EXPLORING THE ADAPTABILITY AND APPLICABILITY OF MILITARY MENTAL SKILLS TRAINING FOR SOUTH AFRICAN PARAMEDICS

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ABSTRACT

Paramedics in South Africa are among the best in the world (MacFarlane, van Loggerenberg, & Kloeck, 2005). However, the domain of pre-hospital emergency care is fraught with challenges and paramedics face numerous personal and professional difficulties. South Africa, with its diverse patient population and challenges, cannot afford to undermine the importance of supportive interventions for emergency medical technicians. Whilst there is a growing body of literature examining the effectiveness of mental skills training in the sporting domain (Gould, Dieffenbach, & Moffett, 2002; Landers & Boutcher, 1998), there is a lack of research on mental skills training as it pertains to paramedics. It is argued here, that the use of mental skills training derived from sporting science and adapted for the military, provides the most comparable context in relation to the paramedic industry. This study thus aims to explore the *adaptability* and *applicability* of military mental skills training techniques in the context of South African paramedics. This study made use of an exploratory, qualitative case study design, focusing on participatory research strategies. The analysis revealed that various aspects of existing military mental skills models can be adapted to be of relevance in the emergency medical services field as it related to three paramedic participants. A prominent emerging theme was that of PTSD among paramedics, and it was an area that the participants felt should receive much more attention, research and intervention.

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CHAPTER 1

Introduction

"Once the romance of the sirens have gone, you see what it can really be about" – [1]*Alex (advanced life support paramedic).

Paramedics in South Africa are among the best in the world (MacFarlane, van Loggerenberg, & Kloeck, 2005). However, the domain of pre-hospital emergency care is fraught with challenges and paramedics face numerous personal and professional difficulties. There is currently a lack of research exploring the ways in which paramedics are supported and there appears to be a limited investigation into the high rates of staff distress, termination of employment, risk to paramedics and retention strategies for these skilled practitioners. It is argued that South Africa, with its diverse patient population and challenges, cannot afford to undermine the importance of supportive interventions for emergency medical technicians.

Whilst there is a growing body of literature examining the effectiveness of mental skills training in the sporting domain (Gould, Dieffenbach, & Moffett, 2002; Landers & Boutcher, 1998), there is a lack of research on mental skills training as it pertains to paramedics. This study suggests that the use of mental skills training derived from sport science and sport psychology and adapted for the military, provides the most comparable context in relation to the paramedic industry.

This study thus aims to explore the *adaptability* and *applicability* of military mental skills training techniques in the context of South African paramedics. This research investigates the mental skills techniques incorporated in military training, and inquires whether these techniques can be adapted for South African paramedics in an attempt to enrich

[1] *Pseudonym

performance, serve a supportive function, and secondarily, possibly contribute to staff retention strategies.

In the literature chapter the existing work relating to the study will be reviewed. This chapter is followed by a description of the study methodology, and analysis of the research findings. Finally, the study will conclude with a summary and discussion of the findings, and recommendations for future research.

CHAPTER 2

2) Literature Review

2.1 Emergency medical services and pre-hospital care in South Africa

Pre-hospital care involves the service whereby medical care is provided in the community, until the patient arrives at a formal facility capable of providing further sufficient healthcare (Kobusingye, et al., 2005). Pre-hospital care comprises medical intervention such as the prompt transportation of patients as well as the dispatching of adequately trained personnel to a site of trauma, illness or accident (Kobusingye, et al., 2005).

In South Africa, emergency medical service training is provided at basic, intermediate and advanced life support levels (MacFarlane et al., 2005). Currently in South Africa, there are two main routes available in terms of becoming a paramedic, however, these routes are being revised. One option is to train through academies offering short courses. This involves, for example, Basic Ambulance Assistant (BAA) training which can take place over approximately five weeks, and includes training in Anatomy and Physiology, Ambulance Technology, Pharmacology and a wide range of wounds and injuries. Ambulance Emergency Assistant (AEA) training requires BAA-level training, in addition to seven to nine weeks of theoretical and experiential training.

Critical Care Assistant (CCA) training and other professional medical courses such as Professional Rescuer, Advanced Life Support and Paediatric Education for Pre-hospital Providers (PEPP) can also be obtained through certified academies, given that the necessary requirements and criteria for enrolment are met. An alternate route of study is by means of university level education. In other words, a four-year Bachelor's degree in Emergency Care (BTech) can be obtained in order to qualify as an Advanced Life Support practitioner. Emergency care practitioners in South Africa are comparable to some of the best in the world

and are registered with the Health Professions Council of South Africa and are therefore subjected to the disciplinary structures thereof (MacFarlane et al., 2005).

The past twenty-five years have seen a rapid development in the pre-hospital care domain in South Africa. Post-apartheid South Africa recognizes a need for health-care that is accessible and proficient, and devoid of politically and racially imposed inequalities (Mulder, 2012). The emergency response industry is no longer a rudimentary system focused solely on the rapid transportation of patients, but is frequently the first interaction that patients have with the South African health-care system, and forms an integral component of general healthcare in the country (Mulder, 2012).

While aero-medical helicopters are available within five minutes in urban settings, rural areas often receive very little advanced life support (MacFarlane et al., 2005). Even though this response-time dichotomy is evidenced in other countries for geographical reasons, the situation becomes much more sensitive in light of South Africa's historical political climate (MacFarlane et al., 2005). Response times often vary from fifteen minutes to forty minutes in urban areas, and up to or over an hour in rural areas (MacFarlane et al., 2005).

The response times may also vary according to whether the response is undertaken by state service or private ambulance services. Macfarlane et al., (2005), argues that in South Africa there seems to be a contrast between insufficient personnel and poorly maintained vehicles in the public sector, while at the opposite end of the spectrum there is growing competence and sophisticated pre-hospital care and expertise in the private sector. This can be viewed as "a dichotomy of the extremely good and the dreadfully poor" (MacFarlane et al., 2005, p. 147). This dichotomy has resulted in a socio-economic difference which may have had implications for racial inequalities being manifested. Despite a consistent striving

towards post-apartheid equality, there is presently an inequitable distribution of services, and parts of the country remain poorly resourced in terms of medical services (MacFarlane et al. , 2005).

Pre-hospital care cannot be considered a universally uniform entity, nor do all pre-hospital policies and undertakings apply universally (Macfarlane & Benn, 2003). Levelling access to emergency services for all South African citizens remains a challenge, given the disparities in infrastructure and availability of resources, both inter-regionally as well as between provinces (Clarke, 1998). These factors have further consequences for health in that there may be an increase in health concerns related to the environment, and a decreased accessibility to healthcare services due to diminished ambulance and medical access (Clarke, 1998).

Mortality from trauma, disease and injury in South Africa are among the highest in the world, with precipitating factors such as HIV/AIDS and sexual violence contributing to a persistent need for medical and emergency services (Clarke, 1998). For example, the provincial ambulance service in Gauteng attend on average to 425,000 incidents per year, of which 71% of these incidents are related to interpersonal violence, while 29% are due to trauma and vehicle-related incidents (MacFarlane et al., 2005). Approximately 1975 paramedic personnel were in employment at the time of the article being published (MacFarlane et al., 2005). It is possible that the statistics published in 2005 may have changed to some degree, but it is suggested that there may be an increase in figures due to higher rates of reported interpersonal violence during the last decade (Mulder, 2012).

Furthermore, 50% of all the cases reported in the Gauteng region were classified as serious, while approximately 7% of cases were life threatening or fatal (MacFarlane et al., 2005). By way of contrast, the Eastern Cape is geographically larger than Gauteng, yet it has

roughly the same amount of response vehicles, and less than 1000 personnel (MacFarlane et al., 2005). While these numbers may fluctuate from year to year, it remains apparent that the Eastern Cape is faced with challenges relating to inadequate staff numbers, poor infrastructure and limited access to rural areas and referral facilities (MacFarlane et al., 2005).

In South Africa, health care is provided across two domains; the private domain and the public domain (Wallis, Garach, & Kropman, 2008). The private system serves approximately 20% of the South African population, but enjoys access to roughly 70% of financial resources (Wallis et al., 2008). South African paramedics are considered to have higher levels of clinical experience as compared to their international cohort, but unfortunately in spite of this feature (or perhaps as a result thereof), both the public and private sectors in South Africa experience the frequent migration of skilled paramedics to other parts of the world (Wallis et al. 2008). Studies demonstrate that there are various hazards that contribute to the high outflow of qualified pre-hospital personnel (Vettor & Kosinski, 2000; Scully, 2011; MacFarlane, et al., 2005).

Occupational hazards for paramedics include an increased risk of being involved in motor vehicle accidents, physical assault, emotional and physical 'burn-out', Post-Traumatic Stress Disorder, and exposure to disease (Binks, 2011; Scully, 2011). Furthermore, demanding working conditions amidst a national climate of financial strain frequently results in advanced life-support paramedics seeking employment abroad or other careers that are more lucrative and less stressful (Binks, 2011).

The concept of 'burn-out' pertains to symptoms of emotional exhaustion, negative or apathetic attitudes towards patients, and a tendency to evaluate oneself and patients in a negative light (Vettor & Kosinski, 2000). As a result of chronic exposure to human tragedy,

trauma and personal danger, emergency medical personnel are often susceptible to 'burn-out' and compassion fatigue (Pickering, Hammermeister, Ohlson, Holliday, & Ulmer, 2010). Furthermore, paramedics are required to attend to patients on-site, and do not have all the resources available that one might find in a hospital setting (Vettor & Kosinski, 2000).

The practitioner is therefore expected to perform to the best of their abilities despite limited access to sophisticated equipment, ideal environments or trained support staff (Vettor & Kosinski, 2000). Insufficient personnel, poorly maintained vehicles and equipment, a lack in financial resources and a general lack of support structures have been identified in previous research as major contributors to the occupational stress experienced by paramedics (MacFarlane et al., 2005 & Binks, 2011). The practitioner is also often subjected to scrutiny by curious bystanders and traumatized relatives, whilst having to contend with challenging weather conditions and exposure to disease and violence (Vettor & Kosinski, 2000).

Furthermore, there is the significant risk of developing Post Traumatic Stress Disorder. This broad range risk can be understood by considering that PTSD can develop from a wide variety of stressors, including the intensity of the traumatic event and the proximity of the individual to the event (Scully, 2011, p. 36). Among the multiple PTSD symptoms, some include the re-experiencing of traumatic events, numbing of responsiveness, increased cognitive arousal, decreased motivation, negativity, general fatigue, anger, frustration, irritability, physiological symptoms, hypervigilance, feelings and thoughts of suicidality, and substance dependence (Vettor & Kosinski, 2000).

Having a multitude of occupational challenges as discussed to deal with, without having adequate supportive resources and structures in place to help them cope, paramedics may thus resort to looking for work abroad, or in a completely different occupational domain.

Considering the demand-and-supply concerns as they pertain to the needs of South Africa's diverse communities, and their many challenges, it can be emphasised here that in a time of "an increasing demand for EMT's and paramedics, the Emergency Medical Service profession cannot afford to lose valuable human resources" (Binks, 2011, p. 34). The literature discussed here thus suggests that emergency medical technicians frequently resign from their posts or end their employment as a result of not coping with the demands of the job, or alternatively, seeking employment in a similar domain elsewhere that offers better financial, professional and emotional compensation (Binks, 2011).

2.2 Mental Skills Training

It is therefore vital to consider interventions that may assist in supporting retention strategies and adaptive coping mechanisms. It is argued here that interventions, such as mental skills training, aimed at supporting emergency medical technicians' performance, and techniques that address mental toughness, stress and anxiety regulation, may be beneficial in terms of a supportive retention strategy. Moreover, it is suggested that by developing resources such as mental skills, these strategies could potentially maintain high performance despite the various challenges faced by emergency medical service providers. Put differently, it is argued here that if paramedics have adequate resources, such as mental skills aimed at stress management, arousal regulation and mental toughness, to help them cope and perform optimally, the prospect of seeking work elsewhere might be less tempting.

Mental skills training involves the systematic training of psychological skills to enhance performance (Jones, 2005). Traditionally associated with sport science, the integration of mental skills training across all domains has become of scientific interest in a vast range of contexts (Jones, 2005). Sport psychology research suggests that athletes who possess a repertoire of mental skills set them apart from their less successful peers and have

been shown to possess better concentration, increased levels of self-confidence, more manageable levels of anxiety, affirmative task-orientated thoughts, and more adaptive coping strategies for task-related stress (Hammermeister, Pickering, McGraw, & Ohlson, 2010). However, the mental skills training benefits need not only be restricted to the sporting domain.

Mental skills training theory argues that a multi-method, also known as a multi-modal approach, is frequently the most effective way of bringing about constructive results (Jones, 2005). The multi-modal approach aims to target multiple domains of functioning in order to promote the adoption of new skills. For example, a multi-sensory approach to imagery may require the participant to engage as many of his or her senses when imagining a mental scenario. The multi-modal approach therefore involves the targeting of various aspects, as opposed to narrowly focussing on one mental skills domain only (Jones, 2005).

Mental skills techniques typically involve focus areas including arousal and anxiety regulation, relaxation, mental imagery and attentional focus (Jones, 2005). These are all factors that have been argued to influence performance and enhance mental toughness (Jones, 2005). The multi-modal approach to mental skills training can thus be applied in any context where performance is applicable (Jones, 2005). Historically, mental toughness has commonly been associated with sporting performance and has been highlighted as an important contributor to elite performance (Connaughton & Hanton, 2010). Mental toughness is understood as a natural or acquired psychological edge that enables individuals to cope with the demands and related pressures of their occupations (Connaughton & Hanton, 2010).

