current research focuses on the effects that traumatic events, death and dying have on EMS personnel on a day-to-day shift system. In fact, the primary goal of this research is not to diagnose or determine the prevalence of PTSD, but to obtain a better understanding of the psychological consequences of working in emergency medical situations, how they respond emotionally, and how they cope. Because PTSD in EMS personnel has been mentioned in several research studies, it is perhaps important to give a brief overview of the literature pertaining to it.

According to the Diagnostic and Statistical Manual of Mental Disorders fourth edition (DSM-IV), a diagnosis of PTSD requires that a person develop re-experiencing, avoidance and hyper-arousal symptoms after being exposed to a traumatic event. The individual has to respond to the trauma with intense fear, helplessness or horror (American Psychiatric Association, 2000:463).

Literature has emphasised the consequences (compassion, a sense of low personal accomplishment, emotional exhaustion and inaccurate diagnosis's) of EMS personnel's repeated exposure to traumatic stress, especially disasters, and events outside the range of human experience (Cicognani, Pietrantonio & Prati, 2009:449; Vettor & Kosinski, 2000:217), specifically focusing on the prevalence of PTSD (Cicognani, Pietrantonio & Prati, 2009:449; Jonsson, Segesten & Mattsson, 2003:79).

EMS personnel can develop PTSD even without being exposed to disasters, as shown in a study conducted by Clohessy & Ehlers. In their study, 21% of the participants working on a day-to-day shift system showed symptoms of PTSD (Clohessy & Ehlers, 1999:256).

The prevalence of PTSD in the EMS has been well researched and documented, with a rate varying between 3% and 61% (Alexander & Klein, 2001; Anderson, Christenson & Petersen, 1991; Armstrong, O'Callahan & Marmar, 1991; Beaton et al., 1999; Bennett et al., 2005; Bilal et al., 2007; Chang et al., 2003, 2008; Clohessy & Ehlers, 1999; Durham, McCammon & Allison, 1985; Dyregrov, Kristofferson & Gjestad, 1996; Epstein, Fullerton & Ursano, 1998; Erslund, Weisaeth & Sund, 1989; Fullerton, Ursano & Wang, 2004; Grevin, 1996; Haslam & Mallon, 2003; Jonsson, Segesten & Mattsson, 2003; Marmer et al., 1996; McCammon et al., 1988; McFarlane, 1986; North et al., 2002; Ozen & Sir, 2003; Perrin et al., 2007; Raphael, Singh & Branbury, 1983-84, 1995; Regehr, Goldberg & Huges, 2002; Smith et al., 2005; Steward et al., 2004; Ursano et al., 1995, 1999; Van der Ploeg & Kleber, 2003; Vogel et al., 2004; Wagner, Heinrichs & Ehlers, 1998). Due to the nature of their work, what they are exposed to every day and the pressure of saving someone's life, these results are not surprising (Clohessy & Ehlers, 1999:262). Researchers have also mentioned that although EMS personnel will experience a traumatic event at some time during their lifetime, not all individuals will develop symptoms of PTSD (Breslau et al., 1991; Davidson et al., 1991; Norris, 1992; Stein et al., 1997).

It is these individuals who devise coping mechanisms to counter the effect of the trauma they witness who are the focus of this research.

2.3 Symptoms and emotional reactions EMS personnel experience after exposure to a critical event.

Research has shown that EMS personnel experience different symptoms and emotional reactions after they were exposed to a traumatic event, leading to a reduction in productivity and effectiveness (Kriek. 2008:26). These include recurrent dreams, anger, fear, emotional blunting, difficulty concentrating, tearfulness, shortness of breath and night terrors (Kriek 2008:29; Regehr, Goldberg & Huges, 2002:508), intrusive memories, insomnia (Clohessy & Ehlers, 1999:256; Haslam & Mallon, 2003:278), irritability and a sense of detachment (Clohessy & Ehlers, 1999:256), feeling emotionally upset, flashbacks (Haslam & Mallon, 2003:278), helplessness, anxiety, existential insecurity, sorrow and grief, self-reproach, shame, guilt and a change in values (Dyregrov & Mitchell, 1992:10).

Smells, sights and sounds might trigger memories of certain incidents they were called out to deal with, causing the person to relive the experience of that incident. Long afterwards, they could still remember the specific incident in detail when driving past the address where it happened (Jonsson & Segesten, 2004:219). They also reported that their families were affected by the incidents. The participants felt emotionally distant and would sometimes direct their anger and irritability onto their families. Some of them became overprotective of their families, and appreciate the value of family more after being exposed to a traumatic event (Regehr, Goldberg & Huges, 2002:508). As will be seen below, some paramedics use coping mechanisms to deal with their responses to their work situation and to avoid PTSD.

Research has shown that EMS personnel use different coping mechanisms to cope with the symptoms they experience after exposure to a traumatic event. The following section discusses the different coping mechanisms.

2.4 Coping mechanisms used by EMS personnel

Coping refers to 'both overt and covert behaviours that are taken to reduce or eliminate psychological distress or stressful conditions.' Fleishman (1984:229) and Folkman and Moskowitz (2004:747) summarised the research findings over the past three decades relating to coping as follows:

Coping is a complex, multidimensional process that is sensitive both to the environment, and its demands and resources, and to personality dispositions that influence the appraisal of stress and resources for coping. Coping is strongly associated with the regulation of emotion, especially distress, throughout the stress process.

Certain kinds of escapist coping strategies are consistently associated with poor mental health outcomes, while other kinds of coping, such as the seeking of social support or instrumental, problem-focused forms of coping are sometimes associated with negative outcomes, sometimes with positive ones, and sometimes with neither, usually depending on characteristics of the appraised stressful encounter.

Folkman et al. (1986:993) classified coping into two theory-based functions, namely problem-focused and emotion-focused coping, while, more recently, Folkman and Moskowitz (2004:752) have also identified meaning-focused coping as a third type of coping, where the person tries to find meaning in the situation. Fleishman also noted that different personalities make use of different coping methods (Fleishman, 1984:231). Coping normally involves both functions (Folkman et al., 1986:993).

Problem-focused coping is when the person feels that something constructive can be done (Carver, Scheier & Weintraub, 1989:267) and takes action to remove the stressor by actively changing the environment (Fleishman, 1984:230). It has been established that people with a controlling personality usually use this way of coping (Fleishman, 1984:231).

Emotion-focused coping reduces psychological distress by reinterpreting the situation instead of confronting it directly, i.e. looking on the bright side of the situation (Fleishman, 1984:230), like the stressor has to be endured (Carver, Scheier & Weintraub, 1989:267). Denial is a personality characteristic associated with this type of coping (Fleishman, 1984:231).

According to the Lazarus and Folkman's Way of Coping Questionnaire (Folkman & Lazarus, 1988), coping mechanisms can also include confrontive coping, distancing, and social support, taking on responsibility, escape-avoidance, problem solving and positive appraisal (Chang et al., 2008:164). These can be active (e.g. confrontation, fight, escape, positive thinking, seeking social support, or dealing actively with problems) or passive (e.g. immobility, disengagement, social isolation, alcohol abuse, self-destructive behaviours, denial, rumination or avoidance), with active coping being the better strategy (Olf, Langeland & Gersons, 2005:976). Yet, the results of prior studies have been mixed and contradictory, as evidenced by Hytten and Hasle (1989), Moran and Britton (1994) and Marmar et al (1996).

Although the Ways of Coping Questionnaire has been used to assess coping mechanisms, Carver, Scheier and Weintraub (1989) developed the COPE inventory after finding pitfalls in Lazarus and Folkman's questionnaire. They concluded that the Ways of Coping questionnaire doesn't assess all the coping categories, some scales are ambiguous and the scales were developed empirically instead of theoretically. They included theoretically based scales in the COPE questionnaire, namely, active coping; planning; suppression of competing activities; seeking social support; focus on and venting of emotions, mental disengagement; positive reinterpretation and growth; denial and acceptance (Carver et al., 1989:268).

Active coping occurs when action is taken to remove the stressor or alleviate the effect it has on the person. Planning involves thinking how to deal with the stressor, what steps should be taken to confront and handle the situation. The suppression of competing activities occurs when all other activities become less important and are put aside so that one can focus and concentrate on dealing with the stressor without being distracted.

Seeking social support consists of two sub-categories: seeking social support for instrumental reasons occurs when the person seeks assistance, information or advice on what to do. Seeking social support for emotional reasons involves soliciting emotional support or sympathy from someone. Although different, these two coping methods are often used together.

Focus on and venting of emotions takes place when there is an increased awareness of the emotional distress and to ventilate those feelings (Carver, Scheier & Weintraub, 1989:268).

Mental disengagement is present when a person uses other activities as a distraction to avoid thinking about the problem. Positive reinterpretation and growth occurs when the person grows from the experience by focusing on the emotions rather than dealing with the stressor.

Denial is an attempt to reject the reality of the stressor and can be beneficial in the acute phases of a stressful event by decreasing the immediate distress. It can, however, impede coping in the later stages.

Acceptance is the opposite of denial and is put in effect when the person deals with the stressor by accepting the reality of the situation. Turning to religion involves the person finding peace by praying or reading the bible (Carver, Scheier & Weintraub, 1989:268) or any other religious text.

Active coping, planning, suppression of competing activities, restraint coping, seeking social support for instrumental reasons are all sub-dimensions of problem-focused coping. Seeking social support for emotional reasons, positive reinterpretation and growth, acceptance, turning to religion, focus on and venting emotions, on the other hand, are all sub-divisions of emotion-focus coping (Carver, Scheier & Weintraub, 1989:268; Schwarzer & Schwarzer, 1996).

Palmer (1983:84) notes that coping strategies involve 'educational desensitization, humour, language alteration, scientific fragmentation, escapes into work and rationalization'. When using educational desensitisation, the EMS personnel's training allows them to see and focus on the signs and symptoms and not the blood and gore, anatomy and physiology, not a human being; and to treat the patient according to a strict protocol which diminishes fear and alleviates helplessness.

The use of humour (Palmer, 1983:85) suggests that jokes and laughing about the incident downscale the trauma associated with it. Language alteration and the use of technical language make the incident impersonal. EMS personnel might refer to a severely burnt patient as a 'crispy' or a patient that is brain dead will be referred to as a 'veg.' Medical terminology helps the paramedic and hospital staff to communicate facts and not emotions. Scientific fragmentation and escaping into work help EMS personnel focus on the job at hand. The patient becomes an object, a human body consisting of anatomy and physiology, signs and symptoms and underlying pathophysiology. Patients will be referred to as 'that MI we treated' or 'that miscarriage we transported.'

Rationalisation of death occurs frequently in the EMS. When a seriously injured patient dies, the paramedic will often say 'If the car hit him and he landed on the theatre table, he still wouldn't have made it' or 'he was gone long before we got here in any case' (Palmer, 1983:85). EMS personnel also reported that social support, experiencing transparency in the administrators, training in critical incident management and rituals help them mitigate the effects of a traumatic incident (Fullerton et al, 1992:375).

There are contradictory findings regarding the coping mechanisms used by EMS personnel. Moran and Britton (1994) for example, reported that Australian bush fire fighters do not possess any coping styles, while the 1989 research of Hytten and Hasle demonstrate that EMS personnel with more experience use coping mechanisms effectively. Marmer et al. (1996) found, however, that avoidance is used more by younger, inexperienced people, who have not been in the service for long.

In contrast to this, it seems that, according to Bennet et al. (2005) and Okada et al. (2005), the risk of someone developing symptoms increases the more they are exposed to critical incidents. This suggests that someone that has been in the service for a long time and that is exposed to critical incidents on a regular basis, irrespective of qualification, is at higher risk for developing symptoms.

EMS personnel also use coping mechanisms such as social support, positive reinterpretation, venting of emotions, denial, mental disengagement, wishful thinking and a professional attitude (Clohessy & Ehlers, 1999:258), emotional distancing, where the caregiver avoids getting too attached to the patient or the patient's family. Others need to obtain information about the incident to understand why the events happened in order to get closure, while some take it as a learning experience, reviewing the incident and treatment given to the patient. By doing this, the caregiver ensures that everything was done according to protocol and sees it as an opportunity to provide better patient care in the future (Regehr, Goldberg & Huges 2002:508).

Coping mechanisms mentioned frequently in the literature include looking forward to being off duty, keeping thoughts or feelings to self, thinking about their own family, thinking about outside interests, thinking about the positive benefits of the work, avoidance of thinking about what they were doing (Alexander & Klein, 2001:79), talking with colleagues (Alexander & Klein, 2001:79; Haslam & Mallon, 2003:282; Jonsson & Segesten, 2004:216; Regehr, Goldberg & Huges, 2002:508), and humour.

Humour however, is not used in incidents where children are involved (Alexander & Klein, 2001:79; Haslam & Mallon, 2003:283; Jonsson & Segesten, 2004:219; Regehr, Goldberg & Huges, 2002:508).

Although it has been noted that EMS personnel receive very little or no support from their employers, it is recognised that support systems can play a major role as a coping mechanism (Alexander & Klein, 2001:78; Regehr, Goldberg & Huges, 2002:508). Most EMS personnel are reluctant to disclose their feelings because of the 'macho' environment associated with their profession, a fear of a breach of confidentiality, and limitations in career growth (Alexander & Klein, 2001:78; Haslam & Mallon, 2003:282).

It seems, however, that they do open up to their colleagues and psychologists (Alexander & Klein, 2001). The support of friends and family are also very important to these individuals (Haslam & Mallon, 2003:282; Regehr, Goldberg & Huges, 2002:508). Substance abuse such as drugs and alcohol has also been reported as coping mechanisms (Regehr, Goldberg & Huges, 2002:508).

The studies that were done on disaster workers showed that cognitive and avoidance coping methods were commonly used (Clohessy & Ehlers, 1999:252). Studies that concentrated on the coping strategies of a day-to-day shift system, found that self-control, distancing and avoidance are the coping mechanisms most frequently used by EMS personnel in those circumstances (Clohessy & Ehlers, 1999:252). Dissociation can be a helpful coping mechanism during the trauma, but can later lead to intrusive memories and nightmares, which can complicate dealing with the event (Bennet et al., 2005:220; Kriek, 2008:28).

Dyregrov and Mitchell conducted a study after a tour bus accident in Norway, in which 12 children died. The on-scene coping mechanisms that they used included activity to restrict reflection, social support, unreality, active avoidance, mental preparation and regulating the amount of exposure by refraining from getting information, distraction and focusing on a central task (Dyregrov & Mitchell, 1992:7).

By concentrating only on the scene and the patient, they create a shield to avoid getting emotionally involved with the patients (Jonsson & Segesten, 2004:218).

A large study conducted in Portland, Oregon, consisting of 645 EMS personnel, reported that those with a lower qualification have higher stress levels when declaring a patient dead than the personnel with a paramedic qualification (Norton et al., 1992:237). They found that it becomes less stressful to declare a patient dead the more often it is done (Norton et al., 1992:239). Clearly set out protocols and DNR orders also help the personnel cope with the death of a patient (Norton et al, 1992:239).

Even though the effectiveness of these coping strategies is unknown to us, disclosure, social support and understanding the traumatic event is said to help EMS personnel cope. Avoidance, wishful thinking, derealisation, emotional numbing and denial can have a negative impact on the person and slow down the recovery process (Clohessy & Ehlers, 1999:253)

Research has also suggested that a person's personality influences the coping mechanisms used.

2.5 Personality types and coping

Although not the focus of this study, different personality types of EMS personnel and how it relates to their coping styles have been mentioned in several research studies. Thus it is perhaps important to give a brief overview of the literature pertaining to it. It is asserted that personality influences a person's coping mechanisms (Costa & McCrae, 1992; Jonsson & Segesten, 2004:216; Marmar et al., 1996:102; Regehr, Hill & Glancy, 2000:339; Vettor & Kosinski, 2000:224) as well a propensity to develop PTSD (Jonsson, Segesten & Mattsson, 2003:79).

Carver, Scheier & Weintraub (1989:274) wrote that optimists, type A personalities (competitive, time urgency and hostile), hardy individuals (commitment, control and challenge), as well as people with a high self-esteem use active coping methods whereas pessimists and those with a low self-esteem tend to use emotion focus coping and disengagement.

Mitchell and Bray describe individuals who work in the EMS as having a 'rescue personality' (Wagner, 2005:2) and said that they are 'inner-directed, action-oriented, obsessed with high standards of performance, traditional, socially conservative, easily bored, highly dedicated, like to be in control and enjoy being needed'. Gist and Woodall (1998), however, strongly criticise and disagree with Mitchell and Bray and say that there is no scientific evidence to prove their statement.

EMS personnel who are controllers, pleasers, martyrs/victims or feeling avoiders, are at higher risk for developing psychological symptoms associated with trauma. Getters, drivers and excitement seekers on the other hand, are less susceptible to it (Vettor & Kosinski, 2000:224).