Characteristics commonly associated with mental toughness include self-belief, motivation, sustained focus, coping with anxiety and processing pain and hardship (Connaughton & Hanton, 2010). Negative critical incidents, such as trauma-related

occupations and general life experiences, could contribute to the deterioration of mental toughness, and knowledge on how to assist mental toughness development can be a great benefit to mental health research (Connaughton & Hanton, 2010).

It is important to reiterate that mental toughness can be acquired and developed, and is not inherently found in only some people but not others (Connaughton & Hanton, 2010). However, once acquired, mental toughness needs to be maintained and continuously developed. The ongoing persistence required to cultivate a mentally tough mind-set may seem like an added psychological burden for individuals who are already constantly focused on coping as a result of their stressful occupations. Apart from requiring ongoing dedication and practice, mental skills training should be conducted under the guidance of someone adequately trained and qualified (Jones, 2005).

Sufficiently trained and qualified persons are not always affordable, nor easily accessed. Mental skills training is not suited for or designed for major psychopathological or behavioural problems, and is therefore applicable to moderately healthy individuals only – a population who might be of the opinion that they do not need psychological services *because* they are moderately healthy (Jones, 2005). However, despite the limitations of mental skills training, its potential for aiding an individual to view experiences as *opportunities*, rather than *threats,* cannot be dismissed (Nicholls, Polman, Levy, & Backhouse, 2009). Furthermore, it has the potential to improve self-confidence and self-belief in one's abilities to perform optimally, while exercising emotional regulation and control (Nicholls et al., 2009).

Considering these focus areas in relation to the argument that employers need to focus on performance and wellness programmes for staff in order to reduce employee turnover, it

can be stated that both employee and employer can benefit from the incorporation of paramedic mental skills training techniques.

2.3 Mental Skills Training and the Military

Whilst there is a growing body of research investigating the usefulness of mental skills training in the sporting context (Gould, Dieffenbach, & Moffett, 2002; Landers & Boutcher, 1998), there is a lack of inquiry into the applicability of mental skills training as it pertains to emergency medical technicians. One can appreciate that an occupation with unique challenges, especially as it is related to the South African context, would therefore require mental skills strategies designed to address the unique needs of emergency care staff.

However, due to a lack in research in this domain specifically, there will be references made to literature investigating the applicability of mental skills training adapted to military contexts. It is argued here, that the use of mental skills training derived from sporting science and adapted for the military, provides the most comparable context in relation to the paramedic industry. Thus similarities between the military and emergency medical services industries will be emphasized.

Even though soldiers, athletes and paramedics are different in many respects, an intersection between team sports and small unit operations can be identified (Hammermeister, Pickering, McGraw & Ohlson, 2010). In these instances individuals are required to perform in a complex environment, rely on an array of cognitive and motor skills, work independently as well as in a team, and perform optimally under stressful circumstances (Hammermeister et al., 2010). “Distractions, anxiety and fear are challenges faced every day, both on the job and during training, by athletes, soldiers, law-enforcement officers, and other similar professions” (DeWiggins, Hite, & Alston, 2010, p. 458). It is further argued that even though the operational tasks may differ considerably, there are various similarities between military

mission personnel and paramedics. Military missions often occur against a backdrop of psychological stress, danger, and risk to self, time pressure and uncertainty (Thomson & McCreary, 2006).

As previously mentioned, these are elements that appear to be present in the emergency medical services domain as well. Furthermore, Thomson and McCreary (2006), argue that despite various technological advances, human beings remain the focal component of military operations and are required to exercise behavioural, emotional and cognitive control to ensure their own safety, as well as that of others. Here too, there is a parallel between the military and the emergency medical services as it pertains to paramedics.

In an attempt to address the various challenges as they arise in the military context, mental skills techniques (such as the *Personal Performance Plan*) make use of mental strategies that target attention, emotional regulation, confidence and motivation (DeWiggins et al., 2010). For example, the education and training of the *Personal Performance Plan* focuses on developing "mental strength by enhancing adaptive thinking, mental agility, and self-regulation skills" (DeWiggins et al., 2010, p. 459).

The *Personal Performance Plan* consists of a phased approach that includes the 'planning phase', 'pre-task execution phase', 'execution phase', and finally, the 'recovery phase' (DeWiggins et al., 2010). Phase one, the planning phase, focuses on the mental skills of goal setting and imagery, and clear images of the task objectives and successes are generated (DeWiggins et al., 2010). During the second phase, the pre-task execution phase, the mental tools of energy management and positive self-talk are incorporated (DeWiggins et al., 2010). This is when the soldiers focus on preparing their minds and their bodies for the physical, mental and emotional aspects of the task. The execution phase involves the mental

tools of self-talk, cue-words and mindfulness in order to stay in the moment and focus on the task at hand (DeWiggins et al., 2010).

Finally, during phase four, also known as the recovery phase, the use of imagery and energy management are again emphasised (DeWiggins et al., 2010). During this phase the soldiers evaluate their performance in terms of successful and sustainable practices, and those that were less successful during the execution of the task (DeWiggins et al., 2010). Arousal regulation and relaxation also forms a part of the final phase. In addition to these phases, the soldiers incorporate a simple acronym to target attention, control, emotional regulation, and confidence (DeWiggins et al., 2010).

The 'ABC' acronym includes the 'A' which stands for Attention and focuses on where and when attention is focused at any given moment. 'B' stands for Body, and includes the awareness of muscle tension, breathing, heart rate and energy levels. 'C' refers to Cue-words and the use of positive self-talk to boost confidence and motivation. The regular use of the ABC acronym before, during and after a task enhances the ability to be self-aware and to self-regulate (DeWiggins et al., 2010).

Other techniques drawn on by some military units include cognitive behavioural techniques, or mental tools such as goal-setting, mental imagery techniques, positive self-talk and energy management techniques (DeWiggins et al., 2010). An emphasis was also placed on increasing awareness of the links between cognition, physiological responses and physical performance (Adler, et al., 2015). Furthermore, interventions that incorporate cognitive as well as relaxation-based training appeared to be the most effective (DeWiggins et al., 2010).

Other mental skills training techniques incorporated into military performance enhancement programmes include: the '*Mental Readiness Approach*' (Thomson & McCreary, 2006), which merges stress management with resiliency and mental toughness;

'*Distraction control and Refocusing*' as used by Canadian military pilots; and *Cognitive Behavioural Therapy* as part of military trauma management techniques (Hohmann & Orlick, 2014). The cognitive behavioural paradigm, for example, emphasises the individual's appraisal of an event and draws on the theory that stress or distress can manifest as a result of how a situation was *perceived*, as opposed to the situation itself (Thomson & McCreary, 2006).

This technique challenges the individual's perceptions of and reaction to a stressor, and includes reframing techniques in an attempt to manage possible stress reactions (Thomson & McCreary, 2006). Furthermore, the cognitive behavioural techniques are the foundation of the *Mental Readiness Approach* which promotes stress awareness, stress management and self-regulation techniques that are applied *in situ*, but should also be applied in various contexts so that the techniques become reflexive (Thomson & McCreary, 2006).

Mental skills training aimed at supporting Canadian military pilots, include the mental tools of Focus, Mental Readiness, Mental Imagery, Stress Management and Distraction Control (Hohmann & Orlick, 2014). 'Focus' refers to focusing during the task at hand and being entirely absorbed in the activity (Hohmann & Orlick, 2014). Being 'in the moment' formed a key characteristic of focus (Hohmann & Orlick, 2014). Before a mission, participants were encouraged to achieve focus by removing themselves from a distracting environment, and to avoid thinking about irrelevant past or future events (Hohmann & Orlick, 2014).

'Mental Readiness' includes the ability to attend to multiple stimuli, planning for unplanned events and engaging in mental imagery (Hohmann & Orlick, 2014). The pilot-participants would frequently review written material, along with mentally planning for

unforeseen scenarios. By engaging in mental imagery, participants would visualize preferred responses to a number of possible outcomes (Hohmann & Orlick, 2014).

'Stress Management' involves the recognition of control and one's limitations, and focusing on constructive activities that were within the control of the pilots (Hohmann & Orlick, 2014). The pilots incorporated techniques such as workload management and administrative organization, the re-appraisal of stress and what constitutes a stressful situation, breathing techniques, and socializing with people who did not evoke stress and anxiety (Hohmann & Orlick, 2014).

'Distraction Control and Refocusing' includes the practice of compartmentalization, prioritising and shifting focus to the task at hand as quickly as possible (Hohmann & Orlick, 2014). In order to refocus and maintain that focus, the pilots used verbal cues or would talk themselves through the procedure (Hohmann & Orlick, 2014).

In evaluating mental skills as they are applied to the military healthcare setting, Hammermeister and colleagues (2009), highlights the importance of positive self-esteem in order to cope effectively with workplace adversity. These authors go on to state that self-esteem should be considered paramount in healthcare settings as this may have a direct effect on patient care (Hammermeister et al. 2009). The authors explain that "as individuals become more positive about themselves, they generally become more positive about others, resulting in a more positive 'bedside manner' which is essential for caregiver success" (Hammermeister, et al., 2009, p.1).

While there appears to be some literature on the psychological effect of trauma on paramedics, as well as some research conducted on the retention challenges faced by the emergency services in South Africa, there is an absence of literature that addresses what can be done to support paramedics in terms of mental strategies and coping skills. It is argued

here that there seems to be an overlap between the challenges faced by military personnel and emergency care paramedics, yet there are mental skills training programmes in place for military staff, but not for emergency medical services staff.

In an emergency setting the onus is on the emergency medical practitioner to make clinical decisions at critical moments in order to render the best possible care to a patient (Mulder, 2012). However, there is an elevated potential for paramedics to make errors in the emergency environment that is fraught with interruptions, distractions, high levels of performance pressure and stress (Mulder, 2012). Coupling the exposure to such experiences with anticipatory anxiety can greatly impact on performance. In a study conducted by Binks (2011), study participant paramedics relayed a fear of being inadequate in emergency situations, a lack of confidence in their abilities, and a fear of impaired decision making. It is argued here that the adaption of military mental skills programmes can be beneficial in addressing these concerns.

2.4 The importance of the research in relation to South African paramedics

High levels of job stress and long working hours are characteristic of the military environment (Pflanz & Ogle, 2006). These are characteristics echoed by the emergency care domain. High work stress is strongly correlated to depression and other psychological sequelae, which in turn impacts on work performance (Pflanz & Ogle, 2006). A study conducted by Pflanz and Ogle (2006) demonstrates that untreated depression and other psychological challenges are as much of a concern for military staff as they are for civilians, and it is suggested that these findings could be extended to paramedics as well.

Common stressors and traumas identified by a number of South African paramedics while at work included deaths (specifically those of children), battered children, suicide, the death of a colleague, individuals who died in isolation, prank calls or trivial call-outs, mass

casualties, and threats to their own lives (for example by patients who are psychotic or substance-induced aggression) (Vettor & Kosinski, 2000). Other occupational stressors include a lack of administrative support, low wages, long working hours, and problematic attitudes of hospital personnel and law enforcement officials (Vettor & Kosinski, 2000). These are factors that may all contribute to psychological and mental challenges.

The presence of untreated psychological conditions presenting in personnel who are responsible for the wellbeing of civilians is potentially hazardous. The perils of staff in the helping discipline who are not faring well psychologically or mentally calls for intervention. However, strategies aimed at addressing these issues are not always effective or sustainable. For example, regular debriefing does not always suffice (Scully, 2011). In fact, several studies argue that debriefing may be iatrogenic, worsen symptoms, be ineffective, or cause secondary trauma (Bisson, Jenkins, Alexander & Bannister, 1997; Raphael, Meldrum & Macfarlane, 1995; Rose, Bisson, Churchill & Wessely, 2002).

Individual crisis intervention and support have also previously been considered as means of addressing psychological distress and mental wellbeing (Scully, 2011). However, in the South African context access to individual psychotherapy is financially and economically regulated, as well as tied to socio-cultural norms, and therefore psychological services are not widely available to all who require them.

Alternately, peer support groups may be beneficial in that they can provide a supervisory system, normalize thoughts and feelings pertaining to a trauma, offer overall emotional support, and provide possible reframing opportunities (Scully, 2011). Unfortunately, such a strategy is not always possible as a result of logistical factors, understaffed and under-resourced work environments, overworked staff members and long working hours.

The nature of the paramedic industry also requires practitioners to leave the ambulance base in order to respond to emergency calls, which means that it can be challenging to gather a group of members together at the same time. Furthermore, there is the potential for tense work-space dynamics as a result of high stress levels and difficult working conditions, which might make it hard for some members to speak about vulnerable or sensitive matters.

It is thus argued here that while there are various strategies that can be pursued in an attempt to provide paramedics with supportive structures, there is little research that demonstrates the effectiveness and applicability of such strategies. It is suggested that mental skills training techniques may potentially be a useful way in which to provide individual psychological and mental support that can address coping with stress before, during and after an occupational challenge, in a manner that allows for agency and confidentiality.

It is further suggested that as a repercussion of inadequate support structures, emergency medical personnel may develop various coping strategies that may be ineffective or even maladaptive. These coping mechanisms often include depersonalization of the self as well as the patient, desensitization, and over-rationalization (Vettor & Kosinski, 2000). While some of these mechanisms may prove useful to the practitioner, it may often have detrimental consequences. For example, it can impact on their general attitude towards their jobs and personal relationships, and might not be effective in guarding against burn-out (Vettor & Kosinski, 2000).

Other maladaptive coping strategies commonly include substance dependence, the incorrect use of psychiatric medication, and the exploitation of company leave policies (Regehr, Golberg, & Hughes, 2002). Some paramedics report the use of intentional cognitive

coping strategies, but these efforts usually occur without the coaching or guidance of a trained individual to assist in effective application (Regehr et al., 2002).

Some of the reported techniques used by paramedics include visualization aimed at imagining the worst possible scenario before arriving at a scene in order to minimize the impact of the situation on the paramedic when he or she arrives (Regehr et al., 2002). Others have described the conscious process of emotionally distancing themselves from the patient and the patient's family, while still other respondents have reported a need to obtain information about the patient's wellbeing or physical status after the event in order to get a sense of resolution or closure (Regehr et al., 2002). Respondents further stated that in order to cope with the lack of control over the job, they would execute high levels of control over other areas of their lives, including their relationships, homes and families (Regehr et al., 2002).

It can be reiterated here that while these strategies may be useful, they may have negative consequences in the long-term. The suppression of emotion on a regular basis while attending to a scene, might lead to an overall detachment and apathy which can have a negative impact on interpersonal relationships (Regehr et al., 2002). The strategy of emotional distancing may make it difficult to shift between states of emotionality in significant relationships which can lead to relational problems, which may in turn jeopardize the individual's support network (Regehr et al., 2002).

It is thus clear that not only do maladaptive coping strategies, together with stress and burn-out, lead to frequent absenteeism or job resignations, but that they also have detrimental consequences for the emergency practitioner's general wellbeing and quality of life (Vettor & Kosinski, 2000). "Emergency organizations and training programmes for paramedics need to address these issues with workers and trainees and they need to assist workers to develop

strategies for self-protection on the job that do not negatively impact on their lives" (Regehr et al., 2002, p. 511).

Alexander and Klein (2001) further argue that no single method of coping guarantees protection from the challenging effects of adversity and that it is likely that the individual is best served by having a repertoire of methods that can be used effectively and flexibly. This study suggests that mental skills training might be able to provide that.

A review of the existing literature reveals that there is a need for mental and psychological support structures pertaining to paramedics, but there is a lack of literature on models currently in place to address this issue. The existing literature also demonstrates that there are some mental skills models in place aimed at assisting military personnel, as discussed earlier, and that there may be some overlap between the occupational needs and challenges of both paramedics and military mission personnel.

Furthermore, the literature reveals that with specific reference to South Africa, there is a need for more widely accessible emergency services, and therefore strategies that can assist paramedics in assisting South Africans are essential.

2.5 Research question and study aims

The central focus of this research project explores the adaptability and applicability of military mental skills training techniques in the context of South African paramedics. The study investigates the mental skills techniques previously and currently incorporated into military training, and explores whether these techniques can be adapted for South African paramedics in an attempt to enrich performance, serve a supportive function, and thirdly, contribute to staff retention strategies.

The research aims therefore include the following:

- The implementation of a mental skills training programme adapted from military mental skills techniques with three South African paramedics
- The exploration of the adaptability and applicability of military mental skills training in the South African emergency services context

CHAPTER 3

3) Methodology and Research Design

The review of the existing literature revealed that South African paramedics face various challenges and that there is a need for supportive strategies. As previously discussed, there is a shortage of literature regarding mental skills training aimed specifically for use by paramedics. Parallels between the military domain and the pre-hospital care domain suggest that the mental skills training utilized in the military might provide a platform from which to interrogate possible mental skills strategies for paramedics. This study thus set out to explore the adaptability, as well as applicability of military mental skills training for South African paramedics.

3.1 Research Design

This study made use of an exploratory, qualitative case study design, focusing on participatory research strategies. Exploratory research allows for the accumulation of knowledge where there is presently limited information on a situation or phenomenon, and therefore qualitative methods are useful in terms of gaining a broader understanding (Bless, Higson-Smith, & Sithole, 2013). The appropriateness of a case study design provides the advantage for new ideas to emerge from detailed observations and analysis, sourced from a small sample (Durrheim, 1999).

The findings and conclusions generated from this study may then be more rigorously tested by other methods in the future (Durrheim, 1999). Participatory research emphasises the collaborative efforts between the researcher and all the individuals involved in the inquiry, resulting in collective contributions and decision-making processes which inform the research question (Smith, 2003).

3.2 Gatekeepers and participant recruitment

Following the ethical clearance and approval from the institutional Research Projects and Ethics Review Committee, access was negotiated with relevant stakeholders based at an Eastern Cape private emergency medical services provider. These stakeholders included the head of department in his capacity as manager of the ambulance base. The research goals were discussed with the manager, upon which various potential participants were identified and initial meetings were put in place.

The participants were selected by the manager based on their availability, their interest in participating in the study and their level of qualification. The participants consisted of two men and one woman, over the ages of thirty, employed in the capacity of full time Basic Ambulance Assistant, Intermediate Life Support paramedic, and Advanced Life Support paramedic, respectively. The participants had approximately forty years' experience in the industry between them. Two of the participants obtained their qualifications through completing successive short courses, while the third participant obtained their qualifications through a university. All three the participants have gained considerable experience involving a range of pre-hospital care interventions, including patient transit, patients suffering cardiac arrest, psychosis, injury related to domestic violence, motor vehicle accident injuries, loss of life as a result of natural disasters, death due to natural causes, death due to suicide, asthma and panic attacks, and many other medical conditions.

The three paramedic volunteers were recruited, for whom the adapted mental skills programme was piloted. Purposive sampling was adequate as the participation did not depend only on availability and a willingness to participate, but allowed for the participation of individuals who meet the criteria specific to the applicable population

(i.e., adult paramedics based in the Eastern Cape) (Durrheim, 1999). The rationale for collaborating with *three* paramedics was related to time constraints and an appropriate sample size for a study of this scale. It is believed that the data obtained from three participants yielded adequate information for analysis, as opposed to a single case study (Durrheim, 1999). Following the successful recruitment of the three participants, the data collection and analysis occurred in seven distinct phases. These phases are discussed next.

3.3 Phased approach to data collection and analysis

3.3.1 Phase One: Interview to establish needs and areas of focus

Drawing on the principles of participatory research, the research participants' needs were discussed by means of a semi-structured interview and focus group (Bless et al., 2013). A focus group approach allowed for the generating of knowledge sources in order to establish areas of focus, and experiential knowledge and expertise was explored (Bull, Shambrook, James, & Brooks, 2005). The mental skills model was later developed on the basis of the needs identified.

3.3.2 Phase Two: Individual Interviews

Following phase one, individual interviews were set up. The rationale behind these discussions was to identify potential areas that may affect paramedic performance, and inform the adaptability of existing military mental skills training programs to the context of South African emergency medical technicians. During these semi-structured interviews, the participants were encouraged to reflect on the everyday requirements of their occupations and identify key areas that they felt would benefit from mental skills training. By conducting the interviews individually as opposed to in the group setting, individual themes could emerge and each participant was encouraged to speak candidly.

The interview schedule included obtaining information about the participant's background both personally and professionally. The semi-structured interview also aimed at obtaining clarification around the participant's job description and daily occupational tasks. The interviews further explored the challenges of the job, the participant's understanding of mental skills, an exploration of the participant's current coping strategies and perceived level of performance, as well as the participant's hopes or goals for a mental skills model.

3.3.3 Phase Three: Transcription of the interviews

During the transcription phase, the participants' needs were explored, followed by an analysis of the transcribed data, facilitating decisions around the choice and adaptability of existing military skills training programmes (Witkin & Altschuld, 1995). Thematic analysis allowed for the identification, analysing and reporting of patterns that emerged from the data (Braun & Clarke, 2006), and the exploration of these themes (Attride-Stirling, 2001).

During the transcription process, repeated and active reading was enabled, allowing patterns and meanings to emerge (Braun & Clarke, 2006). Initial codes were generated, allowing the data to be organized into meaningful groups or subsections (Braun & Clarke, 2006). Various elements were identified and guided the adaption and designing of the mental skills model. These identified themes will be discussed in further detail in the analysis chapter.

3.3.4 Phase Four: Adaptation of Existing Mental Skills Models

During this phase, the available literature describing military-based mental skills models were consulted. Familiarisation with the literature allowed for the identification of possible similarities and themes emerging from the mental skills models used by the military, and the

context of paramedics. Subsequently a programme was compiled, drawing on three military mental skills models (DeWiggins et al., 2010; Hohmann & Orlick, 2014; Thompson & McCreary, 2006), and additional mental skills and mental toughness techniques based on Sport and Performance psychology (Connaughton & Hanton, 2010; Jones, 2005 & Nicholls et al., 2009).

In order to address issues around self-regulation and individual debriefing, the *Personal Performance Plan* as it pertains to real-world military tasks was modified (DeWiggins et al., 2010). This technique makes use of mental tools targeting attention, emotional regulation, control and confident thinking, and consists of a four-phased approach (DeWiggins et al., 2010). However, the first three phases of the *Personal Performance Plan* focus on mental skills that are practiced prior to, and during a task. The interviews with the three paramedic participants revealed that there is a need for mental skills training following the *completion* of a task.

The fourth phase of the *Personal Performance Plan* was therefore applicable to the needs of the participants. During this phase, also called the recovery phase, the emphasis is placed on energy management and reflection (DeWiggins et al., 2010). Furthermore, in an attempt to address attention regulation, personal debriefing and arousal regulation, the "*ABC*" acronym suggested by the *Personal Performance Plan* was incorporated into the modified model. The acronym refers to 'attention', 'body' and 'cue-words' respectively (DeWiggins et al., 2010).

With a further emphasis on personal and individual debriefing, the *Post-Flight Ongoing Learning* approach used by Canadian military pilots was adapted (Hohman & Orlick, 2014). The post-flight phase of the approach centres on preventing the internalization of critical remarks and self-criticism, as well as the prevention of magnifying mistakes

(Hohman & Orlick, 2014). This model encourages the practitioner to "accept responsibility for their actions while also recognizing that they are acting within certain situational parameters" (Hohman & Orlick, 2014, p. 11).

In order to address issues around emotional sequelae, self-doubt and "second-guessing" the *Mental Readiness Training* approach used during military operations was evaluated and adapted for use by the participant paramedics. *The Mental Readiness Training* technique promotes stress awareness, adaptive self-talk, and is rooted in a cognitive behavioural paradigm (Thomson & McCreary, 2016). In addition, the cognitive behavioural theory of interlinking cycles was used to demonstrate the importance of individual appraisals of a situation (Thomson & McCreary, 2006; Westbrook, Kennerley & Kirk, 2011).

In an attempt to adapt the military models in a manner that would make the mental skills training applicable to the pre-hospital services context, the *Drive Theory and Inverted "U"* hypothesis (Jones, 2005) was incorporated. The theory was included to address the "switched off" versus always "switched on" phenomenon, and overlaps with arousal-regulation. In order for optimal functioning to occur, arousal levels must remain at a level that optimizes performance (Jones, 2005). If arousal levels continue to increase after the task has already been completed, or the level of arousal increases beyond what is helpful, performance may deteriorate and elevated arousal is no longer helpful (Jones, 2005).

The concept of mental toughness was included in the adapted mental skills training programme as a result of its potential to address self-doubt, elevated and persistent levels of stress and encouraging self-belief (Nicholls et al., 2009). The adapted programme further emphasised that mental toughness can be acquired, must be maintained, and adopts a growth-mind-set approach (Connaughton & Hanton, 2010).

3.3.5 Phase Five: Application of the Adapted Mental Skills Training Model

Once the adapted model had been completed, the information was compiled and booklets printed for each of the participants. A group session was set up, and the booklets were disseminated. During this session, the researcher carefully went through the booklet, together with the participants. The participants were encouraged to ask questions if something was unclear, and the session only came to an end once the researcher and participants were all satisfied that the instructions and information was clear.

The participants were requested to implement the model over a period of four weeks, both during working hours as well as after hours. Participants were asked to familiarise themselves with each of the different techniques, and to implement one or more that they felt enthusiastic about engaging with. The participants were encouraged to write down any comments or thoughts regarding the mental skills programme over the four-week period, and to bring these into the conversation during the final feedback session. A copy of the mental skills training programme as it was disseminated to the paramedics has been appended (Appendix A).

3.3.6 Phase Six: Final Feedback Interviews and Transcription

Upon the conclusion of the implementation of the adapted metal skills programme, the applicability of the programme was assessed by means of a thematic analysis of transcripts following final interviews with the three paramedic participants. During these semi-structured interviews, the participants were asked to share their experiences of the adapted mental skills training programme, and to report on whether there were facets that were useful, unhelpful, inapplicable, potentially beneficial or unsuitable.

Semi-structured interviewing allows for the probing and clarification of respondents' answers and statements (Barriball & While, 1994). This can go a long way towards improving reliability as it allowed for the exploration of the participants' feelings, thoughts and experiences, while ruling out ambiguity and assumption (Barriball & While, 1994). Probing during semi-structured interviews also facilitated reliability in that it established a sense of rapport and understanding which can lower the risk of socially desirable answers (Barriball & While, 1994).

Following the final semi-structured group interview, the audio recording was transcribed. The process of transcription allowed for the initial familiarisation of the data and informed the early stages of the analysis process (Braun & Clarke, 2006). Even though a verbatim account of the verbal expressions was recorded, the process of transcription formed part of an interpretative act, and was not merely a process of transferring spoken words into text (Braun & Clarke, 2006).

The transcription was read and then re-read to facilitate further familiarisation with, and understanding of the content (Attride-Sterling, 2001). Once the familiarisation process was completed, the document was again engaged with, during which sub-themes were identified and sign-posted. Each sentence and paragraph was analysed for potential sub-themes that stood out as latent or overt content.

The sub-themes were identified based recurrence in the data, the flow of the conversation which led to the exploration of specific topics, the presence of statements addressing the research question, as well as any topics or themes that emerged spontaneously. These sub-themes were sign-posted in the margins of the document, as well as highlighted in the text.