Research suggests that EMS personnel, who are shy, inhibited, uncertain about their identity, not taking responsibility, believe their fate is determined by factors out of their control. They have a global cognitive style (the thinking process necessary to identify the source of the stress) or use emotional suppression and wishful thinking as a coping mechanism (Marmar et al., 1996:102), are insecure, have a lack of personal control and are alienated from others, are at higher risk to develop depression and PTSD after exposure to a traumatic event (Regehr, Hill & Glancy, 2000:339).

EMS personnel are not the only professionals that deal with death and dying on a regular basis. Other medical professionals, such as doctors and nursing sisters also have to cope with the death of their patients.

2.6 Research on other medical professionals' experience and coping with death and dying

The above literature review suggests that there is limited direct research on EMS personnel and coping mechanisms yet research in this area is available on other medical professions such as nurses and doctors. The following section offers a summary of the kinds of research and findings of these studies. It is included to illustrate some of the key themes that emerge when investigating medical personnel's responses to everyday exposure to situations that could be defined as emotionally challenging and traumatic.

There is research that suggests that caring for dying people can be one of the more stressful aspects of medicine and nursing (Hopkinson, Hallet & Luker, 2005:125). Doctors and nurses working in the wards, especially those caring for the terminally ill, build a personal relationship with the patient and family and identify with the patient because of regular consultation or prolonged hospitalisation (Hopkinson, Hallet & Luker, 2005:125; Meier, Back & Morrison 2001:3010; Redinbaugh et al., 2003:1). In these situations medical practitioners develop interpersonal relationships with patients and hence it is essential for them to build resilience in relation to these patients dying.

On the other hand, EMS personnel as well as staff in the emergency unit, spend minimal time with the patient. The doctor has to work quickly and perform emergency procedures so that the patient can go to the intensive care unit or operating theatre. Because of this short time spent with the patient and family, they do not develop an on-going personal relationship with them (Masia, Basson & Ogunbanjo, 2010:359). Even though they do not spend a lot of time with the patient, doctors in a South African hospital emergency department still reported feelings of hurt, anger, frustration, remorse, sadness, guilt and unhappiness after a patient died (Masia, Basson & Ogunbanjo, 2010:357).

They find it hard to accept the loss of their patient and had recurrent thoughts about the incident. They also blame themselves or blame the family for the patient's death as they experience a sense of powerlessness and feelings of failure and helplessness. By working longer hours, the doctors attempt to overcome these feelings (Masia, Basson & Ogunbanjo, 2010:358).

Research shows that talking to the bereaved family is also seen as traumatic for the emergency physician. They feel that they are trained to save lives, and that very little time is spent on death and dying and dealing with the bereaved family at university (Masia, Basson & Ogunbanjo, 2010:360). When a patient dies, they have to face their own mortality and think about how and when they will die (Masia, Basson & Ogunbanjo, 2010:362). In order to cope, the doctors detach themselves emotionally from the patient by putting up a barrier between them. Some of them turn to religion to help them cope. Because they are repeatedly exposed to death and patients dying, some doctors are desensitised to death, which may reflect depersonalisation, causing the practitioner to be rude and insensitive towards the patient.

Research suggests that professional nurses choose the area they want to specialise in. Some choose to work in the acute setting, such as the emergency department, where the focus is on saving the patient's life and death would be seen as failure. Others choose to work in a palliative care environment, where the patient is given a better way to die. Research on this cohort of nursing staff suggests that emergency department nurses have a greater fear of death, fewer acceptances, and are more likely to use avoidance as a coping mechanism than the hospice nurses (Payne, Dean & Kalus, 1998:704).

Nursing in the hospice environment has been studied as it is different from many other forms of nursing, i.e. treating the person, not the disease. Research on hospice nurses suggests that when their patients die, they do not feel as if they have failed.

Hospice nurses deal with these patients at different stages of their illness. The average time these nurses spend with a patient is 15.2 days in hospital and 69 days when they are at home (McNamara & Waddell, 1995:226). These nurses are schooled in managing dying and death and hence are equipped to manage the emotional reactions to this scenario in order for them to effectively do their work.

Research with nurses who have worked in hospital oncology and haematology wards recall stories that 'stay with them'. The traumatic deaths are the ones they remember the longest (McNamara & Waddell, 1995:232; Payne, Dean & Kalus, 1998:708). The deaths of children and young people (Kaunonen et al., 2000:46), especially in the oncology wards, are extremely stressful and are not as easily accommodated by the nurses as is the death of an elderly patient. Doctors working in an emergency department also find paediatric deaths more traumatic, especially if they are parents themselves (Masia, Basson & Ogunbanjo, 2010:359).

Findings show that nursing staff prepare themselves for the patient's death by collecting and disseminating information about the patient's condition and outcome. They learn to cope by avoiding upsetting thoughts by concentrating on other tasks or make use of humour (Hopkinson, Hallett & Luker, 2005: 130). Hospice nurses often find it easier to avoid talking about their job at home. One nurse stated that 'it's hard to talk about it at home. My husband doesn't find it easy to talk about (death), he'll listen but he won't ask, so I don't bring my work home' (McNamara & Waddell, 1995:232). Instead, they rely on their colleagues as a support structure, although some of them felt that admitting that they are distressed would mean that they could not cope.

As evidence in the literature presented above there are studies that have looked at coping amongst other medical professions with interesting findings. Having analysed the literature it is clear that there is research on how hospital and hospice staff are prepared to deal with day-to-day trauma but little information on this in relation to EMS personnel.

The studies suggest that there are similar experiences and coping mechanisms amongst other medical professionals. The case of EMS personnel is similar to staff in the emergency department. They too do not develop an on-going personal relationship with the patient, due to little time spent with them. They see the emergency field as one where lives are saved, and if a patient dies, they feel as if they had failed in their task. Both cohorts of professions report feelings of hurt, anger, frustration, remorse, sadness, guilt and unhappiness after a patient dies. Talking to the bereaved family is experienced as traumatic. A key coping mechanism is to detach themselves emotionally from the patient by using avoidance. This current research will assess the prevalence of this kind of response amongst EMS personnel in our local context and add to our understanding by exploring other common coping mechanisms. It will also surface the consequences of these coping strategies. It also aims to assess if there are possible educational interventions that could be developed to mediate these negative experiences.

2.7 Summary

The literature has shown that EMS personnel are exposed to critical events, such as paediatric death and trauma, gruesome incidents, dead bodies, suicides and mass casualties on a daily basis. Most of the available literature is based on their exposure to trauma i.e. trauma-related stressors, the consequences of these stressors, risk factors, reactions and their coping strategies, specifically focusing on the prevalence of PTSD. This research however, was done on EMS personnel after exposure to a disaster. The research does not focus on the incidents they are exposed to or their coping mechanisms on a normal day-to-day shift system.

Dealing with seriously injured or dead children seems to affect EMS personnel more than other calls. They experience different reactions after they were exposed to a traumatic event and research has documented the fact that they apply coping mechanisms such as problem-focused and emotion-focused coping, meaning-focused coping, confrontive coping, distancing, and social support, taking on responsibility, escape-avoidance, problem solving and positive appraisal or educational desensitisation, humour, language alteration, scientific fragmentation, escapes into work and rationalization to help them deal with the trauma. It is also said that personality influences their coping mechanisms.

Studies on EMS personnel's exposure to critical incidents and the problems associated with it have mainly been conducted in the Western world. As said before, little is known about what impact exposure to traumatic events on a normal shift system have on EMS personnel in the Cape Town Metropole, and what coping mechanisms they use to overcome the psychological effects these incidents have on their lives. The research presented in this thesis will go a long way to address this.

CHAPTER THREE

METHOD

Introduction

In the previous chapter, a thorough review on the existing literature pertaining to the coping mechanisms EMS personnel use was presented. This chapter outlines how the research was conducted. It identifies the key constructs in the research, sampling procedures and data gathering and explains how these stressors, reactions and coping mechanisms were identified, analysed, interpreted and described.

This study investigates the coping mechanisms EMS personnel in the Cape Town Metropole use to mitigate the stress symptomatology after their exposure to a traumatic incident. Additionally, this study aims at determining the nature and extent of the organisational support structures and educational preparation that are in place and whether it is sufficient to help EMS personnel cope with the consequences of the traumatic incidents they face on a daily shift system.

3.1 Research design

The study uses a quantitative as well as a qualitative descriptive design. Accompanying qualitative and quantitative research is mixed method research which has been recognised as a third research paradigm by researchers for the past 20 years. The philosophical orientation associated with mixed method design is pragmatism, and has been described as 'an approach to knowledge (theory and practice) that attempts to consider multiple viewpoints, perspectives, positions, and standpoints (always including the standpoints of qualitative and quantitative research)' (Johnson, Onwuegbuzie & Turner, 2007:113).

This process involves the collection of information and the analysis of empirical information from multiple sources to describe the problem, generate hypotheses and identify determinants. Researchers in this area have increasingly been using mixed-method research techniques to give them a better understanding of human behaviour and to provide superior research findings and outcomes by drawing from the strengths of both quantitative and qualitative designs (Sandelowski, 2000:246).

Qualitative research concerns the understanding of processes that underline various behavioural patterns and is therefore useful in gaining insight into people's attitudes, behaviours, value systems, concerns, motivations, aspirations, culture or lifestyles, and to inform business decisions, policy formation, communication and research (Silverman, 2005:11).

Silverman notes that the main methods used by qualitative researchers to gather data are observation, analysis of texts, and documents, interviews, recordings and transcribing. Silverman mentions, further, that these methods are often combined. Therefore it was felt that for the purposes of this study, one-on-one in-depth interviews along with recordings would be the best approach to gathering valuable and meaningful data and reflect the true feelings of the participants (Silverman, 2005:12).

Quantitative research is a formal, unbiased, methodical process that utilises numerical measurements and statistical analysis to describe and quantify the relationship and interactions between variables (Hopkins, 2000).

3.2 Research participants

Exact numbers of how many EMS personnel are employed are very hard to pin down due to the multiplicity of agencies involved. There are approximately 1200 EMS personnel currently employed in an operational position in the Cape Town Metropole. This includes the ambulance service (approximately 700 operational personnel) as well as the fire and rescue service (507 fire fighters), but excludes management and administrative personnel.

For this study, purposive sampling was used (Ritchie, Lewis & Elam, 2003: 77). Due to time and accessibility constraints, a sample of 350 EMS personnel from the Cape Town Metropole was invited to participate in an anonymous study. This sample did not include EMS administrators, fire fighters or volunteers.

For this study, the participants had to meet the following criteria:

- be full-time employed operational EMS personnel, or
- be in an EMS management position, or
- be a lecturer at one of the EMS training institutions within the Cape Town Metropole.

Two hundred and ten EMS personnel participated in the present research, equating to a response rate of 60 per cent. Twenty-one questionnaires could not be included in the study, either they were not completed or the respondent did not sign the informed consent form. The final sample consisted of 189 participants. Of these 64 per cent of the study sample were males ($n=121$) and 36 per cent female ($n=68$). Of these, 65 were BLS (34%), 87 ILS (46%) and 37 ALS (20%). The participants' age ranged between 21 and 61 years ($M = 33.83$, $SD = 7.74$) and the years of full-time employment in the EMS ranged from one month to 29 years.

Nine operational EMS personnel volunteered to participate in the interviews by completing an informed consent form. Of these, four were ILS (44%) and five were ALS (56%), and the years of full-time employment in the EMS ranged from 10 years to 21 years. The respective managers of the three EMS services that participated in the study (Annexure D) also consented to participate in the interviews, enabling the researcher to obtain information on the support systems that are available to their staff. Discussions were also held with two lecturers from the EMS training institutions in the Cape Town Metropole to obtain information regarding the current curriculum on preparing EMS personnel for the psychological consequences of traumatic incidents and dealing with the bereaved family.

3.3 Measuring Instrument

Two measuring instruments were used in this study to gather information: a survey-type questionnaire (Annexure A) to gather quantitative data, and a semi-structured one-on-one in-depth interview (Annexure B) to gather qualitative data.

3.3.1 Questionnaire

The questionnaire was developed by the principle investigator using information interpreted from an in-depth literature review. The questionnaire included standardised scales, namely, the Revised Impact of Events Scale (Weis & Marmar, 1997) and the COPE scale (Carver, Scheier & Weintraub, 1989:268) as well as close-ended, fixed alternative questions, consisting of multichotomous and dichotomous questions (Ploeg, 1999:36). The questions, which are discussed later in this section, were specifically developed for the purpose of this research. Questions pertaining to qualification, gender, age, and years in the service were asked in order to provide a basis for the statistical quantitative data.

All the questions were associated to the issue of exposure to critical events on a day-to-day shift system, centring on the coping methods EMS personnel use.

The questionnaire presented the following questions to the participants to enable them answer the research question:

What types of incidents traumatise EMS personnel the most?

According to Folkman and Lazarus, it is of utmost importance that the critical incident is defined first (Folkman and Lazarus, 1988). The participants had therefore, to indicate in Question One what type of incidents traumatised them the most. Question Two posed the question as to whether they were more traumatised when arriving on the scene and they find the victim dead, or when the patient dies in their care.

What symptoms and emotional reactions did EMS personnel experience after a traumatic incident?

Question Three used a standardised scale, an adapted Revised Impact of Events Scale (IES-R). The IES-R is most commonly used by researchers to diagnose PTSD (Weis & Marmar, 1997), because it is a fast, easy method of detecting individuals with psychological stress reactions after a traumatic event, and of evaluating the degree of distress a person feels in response to trauma (Sundin & Horowitz, 2003:870). The IES-R uses a five point Likert scale, ranging from 0 (not at all) to 4 (extremely) (Hyer & Brown, 2008:63).

The reliability of the IES-R indicates a high Cronbach's alpha values for the subscales, which include intrusion ($\alpha=0.91$), avoidance ($\alpha=0.84$) and hyperarousal symptoms ($\alpha=0.90$) (Holland, 2008:43). The scale scores also have moderate to strong correlations with one another ($r = 0.52$ to 0.87) (Beck et al., 2008:191).

Although the IES-R is used to diagnose PTSD, this scale was adapted for this study to determine the different reactions the participants experience after being exposed to a traumatic event and not to diagnose PTSD.

Individuals had to indicate whether they had experienced any reactions by answering either 'yes', 'no', or 'sometimes', thereby allowing the researcher to record which reactions were present more frequently than others.

What coping mechanisms do EMS personnel use?

Question Four used a standardised scale: an adapted COPE questionnaire (Carver, Scheier & Weintraub, 1989:268) to determine the coping mechanisms used by EMS personnel. Although more lengthy than the Brief COPE, the COPE scale is the better option for statistical analysis, due to the scales consisting of four items instead of two, as in the Brief COPE. In an analytical survey of various coping questionnaires conducted by Schwarzer & Schwarzer (1996:122), they wrote that the COPE scale is the better choice when assessing coping mechanisms. They reported that the COPE scale is conceived of as a more fine-grained dispositional measure of individual differences in coping than previous instruments and it reflects a balanced view about the disposition versus situation issue.

The COPE inventory consists of 15 scales, each containing four items and is rated by a four point Likert scale. The scales are active coping, planning, suppression of competing activities, restraint coping, seeking social support for instrumental reasons (all sub-dimensions of problem-focused coping), seeking social support for emotional reasons, positive reinterpretation and growth, acceptance, turning to religion, focus on and venting emotions (all sub-divisions of emotion-focus coping), behaviour disengagement, mental disengagement, and alcohol and drug use (Carver, Scheier & Weintraub, 1989:268; Schwarzer & Schwarzer, 1996).

The reliability of the COPE scale indicates high Cronbach's alpha values for some subscales such as turning to religion ($\alpha=0.92$), seeking social support for emotional reasons ($\alpha=0.85$) and planning ($\alpha=0.80$). Other domains indicated acceptable values of Cronbach's alpha, namely, focus on- and venting of emotions ($\alpha=0.77$), seeking social support for instrumental reasons ($\alpha=0.75$), restraint coping ($\alpha=0.72$), denial ($\alpha=0.71$), suppression of competing activities ($\alpha=0.68$), positive reinterpretation and growth ($\alpha=0.68$), acceptance ($\alpha=0.65$), behavioural disengagement ($\alpha=0.63$) and active coping ($\alpha=0.62$) (Carver, Scheier & Weintraub, 1989:272).

For this specific study, two constructs, namely, restraint coping and behaviour disengagement were omitted, due to their being irrelevant for the purpose of this study. The coping methods used by the participants were determined by their indicating on a four point Likert scale whether a coping method was not used (0), used sometimes (1), used quite a bit (2) or used a lot (3).

The effectiveness of EMS personnel training and support structures:

Questions Five to Ten were developed by the researcher to ascertain whether the participants felt that they had received sufficient training to cope with the emotional effects of traumatic incidents and to deal with the bereaved family. They were also asked whether they felt that their family was affected by the incidents, who do they rely on for support, if they knew what debriefing or support structures are in place in their company, and, if so, whether the current available debriefing or support structures were adequate.

3.3.2 Interviews

The interview questions were developed after the questionnaire was analysed in order to obtain added information and provide more in-depth qualitative data (Ploeg, 1999:36). It also provided an understanding of the psychological consequences of critical incidents and coping mechanisms mentioned in the questionnaires. Open-ended questioning gave the researcher rich, detailed and descriptive information by allowing the interviewee to elaborate on the original question and to follow a line of inquiry introduced by the interviewer (Hancock, 2002).

One-on-one interviews provided an in-depth probing of personal opinions and beliefs concerning the coping mechanism used by EMS personnel within the Cape Town Metropole. The advantage therefore being that the researcher was allowed the opportunity to investigate the personal feelings of the participants regarding the topic of research (Mays & Pope, 1996:92). Further advantages to one-on-one interviews are that they have a typically loose, flexible structure which allows for progression from general questions, questions establishing rapport, and to more purposeful questions.

The interviewer opened the interview by asking the interviewee 'What type of calls traumatise you the most?' This made the participants think of traumatic incidents and the questions that followed were based on their answers. Although a qualified ALS practitioner, the interviewer tried to restrain her knowledge of emergency medical care by asking questions such as 'What do you mean?' or 'How did that make you feel?' in response to the interviewees' replies.

3.4 Procedure

The research procedure began with a thorough review of the available literature based on earlier research similar to the current study. The development of the survey followed suit and was based on the information gained in the literature review. A proposal was then developed and presented to the University of Cape Town's Human Research Ethics Committee in order to obtain ethical approval for the study. The ethical approval procedure is discussed later on in this chapter. Once ethical approval was obtained from the University, EMS personnel from two private and one provincial service in the Cape Town Metropole were approached by the researcher during the shift change at different EMS bases.

A five-minute introduction to the study was given, in the aims of the research which was explained, and instructions provided on how to complete the consent form and questionnaire. The EMS personnel were asked to voluntarily participate in the study, and were assured of their anonymity. Participants were requested to complete and return the questionnaire as well as a signed informed consent letter (Annexure C) to the researcher in the sealed envelope provided.

When the envelopes were opened by the researcher, each completed questionnaire and each consent form were given an identification number before they were separated from each other, thereby allowing the questionnaire to be identified in the event of a participant deciding to withdraw from the study and also to ensure the anonymity of each participant. The researcher then analysed the questionnaires, which provided valuable statistical information that allowed for the questions for the one-on-one interviews to be developed. The quantitative data from the questionnaire was further analysed by a statistician to investigate and compare the different variables of the results provided.

In order to gather the qualitative data, convenience sampling was used and appointments were made with the nine EMS personnel and three managers who volunteered to be interviewed. Participants were asked to be completely open and provide honest opinions. These interviews, with an allocated time of 20 minutes each, were audio recorded. The audio recordings were later transcribed in such a way as to provide raw data in the form of a written verbatim, record of both the questions and responses for each interview (Hancock, 2002).

3.5 Ethical Considerations

Ethical approval was obtained from the University of Cape Town's Human Research Ethics Committee as well as the three companies' whose employees were approached to participate in the study. The participants' confidentiality and anonymity were assured in the consent form, which each participant had to read and sign. All the data was captured onto a laptop with password protection in place.

3.6 Data analysis

3.6.1 Quantitative data analysis

The raw data of the questionnaires were entered into a Microsoft Excel 2010 spread sheet and the statistical values were calculated to reflect the views of the sample. Following consultation with a statistician, the available data and variables were discussed for further analysis in order to obtain more sophisticated results by means of comparison and correlation. This was done utilising a chi-squared test of association, the Spearman Rank Correlation Co-efficient, the Mann-Whitney/Wilcoxon Rank Sum-Test and the Kruskal-Wallis test.

3.6.2 Qualitative data analysis

The audio-taped interviews were transcribed and read repeatedly to gain an overall insight of the ideas expressed by the participants. Similarities were noted between the transcripts, with participants describing similar stressors, emotions and coping mechanisms, and themes emerged. These themes were identified because the responses occurred consistently (Hancock, 2002). This allowed the researcher to make comparisons between the participants' answers. The data was then coded by themes and patterns so that differences and similarities between all the different items could be identified (Hancock, 2002; Williams, 2012).

Thematic coding (incorporating both open and axial coding) was utilised in order to establish any existing themes or ideas showing through from the one-on-one in-depth interviews. The researcher copied the interview transcripts onto computer-based directories, each of which held a particular theme or analytical idea (Strauss & Corbin, 1990:61). This was achieved by initially approaching the transcripts using an open coding technique, which involved 'breaking down, examining, comparing, conceptualizing, and categorizing data' (Strauss & Corbin, 1990:61). The generation of codes, by splitting the data into its components during the examination process, was done in a 'line by line' fashion. This method, although time consuming, is generally the most productive and accurate, and the most recommended. Code generation can also be done in a more holistic manner, by examining whole paragraphs or entire documents.

The next step involved axial coding. In order to perform this technique correctly an organised set of initial codes or preliminary concepts must be available to the researcher (Strauss & Corbin, 1990:61). These initial codes or preliminary concepts are found during open coding as mentioned above.

The researcher focused on these initial coded themes rather than on all the data. This was done primarily in order to review and examine the initial codes, while at the same time it allowing the researcher to make notes and formulate new ideas or additional codes. The researcher also moved towards organising ideas and themes as well as identifying the axis of key concepts in the analysis. Questions asked during axial coding would include the causes and consequences, conditions and interactions, strategies and processes, as well as organising categories and/or concepts that can be grouped together (Strauss & Corbin, 1990:61).

The thematic coding based on the questions in the study was of great assistance in giving exhaustive qualitative data on the coping mechanism of EMS personnel. This is because each theme was specific to certain questions and answers. The research questions established a sequence of the data analysis that will be dealt with in the next chapter. The researcher broke down the information gathered; thereby creating a comparative profile on individuals that helped in drawing general themes, trends, and patterns that emerged.

The data was clustered and themes in it identified. It was then analysed and the results interpreted and reported (Basit, 2001:114; Hancock, 2002; Ploeg, 1999:37). These results are presented in the next chapter.

CHAPTER FOUR

FINDINGS

Introduction

The previous chapter described the methods that were used in this study by identifying the key constructs in the research, sampling procedures and data gathering.

The results of the analysis are presented in this chapter. The data of the questionnaires produced statistical results by quantifying the relationship and interactions between variables. The interviews produced qualitative data in the form of transcribed transcripts and allowed for a more detailed and descriptive understanding of the psychological consequences of the critical incidents and coping mechanisms mentioned in the questionnaires. The transcriptions were read repeatedly to identify, gather, and document themes and trends linked to the aim and objectives of the study (Ploeg, 1999:36). Two or more participants had to mention the same topic for it to have been included as a theme or subtheme. The prevailing trends and themes gathered from the quantitative and qualitative data are presented below.

Analysis of Questions: Prevailing Trends and Themes

4.1. Theme 1: What are the reported stressors among EMS personnel?

Twenty-seven per cent of the participants indicated in the questionnaire that incidents involving children traumatise them the most. Subsequently, serious injury or death of a colleague (17.1%), when a patient dies in their care (13.2%), violent crime victims (8.2%), burns patients (7.8%), cot deaths (7.2%), multiple casualties (7.2%), suicides (4.5%) and road traffic accidents (4.5%) were also noted as traumatic, with arriving on a scene to find dead bodies (3.5%) seen as least traumatic. Figure Two gives a summary of the experience of traumatic incidents.

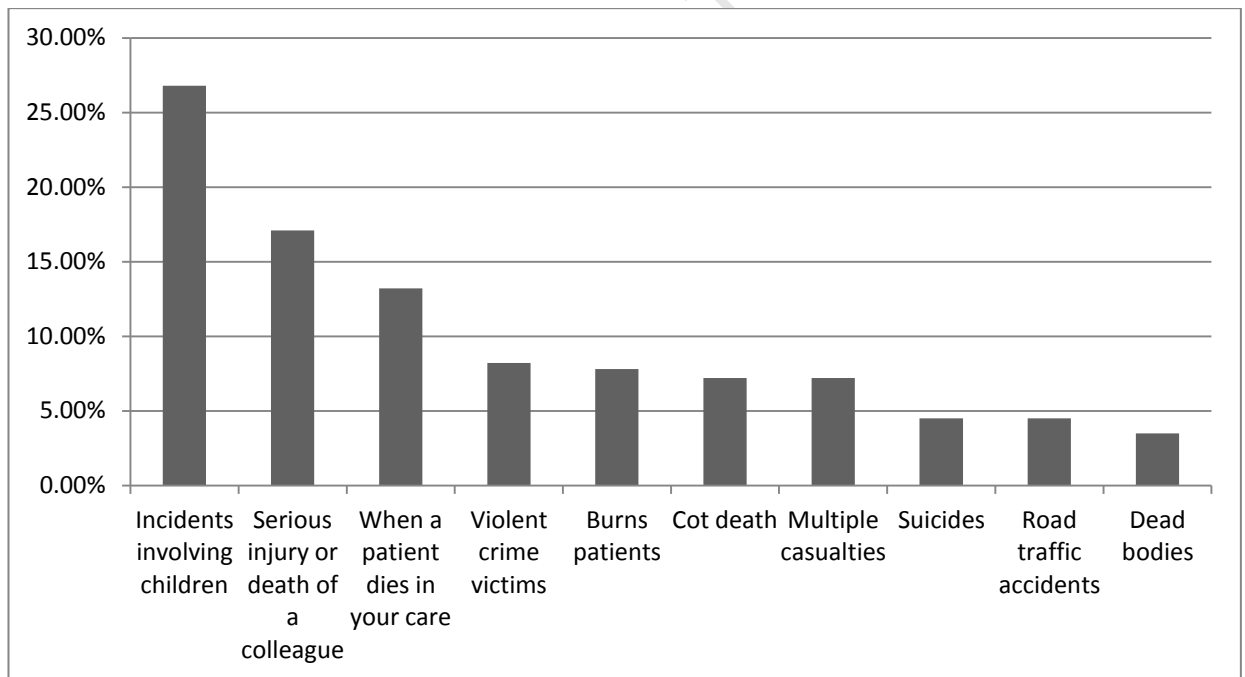


Figure 2

Ranked list of incidents EMS personnel experience as traumatic

Further comparisons based on a visual assessment of tables and the figure below (Figure 3) gave a fair indication that the participants with a BLS and ILS qualification find all calls more traumatising than those with an ALS qualification, with the biggest differences observed for road traffic incidents.

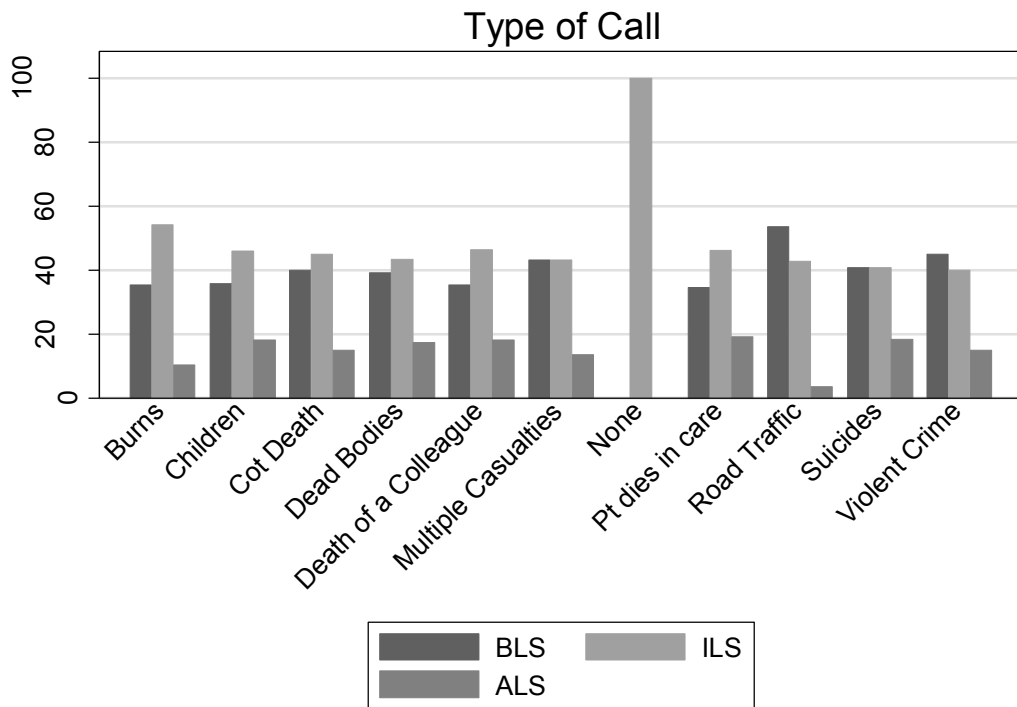


Figure 3

Trauma and scenarios compared with qualification type

The type of critical incidents that were experienced as traumatic were also compared with the years of service, and judging from the overlap of the boxes and the position of the median lines in Figure Four, there does not appear to be much of a difference in the average years of service associated with each type of critical incident. However, those participants that did not indicate trauma of any type did appear to have a higher number of years of service.

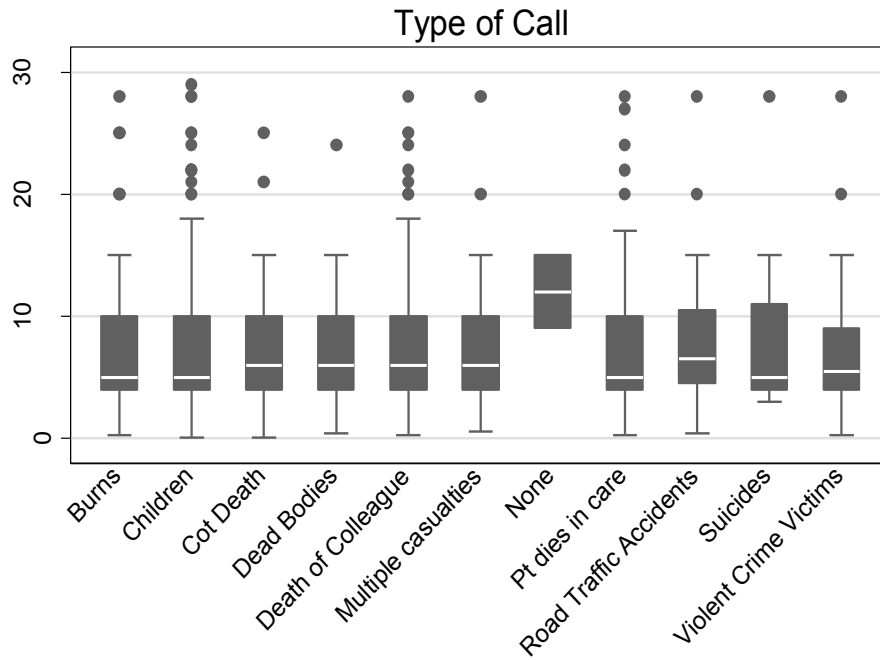


Figure 4

Box and whisker plot mapping the critical incidents compared with years of service

The interviews confirmed the results of the questionnaire, in that participants reported that calls that involve children (Interviewee1, Interviewee 2, Interviewee 3, Interviewee 4, Interviewee5, Interviewee 6, Interviewee 7, Interviewee 8 and Interviewee 9); especially where there is evidence of child abuse (Interviewee 3, Interviewee 4 and Interviewee 8) traumatise them the most:

If it was a geriatric, most of the time it was expected, and their life time is up and people expect it no matter what, but children shouldn't be taken away (Interviewee 2).

Predominantly the child abuse and the rape calls. Those are the big ones. I completely flip out with child abuse (Interviewee 4).

Having to deal with the child's parents compounds the difficulties of dealing with the incident:

Children are just that much more traumatic and the emotions that are involved. You don't just have to treat the patient; you have to treat the family; the parents (Interviewee 1).

Interview data revealed that incidents involving children affected the participants more after they had become parents themselves. They reported that their experience of treating a child changed, in that they related to the child on a new level (Interviewee 1, Interviewee 2, Interviewee 4, Interviewee 5 and Interviewee 8).

Another subtheme to emerge was trauma calls or sudden death incidents (Interview 1 and Interview 2) for instance pedestrian vehicle accidents or burns patients, because of the method of injury that is involved (Interview 1):

In the case of a medical patient, people usually expect something to go wrong because they have had a medical history but with trauma it's an unexpected injury (Interviewee 1).

Helpless, innocent victims, violent attacks including rape and torture as well as suicide calls (Interviewee 2, Interviewee 3, Interviewee 4 and Interviewee 5) are the incidents the participants highlighted the most when discussing data related to this theme.