3.3.7 Phase Seven: Analysis of the Data

The themes that arose from the participants' feedback formed the units of analysis and were considered in terms of answering the overall research question (Smith, 2003). These findings are discussed in the Analysis Chapter.

3.4 Limitations and Advantages of the Method

Conducting the study with three participants only, respondents' feedback cannot be generalized or transferred to a larger paramedic population. The study cannot assume that the reported experiences of the participants will be the experiences of all paramedics across South Africa, or even at a different ambulance base in the same town (Bryman, 2012). Generalizations in qualitative interviewing and analysis are thus limited compared to statistical generalizations (Bryman, 2012). However, as this is a qualitative study, the findings are not meant to be generalized, and findings should be considered within this context.

However, small sample sizes allow for close involvement with participants in interview-based studies and can potentially generate rich qualitative material (Bryman, 2012). Furthermore, for the purpose of this study, a small sample size allowed for the piloting of new strategies, ideas and interventions that may not otherwise have been possible, and can direct future research.

There was also no guarantee that all three participants engaged equally with the model, which could have implications for reliability and validity. In other words, once the adapted model was taught and disseminated, the participants were required to utilize the techniques of their own volition and the process was not closely monitored by the researcher. However, the initial phase, or teaching and application phase, emphasised the importance of applying mental skills training individually, diligently and persistently, and

it is theorised that the participants' commitment to the research study would have supported the application of the techniques.

A further potential limitation is that the application of the adapted model did not involve ad hoc or *in vivo* training. This implies that mental skills training could not be modelled, encouraged or modified as it pertained to actual events (Westbrook et al., 2011). The paramedic participants were thus expected to apply mental skills techniques without impromptu or regular guidance by a trained professional. While mental skills training ultimately aims to aid the individual in conducting the techniques on their own, it is important that the initial learning phase is facilitated (Bull et al., 2005).

However, as a result of the participants' demanding work schedules, time restraints and ethical considerations pertaining to patient care, the option of the researcher accompanying the participants to facilitate training was not viable. The initial teaching phase was thus emphasized and regular conversations throughout the application phase with the participants allowed for questions, comments or clarification.

3.5 Ethical Considerations

Due to the nature of the study which involved the participation of human participants, all necessary steps were followed as part of risk management. This included the submission of an ethical standards protocol and the compliance with departmental and institutional review and approval.

All possible risks, consequences and the management thereof were clearly outlined in the ethical standards documents submitted, and options for dealing with potential harm were made available to the participants. Each participant elected the use of pseudonyms. Research proceeded with the approval from the relevant departmental and institutional boards.

CHAPTER 4

4) Analysis and Discussion

The central focus of this study was the exploration of whether existing military mental skills models are applicable, and adaptable in the context of South African paramedics. The study further investigated whether the adaptation and incorporation of the mental skills model can be successful in maintaining performance, serve as a supportive tool, and potentially contribute to staff retention of paramedics. The effect of the mental skills model on performance, support and staff retention, was based solely on the participants' joint and separate experiences and opinions. The following section includes a discussion of the first set of interviews, and how the needs that emerged from the data informed the development of the adapted mental skills model. Thereafter, this section comprises a discussion of the final set of interviews (conducted after the implementation of the mental skills training model), the themes that arose from them and a reflection of how these themes relate to the research question and study aims. The chapter concludes with a summary and conclusion of the findings.

4.1 Needs that emerged from the first set of interviews

The interviews conducted in the early phases of the study were aimed at identifying the participants' needs. A number of key themes emerged, and these are explored next. The manner in which these identified themes informed the development of the mental skills training model are discussed hereafter.

4.1.1 The unpredictability of the emergency calls and the situation.

This included not knowing what the paramedic will find when he or she arrives at a call-out site, or when patients suddenly deteriorated. This also included polarized extremes, for example "run of the mill" calls punctuated by extreme "genuine ambulance calls".

"One of the first things you learn is to not listen to the dispatch information, 'cause 90% of the time it's wrong" (*Alex, Individual Interview). Alex went on to state that the ambulance calls can involve "moments of sheer boredom, interrupted by moments of sheer terror" (Individual Interview).

4.1.2 Preconceived ideas of Mental Skills Training.

These included the paramedics' understanding of mental skills training as methods designed to "break one", or methods that can help one cope psychologically.

4.1.3 Uncertainty and questioning.

This component differs to that of unpredictability in that it included second-guessing, questions around what could have been done differently, and questions around why a tragic event had to happen. Referring to second-guessing and uncertainty, Alex stated that "it's the ones that are deteriorating enroute and you don't know why. Nothing is giving you any clues, and the vitals aren't telling you what's wrong. It's *those* ones." (Individual Interview).

4.1.4 Sequelae / consequences of a call.

These included emotional reactions that involved anger, anxiety, rumination, catastrophizing, irritation and frustration. "I've never turned off. You're constantly expecting the worst to happen. I suppose because you're constantly seeing the worst" (*James, Individual Interview).

James went on to explain that difficult emotions frequently follow challenging calls. "Problem is, you feel a lot of anger, depending on what happened. Get a family suicide. I recently went to one. You're pissed off. But you're still switched off. A father killed his baby. Offs himself. You will feel anger" (James, Group Interview).

4.1.5 Current coping mechanisms.

Among the participants' preferred and current coping strategies were recreational activities, 'gallows humour' also known as 'dark humour', safety-behaviours or habits, venting, "switching off", and debriefing.

Midway through the group interview, James takes out an ECG print-out (electrocardiogram), and presents it to his colleagues. They proceed to discuss a patient who recently passed away.

> *Alex: "Oh is it that kid?" (Referring to the ECG print-out)*
> *James: "Eighteen years old."*
> *Alex: "Eighteen years old? Was he on something?"*
> *Dan: "Ja. On my stretcher." (Laughs)*
> *Alex: "No shit Sherlock. On anything? Taking anything?"*
>
> *- Group Interview*

The use of humour is further demonstrated when *Dan states that "the only thing about our job is that our mistakes get buried", and the paramedics all start laughing.

4.1.6 "Roboticised" reaction.

This involved the process of tuning out all emotions and thoughts while focusing on the job at hand. During this time no processing occurs. "Whenever we go out, we focus on the task at hand. We come back, chat about it and see what you could've done differently. But basically my focus is always on my patient. In front of me." (Dan, Individual Interview).

4.1.7 A need for debriefing, processing and venting.

This included a space where mentorship, normalizing of experiences and a sharing of experiences could be explored. “Proper debriefing. It’s not often we get those. And I think a lot of the times you don’t want to show that you are second guessing yourself” (Alex, Individual Interview).

4.1.8 An entrenched need or desire to help others, or concern over others’ wellbeing.

This included using recreational time for the benefit of others, concern over how others are coping, and elevated concern over loved-ones’ safety. Referring to his constant concern over loved ones, James reported: “my wife and kids driving to the beach I continuously worry about them being in an accident” (Individual Interview). When referring to creative art as a form of relaxation and enjoyment, Alex reported: “ I kind of do it [artwork] when people ask for drawings, and when I do one, it normally ends up being for someone else” (Individual Interview).

4.1.9 Differing motivation for doing the job.

These included self-determination, the occupation being a calling and incidents where people’s lives are saved. When speaking about factors that keep him motivated, James reported: “Just the fact that you can help people. We got a call, the guy from the ambulance on the scene had already declared the lady dead. We got there, we resuscitated her and now she’s fine. So things like that” (Individual Interview). Dan reported: “To me it all comes down to self-determination. I push myself to be where I want to be” (Individual Interview).

4.1.10 Contradictions regarding “always being switched on” versus “switching off during calls”. This theme refers to the phenomenon of always being “switched on”, even when at home, or on standby, but “switched off” during the task at hand.

Researcher: "When you are there, mentally and psychologically, what is happening?"
James: "Nothing, You switch off."
Dan: "Nothing."
James: "No matter what you see or what you do..."
Alex: "No matter what you see, you know what has to be done, you know what you are looking for, and you just literally, you are ticking off, you are sorting through your system-"
James: "-Like a robot"

Group Interview

This experience of being switched off during the task at hand, is in contrast to the participants' experience of constantly being 'switched on' while off-duty.

Researcher: "is it a case of switching off entirely?"
James: "No. I think sometimes you do take it home."
Alex: "Especially if you think you could have done better."

Group Interview

When referring to being at home, Alex reported: "My phone could ring at eleven o' clock, two o' clock and four o' clock in the morning. So I kind of sleep with one ear open, and one eye open" (Individual Interview).

4.1.11 Differing reasons for why the coping mechanisms are reinforced.

The participants had different reasons for why they had specific coping mechanisms and these included: gendered dynamics, family dynamics, and reasons for being in the job. In

other words, a woman's coping mechanisms might be different to that of a man's coping mechanism, a parent's coping might be different to that of someone without children. One is not more or less successful than the other, but they are different. "Girls in EMS have to prove themselves a hundred times more to be in this job than guys do" (Alex, Individual Interview).

This theme highlighted the importance of a mental skills model that can be customised to suit the individual's context and needs, but comprehensive enough to be applicable to more than one paramedic.

4.1.12 A need for being able to 'read' patients.

This was emphasised as a requirement for safety reasons as well as effectiveness of job performance, with specific reference to dealing with psychotic or aggressive patients. When referring to aggressive or psychotic patients, Alex reported;

"You have a very short space of time, so being able to read people I think is a job, that is something we have to learn, and is one of the most important things" (Alex, Individual Interview).

4.1.13 A general sense of feeling unsupported.

This included the domains of psychological support, professional support from professional boards or councils, as well as emotional support.

"It was an absolute nightmare. We got to the hospital. They're busy with a resuss (resuscitation), there's no one there to help us, we needed an extra hand, this patient was massive. We eventually had to call our own time of death in the ambulance. Twenty minutes after we arrived (at the hospital)" (Alex, Individual Interview).

During the group interviews, the paramedics went on to discuss general support as it related to a professional board;

James: "They knock you" (professional board)
Alex: "They will throw you under the bus at any point, but they're supposed to be our representatives. There is no one actually who-"
Dan: "They're actually there to screw us"
Alex: "Exactly."

- Group Interview

The participants also discussed that social support becomes challenging, because the ways in which they relate to friends and family are not always conducive to eliciting support.

"I used to be very calm, romantic. Now I'm like totally the opposite. Now I couldn't give a damn about romance. Really, I'm being dead honest with you, it's changed me completely. Almost to be like a hard arse." (James, Individual Interview).

This finding echoed the findings discussed in the literature review. The paramedics' sense of feeling unsupported formed a fundamental component and motivation for the adapted mental skills model. Each of the sections of the adapted mental skills model are aimed at techniques that can enable the paramedics to draw on internal sources of support, and this in many ways reflects the theory of mental toughness as a foundation for dealing with stressors, cultivating a growth-mind-set and promoting mental agility (Connaughton & Hanton, 2010).

4.1.14 Various reasons for motivation in participating in the study.

These included a desire to improve professional efficiency and to contribute to an under-researched area. Referring to his participation in the study, James remarked: "As long as it's helpful", and later, "I'm quite keen because nothing has been done about it [paramedics' mental skills training]" (Group and Individual Interview).

4.2 Development of the MST model

The theme around the unpredictable nature of the job was linked to the military *Personal Performance Plan* mental skills model discussed by DeWiggins and colleagues (2010). The *Personal Performance Plan* maintains that adaptive thinking and mental agility are crucial aspects of dealing with unforeseen outcomes (DeWiggins et al., 2010). The mental skills model designed for the paramedics thus drew from the *Personal Performance Plan's* techniques of focusing attention and confidence in one's skills and abilities. This included a process of ecnouraging paramedics to re-appraise their negative thoughts, self-doubt and second-guessing, thereby instilling a sense of confidence and mental flexibility.

The military mental skills models discussed in the literature all focus on empowering and supporting the individual. The adapted mental skills model developed for this study thus drew only on military models that were adaptive, constructive and affirmative.

The theme related to the theme of uncertainty and questioning was linked to the mental skills programme discussed by Thomson and colleagues (2006). The authors' approach to mental skills aimed at dealing with insecurities, stress and second-guessing, revolves around the cognitive behavioural paradigm. The adapted model thus included a cognitive exercise whereby the paramedics were encouraged to appraise a situation in a more positive and realistic manner, as opposed to getting caught up in negative rumination (Thomson & McCreary, 2006). For example, the model designed for this study outlines an example of a common scenario as it pertains to paramedics, and the manner in which it can act as a trigger for negative thinking. The model goes onto demonstrate how the negative thought impacts on physiology and emotion, and that these in turn impact on behaviour. Thereafter, the model provides examples of more adaptive cognitive appraisals.

The adapted model drew on Jones' (2005), arousal-regulation techniques, which include psychoeducation around how arousal affects performance. In terms of mental skills techniques used by the military, the adapted model drew from the post-flight mental techniques used by Canadian military pilots (Hohmann & Orlick, 2014).

With regards to the 'roboticised reaction', this mechanism can be linked to the 'focus' component incorporated in many of the military mental skills models, including the *Personal Performance Plan* (DeWiggins et al.) and the mental skills techniques used by Canadian military pilots (Hohman & Orlick, 2014).

The theme regarding the need for debriefing were similar to the experiences of Canadian pilots, and therefore the techniques of self-debriefing and the prevention of critical remarks being internalized were added to the adapted model for the paramedics (Hohman & Orlick, 2014).

The existing literature did not reveal specific mental skills techniques used by the military to address the negative effects of helping others. However, 'burnout' as a challenge experienced by paramedics was highlighted in the literature, and therefore strategies aimed at self-care was incorporated into the adapted mental skills model. These strategies drew on arousal-regulation as discussed by Jones (2005), as well as techniques aimed at relaxation and stress management (DeWiggins et al., 2010).