Suicides affect me years afterwards because I have a close friend that committed suicide, so it's very close to me (Interviewee 1).

4.1.1 Which of the following two scenarios affect EMS personnel the most? Arriving at a scene and finding that the patient is dead, or when the patient dies in your care?

Ninety-three per cent (93%) of the participants indicated in the questionnaire that they find it more traumatic when the patient dies in their care as compared with when they arrive at a scene and the patient is dead already.

Comparing the worst scenario of ‘arriving on scene and the patient is dead’, or ‘when the patient dies in your care’ to years of service showed that the average number of years of service is lower for those that found the latter scenario to be the more traumatic of the two.

However, there is a great deal of overlap as indicated in Figure Five below, and the large range of years of service for ‘patient dies in care’, indicates that this scenario is traumatic regardless of years of service.

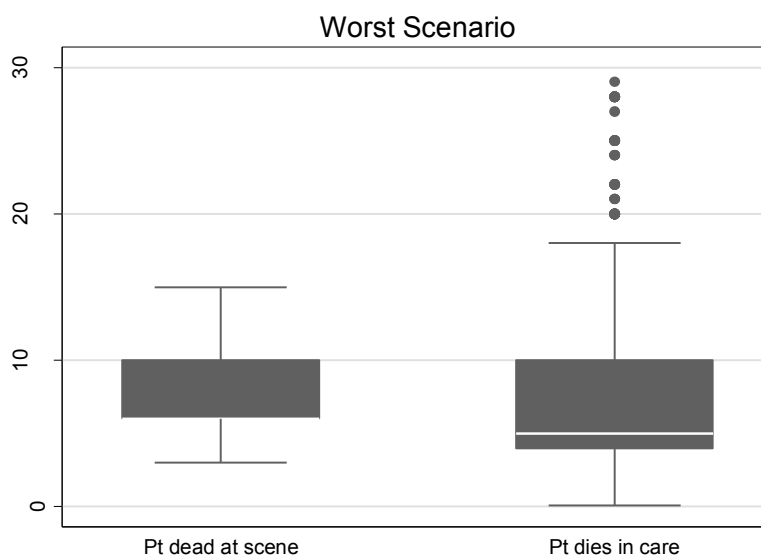


Figure 5

Box and whisker plot mapping the worst scenario compared with years of service

Most of the participants reported in the interviews that it is more traumatic when the patient dies in their care (Interviewee 1, Interviewee 2, Interviewee 3, Interviewee 5, Interviewee 6, Interviewee 7, Interviewee 8 and Interviewee 9). This is the case because they then ask themselves questions like: ‘Could I have done something better, could I have done something more? Did I do something wrong? Was I supposed to do something different, to determine whether it was my fault that the patient died’ (Interviewee 1, Interviewee 3, Interviewee 6 and Interviewee 7).

The following participant's quotation highlights the distress caused by a patient dying in his care:

We did a MVA the other day; we were busy resussing a mother and her baby. We couldn't get the baby out of the car in the first place. He was trapped. She was sitting in the back, he was in the car seat, but she took him out to breastfeed him. They were 100 metres from the house. A drunk guy came, didn't stop at the stop street, jumped it and T-boned them and he (the baby) took most of the impact. The problem was getting him out. We could see he was in a brady but there was nothing we could do because nobody could get into the car. That touches you (Interviewee 8).

When a patient is dead on arrival, it is less traumatic; because it is not as personal.

I don't know the sound of their voice if they are dead already. I don't even know the colour of their eyes, so I can't relate to them, because I have never heard them speak (Interviewee 2).

Some participants reported that if the patient is dead when they arrive there is nothing more they can have done (Interviewee 1 and Interviewee 7):

I realise I don't mind the obvious dead patients, like when you get to a train casualty and there are body parts lying there and body parts lying there. For me that's fine, because I cannot put the patient together. It means nothing for me (Interviewee 5).

4.2. Theme 2: Reported symptoms and emotional reactions EMS personnel's experiences after a critical event.

Participants indicated in the questionnaire that they experience different symptoms when exposed to a traumatic incident. 'Trying to remove the incident from memory' was the most frequent response and was experienced by 50 per cent of the respondents. Eighty-two per cent (82%) of the participants indicated that they do not experience any physical reaction when reminded of the incident and 48 per cent indicated that they sometimes experience a reaction to the incident when reminded of it.

Table Three shows the symptoms that the participants experience when exposed to a traumatic incident.

University of Cape Town

Table 3

Symptoms experienced after a traumatic incident

Emotions	Yes	No	Sometimes
Any reminder brought back feelings about it	28%	25%	48%
I had trouble sleeping	13%	69%	18%
Other things kept making me think about it	27%	43%	30%
I felt irritable and angry	31%	41%	28%
I avoided letting myself get upset when I thought about it or was reminded of it	44%	24%	32%
I thought about it when I didn't mean to	25%	44%	31%
I felt as if it hadn't happened or wasn't real	18%	58%	24%
I stay away from people or places that reminded me of it	16%	71%	13%
Pictures of it popped into my mind	34%	34%	32%
I was jumpy and easily startled	11%	76%	13%
I tried not to think about it	47%	26%	28%
I was aware that I still had a lot of feelings about it, but I didn't deal with them	33%	44%	22%
My feelings about it was kind of numb	30%	49%	21%
I had waves of strong feelings about it	25%	54%	21%
I tried to remove it from my memory	50%	33%	17%
I had trouble concentrating	15%	70%	15%
Reminders of it caused me to have a physical reaction, such as sweating, nausea	9%	82%	9%
I had dreams about it	13%	71%	16%
I felt watchful and on guard	21%	56%	24%
I tried not to talk about it	29%	56%	15%
I cannot remember important detail of it	18%	59%	23%
Activities that use to be fun and interesting, doesn't interest me anymore	13%	66%	21%
I feel estranged from people	8%	77%	15%
It made me feel negative about the future	11%	76%	13%
I didn't feel loving or affectionate	13%	69%	17%

The interviews explored different and more detailed symptoms and emotional reactions than the questionnaire intimated, thereby allowing the participants to elaborate on the different symptoms and responses they experienced when exposed to a traumatic incident. The symptoms and emotional reactions they experience while in the process of treating a critically ill patient differ from the ones they experience afterwards.

The participants indicated that while they are treating the patient, they are focused on recognising signs and symptoms, diagnostics and treatment; hence their emotions and reactions are submerged or controlled, for e.g.:

On scene, you are in the mode; you are just treating the patient. There is so much adrenaline; you are just going through what you have to do to get the patient treated at the time (Interviewee 1).

In Interview 2 the following was reported:

I concentrate on what I have got to do next. You don't have time. I don't feel for them at that moment. Are we going to organise the hospital, are we going to get him there? Are we even going to get him off the road here? Is the ALS going to get here in time, must I load the patient and go? It's like you are three steps ahead of what you are doing all the time, trying to see the next phase of the situation (Interviewee 2).

The participants reported that although they are focused on the task at hand, they do experience certain emotional reactions. Stress is the main reaction they experience while the patient is in their care as well as anger, sadness, rage and disgust where innocent victims are involved (Interviewee 3, Interviewee 4, Interviewee 5, Interviewee 6, Interviewee 7, Interviewee 8 and Interviewee 9).

So there is happiness and you feel like you did a good job, but it feels very short lived, because you will go to the next call and five minutes later it's going to be the opposite. So it's a constant roller coaster of emotions, I think. In one day you can have sadness, you will have happiness, you will have anger. You will have everything. Your blood pressure will reach the roof. All depending on the scenario (Interview 6).

They are particularly angry when a child is injured or dies due to a parent's neglect, for instance by crossing a highway unsupervised or when they are not secured by a seatbelt (Interviewee 6, Interviewee 7, Interviewee 8 and Interviewee 9). Although most of the participants reported that they do not experience a lot of emotional reactions when treating a patient, one reported that she does get emotional:

I do find it difficult to hold back the tears and then you walk away from it and you try switch off as quickly as possible (Interview 3).

Participants noted that they were affected mainly after the incident. They mentioned feeling drained, upset and sad, especially if the patient died in their care and, consequently, start doubting themselves and try to figure out whether the patient died due to their treatment (Interviewee 1; Interviewee 2 and Interviewee 7).

What if I had done something differently? What if I could have done something better (Interviewee 1)?

Participants explained that the traumatic incident can affect them immediately, or it can take several days, sometimes weeks to make an impact on them, when they have time alone or talk about the incident (Interviewee 1 and Interviewee 2).

In Interview One the following was said:

Immediately after, it affects me quite a lot and then I can still think about it for weeks and months afterwards. Some calls affect me for years afterwards. I still picture the scene; I still remember it and see all the emotions.

Participants noted that it was the more traumatic incidents that linger around and remain in their thoughts, although over time, they think about it less frequently (Interviewee 3). They could recall very traumatic incidents and the way they felt during and after them, even though they occurred years ago.

We did a policeman that shot his wife in bed and shot himself while his kids were sleeping in the room next door. That was about three years ago and I can still remember his face and I still remember his wife's face. I still remember having to tell his children that both their parents are dead. It made me feel almost useless in a way, because there was nothing I could do. I couldn't bring their mother back. I didn't worry so much about their father. I was angry at the father, because why did he do that? He could have shot himself. Why did he have to shoot the mother? I felt so sad (Interviewee1).

Almost two years after an accident, one of the interviewees could still remember the intricate detail of the incident where nine children died in a taxi accident in Blackheath in August 2010.

I remember the screams of those parents running up the road. I dealt with the one kid. He died last. He was hanging by his school jersey, caught up in mangled wreckage. I was trying to hold his head and all the blood was pissing down the side of my jacket when I heard this little voice say, 'Aunty, can you help me?' I looked, and there was another kid in there. He had his arm trapped underneath the taxi and he said, 'Aunty, I have broken my arm. Can you help me?' I couldn't do a thing to help him.

I just tried talk to him and he said; 'Please look after my friend. That is my friend there, Josie. I sit next to him. Can you please look after my friend?' His name was Emilio. This woman came screaming at me and said, 'Where are my children? Where is my son Emilio?' I said; 'He is fine. He has a broken arm and he is fine'. Then she asked, 'And my daughter?' I broke her life in pieces, in that one word, when I said, 'No girls survived'.

Then we had to go around and certify the bodies. I just sat on the railway track and there were the school bags with Tippex on them. This one loves that one and their lunch tins. I was thinking about their mothers. 'I hate making sandwiches.' They would give their right arm just to make them sandwiches one more time. Those things killed me. There was one, his legs were open and his pants were broken, and I remember thinking; I hope his mom knows how to sew. You think the weirdest things, because his pants were broken, but his legs were actually wrapped around the top of his head. I was writing unknown. And I suddenly thought; this is not unknown. This is someone's child. They've got a name. This is someone's brother, sister, friend. They are not unknowns. They are known by lots of people (Interviewee 2).

Interviewee 2 reported that she remembers how she felt after the incident.

We went back to base and I fell apart. I couldn't, I couldn't deal with it and the next day I thought; I have to go back to work, thought I was fine. That night, I couldn't wash that guy's blood off my arm because that to me was washing him away, and his life meant too much. It wasn't a case I could just wash it off, because he was somebody's someone

Participants reported that when the patient survives and is handed over to the hospital personnel, they experience relief as well as a sense of satisfaction.

As long as the patient is in a better condition than he was, then I go outside and have a cigarette and go; job well done. I feel good, because I know he is in better care now and at least we didn't worsen his condition. We were able to treat him and keep him where he was so that he can get better treatment (Interviewee 4).

4.3. Theme 3: What coping methods do EMS personnel use?

Participants were requested to indicate on the questionnaire which coping mechanisms they used after exposure to a critical event. The results show that EMS personnel in the Cape Town Metropole use emotion-focused coping (49% used it quite a bit and 62% used it a lot) more than problem-focused coping (37% used it quite a bit and 28% used it a lot). Mental disengagement (5%) and denial (3%) are not used often as coping mechanisms, with alcohol and drugs (0.6%) being used the least.

Figure Six presents a summary of the coping mechanisms EMS personnel use.

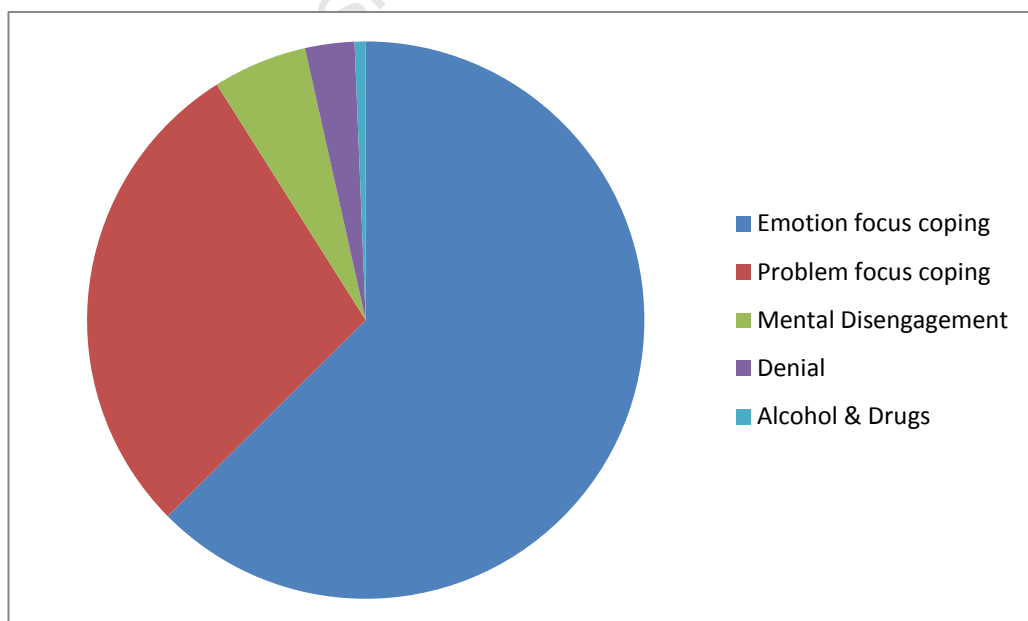


Figure 6

The coping mechanisms used by EMS personnel.

The different coping mechanisms used were compared with another variable, namely, qualification. When comparing coping mechanisms and qualification, the results showed that there is a fair amount of overlap in the boxes for problem, emotion and mental disengagement, indicative of non-significant effects, as indicated in Figure Seven. There is however, a possible effect as regards the coping denial subsection, with those with higher qualifications reporting lower median values.

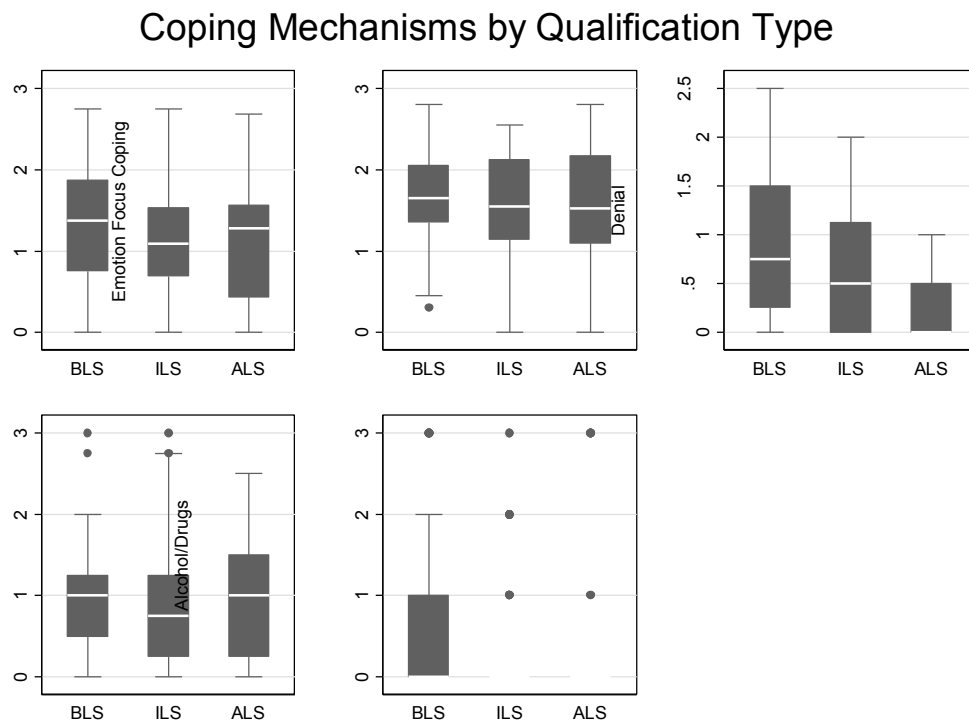


Figure 7
Box and whisker plot mapping the coping mechanisms by qualification type

The EMS personnel that were interviewed elaborated on the different coping mechanisms that they use. Forty-five percent (45%) of the participants reported talking to their colleagues after the incident as a key mechanism and see it as informally debriefing each other (Interviewee 2, Interviewee 3, Interviewee 4, Interviewee 6 and Interviewee 9). They discuss mainly the technical details of the incident (Interview 3) and do not talk about their emotions.