With reference to the experience of 'always being switched on' versus 'switching off during calls', the elements of focus, attention and arousal-regulation as techniques used in military mental skills models, were therefore important aspects to add to the adapted model for the paramedics.

As already mentioned, techniques that focus on self-awareness, arousal-regulation and confidence in one's skills were included to address the need to be able to 'read' patients as

well. It is argued that the paramedics will be more equipped to identify and treat the mental and emotional states of others, if they are able to reflect on and regulate their own cognitive and emotional states.

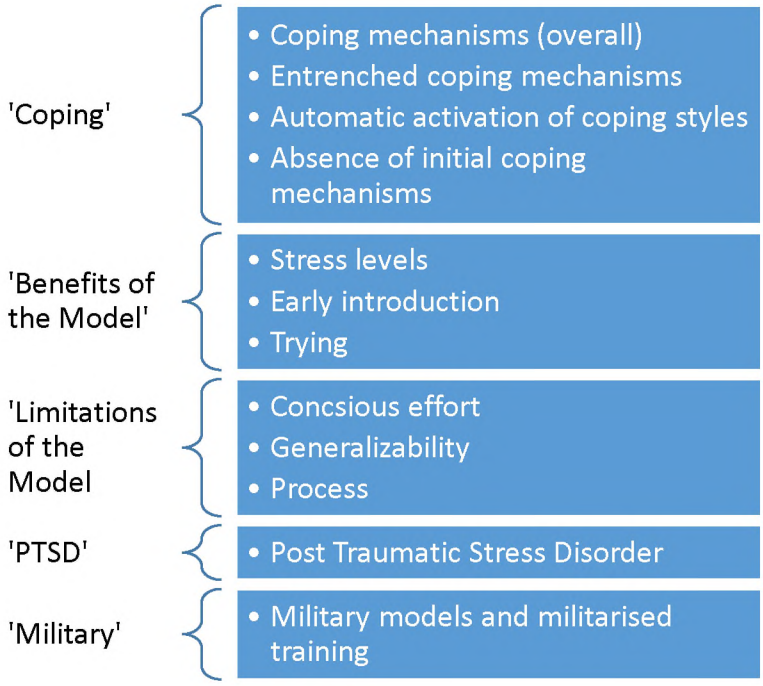
The needs identified during the first set of interviews thus formed the basis of the adaptation of the techniques used in military mental skills models.

4.3 Analysis of the feedback interviews

After the participants had applied the adapted mental skills model, the final group interview took place, and the data was analysed. The analysis led to the emergence of twelve sub-themes, which were later clustered into five major themes.

Twelve sub-themes were identified: 'coping mechanisms overall', 'entrenched coping mechanisms', 'automatic activation', 'absence of initial coping mechanisms', 'Post Traumatic Stress Disorder', 'stress levels', 'early introduction', 'trying', 'militarised training', ' effort', 'generalizability', and 'process'.

Each of the twelve sub-themes were grouped or clustered into five major themes. The major themes identified include: 'Coping', 'Benefits of the Model', 'PTSD', 'Military' and 'Limitations of the Model'. Following, is an exploration of the themes identified. Pseudonyms are used throughout when referring to the participants.



4.3.1 Coping

A dominant theme that emerged was that of coping and coping mechanisms. While it was unsurprising that this theme emerged, considering that it also presented as a theme when the paramedics' needs were explored, the dominance of the theme was notable. Following is a discussion of the theme of coping as sectioned in its various sub-themes.

4.3.1.1 Coping Mechanisms in General

Analysis of the data revealed that participants felt that coping mechanisms are experienced individually, and this was evidenced in a statement by Alex who remarked that "we all have our own way of dealing" (feedback interview, line 36). Furthermore, participants also held different opinions around what constituted 'healthy/unhealthy' coping strategies. For one of the participants a 'healthy' coping mechanism included time with family, while "drinking and smoking" was considered to be an 'unhealthy' coping mechanism.

For another participant, smoking was considered to be an acceptable coping strategy and spending time alone was viewed as an adaptive coping activity. The phenomenological experience and opinion of coping mechanisms in general, might have had implications for how the adapted military mental skills model was received and implemented by each of the individual participants. Put differently, each participant had different views around what constitutes an 'adaptive' coping mechanism, and therefore one participant might have viewed the adapted mental skills model favourably, while another participant may have felt less invested.

For all three the participants, humour – specifically '*gallows humour'* - was viewed as a prominent coping mechanism. The manifestation of humour and 'dark humour' was repeatedly evident during the interviewing processes, and the banter and teasing seemed to come readily when more sensitive or serious topics were discussed.

The data further revealed that coping mechanisms were also considered to be a 'group phenomenon'. Participants reported that they had inadvertently formed group coping mechanisms at the ambulance base, which often revolved around teasing and humour in a team context. While the 'dark humour' component is in keeping with humour as a coping strategy on the whole, the occurrence of group coping mechanisms is in contrast to the participants' statements that coping strategies are individualistic.

This contradiction might speak to the possibility that the participants experience coping mechanisms as context specific and individually customised, while at the same time recognising the importance of coping mechanisms that can be widely applied and shared. This emphasises the importance of a mental skills model that can be adapted and customised to suit each individual's needs, while at the same time remains applicable to a broader population and wide range of contexts.

4.3.1.2 Entrenched Coping Mechanisms

The participants were all in agreement that coping mechanisms are built up over time, and stated that the longer one is in the EMS profession, the more entrenched certain coping mechanisms become. When referring to venting to other paramedics as a coping strategy after a traumatic call-out, one of the participants remarked: "talking with each other, swearing, talking about it, saying how you wish you could get your hands on that fucking guy". When referring to a coping mechanism aimed at alleviating anxiety and second-guessing, one participant recounted an incident during which a patient passed away. Following the stress of that event, the paramedic participant adopted a routine that is applied without fail. The routine includes dropping all used ampoules into the drug bag so that the paramedic can check whether the right drugs were administered should the participant start second-guessing the intervention that took place.

The various coping mechanisms also appear to be covert and it seemed that it was only once a new coping mechanism was introduced that the paramedics realized there were already entrenched coping strategies in place. This realization is useful to note, as awareness is an important factor in mental skills training.

4.3.1.3 Automatic Activation

The automatic activation of coping mechanisms ties in with the notion of entrenched coping mechanisms, and it can be assumed that the more habitual a coping mechanism is, the more readily it will be activated. The data revealed that before the participants were able to utilize the new strategies suggested by the model, they had already "automatically" slipped into the entrenched coping strategies. It repeatedly emerged that the coping reaction is automatic and that the participants each seem to have a 'default' coping style.

"I just naturally kick back into mine", Dan stated (feedback interview, line 58). Later on James reported that "your original mechanism kicks in" (feedback interview, line 65). The use of the word 'kick' in both of these statements might also be indicative of the rapidity with which an entrenched mechanism is activated. This is important to note; not only do the paramedics require a coping mechanism that is swiftly activated while they are focusing on the job at hand, but the coping mechanism might be activated before the paramedic has the opportunity to choose *which* coping strategy is activated.

The participants also stated that the new model was not "second nature" to them. This reiterated the idea that a coping mechanism is first acquired and over time becomes automatic and entrenched to the point of being 'second nature'. While this process might be beneficial, there may be problematic implications if the coping mechanisms that were adopted are particularly rigid and maladaptive ones.

4.3.1.4 Absence of Initial Coping Mechanisms

All three the participants emphasised the intensity of their training, but highlighted that coping skills acquisition was not a part of the formal training process. In referring to EMS training, Alex stated that "there is nothing on how to cope with anything" (feedback interview, line 31). The use of the generalized terms 'nothing' and 'anything' might be reflective of the scale of the responsibility felt by the participant with regard to coping. In other words, the use of the word 'nothing' emphasises the total absence of coping strategies, while the word 'anything' highlights the range of scenarios and contexts in which coping strategies are required.

Based on the participants' statements, the absence of coping skills modules during training, means that the responsibility of adopting coping strategies fall solely on the

paramedic. This is further evidenced in Alex's comment: "none of us were given any help" when referring to dealing with the pressures of the job (feedback interview, line 123).

One can further speculate that if there are no adaptive, supportive strategies being taught and coping techniques need to be adopted as soon as possible in order to cope with the demands of the profession, that paramedics might adopt effective, but problematic coping strategies. This process is further compounded by each individual's personal history, life experiences and temperament. As these coping mechanisms then become entrenched, they become rigid and harder to challenge or replace.

This in many ways echoes the theory of psychological defence mechanisms. Defence mechanisms are initially evolved to protect the individual psyche from harm, but if these defences are not maintained in good order, or no longer serve their purpose adaptively, they can become rigid, outdated and maintain problematic reactions (Frosh, 2012). It is thus suggested here that maladaptive coping mechanisms that are entrenched and inflexible can end up having counterproductive effects for the individual. Put differently, paramedics who have adopted maladaptive coping strategies, might experience these coping mechanisms as effective, but these strategies may negatively impact on coping in the long run.

While the data reveals that coping mechanisms as 'healthy' or 'unhealthy' are viewed objectively, the literature previously discussed indicates that common problematic coping strategies include substance abuse, emotional distancing, violence (towards self and /or others) and catastrophizing through constantly imagining the worst possible scenario as an attempt to be psychologically prepared (Regehr, Goldberg, & Hughes, 2002; Scully, 2011).

4.3.2 Benefits of the Model

4.3.2.1 Stress Levels

Two of the participants felt that the implementation of an added task – the mental skills model – did not add to their levels of stress. The third participant agreed, but commented that "it is difficult to see if it's stressing you out more" because there is a range of mental activity at any given moment (feedback interview, lines 89, 90). This highlights the elevated levels of stress at which the participants operate, and it is useful to note that the mental skills model did not seem to *add* to their stress.

With regard to stress *reduction*, James felt that the model helped him to relax when at home and stated that "switching off from work at home was a bit easier" (feedback interview, lines 40, 41). Alex commented that the model made her more aware of when she was ruminating or stressed, which activated her own coping mechanisms sooner than it might normally have. This would suggest that early awareness of a maladaptive stress response could potentially facilitate the activation of an adaptive coping strategy, thereby reducing stress.

4.3.2.2 Trying

"Trying" and having "tried" was a theme that presented during the feedback in various ways and across multiple contexts. For example, "I tried your system" (feedback interview, line 6), as stated by one of the participants, related to the overall application of the mental skills model, while "we tried" referred to the resuscitation attempts of a deceased patient (feedback interview, lines 16,17). "I've tried, I tried" later referred to previous attempts at managing anxiety (feedback interview, line 52), while the theme presented once more when describing the application of the model as it related professionally and personally;

"I tried quite a few of the things at home. To forget about work" (feedback interview, line 39).

The theme of "trying" is notable as it speaks to the paramedic participants' penchant for striving towards different outcomes; be it saving a patient's life, improving their own performance, or making an effort to acquire new mental skills. The paramedic participants' propensity towards "trying" would thus also have been an important attitude with regard to trying the mental skills model. The feedback findings would have been less reliable had the participants not tried or applied the mental skills model.

4.3.2.3 Early Introduction

The participants unanimously felt that the model would be of significant use and benefit if introduced early on in a paramedic's training and career. James stated that "if you taught it from the beginning it will come as second nature" (feedback interview, line 78). This links to the automatic activation of coping mechanisms previously discussed. James went on to state that as with "anything you teach, if you start it right in the beginning, it's going to do good in the long run" (feedback interview, lines 170,171). The participants did not only feel that the model could be useful if introduced at the beginning of the Emergency Medical Services career, but stated that a model like the one they applied *should* be implemented.

Alex: "Should be implemented. A model like this-"
James: "It should be compulsory".
Alex: "It should actually be compulsory".
Researcher: "So you're saying university level will be a good starting point?"
Alex: "Even short courses, hey. So at the university level I think the model will be incredibly useful"

(Feedback interview, lines 219-228 and 236-238).

This theme can be linked to the sub-themes of entrenched coping mechanisms previously discussed, and the notion that adaptive coping mechanisms should be acquired early on, before problematic strategies become rigid and entrenched. This theme also echoes the findings of the literature that argues that aspects of mental toughness, including dealing with hardship, coping with anxiety and focusing, can be acquired and developed (Connaughton & Hanton, 2010).

4.3.3 Limitations of the Model

4.3.3.1 Conscious Effort

The participants stated that, even though the model did not add to their stress, it took a considerable amount of conscious effort to apply the mental skills model. Linking this to the theme discussed previously that emphasised the importance of coping mechanisms as 'second nature', the application and activation of the mental skills model did not take place without effort. Even though mental skills training requires a degree of dedication and effort, it may possibly discourage individuals from diligently cultivating the mental skills model if it requires too much conscious labour (Jones, 2005). However, drawing on the previous discussion of early introduction of coping strategies, the early introduction of the model might circumvent the added conscious effort or labour. It is also important to note here that

effort is important to encourage, and should not be viewed as a deterrent when it comes to acquiring new skills (Jones, 2005).

If the individual's profession requires a great deal of mental exertion in and of itself, the addition of another mental task that requires consistent effort might be unappealing. Had the participants been afforded the opportunity to implement the model over a longer period of time, along with regular contact sessions with a trainer, the participants may have experienced the model as requiring less effort. However, this speculation can only be evaluated with further research on the matter.