The participants articulated that the attitude of 'boys don't cry' in EMS (Interview 4) causes people not to show their emotions. They have to maintain the image of being the providers and have to protect their reputation of being strong (Interview 3, Interviewee 6 and Interviewee 8).

One of the biggest concerns EMS personnel have is that people will think that they are weak when they show that an incident affected them emotionally (Interviewee 2, Interviewee 3, Interviewee 6 and Interviewee 8).

I am too scared to say anything at work most of the time. Because you are looked upon as weak, can't cope, what's wrong with you, nobody else seems to be upset, so why must you? Especially being a woman. They think that you are not able to cope because you are a woman and you are going to start crying at every drop of a hat. That's the worst thing. Thinking you are weak. That they are going to think that I am not capable of doing my job. And you are not allowed things to affect you. And if you do, you suffer the consequences (Interviewee 2).

Some of the participants also reported that they choose to sit quietly on their own or lie in a hot bath when they get home, work the incident through in their head, trying to make sense of it (Interviewee 1, Interviewee 2, Interviewee 5 and Interviewee 6).

Although an isolated incident, it is important to note that one of the participants was admitted to hospital after she had trouble coping with a traumatic incident.

I sat for four days; I didn't speak to no one with the curtains drawn and when I eventually came out, I contacted my partner that was there with me. We took a bottle of booze and some sausage rolls and we went and sat on Blaauberg beach. We sat there and we cried and we spoke about it and we screamed into the wind, everything we wanted to say. And (interviewee starts crying) we wrote on the sand, the one kid that I dealt with that survived, and we said goodbye to the rest of them. Because it was a more dignified way of letting these children go.

We did that and that was our way of closure, because nobody else helped us. We said prayers and did whatever we had to do and went back to work (Interviewee 2).

4.4 Theme 4: Dealing with the bereaved family

4.4.1 How comfortable are EMS personnel with talking to the bereaved family?

This question was only presented to participants in the interviews and did not form part of the questionnaire.

Participants reported that while they do not always feel comfortable doing it, they would rather talk to the bereaved family than giving the responsibility to someone else (Interviewee 1, Interviewee 2, Interviewee 4 and Interviewee 8). They said that because of their own personal experience and when they can relate to the family, they are more sympathetic (Interviewee 1 and Interviewee 2).

I am quite good at that, I supposed because I have been through so much in my own life, that I know how to approach it and because I have a close friend that committed suicide, I know exactly how the family feels (Interviewee 1).

One of the participants feels that she would rather talk to the bereaved family than giving the responsibility to one of her younger, inexperienced colleagues.

I'd rather do it. I always volunteer to do it. You can't have a 21-year old who doesn't understand the meaning of life, be able to be sympathetic enough to someone whose 64-year old husband just dropped dead when he went to buy a loaf of bread. How's that possible (Interviewee 2).

Another key subtheme to emerge here was that whether they feel comfortable talking to the bereaved is scenario dependant (Interviewee 6 and Interviewee 7). If the patient died of natural causes and can be explained by science, some of the participants feel more comfortable talking to the family. They find scenarios where the patient died due to ignorance or negligence more uncomfortable.

When there is stupidity involved. Like with the kids. I do find it hard if they start asking questions and accusations and I might believe that they were the ones responsible for it. And it's sometimes hard, being the professional one and just say this is how it is. If it's based on science, I would say I feel comfortable talking to them (Interviewee 7).

4.4.2. What training has EMS personnel been given to help them deal with the bereaved family?

Eighty-two percent (82%) of the participants indicated in the questionnaire that they have not received sufficient training to deal with the bereaved family.

Box plots were used to visually assess the relationship between years of service and whether participants have received sufficient training to deal with the bereaved family. The average number of years of service appears to be lower for those who feel that they have had sufficient training and is shown in Figure Eight.



Figure 8

Box and whisker plot mapping whether EMS personnel have received sufficient training to deal with the bereaved family by years of service

The participants in the interviews confirmed the results reflected in the questionnaire. They reported that they have not received enough training to deal with the bereaved family and said that they had to teach themselves the skill (Interviewee 1, Interviewee 2, Interviewee 3, Interviewee 4, Interviewee 5, Interviewee 6, Interviewee 7, Interviewee 8 and Interviewee 9).

They report that they often behave in a manner that can be perceived as unsympathetic and suggest that this is because of insufficient training (Interviewee 1, Interviewee 2).

Participants said that they learned the technique of talking to the bereaved family with job experience (Interviewee 4 and Interviewee 9). Two of the participants have other degrees in the medical field (Interviewee 5 and Interviewee 7). One of the interviewees was a nursing sister prior to becoming a paramedic and one has a BSc degree in psychology. They learned how to talk to the family while studying for these degrees as well as working in hospitals.

I am privileged to be a sister as well and I learned that in the hospital. I didn't learn it as a paramedic. So I actually feel sorry for the people who did the courses as EMS personnel because that type of, dealing with death, I learned in the cancer wards and we actually had that subject at varsity, but as a paramedic, I didn't learn to do that (Interviewee 5).

4.5. Theme 5: What training has EMS personnel received to cope with the emotional effects of daily exposure to traumatic incidents?

Seventy-six percent (76%) of the participants indicated in the questionnaire that they have not received sufficient training to cope with the emotional effects of traumatic incidents.

As shown in Figure Nine, the average number of years of service appears to be lower for those who feel that they have had sufficient training to cope with the emotional effects of patients dying.

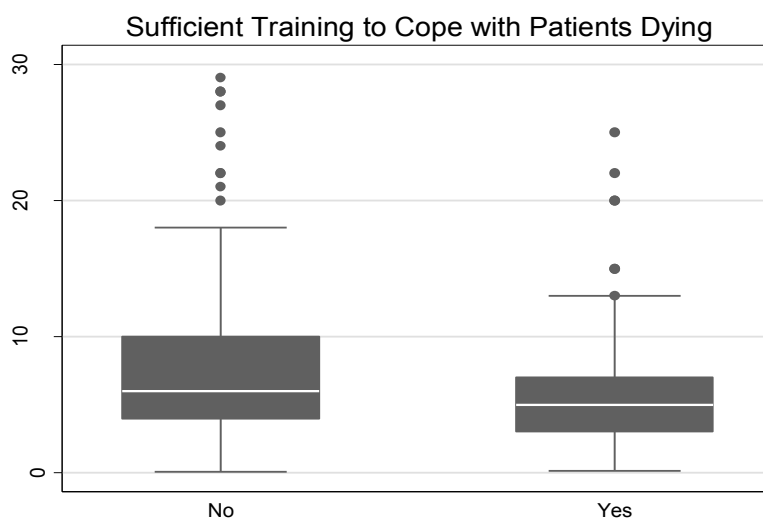


Figure 9

Box and whisker plot mapping whether EMS personnel have received sufficient training to cope with the emotional effects by years of service

When comparing the training and preparation EMS personnel receive with years in service using the Mann-Whitney/Wilcoxon Rank-Sum Test, there is a significant difference in the median number of years of service between those that responded yes/no to whether or not they received sufficient training to cope with the emotional effects of patients dying ($p=0.0107<0.05$). There is no significant difference in the median number of years of service between those that responded yes/no to whether or not they received sufficient training to cope with the bereaved family ($p=0.7115>0.05$).

Participants reported in the interviews that they have had very little or no training to prepare them for the emotional effects of traumatic incidents (Interviewee 1, Interviewee 2, Interviewee 4, Interviewee 5, Interviewee 6, Interviewee 7, Interviewee 8 and Interviewee 9). The training they receive focuses on diagnostics and patient treatment and not on coping mechanisms (Interviewee 1, Interviewee 2, Interviewee 3, Interviewee 4 and Interviewee 5). When one of the participants was asked whether he has been prepared for the emotional effects of traumatic incidents, he answered:

Personally, yes. I have a degree in psychology, a BSc degree. Definitely not during my paramedic training (Interviewee 7).

The participants that studied at the EMS colleges reported that students have to do self-reading in their text books because there is no time set aside in the curriculum to teach them coping mechanisms.

There was no actual lecture or guidance how to do that. So it is basically up to you to equip yourself to be able to deal with that (Interviewee 5).

A discussion held with one of the lectures from the EMS College confirmed this.

The participants that studied at the universities and obtained their N.Dip EMC mentioned that they had personal health and wellness as a subject:

They touched on post-traumatic stress, but they never actually went into, if this scenario happens, if that scenario happens, how you would handle it, how do you think we could handle it.

It was basically: this is what post-traumatic stress is, this is how you recognise it (Interviewee 3).

In a personal conversation on 14 May 2012, one of the lecturers at the university highlighted the fact that the psychological wellbeing component of the course curriculum at CPUT involves the use of an external psychologist to lecture one of the second year subjects, personal health and wellness. An example of the learner guide is presented in Annexure E. The university also has a student counselling service available on campus where the students can seek assistance from qualified psychologists. During their orientation week in first year, the student counselling service gives a presentation to students to inform them of the services that are available to them. Despite this, the students still feel unprepared for the psychological effects of traumatic incidents.

4.6. Theme 6: What support structures do EMS personnel rely on?

The participants indicated in the questionnaire that they mainly rely on their families as their support structure (40%), followed by their colleagues (31%) and friends (20%). Other means of support include religious leaders and psychologists (9%).

In the interviews, the participants confirmed that they rely on their families (Interviewee 4, Interviewee 5, Interviewee 6, Interviewee 7 and Interviewee 8) and colleagues (Interviewee 1, Interviewee 3, Interviewee 5, Interviewee 6 and Interviewee 9) as their support structures.

EMS personnel rely on their colleagues for emotional support and debrief each other after a traumatic incident. They found, however, that this used to work better in the past, when all the ambulances responded from one base.

We have actually found that now that we have the satellite stations, where you go to the base, you get your ambulance and you are sent to your area you are working in, the stress level on the shift has increased because we are not sitting with each other anymore to be able to do that debriefing. Where in the past, we used to respond from the base, where the whole shift would be together, and we would all be able to sit together and talk and debrief each other. Now you only have your partner. But if your partner is stressing about the same thing, there is nothing you can do about it (Interviewee 1).

Another participant said that since she has been working with a partner and not alone on a response vehicle, her support structure has strengthened:

There was a time where the paramedics worked alone and I found that I never debriefed about calls, because I would get into the response car, away from colleagues that work with me. But now, simply getting back in the ambulance and talking to your partner that was there is the first line of debriefing. And that's good (Interviewee 5).

EMS personnel reported that they also rely on other medical professionals as their support structure. They will discuss the incident with specialist doctors, talk to them about diagnostics and confirm that the steps they have taken and treatment they have given the patient was correct (Interviewee 4 and Interviewee 6).

One interviewee said that most of her friends are in the medical profession and they do not judge her or think she is weak and unable to do the job. She can talk to them and explain the incident to them from beginning to end. What she saw, what she did, use all the medical terminology appropriately and not have to explain what they are.

They will help you and say there is nothing wrong with you. You did the best you can. Then someone will say; 'What else can you do? What else did you do, what didn't you do? You did everything; there is nothing you could do.' And then you start working it out in your own mind (Interviewee 2).

4.7. Theme 7: How are EMS personnel's family and friends affected by the incidents they deal with at work?

Forty-nine per cent (49%) of the participants indicated in the questionnaire that their family and friends are affected by the traumatic incidents they are exposed to on a day-to-day shift system.

EMS personnel reported in the interviews that their family and friends are affected by the traumatic incidents they are exposed to (Interviewee 1, Interviewee 2, Interviewee 3, Interviewee 5, Interviewee 6, Interviewee 7, Interviewee 8 and Interviewee 9).

Sometimes you do a hectic call and you go home and now you don't feel like talking and now they are pressurising you into talking, and this is where arguments starts and it gets blown out of proportion (Interviewee 8).

The participants explained that they tend to shut their loved ones out by not discussing the trauma (Interviewee1 and Interviewee 5) because they feel that they are sheltered and don't understand the horrific scenes they deal with (Interviewee 2).

I think they get affected because of my moods, if you want to call it that. If I had a rough time at work I will withdraw a little bit not to get them involved, so I will protect them from the gory details. Without the details they might not understand what I went through and without them understanding, they get frustrated with me withholding and withdrawing (Interviewee 7).

4.8. Theme 8: Do EMS personnel know what debriefing or support structures are in place in their company?

The participants were divided in their response to this question. Fifty-one per cent (51%) of the participants indicated in the questionnaire that they know what debriefing or support structures are available in their company.

Those that responded 'No' to whether or not they knew about the debriefing/support structures available to them appeared to have lower median years of service and is illustrated in Figure Ten.

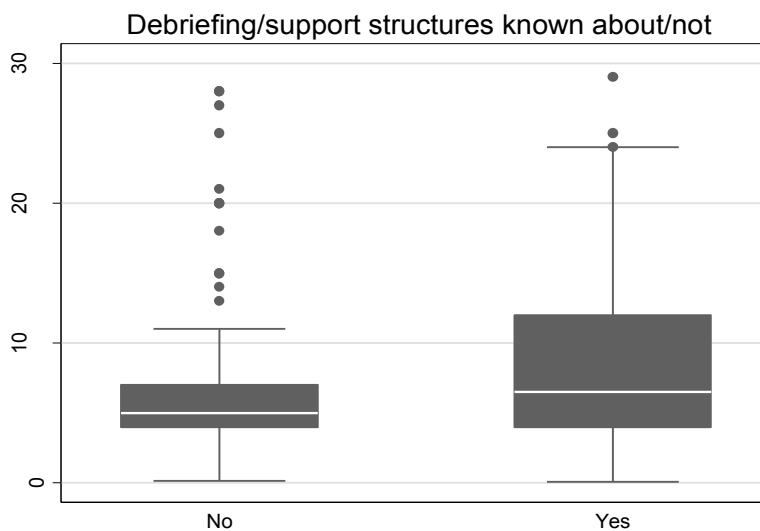


Figure 10

Comparison of knowledge about debriefing/support structures to years of service

The result of the Mann-Whitney/Wilcoxon Rank-Sum Test supports this conclusion ($Z = -1.919$, $p = 0.0549$ (almost < 0.05)).

Table 4

Comparison of knowledge about debriefing/support structures to years of service

Years of service by categories of debrief known/not	N	Min	Max	25th Percentile	Median	75th Percentile	Mean	Std Dev.
No	93	0.167	28	4	5	7	7.05	6.22
Yes	96	0.083	29	4	6.5	12	8.09	5.90
Total	189	0.083	29	4	5	10	7.58	6.07

In the interviews, the support structure that featured the most was ICAS (Interviewee 1, Interviewee 3, Interviewee 4, Interviewee 5, Interviewee 6, Interviewee11 and Interviewee 12):

You phone in (ICAS) and you speak to a counsellor. If they think that you need further counselling, they refer you to a psychologist. That can take up to 48 hours before the psychologist phones you and sets up an appointment, which can take a further 48 hours before you have your first appointment (Interviewee1).

4.9. Theme 9: Do EMS personnel feel the debriefing or support structures in their company are adequate?

Seventy-eight per cent (78%) of the participants indicated in the questionnaire that the debriefing or support structures in their company is not adequate. As shown in Figure Eleven, those that responded 'Yes' to whether or not the debriefing/support structures available to them were adequate, appeared to have lower median years of service.

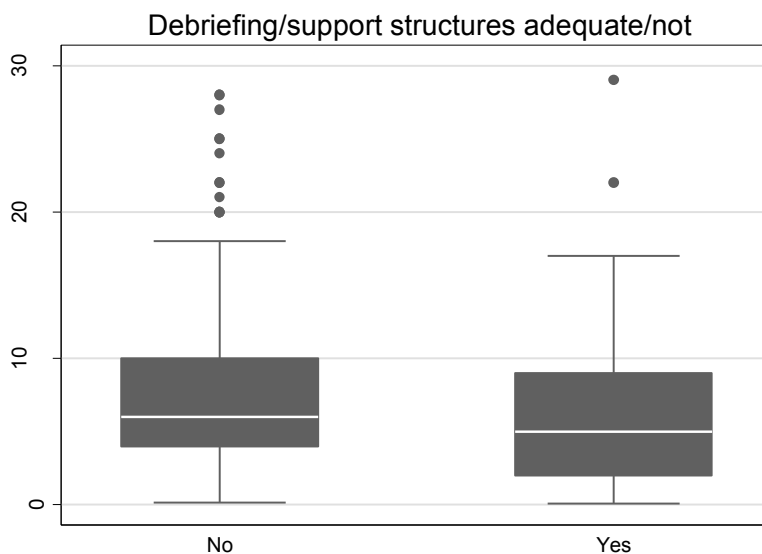


Figure 11

Comparison of adequate debriefing/support structures to years of service

The result of the Mann-Whitney/Wilcoxon Rank-Sum Test supports this conclusion ($Z = -1.919$, $p = 0.0550$ (almost < 0.05)).

Table 5

Comparison of adequate debriefing/support structures to years of service

Years of service by categories of debrief adequate/not	N	Min	Max	25th Percentile	Median	75 th Percentile	Mean	Std Dev.
No	147	0.167	28	4	6	10	7.88	6.00
Yes	42	0.083	29	2	5	9	6.51	6.26
Total	189	0.083	29	4	5	10	7.58	6.07

Most of the participants reported in the interviews that the current debriefing structures in their companies are not sufficient to help them cope with the traumatic incidents they deal with (Interviewee 1, Interviewee 2, Interviewee 3, Interviewee 6, Interviewee 7, Interviewee 8 and Interviewee 9).

Interviews held with the respective EMS managers confirmed this (Interviewee 10 and Interviewee 11).

Participants reported feeling that they do not have the support they need from their company or management and that they are not comfortable approaching management for help.

No, because the guy that does it, he is not on the road, so he doesn't know what we are going through. He is just a guy driving around in a car. If you do a hectic call, he doesn't come to the scene to see what you have seen. But then he wants to speak to you about it. They wait two, three days and send someone to talk to you. What trauma have you gone through in those three days already? By the time they get to you, it's already too late; you don't want to talk about it anymore (Interviewee 8).

This reluctance to approach management for help is mainly due to issues of confidentiality (Interviewee 7 and Interviewee 8). They also reported that debriefing was available only after a major incident and not for day-to-day traumatic incidents (Interviewee 6 and Interviewee 8).

The participant that was admitted to hospital after a traumatic incident said in the interview:

There is no point in going to work because they are not interested. Not one person from work, not even the manager contacted me. The day I got back to work, I was called in by my boss and I was told that I was a useless sack of salt, because everywhere I go, I cry. It was the first sentence out of their mouth. You are a liability to this company. What happens on the next call you go to? I wanted to burst into tears, sitting there. How I didn't, I don't know. And I knew if I did, it would have been tickets for me (Interviewee 2).

Interviewee 2 recently approached her manager and confided in him that she has had a run of traumatic incidents over a couple of shifts and that she is not coping emotionally.

He said to me, 'well, you must remember, the older you are and the longer you are on the road, the gaps get smaller to you getting upset.' I had tears in my eyes and he said, 'you know, you've been on the road a long time and you are burned out.' So that will be the last time. I will just keep it to myself. But they don't see it like that. You just deplete the fleet (Interviewee 2).

Most of the participants reported that the counsellors they are referred to are not suitable for EMS personnel and what they are exposed to on a daily basis (Interviewee 1, Interviewee 2, Interviewee 6; Interviewee 8 and Interviewee 9):

They send you to some silly old granny that's got grey stockings on and a pleated skirt that sits there and says, 'it's ok if you don't want to speak.' Who's got absolutely no clue what you're talking about. I was sent to one like that and I got so irritated. I just literally said to her; 'listen I am very sorry, you are probably very good at what you do, but have you ever seen your colleague splatted on the N1?' And she's like, 'no'. I said 'well I have and I really don't think you can help me.' There is no one to help you (Interviewee 2).

Participants also reported that the control room should give them time to be debriefed after they had a traumatic incident. They are expected to go from one incident to another without having a chance to come to terms with the emotions of the traumatic incident they just dealt with (Interviewee 3).

These inadequate support and debriefing structures in the EMS can lead to absenteeism and inadequate manning levels:

The problem of booking off sick, you deplete your staff. There is one specific paramedic I know that was on a year off stress relief from not getting proper, adequate support. And the work had to pay for a year for this person to be off at home. So it's affecting manning levels, it's affecting work production. If you are unhealthy, you cannot look after unhealthy patients, and that is the problem. I think it is a really serious problem (Interviewee 5).

Interviews with EMS managers revealed that there is no reporting structure in place for them to be notified when their personnel has been exposed to a traumatic incident. They rely on their personal knowledge of the individual's personality and normal behaviour and would pick up trends in change in their attitude (Interviewee 10, Interviewee 11 and Interviewee 12). When one of the EMS managers was asked whether the company's debriefing structure is sufficient, he replied:

No I don't. Emotional well-being, yes I do think they tend to be more after the call volume and the patient care and the patient treatment, and the staff is at the back of the line when it comes to being looked after. I think there is definite need for change and the balance must be the other way around. Your staff must come first before the volumes and the profit driven entities (Interviewee 10).

4.10. Theme 10: What should be implemented to improve the debriefing and support structures in the workplace?

This question was probed only through the qualitative interviews, thereby enabling the researcher to get a better understanding of what debriefing structures the participants think would benefit them most. It was made very clear across the board that EMS personnel want a counsellor to talk to that has an EMS qualification and has been exposed to traumatic incidents. Someone that knows the medical terminology, who will understand them and whom they feel comfortable with (Interviewee 1, Interviewee 2, Interviewee 3, Interviewee 4, Interviewee 5, Interviewee 7, Interviewee 8 and Interviewee 9).

This person should have a dedicated office where personnel can make appointments and have as many sessions as it takes to help them to cope (Interviewee 5).

We need someone that can give instant debriefing. It's just not happening at the moment. They need to know what EMS is about and has had exposure to the EMS environment. Someone that has never seen a motor vehicle accident is not going to have a clue what we are going through. So it has to be someone that has been exposed to EMS and whatever we are going through on a day-to-day basis (Interviewee 1).

You need someone that understands the medical terminology. I don't want to sit with a psychologist or a trauma councillor and have to explain a haemothorax. You just want to be able to speak the words the way it is (Interviewee 2).

Participants indicated that they were happier with a counsellor that has EMS experience as such a counsellor can visualise the incident because they have had exposure to the same scenario.

You can't have someone who ain't worked on the road to verify that you did the right thing. That you didn't leave anything out, that your treatment was sufficient, there was nothing more than you can do. That is very important, because you doubt yourself. You doubt your treatment; you doubt your ability, your capability, and your knowledge. You doubt everything. You need someone to reassure you that you did it right, that it wasn't you. If you have someone you can talk to, that understands the sequence of events, and say, 'actually, I wouldn't have done anything different', then it makes you feel better. Then you can maybe start to get closure. Then you can start the healing process.

So it's generally people that you can trust. That isn't going to laugh at you, that aren't going to ridicule you, that aren't going to think that you are weak. You need people that are going to understand, listen, talk, and not judge you. And there are not many people out there who you can actually sit down with, that you feel comfortable with (Interviewee 2).

The necessity and value of regular debriefing sessions amongst crew members were also highlighted by some of the participants:

After every call, hectic call, you need to sit down and talk about it. What went wrong on a scene, what could have done better? I think the first person is the duty paramedic because he is also on the scene. So he can be the first to debrief you. Our duty paramedic doesn't do a debriefing with us. If you can, after a call, sit down and do a debriefing, afterwards you will feel better. There should be follow-ups. You should talk regularly on your shift. But at least the paramedic knows what it is about. Because when you talk to a councillor, you don't open up. You open up to a colleague of you, yes. You won't open up to a councillor.

The EMS is a close-knitted family and I won't talk to somebody I don't know. And the thing is, once a shift, you need to have a debriefing. You need to talk to somebody. It's not happening (Interviewee 8).

The control room and dispatchers need to be aware when the crews have had a traumatic call, notify management so that the correct support structures can be activated and give the personnel time to debrief (Interviewee 3):

Where you have finished a traumatic call, you should be contacted regardless of whether or not you seek assistance, and at least ask; did everything go alright, are you happy, is there anything we can do (Interviewee 4).

One of the participants said that the attitudes of EMS students and personnel should change first before adequate coping mechanisms and debriefing sessions can be implemented:

I remember when I was on class and they came and told us about coping mechanisms, we were like 'ah whatever, big joke.' So how do you get the students or workers to take it seriously? Because again, with the mind-set that they can't be weak. So that is the problem I think.

How do you implement something when the general population consider it a weakness? So you got to change the mind-set first and then try and implement something (Interviewee 6).

The next chapter focuses on the interpretation of these findings as well as linking and comparing it to other studies.

University of Cape Town

CHAPTER FIVE

DISCUSSION

Introduction

Whilst the previous chapter dealt with the analysis of the data gathered from the questionnaires and interviews, this chapter focuses on the interpretation of the results. The findings of the main research questions are interpreted by integrating the quantitative and qualitative results.

5.1. Critical incidents that EMS personnel identified as traumatising

Participants in this study indicated that cases involving seriously injured children traumatise them the most. They also find that cases involving children affect them more after they had become parents because they could identify with the injured child and imagine that it could have been one of their own. This viewpoint has regularly emerged in the literature which also suggests that dealing with seriously injured or dead children seems to affect EMS personnel more than other incidents (Alexander & Klein, 2001:78; Bennett et al., 2005:222; Clohessy & Ehlers, 1999:253; Dyregrov & Mitchell, 1992:14; Haslam & Mallon, 2003:278; Jonsson, Segesten, & Mattsson, 2003:81; Regehr, Goldberg & Huges, 2002:507; Van der Ploeg & Kleber, 2003:i44). It can be seen, therefore, that the response to this experience, which is essentially a traumatic one for this occupational group in Cape Town, is common among EMS personnel across countries and in different contexts.

As mentioned above, participants in this study found incidents involving children most traumatic, yet other incidents also lead to psychological distress. Serious injury or death of a colleague, the death of a patient in their care, violent crime victims, burns patients, cot deaths, multiple casualties, suicides, road traffic accidents, and hopeless and innocent victims were also seen as deeply traumatic. This is not surprising, since EMS personnel are exposed to a multitude of traumatic incidents on a day-to-day shift system. Even though the incidents they attend to vary in severity, the events that have been most troubling for EMS personnel in this study are not the major incidents or disasters, but rather the ones that to which they have an emotional connection. Examples of such incidents would be those involving helpless or lonely people, an abused child, a rape victim or an elderly patient that has been brutally assaulted.

The results of this study also indicate that participants with a BLS and ILS qualification find all calls more traumatising than those with an ALS qualification. This may be because personnel with a higher qualification and additional experience may be more reluctant to admit that they find an incident traumatic (Alexander & Klein, 2001:79). ALS paramedics are the senior staff on a shift, set high expectations for themselves, and the junior staff look up to them for guidance. Admitting that an incident is traumatic or has caused psychological distress may result in staff with lower qualifications seeing them as weak.

These results are illuminating as both locally and internationally there is little documented or empirical information pertaining to the kinds of incidents EMS personnel find traumatic on a day-to-day shift system. Most of the research that has been conducted on critical incidents in the EMS environment has been event-specific and largely focused on disaster situations such as earthquakes, aeroplane crashes and the 11 September 2001 incident. This may be due to the general population's view of EMS personnel as being strong and not generally perceiving them as the victims of trauma themselves.

These data are vital if the quality of work life of this occupational cohort is ever to be considered, particularly, given the fact that EMS personnel are more regularly exposed to critical incidents than anything that the average person will ever see. As mentioned before, although the majority of research focused on disaster situations, a few studies did investigate the daily stressors EMS personnel experience as traumatic. The participants in this study identified the same stressors as those noted in the literature as being traumatic.

The critical incident stressors that have been identified on a daily shift system in previous literature, and resemble the results of this study, include serious injury or death of a fellow colleague or that of a patient, the death of a child, the death of a patient after a prolonged rescue attempt (Beaton et al., 1999:824), mass incidents, road traffic accidents, fires, murder scenes, violent crimes, the fact that they find the patient dead on their arrival at the scene, burns patients (Clohessy & Ehlers, 1999:253), the death of a patient in their care, suicides (Regehr, Goldberg & Huges, 2002:507), dead bodies (Bennett et al., 2005:222; Haslam & Mallon, 2003:278), sad and hopeless patients (Van der Ploeg, 2003:i44), cot deaths (Bennett et al., 2005:222), having to notify a family member of the patient's death, and having to deal with the bereaved family (Regehr, Goldberg & Huges, 2002:507; Ward, Lombard & Gwebushe, 2006:230). Although this list of critical incidents is not extensive, it is nevertheless useful because it enables one to determine which incidents have the potential to be more traumatic.

Due to the fact that so little is known about these experiences, it is vital that our knowledge is increased of the type and frequency of critical incidents that may lead to psychological distress in EMS personnel. It has been reported in the literature that EMS personnel are repeatedly exposed to traumatic events, and that this constant exposure to these stressors may lead to an increase in psychological distress. This means that not only must the reaction of EMS personnel to the incident be considered, but so must the frequency of their exposure to such incidents (Donnelly & Siebert, 2009:426).

Even though each of these events has the ability to have an effect on the personnel, emotional distress is seldom caused by a single incident. The accumulation of traumatic incidents, especially emotional events that occur on a day-to-day shift system, eventually leads to emotional distress in EMS personnel (Regehr & Bober, 2005). Although EMS personnel are trained and prepared to deal with the technical aspects of incidents they will face in their career, they are less prepared to manage the psychological impact of these events. Despite this, they still have to develop coping mechanisms for managing the emotional impact these traumatic events have on their lives.

5.2 Symptoms and emotional reactions EMS personnel experience after exposure to a critical incident

An adapted IES-R was used in this study, to assess what symptoms the participants experienced when exposed to a traumatic incident. As mentioned in Chapter Three (Methods), the IES-R consists of scales named intrusion, avoidance and hyperarousal symptoms (Weis & Marmar, 1997).

Intrusion symptoms include intrusive thoughts, nightmares, flashbacks and intrusive feelings and imagery. Avoidance symptoms include a numbing of responsiveness, the avoidance of feelings, situations, thoughts, ideas or conversations about the incident.

Also included are avoiding places that bring back memories of the incident, being unable to recall certain details of the event, a decrease in interest in activities that used to be considered exciting, feelings of detachment from others, and a negative outlook on relation to the future.

Hyperarousal symptoms include anger, irritability, hyper-vigilance, difficulty concentrating and falling asleep, reminders of the incident that cause a physical reaction as well as a heightened startle response.

Avoidance symptoms were what was reported most frequently by the participants in this study, while hyperarousal symptoms were experienced the least. Participants in this study indicated that while they were treating the patient, they were more focused on recognising signs and symptoms, diagnostics and treatment; hence their emotional reactions were submerged or controlled.

After the incident, the participants could recall intricate details, even flashbacks that they had had, of some incidents when they were reminded or talked about them. They reported being emotionally upset and angry, especially if innocent and helpless victims were involved.

Another contributing factor to the suppression of symptoms and emotional reactions in EMS personnel in general is the male coping culture prevalent in EMS, better known as 'the John Wayne Syndrome', where the individual is expected to be able to cope with anything (Williams, 2012). Participants felt that the organisation generally created an atmosphere in which personnel have to be strong and in control and if someone shows an emotional reaction, he or she will be seen as weak and not tough enough for the job. These attitudes have caused the participants to suppress or deny their symptoms or reactions out of fear of being labelled as 'flawed' or 'not in control'. Containing their reaction to traumatic incidents may lead to personnel making use of inadequate coping mechanisms and have a negative effect on their emotional wellbeing.

Although there did not appear to be any association between the number of their years of service and the number of symptoms experienced by participants as indicated in this study, results from the Nydegger, Nydegger and Basile study (2011) show that participants with longer years of service were more likely to report symptoms than those with fewer years of experience.

International studies that have been conducted on the symptoms and emotional reactions experienced by EMS personnel after their exposure to critical incidents are small scale, limited to disaster situations, and mainly emphasised the prevalence of PTSD. Studying the occurrence of PTSD, however, was not the aim of this study. As international studies focused on different levels of trauma, the findings of this study has made novel contributions to understanding what impact daily exposure to traumatic incidents have on EMS personnel.

The participants in international studies described different symptoms and emotional reactions after exposure to traumatic events. These included hyperarousal symptoms such as anger, difficulty concentrating, tearfulness, shortness of breath (Kriek, 2008:29; Regehr, Goldberg & Huges, 2002:508), irritability (Clohessy & Ehlers, 1999:256), feeling emotionally upset (Haslam & Mallon, 2003:278) and anxiety (Dyregrov & Mitchell, 1992:10). Intrusive symptoms included recurrent dreams, flashbacks and night terrors (Kriek, 2008:29; Regehr, Goldberg & Huges, 2002:508), intrusive memories, insomnia (Clohessy & Ehlers, 1999:256; Haslam & Mallon, 2003:278) and smell, sight and sound that would trigger memories of certain calls (Jonsson & Segesten, 2004:219). Fear, emotional blunting (Kriek, 2008:29; Regehr, Goldberg & Huges, 2002:508) and a sense of detachment (Clohessy & Ehlers, 1999:256), helplessness, existential insecurity, sorrow and grief, self-reproach, shame, guilt, and a change in values (Dyregrov & Mitchell, 1992:10) were also reported.