4.3.3.2 Transferability

Similar to the difficulty around stating whether group coping mechanisms such as humour and teasing can be generalized across all paramedic bases, it also cannot be stated that the applicability of the mental skills model can be transferred to include all paramedics across South Africa. This theme arose in relation to the participants stating that 'group mechanisms' are formed, as stated by James: "I also noticed, I think at the [ambulance] base you form a coping mechanism as a group" (Final Interview, line 136). When the participants were asked whether they think this might be the case across all ambulance bases, they differed in their opinions. With regards to whether the participants felt that the adapted model for this study would be applicable to paramedics outside of their team, they stated that the model "should be compulsory" and "it should be a part of our [paramedics'] CPD points" (Final Interview, lines 228-231).

4.3.3.3 Process

The subthemes of entrenched coping mechanisms and automatic activation previously discussed, suggest that the acquisition of a new mental skills model may have to compete with existing mechanisms already in place. Linking this to the notion that participants felt

that a concerted effort was needed to apply the proposed model, it can be stated that the successful application of the model may necessitate a long, dedicated process.

The process is further complicated by the presence of unpredictable tasks while on the job, as certain scenarios might elicit certain responses. For example, a call-out that requires a simple and uncomplicated intervention, might require less focus and attention, and less post-performance debriefing. In contrast, a particularly difficult call-out that includes loss of life and risk to self, might necessitate more intensive mental skills strategies.

However, in a different context, for example while at home, the participants felt it was easier to try some of the model's techniques, and James reported: "But switching off at home was a bit easier. You made me think about that – actually switching off from work at home, spending more time with the kids, that was-I did find that better and easier" (feedback interview, lines 39-42). This is worth noting as a possible starting point whereby the techniques can be practiced at home, and eventually extend to including the work space as well. The benefits of mental skills training thus includes the fact that it can be transferable from one domain of an individual's life, to another.

The process of adopting the mental skills model is therefore an uncertain one, with the chances of interference, distractions, unpredictability and automatic activation of existing coping skills all potentially impacting on the applicability of the model. Linking these findings to the literature discussed, the theme of process is commensurate with Jones's (2005) statement that mental skills training requires long-term dedication and consistency, and is not designed to replace or remedy existing behavioural or cognitive problems.

4.3.4 Post-Traumatic Stress Disorder

> *Alex: "-You'd probably find people in the EMS are some of the most stubborn people when it comes to having to admit that something is wrong," (Feedback Interview, lines 150,151) and "- the romance of the lights and sirens is lost when you're looking at this darker side of PTSD" (Feedback Interview, line 168).*

The theme of PTSD emerged in relation to the participants' discussion around the applicability of the mental skills model in the EMS field and its potential relation to the high staff-turnover in the industry. This was particularly notable given the literature discussed around the loss of valuable human resources in the EMS (Binks, 2011). As previously discussed, based on the literature reviewed, the emergence of PTSD as a theme was not unexpected or surprising, however, the depth and unanimity with which the topic was engaged with by the participants was notable.

The participants stated that the mental skills model would be particularly beneficial in preventing the development of PTSD symptoms.

Alex: "I think what might be a really interesting thing, I think that's swept under the carpet, is PTSD in EMS. I think that's something that is swept under the carpet a lot and people are honestly scared to admit that there is something wrong. And the majority of people that go off the rails is because of that."
Researcher: "Do you feel a mental skills model could be a preventative aid for PTSD developing?"
James and Alex (simultaneously): "Ja".
Feedback Interview, Lines92-96, 117-119

The participants make sense of the development of PTSD based on an inability to cope effectively with the traumas of the profession.

It was therefore posited by the participants that an absence of adaptive coping mechanisms, together with a lack of reasonable outlets for stress, such as a hobby, increases the risk of PTSD (feedback interview, lines 111-116). It was stated by one of the participants that being familiar with a mental skills model like the one presented in this study, and having it in place to help develop coping mechanisms, "can drastically help" to prevent PTSD among emergency medical service providers (feedback interview, line 116).

The participants went on to discuss that the occurrence of PTSD among paramedics is generally not openly discussed and felt that many paramedics avoid admitting to symptoms thereof. The participants stated that the possible under-reporting of PTSD among paramedics might be linked to fear of job-loss, fear of stigma and concerns around discouraging aspiring paramedics from pursuing a career in the field (feedback interview, lines 95-106). It is suggested that these fears, in addition to the other stressors that accompany the job,

emphasise the importance of coping and support strategies. The participants felt that the model proposed in this study could be a preventative aid for PTSD (feedback interview, lines 117-119).

4.3.5 Military Mental Skills Models and Militarised Training

The participants related to the 'military' theme in two ways. The theme presented in relation to what the participants understood around military mental skills models. However, it also presented whenever the participants referred to their own formal training as paramedics.

All three the participants had some form of training that drew on militarised methods while training to become paramedics. These methods included marching, push-ups, confronting phobias, excessive exercise, day-night reversal activities, and similar activities that the participants interpreted as designed to "break" or "destroy" the trainee (feedback interview, lines 185, 195 and 207).

The participants were of the opinion that by incorporating these techniques into the training, the trainers forced the trainees to develop their own coping mechanisms, and to discern the stronger trainees from the weaker (feedback interview, lines 191 and 210). The participants went on to explain that the training was designed to "break" one down, but then to rebuild one again. However, the participants felt that the rebuilding did not always happen, and therefore trainees were often left without adequate or any coping strategies at all (feedback interview, lines 193-194).

When the military mental skills model of this study was introduced to the participants, and the model was implemented, the feedback revealed that there was an element of surprise regarding the content and approach of the model.

Alex: "I was surprised when I read your bibliography and I read the model – I was actually surprised that it was military-based".
Researcher: "Surprised, why?"
Alex: "Because it was almost like from a psychology book. Like when you think military, you think discipline, hardship. But this was very almost whimsical. So I was very surprised. Like the military and the model was in very stark contrast from what I had expected." (Feedback interview, lines 241-246).

Given the participants' background in militarised training techniques, it is reasonable to expect that a 'military mental skills model' would entail techniques grounded in discipline and hardship. One could also speculate that the participants might have been reluctant to engage with a model grounded in military mental skills, considering the participants' previous experiences of being 'broken down' and left without developed coping strategies. This is evidenced in the statement made by Alex with regard to the contrast between the participants' experiences of military models, and the military mental skills drawn on in the model for this study. It thus seems that the participants had a particular set of assumptions and connotations bound to the term 'military model', which stood in contrast to what they found in the adapted mental skills model explored in this study.

The degree of surprise also speaks to the paramedics' perception of the differences between the military and EMS, and suggests that the paramedics did not expect military mental techniques to be applicable in the EMS context. However, as demonstrated in the literature, while the stressors experienced by military members are quite different to those experienced by paramedics in the field, the emotional, psychological and interpersonal

sequelae amongst paramedics and members of the military are comparable (De Wiggins et al, 2010; Hammermeister et al., 2009; Thomson & McCreary, 2006).

Despite the element of surprise and preconceived ideas regarding the mental skills model in this study, the themes discussed above demonstrated that aspects of the model were useful, and therefore the applicability of military mental skills models to the EMS field is significant.

CHAPTER 5

5) Summary of the Findings and Reflections

The analysis revealed that the theme of 'coping' was a central feature for the participants, and aspects of the mental skills training model was viewed by the participants through the lens of the model potentially providing coping skills. The theme of coping referred to coping in general, as well as the various nuances of coping. These nuances included the perception of coping strategies as something that is automatically activated and deeply entrenched. The participants also felt strongly about the lack of coping strategies taught during formal EMS training. Furthermore, the findings revealed that the early introduction of the model during EMS training was considered to be vital by the participants, especially at university level.

The analysis further revealed that the participants felt that the model in this study can be useful in preventing PTSD among paramedics. The analysis went on to show that the model did not add to the participants' stress levels, but in some aspects helped with stress reduction and management.

The analysis revealed that the participants were surprised by the model being rooted in military mental skills, as the participants had expected a model that centred on discipline and hardship.

Finally, the analysis revealed that there were some limitations to the model, and that these included the lack of transferability, the conscious effort required to adopt the mental skills model, and the interference of existing coping strategies with the acquisition of new mental skills.

With regards to researcher reflexivity it bares mentioning that the researcher, on occasion had to refrain from providing *ad hoc* or *in vivo* psychotherapy when the interactions between the researcher and the participants veered in such a direction. For example, a

participant asked the researcher about possible techniques for dealing with the symptoms of PTSD. This posed an ethical challenge as the study did not focus on the amelioration of PTSD symptoms, but the researcher is ethically obliged to provide psychological assistance or referral where necessary. In this instance the researcher advised that a list of practitioners and resources are available should the participant wish to pursue the topic of PTSD in further detail, but that the researcher's role in this study is not in the capacity of psychotherapist. There were numerous other occasions where the researcher reflected on maintaining the boundaries of the research relationship, and interactions that posed the risk of blurring those boundaries with that of therapeutic intervention. There was also ongoing reflexivity around what information the researcher hoped to gain from the study, and the information offered by the participants, and conducting the study in such a way as not to influence or direct the participants' experiences and responses in any way. With regards to rapport building and maintenance, the researcher reflected on the notion that the participants seemed interested in gaining information about the researcher herself with regards to experiences of dealing with trauma and emergency, personal experiences and personal relationships. While the researcher recognized that a certain quality of interaction was necessary to establish rapport, the researcher did not deem it fit to disclose personal information to achieve rapport. It is reflected here that a collegial and professional research relationship was successfully established. Finally, the researcher remained cautious throughout the research process regarding psychotherapeutic knowledge and biases influencing the research study. For example, the researcher tried to prevent existing knowledge with regards to psychological characteristics, diagnoses, trauma and other psychological theory and practice from interfering with how participants' feedback and interactions were made sense of. This became particularly important during the transcribing of the participants' interviews and the development of the model.

CHAPTER 6

6) Conclusion and Recommendations for Future Research

The overarching aim of this study was to explore the *adaptability* and *applicability* of military mental skills training techniques in the context of South African paramedics. The study also aimed to explore whether an adapted mental skills model, such as the one introduced in this study, could potentially have an impact on overall performance and serve a supportive function. A prominent emerging theme was that of PTSD among paramedics, and it was an area that the participants felt should receive much more attention, research and intervention. A further prominent theme included the participants' firm opinions that coping strategies and mental skills training models should be incorporated in paramedics' formal training. These themes emerged in addition to the themes aimed at addressing the research question.

The analysis revealed that various aspects of existing military mental skills models can be adapted to be of relevance in the emergency medical services field as it related to three paramedic participants. Furthermore, the analysis demonstrated that despite the participants' surprise at the model being rooted in military mental techniques, the model was experienced as applicable to the paramedics' needs and field. This was further evidenced in the statements by the participants that the model should be implemented, as is, at a formal tertiary training level.

In terms of whether the model could be potentially useful in staff retention strategies, the analysis revealed that the participants felt that PTSD is largely responsible for the high levels of staff turn-over in the field, and that a model like the one in this study could go a long way in preventing PTSD. However, further research focusing on specific staff retention strategies will be needed to substantiate these findings. It is also recommended that future

research be conducted around PTSD among paramedics, and strategies to address this, as both the analysis and the review of literature revealed that PTSD is a problematic feature of the paramedic occupational environment.

With regards to the mental skills model's potential for enriching performance, the analysis revealed that some of the techniques were useful in the management of stress or arousal, and it could be hypothesised that this could have an impact on overall performance. However, further research aimed at mental skills models to enrich or elevate performance among paramedics is needed to substantiate the hypothesis.

A further recommendation for future research involves the introduction and application of the model amongst a larger participant sample and for a longer period of time. This study recognizes that the findings concluded from three paramedics is not transferable to a larger paramedic population.

However, it is argued that the findings of this study revealed the importance of research in the field, and the potential for future research. The study also confirmed the lack of interventions with paramedics regarding mental skills training and adaptive coping mechanisms, and is commensurate with what was found in the existing literature. Finally, the study demonstrated that military mental skills models were adaptable and applicable in the context of the three paramedics who participated in this study.

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Appendix A: Copy of the adapted Mental Skills Model

"Exploring the adaptability and applicability of military Mental Skills Training for South African paramedics"

Mental Skills Training Programme

Adapted from Military Mental Skills Models for use by Paramedics

Compiled by: Chantél Minnie, 2017

The following programme has been compiled by adapting or extracting mental skills training techniques from the following Military Mental Skills Models:

1) *Personal Performance Plan: Application of Mental Skills Training to real-world military Tasks*. DeWiggins, Hite, Alston, 2010.
2) *Enhancing Mental Readiness in Military Personne*l. Thompson and McCreary, 2006.
3) *Examining the psychological skills used by elite Canadian Military Pilots*. Hohmann and Orlick, 2014.

The adapted model also includes theory incorporated from the following sources:

1) Jones, R. (2005). Mental Skills Training: High Performance for Mind and Body.
2) Nicholls, A., Polman, R., Levy, A., & Backhouse, S. (2009). Mental Toughness in Sport: Achievement Level, Gender, Age, Experience and Sport Type Differences.
3) Connaughton, D., & Hanton, S. (2010). The Development and Maintenance of Mental Toughness in the World's Best Performers

Mental Skills Training Techniques

- It is useful to remember that *mental skills* can be acquired: Just as Emergency Medical Services skills are acquired and maintained, mental skills can be acquired and should be maintained through regular practice and perseverance.
- *Mental Toughness* can be developed through mental skills training: mental toughness can be enhanced by considering *how* a challenge is appraised and

perceived. Is the challenge viewed with a growth mind-set, or is it perceived as impossible?

- *Mental Toughness* includes the ability to regulate levels of anxiety and arousal: this can aid in addressing the "switched off during the task at hand" versus "always switched on" phenomenon.
- *Self-belief* in one's abilities: mental toughness focuses on the self-belief and trust in one's abilities, which can go a long way towards addressing issues around second-guessing, and a perceived sense that there is a mismatch between the demands of the situation and one's abilities (in other words, stress).