As can be seen, above, the symptoms experienced by EMS personnel after exposure to a traumatic incident as reported in the international literature were mainly hyperarousal symptoms. These findings contradict those of this study, as hyperarousal symptoms were experienced the least and avoidance symptoms the most by participants in this study. This may be because the IES-R was not used in all the previous studies in which different instruments, such as semi-structured interviews, self-developed questionnaires and other standardised scales were used.

5.3 Coping mechanisms used by EMS personnel

Data emanating from the COPE questionnaire in the current study is used to assess what coping mechanisms the participants use after they have been exposed to a traumatic incident. As briefly mentioned in the literature review, the COPE questionnaire consists of scales named 'active coping', 'planning', 'suppression of competing activities', 'seeking social support', 'focus on and venting of emotions', 'mental disengagement', 'positive reinterpretation and growth', 'denial', 'turning to religion' and 'acceptance' (Carver, Scheier & Weintraub, 1989:268).

Studies based on the South African situation have concentrated on general job stressors and burnout amongst EMS personnel and not on what coping mechanisms they apply to mitigate the psychological effects of daily exposure to critical events. Internationally, research that has been conducted on coping mechanisms looked largely at post-disaster incidents.

EMS personnel on a daily basis are exposed to traumatic events that the general population would regard as distressing. Despite this, whether good or bad, they have undoubtedly adapted coping methods to help them reduce psychological distress after exposure to these incidents. It is therefore vital that the nature of this occupational cohort is understood, as is how they manage to cope with circumstances that non-emergency services individuals find overwhelming.

In this study, the results of the questionnaire reveal that the participants use emotion-focused coping to counteract the effects of exposure to traumatic incidents. Although no significance between years of service and coping mechanisms used were reported, results from the Nydegger, Nydegger and Basile study (2011) report that participants with fewer years of service were more likely to use emotion-focused coping. Participants from the Brown, Mulhern and Joseph (2002) study similarly acknowledged using emotion-focused coping mechanisms.

Participants in this study noted in their interviews that they used avoidance as a coping mechanism by using a buffer system when treating the patient. This was something that was not solicited from the questionnaire. They indicated that they focus on the protocol and treatment and avoid thinking about the patient as a person, but concentrate only on medical issues. By doing this, they reduce the risk of developing an emotional connection with the patient, to enhance their focus and ability to function. The majority of the participants also reported that talking to their colleagues after the incident was a key coping mechanism and see it as a means to informally debrief each other. This method of debriefing and getting confirmation that their patient care was correct contributes a great deal to their ability to cope with the trauma.

While numerous studies have reported that avoidance as a coping method is associated with poor mental health (Aldwin & Revenson, 1987; Boudreaux, Mandry & Brantley, 1997; Brown, Mulhern & Joseph, 2002; Dowdall-Thomae, 2009; Holland, 2008; Kampfe & Mitchell, 1991; Littleton et al., 2007; Mcfarlane, 1988; Vitaliano et al., 1985), Kirby, Shakespeare-Finch and Palk (2011) hold a different view. They note that avoidance can in some circumstances be the better strategy, especially at the time of the event.

Even though the majority of the studies that have been done on coping mechanisms in EMS have focused on disaster situations, a few researchers have concentrated on the coping mechanisms EMS personnel make use of on a normal shift system. The coping mechanisms mentioned in the literature that is synonymous with the results of this study are: concentrating on the patient and focusing on the job at hand (Alexander & Klein, 2001:79; Dyregrov & Mitchell, 1992:8; Hill & Brunsden 2009:83; Regehr, Goldberg & Huges, 2002:509), talking with colleagues (Alexander & Klein, 2001:79; Dyregrov & Mitchell, 1992:8; Haslam & Mallon, 2003:282; Jonsson & Segesten, 2004:216; Regehr, Goldberg & Huges, 2002:508), as well as emotionally distancing themselves from the patient and family members (Regehr, Goldberg & Huges, 2002:509).

By concentrating only on the scene and their treatment of the patient, they create a shield around themselves to avoid getting emotionally involved with the patients (Jonsson & Segesten, 2004:218). This means that the coping mechanisms applied to counteract the psychological effects of daily critical incidents are similar across countries and contexts for this kind of occupational group.

Problem-focused coping has generally been linked to better mental health outcomes than emotion focused coping strategies (Boudreaux, Mandry & Brantley, 1997:246; Brown, Mulhern & Joseph, 2002:165; Dowell-Thomae, 2009:89; Folkman & Moskowitz, 2004:747; Holland, 2008:74). Despite this, Littleton et al. (2007:977) argued that problem-focused coping is more effective in situations where the stressor can be controlled, whereas emotion-focused coping is more effective in situations where the stressor cannot be controlled. The incidents EMS personnel are exposed to could be classified as uncontrolled, thus emotion-focused coping could be seen as an acceptable coping method.

Despite the debate around which coping methods are maladaptive and which are more beneficial, the literature suggests that there is no wrong or right way to cope, and no specific coping method should be seen as either good or bad. Although some coping methods have proven to have less desirable outcomes, studies show that, because EMS personnel are exposed to many different and difficult circumstances, they would benefit more from using a variety of coping methods, depending on the specific scenario and stressor (Alexander & Klein, 2001:79; Holland, 2008:34). For instance, problem-focused coping may be an effective coping mechanism in one situation, but ineffective in another (Folkman & Moskowitz, 2004:753). The size of the critical incident also determines the coping mechanism used. EMS personnel tend to use problem-focused coping when dealing with a big incident and emotion-focused coping when dealing with smaller ones (Brown, Mulhern & Joseph, 2002:165).

Most of these coping mechanisms adapted by EMS personnel they had to acquire themselves due to the fact that very little time is spend on the topic in the training curriculum, as will be seen, below.

5.4 Training as preparation for the emotional effects of critical incidents.

Participants in this study indicated that they have received very little or no training to prepare them for the emotional effects of traumatic incidents or how to deal with the bereaved family. The skills that they have they have had to teach themselves and have acquired over time and from what they have experienced on the job.

The average number of years of service appears to be lower for those who feel that they have had sufficient training to deal with the bereaved family. The same result was noted for those who feel that they have had sufficient training to cope with the emotional effects of patients dying in their care.

Local literature on EMS training focuses on the qualifications and technical preparation of personnel. No studies have documented the emotional and psychological preparation of the students. International literature has also produced little information on the topic.

Traumatic incidents and dealing with the bereaved family can be particularly stressful for EMS personnel (Regehr, Goldberg & Huges, 2002:507; Ward, Lombard & Gwebushe, 2006:230) and although death education forms a part of the medical and nursing curriculum, very little time is spend teaching professionals in the emergency setting (Smith, Walz & Smith, 1999:37).

Historically, the EMS curriculum has prioritised the technical aspects of patient care. It focuses on the speed and efficiency of diagnosing, stabilisation and treatment of the critically ill or injured and offers very little recognition of the psychological aspects of the EMS environment.

The short course curriculum in South African EMS colleges allows for no psychological preparation of the students and even though training has moved to higher education institutions and subjects such as personal health and wellness have been integrated into curriculum, the major focus is still on the technical skills of the personnel dealing with emergency medical care.

Preparation for the emotional effects of EMS work during training will definitely be beneficial to students, as shown by a study conducted by Smith-Cumberland & Feldman (2006:95). After attending a two-day emergency death education and crisis training workshop, 92 per cent of the participants reported that they feel more comfortable dealing with the bereaved family and making death notifications than before attending the course. EMS training should therefore re-examine this imbalance and ensure that the technical as well as the emotional preparation of EMS work is included in the curriculum.

5.5 Effect of critical incidents on EMS personnal family and friends

Despite attempting to protect their loved ones, many participants in this study reported that their family and friends are affected by the incidents they deal with at work. They tend to safeguard their loved ones by shutting them out because they do not want to expose them to the same trauma that they have experienced. When pressurised by their partners to communicate, they become emotional and an argument ensues.

EMS personnel use coping mechanisms such as emotional numbing and avoidance to cope with critical events. These coping mechanisms lead to them being emotionally distant, socially withdrawn, unavailable and disinterested, all of which has a negative effect on their family life.

Although the literature has numerous topics related to stressors and how they affect EMS personnel, very little attention has been given to what impact these traumatic incidents have on their families and friends. EMS personnel that participated in a study conducted by Reger, Goldberg and Huges (2002) reported that their families were affected by the traumatic incidents they deal with. The participants felt emotionally distant and would sometimes vent their anger and irritability on their families. Some of them became overprotective and appreciated the value of family more after being exposed to a traumatic event. They also reported being socially withdrawn after a shift, became emotional, were temperamental and showed an increased in conflict and expression of anger (Regehr, 2005:105). Participants in this present study reported that their responses to traumatic incidents matched those reported on by the interviewees in Regehr's 2005 study.

Working in the EMS sector requires certain skills. These include 'taking control, springing into action, remaining detached, making quick and decisive decisions, and questioning everything' (Regehr, 2005:98). All these skills are contradictory to what is needed to be a good husband, wife or partner and can lead to unfavourable family relationships.

Although EMS personnel choose not to discuss with their loved ones their working environment and the trauma they deal with on a daily basis, their families and friends are not immune to it (Regehr et al., 2005:424). They can experience secondary trauma by overhearing their partner having a casual conversation to a colleague about it or through media exposure. Their partner may bring home gruesome photos or written reports to complete which may cause psychological distress to their family members.

While systems are in place in the organisations to debrief and support EMS personnel, no support is available to the family and friends who are also, although indirectly, affected by the incidents EMS personnel are exposed to on a daily basis.

5.6 Support structures EMS personnel rely on

Participants in this study indicated that their family is their biggest support structure, followed by their colleagues and friends. They rely on their colleagues for emotional support and debrief each other after a traumatic incident to help counteract the psychological effects they experience. Besides talking to their colleagues, they will also have informal discussions regarding the incident with someone that understands the incident that have been dealing with, such as specialist doctors, or family members that are in the medical profession.

The scenario can be analysed by discussing the signs and symptoms, injuries and diagnosis, and confirm that the actions and the treatment they have given the patient was correct. By getting this informal debriefing and confirmation that they have done everything they could for the patient, they can get closure and move on.

Although family and colleagues constitute a major part of their support structure, participants in this study also indicated that they do not have the support they need from their company or management and that they are not comfortable approaching management for help. This is mainly due to issues of confidentiality, where they feel that private and sensitive discussions between themselves and management are disclosed to others. They also reported that debriefing was only available after a major incident and not for exposure to day-to-day traumatic incidents.

These results are comparable with those found in international studies. Participants from the studies by Alexander and Klein (2001) as well as Regehr, Goldberg and Huges (2002) reported similar results and stated that they have received little or no support from their employers and they do not disclose their distress due to confidentiality issues. They also feel that their managers are not concerned with their psychological welfare after a traumatic incident and that assistance is automatically offered after major events but never after normal day-to-day incidents.

Other international studies also reported that friends and family are important to EMS personnel and constitute their main support structure (Haslam & Mallon, 2003:282; Regehr, Goldberg & Huges, 2002:508). Studies have shown that EMS personnel are helped when they talk to family members that are also in the health care profession (Regehr, 2005:111) as well as talking and debriefing with their colleagues after an incident (Orner et al., 2003; Regehr, Goldberg & Huges, 2002:508).

Supporting these findings, research conducted by Beaton et al. (1997), Regehr, Goldberg and Huges (2002) and Shakespeare-Finch et al. (2003) concluded that family support and, specifically the support of their colleagues, aid in decreasing psychological distress amongst EMS personnel. This mechanism, however, as a single entity is not sufficient and more sophisticated debriefing structures by professionals are needed.

5.7 Debriefing structures available to EMS personnel

Only half of the participants in this study indicated that they know what debriefing or support structures are available to them in their company. This is alarming, because the personnel can not be expected to seek help if they do not know what support structures are available to them. The participants with fewer years' service seem to be the ones who are unaware of what debriefing or support structures are available to them in their organisations. Besides this, a large majority (78%) of the participants feel that their company's debriefing and support structure is inadequate. This leads to absenteeism and inadequate manning levels to service emergency calls.

One of the support structures used by the EMS in the Cape Town Metropole is ICAS, a 24 hour a day trauma counselling service that has a toll-free number that the employees can call if they need trauma counselling. It is also available to employees and their families for domestic problems or legal support.

The employee can either contact ICAS directly, or, if management notes that an employee needs psychological support, they can phone ICAS and make a recommendation that an employee be contacted by one of the counsellors. It is the prerogative of personnel as to whether they want to seek further assistance.

The attitude of 'boys don't cry' in EMS might hinder personnel to contact ICAS or one of the other available support structures. They do not to show their emotions because they have to maintain the image of being the provider, protect their reputation of being strong, and do not want people to think that they are weak when they show that an incident has affected them emotionally.

Due to the fact that EMS personnel are exposed to trauma and critical incidents on a regular basis, concern for their psychological wellbeing and the prevention of maladaptive coping mechanisms has led to the development of a debriefing model. Mitchell (1983) developed the critical incident stress debriefing model (CISD) to debrief EMS personnel and mitigate PTSD symptoms after exposure to traumatic incidents. This model consists of seven stages or phases, namely, introduction, fact-, thought, reaction-, symptom, teaching and reentry phase (Campfield & Hill, 2001:328; Regehr, 2001:90). It is a once-off group session and allows for the expression of feelings, encourages support in the organisation, provides coping mechanisms to EMS personnel, as well as the screening of personnel needing further intervention (Hawker, Durkin & Hawker, 2010:453; Regehr, 2001:88).

Although CISD is widely used in the EMS, it is a controversial topic as there has been very little scientific evidence as to the effectiveness of the early debriefing of EMS personnel after exposure to a traumatic event (Campfield & Hills, 2001:327; Halpern, 2009:140; Scully, 2001:36). Some researchers have claimed that CISD is ineffective and can cause more harm than good (Scully, 2001:36).

Most of the studies that have been conducted on the topic have methodological and conceptual limitations, causing the confusion around the debriefing debate (DeVilly & Annab 2008:44; Hammod & Brooks, 2001:317; Harris, Baloglu & Stacks, 2002:224; Tuckey, 2007:106). Despite the controversy, Mitchell (1983) recommends that debriefing should ideally be commenced 24 to 72 hours after the incident. Other studies suggest that debriefing should start at 24 to 48 hours (Kenardy et al., 1996) or 48 to 72 hours after the incident (Campfield & Hills, 2001). These recommendations however, have all been based on the researchers' personal and clinical experience and client satisfaction surveys, and not on scientific evidence (Campfield & Hills, 2001; Harris, Baloglu & Stacks, 2002:227).

Even though the effectiveness of CISD has been the source of much debate, several studies have shown that debriefing is beneficial to those who have been exposed to a critical incident (Adler et al., 2008; 2009; Deahl et al., 2000; 2001; Eldridge, 1991; Greenberg et al., 2003; McCammon & Jackson, 1995). It is recommended that adequate debriefing should be a minimum of two hours with at least one follow up session. This is due to the fact that sessions lasting less than an hour have proven to have fewer desirable effects (Hawker, Durkin & Hawker, 2010; Parkinson, 2001).

Mitchell & Everly (1996:97) also recommend that debriefing should be done with qualified psychologists and counsellors whom are familiar with the EMS environment so that they can relate to the participants and vice versa. This has repeatedly surfaced in the current research.

Looking at the results of this study as well as the feelings participants voiced in the interviews, group debriefing can aid as well as hinder participation. When other EMS workers, including management, verbalise their feelings, they realise that others also share the distressing emotions they experience. Of course, personnel can choose not to participate in group sessions for the fear of being classified as weak, this fear being a huge concern for participants in this study.

They have also reported that they feel that one group debriefing session is not enough and they are 'left hanging' without further assistance. They also mentioned that the only group debriefing sessions they have attended were those that followed large-scale multiple casualty incidents or when a colleague has died in the line of duty. None followed after everyday traumatic incidents.

Despite the ongoing debate, when conducted at the right time and with ample sessions, debriefing can be beneficial to EMS personnel who are exposed to daily traumatic events. It reduces the time EMS personnel are absent from work, aids in psychological recovery, mitigate the impact of the stressful event, allows for expression of emotions, prevents maladaptive coping mechanisms and prevents long term negative reactions (Shakespeare-Finch, Smith & Obst, 2002:276).

EMS personnel should therefore be given the choice whether they would like to participate in group sessions or prefer a one-on-one session with a psychologist. The amount of sessions should not be limited to one session so that personnel feel that they have not received sufficient counselling. This will decrease the psychological distress EMS personnel experience and aid them in applying effective coping mechanisms.

CHAPTER SIX

CONCLUSION

Researcher's reflection

Given the qualitative components of this research, it is appropriate to conclude this dissertation with some reflection on the researcher's proximity to, and involvement in, the research context. The researcher has attempted to reflect on her own perceptions and experiences throughout the research process in order to ensure that they do not influence the reporting of the participants' results. This constant monitoring has helped the researcher manage boundaries between herself as an investigator and an EMS practitioner.