Encourage yourself to focus on the following techniques as soon as viably possible after each call.

Individual or Self-Debrief:

The goal of this mental technique is to help you make sense of the experience you have had, processing what has occurred, as well as focusing on areas of improvement and success. This technique makes use of mental self-talk and reflection.

STEP ONE: Take a moment after the completion of a call and say to yourself;
"Right now, I will take three deep breaths. The call is over. I will release any tension, because the tension will no longer serve me." Repeat this like a mantra if necessary, until you feel ready to move on to the next step.

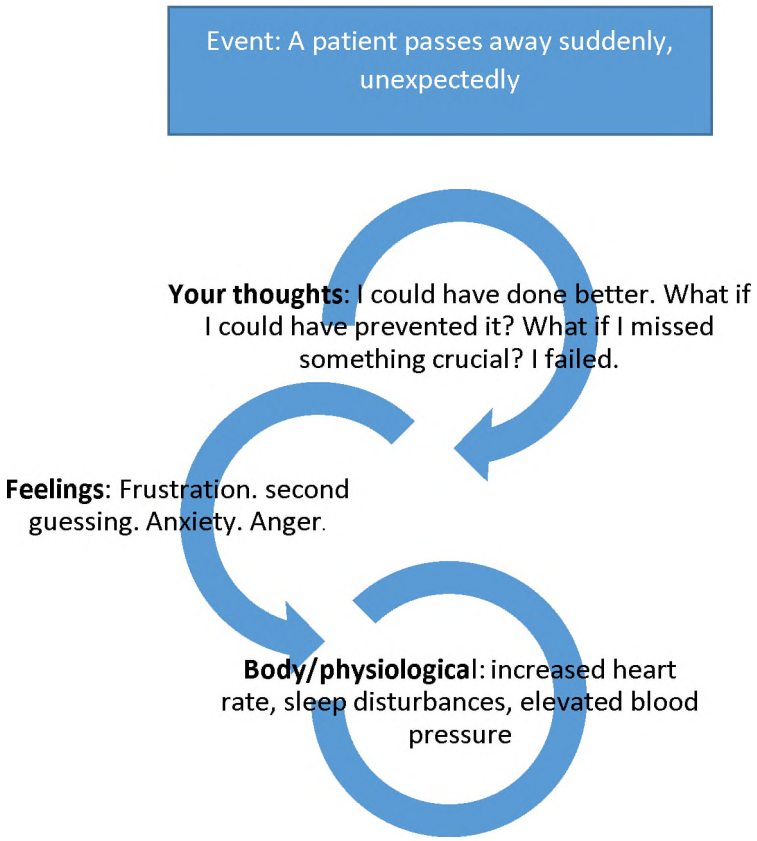
STEP TWO: Next, say to yourself;
"I will now take a minute or two to reflect back and identify elements of the call that went well, and elements that could have been improved upon." It is important that when doing this you adopt a ratio technique of 1:1. In other words, for every one element that you can identify as needing improvement, you must add one element that had gone well. This may be anything as straightforward as getting your gloves on quickly, to driving the ambulance without causing a collision. The point is that for every element you can identify that may have been improved on, that there are bound to be aspects that went well. This avoids magnifying the mistakes, and takes into account the various components that worked.

STEP THREE: Finally, own your mistakes, but do not be too hard on yourself. Remind yourself that you were acting within certain situational parameters, which means that you should accept your limitations, and that mistakes are bound to happen.

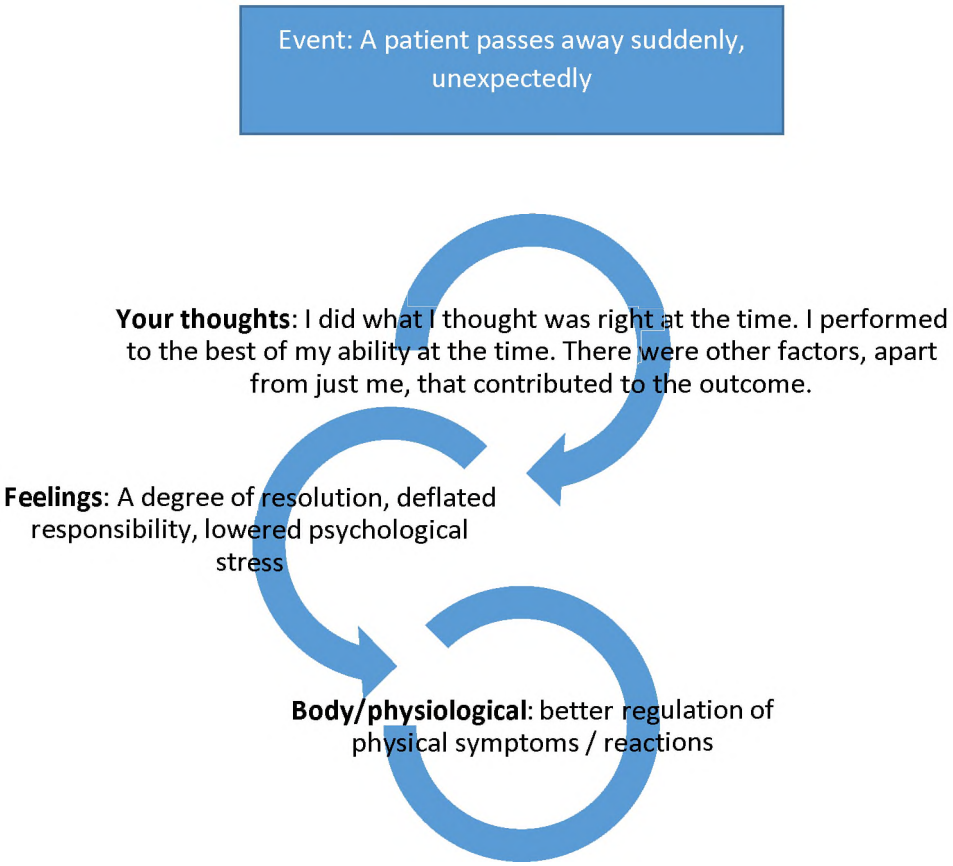
Dealing with difficult emotions, self-doubt and second-guessing:

This mental technique is rooted in a cognitive behavioural paradigm. This refers to the link between cognition (thoughts), physiology (body), emotions (feelings) and behaviours. These components all interact and play a role in our daily experiences, our experiences of ourselves, and our experiences of others. The emphasis of this technique is not on the situation we experience, but how the situation is *appraise*d. In other words, the way in which you think about something, will have an effect on what happens in your body, how you feel, and how you behave. These reactions are then used as confirmation that a situation was either "good" or "bad".

Look at the examples below, and try to think of examples that are more specific to you.

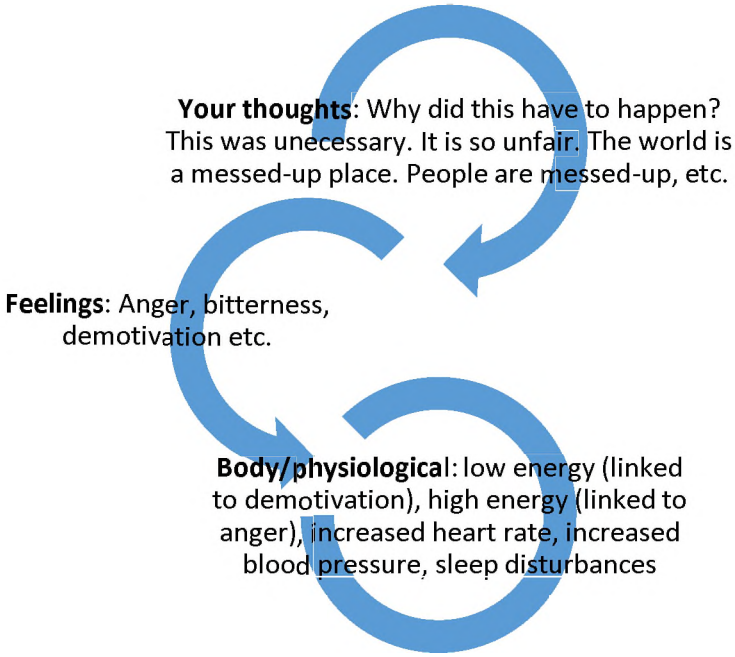


This cycle reinforces a negative appraisal of the situation. By changing the way in which the same situation is appraised, you could end up with a different outcome. Consider the next example.

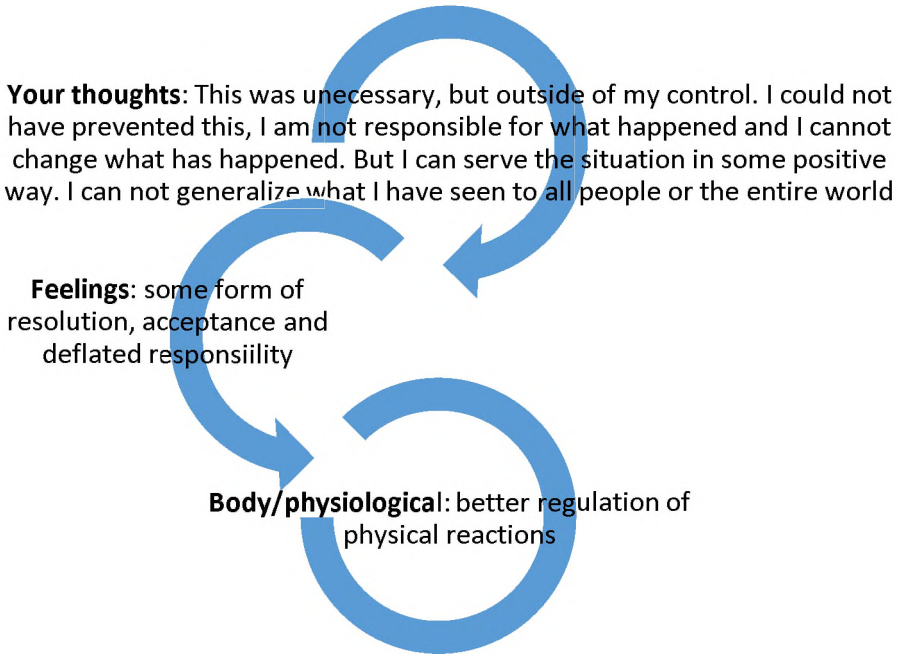


This is a much more forgiving, realistic and positive appraisal.

In the following example, consider the impact of how a situation is appraised as it relates to a family suicide, or death caused by an intoxicated driver.



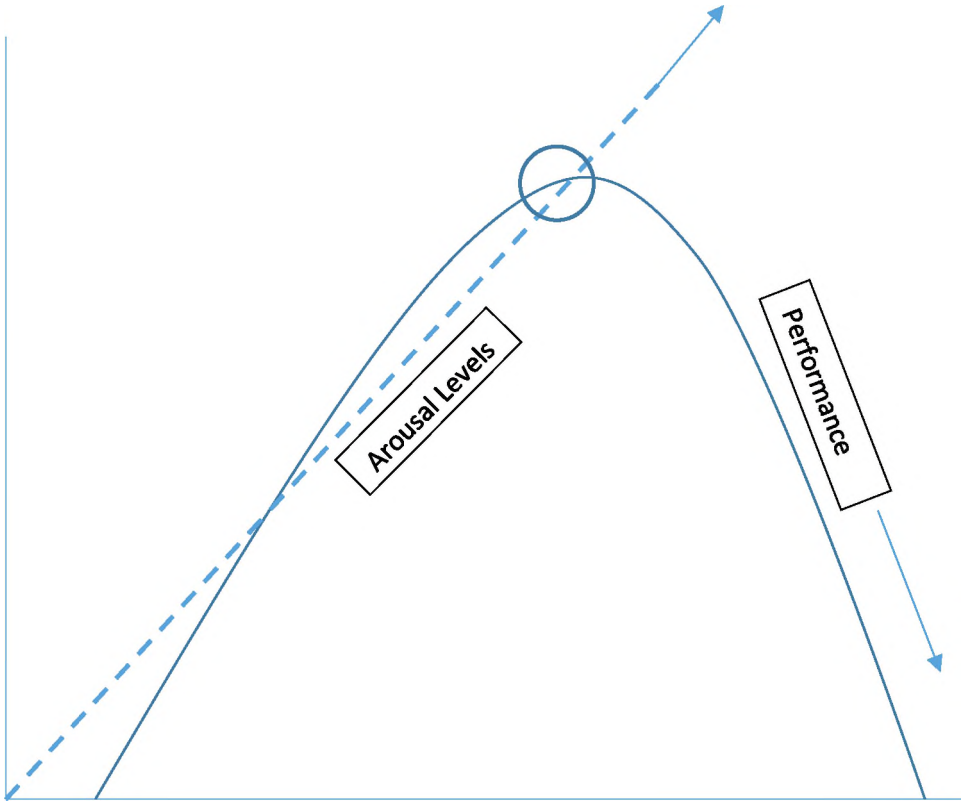
This interaction of thoughts, feelings and physical symptoms reinforces the negative appraisal of the situation. Using the same scenario as an example, consider the below alternative appraisal.



This is a more realistic appraisal of the situation. But it is important to note that you should not dismiss your feelings, but rather weigh up the cost versus benefit of having those reactions. How does your anger serve you? What does it do for you? Is it helpful? Does it alter what has happened in any way?

Arousal Regulation:

Perhaps as a result of the unpredictable nature of the job, your brain and body might feel the need to be in a constant state of readiness. This might mean that even when you are at home, during leisure activities or with friends and family that you are always "switched on". On the other hand, during calls or job-related tasks, you are often "switched off" and focus only on the job at hand. Being "switched off" therefore serves an important function. However, there might be challenges if you are unable to "switch off" during times that it also matters (for example when you need to rest or be with loved ones). The below diagram explains why this might be the case.