The research questions emerged directly from the researcher and her colleagues' experiences. Being immersed in the field and experiencing the limited resources available for debriefing helped fashion her thinking as to what to base her Master's studies. While there are significant advantages of being internal to the field (i.e. trust and access), there are also potential threats, like bias. The empiricism with which the results have been gathered and reported has prevented any negative bias from skewing the results.

6.1 Limitations of the Study

While every effort was taken to ensure that the research was methodologically sound, a number of important limitations need to be considered:

The study used a non-experimental descriptive design. Sampling, therefore, was not random. The results could therefore not be generalised to other medical professionals or beyond this occupational cohort. Strictly speaking, the EMS in the Cape Town Metropole is representative of the other EMS systems in South Africa, so there is a possibility that the results of this study may have resonance with EMS as a whole.

Not all of the EMS personnel employed in Cape Town participated in the research, so the results may not be representative of all the employees in the area. This may be due to time constraints or the reluctance of EMS personnel to participate in the study. Their unwillingness to participate may be due to concerns that the results would not be anonymous and confidential. Fear of being seen as weak when admitting that an incident affected them emotionally may also contribute to the fact. However, the researcher felt that the sample size was sufficient to be appropriately representative of the cohort.

Both the questionnaire and interview requested the participants to reflect on the symptoms, emotional reactions and coping mechanisms they used after exposure to a traumatic incident. If the participant had not been exposed to a traumatic incident recently, it could be difficult to recall these symptoms and coping mechanisms, which could lead to inaccurate results. The possibility of this was mitigated by the fact that only operational personnel who are exposed to traumatic incidents on a day-to-day shift system participated in the study.

6.2 Recommendations

On the basis of the research presented in this study, it is possible to make recommendations which might have important implications for future practice.

Repeating this study amongst EMS personnel working in other provinces of South Africa will be useful as a means to fill the gap in our understanding of what coping mechanisms they use to overcome the psychological effects of traumatic events. Further studies on this topic will help determine whether coping mechanisms utilised by EMS personnel in the Cape Town Metropole differ from those in other parts of the country. These additional studies will also be useful in determining what debriefing structures are in place for EMS personnel in other services across South Africa. If these are effective, steps should be taken to implement the system in the Cape Town Metropole.

A comparative study on EMS personnel and other medical professionals will enable comparisons to be made as to the coping mechanisms used by the different occupational groups. More time should also be allocated for data collection so that a larger sample can be obtained. The findings of this study also suggest the introduction of several changes for EMS personnel in respect of the work environment.

Dispatchers:

Control room staff and dispatchers should be informed of the potentially traumatic nature of certain call types and appropriate debriefing times should be factored in to response time performance. In the case of a potentially traumatic event, the dispatcher should notify management so that preparation for counselling can be made.

EMS Management:

Managers should familiarise themselves with their personnel's normal behaviour, and be attentive to any deviation there from. Should the employee reflect any symptoms and emotional reactions that are different from their normal behaviour, the manager should discuss these with the individual and recommend counselling.

Employees should be made aware of what debriefing or support structure is available in their respective companies. This should form part of the employees' induction. A notice with contact details regarding these support structures should be visible on the notice board at all times.

A qualified counsellor with the relevant EMS experience should be made available to the EMS personnel. This person should be readily accessible for individual as well as group debriefing sessions.

Regular debriefing sessions should take place within the organisation to mitigate the psychological effects of smaller emotional incidents and should not be limited only to disasters, large-scale multiple casualty incidents or when a colleague has died in the line of duty.

The initial debriefing session should be followed up by others, enough to ensure that the individuals have received sufficient counselling and acquired effective coping mechanisms to assist them overcome any psychological distress.

Training and development:

The EMS curriculum should be amended on all levels of training (BLS, ILS, ECT and ALS) as these courses need to be adjusted to allow time to include training on coping mechanisms, and to prepare students to deal with the psychological effects of traumatic incidents and to deal with bereaved families.

Management should participate with their staff in seminars and workshops in which an expert in the field of industrial psychology can present information on how they can recognise emotional distress in their personnel, assist them with effective coping mechanisms as well as how to implement an effective support structure in the company.

EMS employees:

Employees should familiarise themselves with the debriefing structures available to them in their company and the procedures that need to be followed to receive counselling. By talking about their symptoms and emotional reactions, EMS personnel would come to realise that their colleagues experience the same distress, and that there is no reason why they should feel incompetent or weak if they were to seek the help they need.

6.3 Summary

This study has set out to investigate the coping mechanisms used by Cape Town EMS personnel following exposure to daily or routine traumatic events. The objectives of this study is to address this in relation to the incidents they find traumatic, to establish what symptoms and emotional reactions they experience after witnessing a traumatic event, and to determine what support structures are in place to help them deal with them.

Previous studies on EMS personnel and coping mechanisms have been conducted in first world countries. These focused on disaster situations and the prevalence of PTSD. Exposure to critical incidents of a smaller magnitude on a day-to-day basis has not received much attention from researchers.

EMS personnel are exposed to critical incidents on a daily basis. The results of this study showed that EMS personnel in the Cape Town Metropole find dealing with seriously injured children the most traumatic. They experience avoidance symptoms after exposure to a traumatic incident, apply emotion-focused coping mechanisms to help them manage their emotions, and have received very little or no training to prepare them for the emotional effects of traumatic incidents or how to deal with the bereaved family. They also feel that their companies' debriefing and support structures are inadequate.

The results of the research suggest that EMS personnel are well suited to their environment and have developed coping mechanisms to manage the effects the daily stressors inflict on their psychological wellbeing. Even though these highly trained professionals have adapted to their work stressors, they are not immune to the accumulation of daily traumatic incidents. The emotion-focused coping mechanisms applied by the participants are not effective in the long-term; therefore intervention programmes are needed in this high-stress environment.

The researcher's aim was to uncover the coping mechanisms that EMS personnel use, and present findings of use to health care educators, policy makers, EMS managers as well as EMS employees. The findings from this study can be used to aid in the preparation and psychological wellbeing of EMS personnel. This knowledge could be used to help design effective debriefing and support structures in EMS organisations as well as a curriculum that will aid in preparing personnel for the emotional consequences of EMS work.

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APPENDICES

Annexure A

DEATH AND DYING: WHAT ARE THE PSYCHOLOGICAL CONSEQUENCES TO EMERGENCY MEDICAL CARE PERSONNEL IN THE CAPE TOWN METROPOLE?

Questionnaire

Being an emergency care worker, you are exposed to critically injured people and traumatic calls on a regular basis.

1. What type of calls traumatises you the most?

Incidents involving children	
When a patient dies in your care	
Multiple casualties	
Suicides	
Dead bodies	
Cot death	
Burns patients	
Serious injury or death of a colleague	
Road traffic accidents	
Violent crime victims	

2. Which one of these two scenarios affects you the most?

Arriving on scene and the patient is dead or

when the patient dies whilst in your care.

3. When you treat a critically ill or injured patient, and the patient dies, it can be distressing.

Below are emotions that you might experience after such a traumatic call. When thinking of the calls you have mentioned in question 1, please indicate which feelings you experienced.

1	Any reminder brought back feelings about it	Yes	No	Sometimes
2	I had trouble sleeping	Yes	No	Sometimes
3	Other things kept making me think about it	Yes	No	Sometimes
4	I felt irritable and angry	Yes	No	Sometimes
5	I avoided letting myself get upset when I thought about it or was reminded of it	Yes	No	Sometimes
6	I thought about it when I didn't mean to	Yes	No	Sometimes
7	I felt as if it hadn't happened or wasn't real	Yes	No	Sometimes
8	I stay away from people or places that reminded me of it	Yes	No	Sometimes
9	Pictures of it popped into my mind	Yes	No	Sometimes
10	I was jumpy and easily startled	Yes	No	Sometimes
11	I tried not to think about it	Yes	No	Sometimes
12	I was aware that I still had a lot of feelings about it, but I didn't deal with them	Yes	No	Sometimes
13	My feelings about it was kind of numb	Yes	No	Sometimes
14	I had waves of strong feelings about it	Yes	No	Sometimes
15	I tried to remove it from my memory	Yes	No	Sometimes
16	I had trouble concentrating	Yes	No	Sometimes
17	Reminders of it caused me to have a physical reaction, such as sweating, trouble breathing, nausea, palpitations	Yes	No	Sometimes
18	I had dreams about it	Yes	No	Sometimes
19	I felt watchful and on guard	Yes	No	Sometimes
20	I tried not to talk about it	Yes	No	Sometimes
21	I cannot remember important detail of it	Yes	No	Sometimes
22	Activities that use to be fun and interesting, doesn't interest me anymore	Yes	No	Sometimes
23	I feel estranged from people	Yes	No	Sometimes
24	It made me feel negative about the future	Yes	No	Sometimes
25	I didn't feel loving or affectionate	Yes	No	Sometimes

4. Every person deals with stressful calls and a patient's death in a different way.

Keeping in mind the traumatic calls that you have mentioned in question 1, please indicate which of the measures listed below helped you deal with the incident.

0 = Does not apply or not used

1 = Used sometimes

2 = Used quite a bit

3 = Used a lot

		0	1	2	3
1	I take additional action to try get rid of the problem				
2	I try to come up with a strategy about what to do				
3	I put aside other activities to concentrate on this				
4	I ask people who have had similar experiences what they did				
5	I talk to someone about how I feel				
6	I look for something good in what is happening				
7	I learn to live with it				
8	I seek God's help				
9	I get upset and let my emotions out				
10	I refuse to believe that it has happened				
11	I turn to work or other substitute activities to take my mind off things				
12	I concentrate my efforts on doing something about it				
13	I make a plan of action				
14	I focus on dealing with the problem, and if necessary, let other things slide a little				
15	I try to get advice from someone about what to do				
16	I try to get emotional support from friends or relatives				
17	I try to see it in a different light, to make it seem more positive				
18	I accept that this has happened and that it can't be changed				
19	I put my trust in God				
20	I let my feelings out				
21	I pretend that it hasn't really happened				
22	I go to movies or watch TV, to think about it less				
23	I do what has to be done, one step at a time				
24	I think hard about what steps to take				
25	I keep myself from getting distracted by other thoughts or activities				
26	I talk to someone to find out more about the situation				
27	I discuss my feelings with someone				
28	I learn something from the experience				
29	I get used to the idea that it happened				
30	I try to find comfort in my religion				

31	I feel a lot of emotional distress and I find myself expressing those feelings a lot				
32	I act as though it hasn't even happened				
33	I daydream about things other than this				
34	I take direct action to get around the problem				
35	I think about how I might best handle the problem				
36	I try hard to prevent other things from interfering with my efforts at dealing with this				
37	I talk to someone who could do something concrete about the problem				
38	I get sympathy and understanding from someone				
39	I try to grow as a person as a result of the experience				
40	I accept the reality of the fact that it happened				
41	I pray more than usual				
42	I get upset and am really aware of it				
43	I say to myself "this isn't real"				
44	I sleep more than usual				
45	I drink alcohol or take drugs, in order to think about it less				

5. In your opinion, do you think that you have received sufficient training to cope with the emotional effects of patients dying?

Yes No

6. In your opinion, do you think that you have received sufficient training to deal with the bereaved family?

Yes No

7. Who constitutes your support structure after you have had a traumatic call?

Family Colleagues
Other Friends

8. In your opinion, is your family affected by the incidents you deal with at work?

Yes No

9. Do you know what debriefing or support structures are in place in your company?

Yes No

10. Do you feel the current available debriefing or support structures are adequate?

Yes No

Tell me more about yourself

BLS ILS ALS

Male Female

Age: _____

Total years full time employed in EMS _____

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Annexure B

DEATH AND DYING: WHAT ARE THE PSYCHOLOGICAL CONSEQUENCES TO EMERGENCY MEDICAL CARE PERSONNEL IN THE CAPE TOWN METROPOLE?

EMS personnel interview questions

1. What type of calls traumatises you the most?
2. Does the age of the patient that died make a difference i.e. paediatrics vs. geriatrics?
3. Are you a parent? If so, how do paediatric deaths affect you before and after you became a parent?
4. Which scenario affects you the most? Arriving on scene and the patient is dead or when the patient dies whilst in your care.
5. You are exposed to critically injured people and traumatic calls on a regular basis. What feelings did you experience on scene / after the call?
6. What do you do to cope with all these feelings and emotions?
7. Do you feel comfortable talking to the bereaved family?
8. How well have you been trained to deal with the bereaved family?
9. How would you describe your support structure?
10. Do you feel that your family and friends are affected by the incidents you deal with at work?
11. Do you know what debriefing or support structures are in place in your company?
12. Do you feel the debriefing or support structures are adequate?
13. Do you feel that you have had ample training and preparation to cope with death, patients' dying?

Annexure C

DEATH AND DYING: WHAT ARE THE PSYCHOLOGICAL CONSEQUENCES TO EMERGENCY MEDICAL CARE PERSONNEL IN THE CAPE TOWN METROPOLE?

Informed consent form

I have been informed that this study involves research that will be conducted by Llizane Minnie, a Master's of Science student at the University of Cape Town. I understand that this study is designed to understand the psychological consequences to Emergency Medical Services (EMS) personnel of patients dying while in their care and to determine how they cope with the situation.

The goal of this study is to determine how EMS personnel are coping, if they are coping and what support structures should be in place to help the employees with their psychological well-being. The benefit of the study is to help assist EMS personnel to learn about coping strategies being use and, in the future, to help develop effective coping strategies that promote health, wellness, and fitness.

I have been asked to participate in this study because I am currently a full time operational employee in the EMS in the Cape Town Metropole. I understand that my participation in this study will involve the completion of a questionnaire designed to determine the different symptoms and feelings I experienced after being exposed to a traumatic event as well as to measure coping functions.

I am aware that my involvement in this study will take approximately 30 minutes of my time to complete the questionnaire.

I understand that I may refuse to participate or withdraw from this study at any time without penalty or loss of services that I am entitled to. I understand that my identity as a participant will be kept in strict confidence and that no information that identifies me in any way will be released without my separate written approval.

I have been informed that if my participation makes me feel uncomfortable, Llizane Minnie may be contacted and if necessary, a referral will be made for psychological help.

I am aware that although I may not benefit directly from this study, my participation in this project may benefit EMS personnel and their future well-being.

I understand that I may contact Llizane Minnie at 0829797754 or via email at llizane0@gmail.com if I have any questions pertaining to the study. Should I wish to obtain more information about my rights and welfare as a participant, I can contact Professor Blockman at the Faculty of Health Sciences, Human Research Ethics Committee, Room E52-24, Groote Schuur Hospital Old Main Building, Observatory. Alternatively, I can phone the office at 021 4066626.

I have read the disclosure form and understand what it says. I am 18 years or older and voluntarily agree to participate in this study.

Participant

Signature:

Date:

Principal Researcher:

Signature:

Date.....

Annexure D

DEATH AND DYING: WHAT ARE THE PSYCHOLOGICAL CONSEQUENCES TO EMERGENCY MEDICAL CARE PERSONNEL IN THE CAPE TOWN METROPOLE?

EMS management interview questions

1. How do you know when your personnel were exposed to a traumatic incident?
2. In the case of a traumatic call, what debriefing or support structure is in place for your employees?
3. In your opinion what is/ should be the organisation's responsibilities in this area?
4. Do you think there is enough training to support EMS personnel's coping mechanisms?

Annexure E

Cape Peninsula University of Technology's Personal Health and Wellness Learner Guide

On completion of this module the learner should be able to:

- Physical Personal Health and Wellness:
 - List the vaccines available to the emergency care provider.
 - Discuss safe sharps and medical waste management.
 - Explain the ways in which you can safeguard yourself against being infected by pathogens in the emergency care environment.
 - Explain the procedure that should be followed should you become exposed to pathogens.
 - Explain the procedure that should follow should you become injured on duty.
 - Demonstrate correct and safe lifting and carrying techniques.
 - List and discuss common hazards associated with emergency Work.
 - Explain the importance of scene safety and provide a generic approach to rendering scenes safe.
 - Explain the correct method of dealing with bystanders.
 - List the items of personal protective equipment and clothing that need to be available during the rendering of emergency care services.

- Mental Personal Health and Wellness:
 - Explain the importance of mental health in the emergency care environment.
 - Explain how to identify the signs and symptoms of depression, stress and or 'burn out' both in your own behaviour and that of your co-workers.
 - Describe stress syndromes
 - Explain the common causes of stress and the ways in which we often cope with stress.
 - Explain how to limit the impact stress has on our lives.
 - Discuss the concept of conflict and conflict resolution.
- Explain how people deal with death and dying, and what you could do as an emergency care provider to assist people in dealing with these emotions.

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