This image shows that in order for one to perform at an optimal level, the right amount of arousal is needed. However, if the arousal levels continue to increase after the job has been

completed, or the level of arousal increases beyond what is helpful, performance will deteriorate, and heightened arousal is no longer helpful. It can therefore be suggested that

- If your arousal levels do not return to baseline after the task has been completed, you may always feel like you are and should be "switched on".
- If your arousal levels continue to rise during a task, this may result in mistakes caused by stress. Remember that stress occurs when there is a *perceived* mismatch between your abilities and the demands of the situation.

You may also be better equip to 'read' a patient or situation, if you are attuned to your own mental and physical state. It is therefore important to practice ways in which the arousal level can be lowered to baseline if it is not needed or beneficial.

The following technique may be useful in self-regulation, staying "in the moment" and switching on and off as needed.

The ABC Technique:

Attention: ask yourself how and where your attention is focused? If you are attending or responding to a call, your attention should be on the task at hand. If you are busy with a leisure activity or spending time with loved ones, your attention should be on that activity / loved ones.

Body: check in with what your body is telling you about your current state of arousal. Is there muscle tension? Is your breathing rapid? Is your heart rate elevated? Some physical responses might aid you during a call, but they may be signs of unnecessarily high levels of arousal during times when you should be relaxing.

Cue-words: chose one word or a phrase that signifies relaxation, focusing and calming down. When you feel your levels of arousal spike beyond what is useful, engage with the word that will remind you to lower this to base rate. Cue-words may also be substituted by mental imagery, if that works better for you. For example, imagine a stop-sign if you feel that your thoughts are spiralling out of control or if you start doubting yourself, or visually imagine your shoulders relaxing when you start feeling tense.

Ultimately remember that the success of any mental skills technique depends on personal commitment to the technique, as well as the implementation thereof as frequently as possible. What might feel foreign at first will become automatic when practiced regularly enough.

Notes, Comments and Questions:

Appendix B: Transcription of Final Group Interview

C: I was thinking time wise it might be best if we just sit in the group that we are now and have an informal chat, instead of breaking into pairs and having feedback. But the general themes that I would like for us to cover is if you could tell me what worked, what didn't work and if you have any suggestions, and like I said the last time, to be as honest as possible, any feedback is usable. If we could start by saying, well, over to you guys. I don't want to guide the-

A: Okay. I will go first. I tried your system. Dan and I had a run of bad luck. About a month ago where we had a patient walk to the ambulance and die. Literally on the way to the ambulance. She said she wanted to walk, so she walked to the ambulance, stepped into the ambulance and collapsed there. No pulse, she was like this size {gestures}, so CPR was a nightmare {laughs}. {the rest also laugh}.

C: So even before you could do any intervention –

A: It was an absolute nightmare. We got here to the hospital. They're busy there with a resuss, there's no one there to help us, we needed an extra hand, this patient was massive. We eventually called our own time of death in the ambulance. 20minutes after we arrived? {asks Dan}

J: Did you carry on that long? Shjoh {inaudible}

A: We tried.

D: We tried {in response to James}

A: The thing is, I don't know if I'm speaking on behalf of everyone else, or if it's just me, is that when you've been in this profession for a number of years, you're working on coping mechanisms that you've built up over the years, so you *naturall*y slip into your own coping mechanism. So I didn't actually, at that point of time, maybe I should have utilised your coping mechanisms, but I a*utomaticall*y slipped into my coping mechanism.

J: Ja. I also found that.

A: So I was thinking, like the concept, and the concept that was put into place, was actually really good. But it may be something that could be introduced to people *just* coming into EMS. They actually don't have a coping mechanism in place yet and don't know how to deal with it. Like all of us is like – {breaks off}. And that is a *really* open spot, all of us, even when I was just studying at university, they give you the theory, they give you your, sort this out, this is how you treat a patient – but they don't actually show you how to cope.

J: No. Nothing.

A: There's nothing on how to cope with anything. And that's sort of something they expect you to get along as you go along. So all of us probably have very unhealthy coping mechanisms, but that's –

J: No. I think unhealthy coping mechanisms is like drinking and stuff like that

A: And drinking and smoking.

J: I don't do any of that

A: We all have our own way of dealing

J: Dan has an alcohol problem {joking}

D: Ja. I have an alcohol problem. I hate alcohol. {inaudible, laughs}

J: I tried quite a few of the thing at home. To forget about work. But at the same time it's difficult because you're always on stand-by. Off once a weekend. So …one weekend a month. But switching off at home {sighs} was a bit easier. You made me think about that – actually switching off from work at home, spending more time with my kids, that was – I did find that better and easier.

C: Was there anything that you found particularly useful in terms of doing that?

J: {THINKS} I don't know- it's difficult to say, like we were saying, being in it for so many years, you don't really know what is useful and what is not useful.

A: What I did find potentially useful was that, being more aware that you're overthinking. You –

J: Ja.

A: You're more aware that you are potentially overthinking the situation. From the workshop and from the literature you made us read. Potentially there you might know that you're overthinking or over stressing, but it was difficult to think back on what you laid out, because there's already a coping mechanism in place that you've used for a certain amount of time.

J: Well I've tried. I tried. Tried to come up with a word like say "calm down", or whatever

D: {inaudible} That word for me. Especially that word.

J: But I swear.

A: The word {they all laugh}

C: Was there anything for you that worked or didn't work?

J: {thinks} Like me, I mean, fifteen years in this service

D: I just naturally kick back into mine

A: It's the humour

D: I've just always had that humour

J: That dark sense of humour {J, K, R inaudible}

C: So something that potentially worked was becoming more aware of when you were doing something, not necessarily then intervening at that point

A: Ja.

J: Ja. Your original mechanism kicks in, but you're definitely aware of the situation.

A: That you're overstressing maybe, and like, as I've said, where you might not have been aware of it before you're sort of like more aware of the signs –

J: Ja.

A: Actually then your own coping mechanism kicks in a lot earlier than it might have done before.

J: Making you think about things you would never have thought about before.

C: And after that little workshop we had, did you have to consciously force yourself to think of some of those things we spoke about?

A: Ja

J: Mm mm

A: It was like, it didn't come like second –

J: Ja.

A: I was like, okay, we've got this mechanism –

J: If you taught it from the beginning it will come as second nature.

A: Ja. Ja. If its taught from where people have just started studying, I think it will give them a good coping mech. But I definitely had to force myself to do it.

C: Ja, so quite a conscious effort

J: Ja

C: Did it add to your stress at all?

J: what, like add more stress?

C: Ja, like now there's an extra thing to do and think about

A: no. no. {thinking}

J: No. See its difficult too, coz when you say that, when you treat a patient, yesterday I was feeling like shit, infection in my eye. At the accident, when I was on scene, I forgot about everything. Your focus is just on that scene. And then I was feeling fine. You see its difficult to see if its stressing you out more, but I don't think it was. For me personally it wasn't.

D: {inaudible}

A: I think what might be a really interesting thing, I think it's something that's swept under the carpet, is PTSD in EMS.

J: Ja.

A: I think that's something that's swept under the carpet a lot and people are honestly scared to admit that there is something wrong. And the majority of people that go off the rails is because of that-

J: And you lose your job

A: Because you get scared that because there's actually a stigma attached to it you, like James said, you'll lose your job if you have to admit that you were battling-

J: Meanwhile

A: Ja.

C: So you think there's also under reporting

J: D*efinitely*. Definitely. By the millions. Coz everybody in the EMS service, I can tell you now, I'll put my cock on a block, 90% of them have signs and symptoms of the beginnings of post-traumatic stress.

A: Ja.

J: You can say what you like, you can be as strong as you want, you will have post-that, what?

A: post-traumatic stress disorder.

C: Alex, if you had to link that to suggestions for what we can do to improve that model in terms of PTSD, what are you thinking?

A: I think, um, honestly, it's because coping mechanisms weren't taught early on. Like we said, its , it was never taught to us when we started our training, and it was always something that you have to learn by trail and error. And I think that that is where if you don't have an outlet or hobby or something that you can focus on, that that increases the risk of PTSD. So I think if people make a focus on it when people are starting, that people have already coping mechanisms in place and have a system in place to deal with it, I think that that can drastically help.

C: So you feel a mental skills model could be a preventative aid for PTSD developing?

J: Ja.

A: Ja {simultaneously}

A: Coz you'll have it where people do have unhealthy coping mechanisms - the drinking the smoking, all sorts of-

J: The drugs.

A: The drugs. Just finding a way to just really – because they weren't. I mean none of us were given any help with that, so I think that a model early on will have a huge benefit on PTSD

C: And how we did that model with the specific things, would you say that it will be a useful thing to build on?

J: Definitely.

A: I think it's a very –

J: - if it's taught from the beginning it's very –

A: - I think the beginning is the important time.

C: What in that whole model do you think was the least helpful (all thinking)

A: Actually, funny enough, the image. I think that was the last thing I found helpful. I think the most important part that was, was your over-stress levels and being aware that it's – if you become aware you can activate your coping mechanism a lot quicker. SO I think the becoming aware that your stress levels are getting out of hand and learning to recognise that early I think is –

J: you know what I also noticed, I think at the base you form a coping mechanism as a group.

D: Mm mm

J: Because there's a lot of teasing going on and that's a coping mechanism. Say what you like, that's a coping mechanism. And there's a lot of ripping off and there's a lot of jokes.

D: Is that how you guys cope?

A & J: Well you do drink (teasing).

D: When I'm off, ja.

C: So let's say that's at your guys', at this base, a coping strategy overall for the team, that's not to say it might be the same at another base.

D: Ja.

J: Most likely will.

C: the model we used here with you guys specifically, do you think that's something that could be generalised to other bases?

D: (inaudible) but the chance is there.

A: (Inaudible) you'd probably find people in the EMS are some of the most stubborn people when it comes to having to admit that something is wrong.

J: Unless you want to be medically boarded

C: so they don't do any form of training like this?

J: No (emphatic). Well, I haven't been trained like that.

A: I went to university and there was nothing about it, there was no effort placed –

J: I think there was a little paragraph in your book about –

A: Ja, but nothing about coping mechanisms.

J: Ja.

A: It's like PTSD because of a patient, it's not because of –

C: why do you think that is?

J: I think it'll chase people away.

C: Scare them off?

J: Scare them off.

A: Ja. Especially as now in the university they're wanting to take people straight out of school. So now if there's a whole model on you being stuffed up as a person –

C: No one will be that keen to –

A & J: Ja.

A: The romance of the lights and the sirens is lost when you're looking at this darker side of PTSD and people going off –

J: But I still think it will be – it's like anything you teach, if you start it right in the beginning, it's going to do good in the long run. Because eventually you're going to start thinking oh shit, maybe I should start doing what they told me to do. And there's nothing on it, there's absolutely nothing. I've never heard of anyone being taught coping mechanisms.

A: It's like they're more interested in theory and getting that sorted.

J: Theory, practical, ad you go out. Go do your job.

A: Ja, Ja.

C: And that's why we are so keen to do something with our research, because the stats keep showing us that medics are battling, and everyone knows that, universities know that but why is no-one doing something to prevent it from escalating?

J: They're scared of losing medics.

A: Ja as I've said, that once the romance of the sirens have gone, you see what it can be really about.

D: But then your varsity courses, how many have you guys started?

A: Ja. You see on my course there were 28 of us that started, end of second year when we qualified, there were six of us. They have this, and what they do again to drop numbers, the first day of lectures there'll be 50 per class. Then they'll do like a PT day where they absolutely destroy you. They will go through your phobias, they make you run until you vomit, they make you march, push-ups and all sorts. Ensuring a further drop-out rate of another 50%.

C: Why do they do that?

A: Smaller classes? I don't know, but they –

J: No! I think what it does is if you pass –

A: Like sorts out the stronger from the weaker.

C: Is that what you said in the beginning about they break you down?

A: The initial plan is to break you down and build you up, but a lot of the times they break you down and then "my work here is done".

J: Well in my course the first thing my instructor said was we're going to break you.

A: Ja, but in your guys' course they built you back up again.

J: Ja. But they till broke us down. Geez, I mean you should know (addresses Dan)

D: Ja, but I'm still broken (they all laugh).

C: SO they push to see how far you can go>

A: to breaking point, ja.

C: Because then they know you'd be able to manage whatever you get faced with?

J: Ja.

A: so they kind of in a way force you to make your own coping mechanisms. In my first year they do a thing called tree peaks. And you're not allowed watches, they get you out of bed at 2a.m. in the morning and it's 36 hours of no sleep, PT, rescue, patients, more PT, for 36 hours and you do not sleep, and if you fail that you fail the year. So it's also another way of getting you to the point where you re so broken.

J: because you don't care anymore.

A: And the wanting to see if you can get to that point and carry on. So in a way they force you to make your own coping mechanism.

J: bastards.

A: Ja.

C: Dan, you've been quiet.

J: It's best like that.

C: Do you want to add anything?

D: No I don't want to add anything.

C: Generally in agreement?

D: (nods)

C: I don't want to put words in your mouths, but so generally it can be quite useful (the model) if implemented in the beginning

A: JA.

C. And generally it was quite –

J: I don't think *can.* It *will* (emphatic)

A: It *should.*

J: I don't think can is the word. Will be useful.

A: JA. And should be implemented. A model like that is –

J: It should be compulsory

A: it should actually be compulsory.

J: Just like the Health Professions Council should be looking after their medics. By sending them to, forcefully, to a psychologist. At the least once a year.

A: It should be part of our CPD points. Coping mechanism training should be as important as your bloody ethics course. So it should be implemented because no-one has ever come out okay before.

C: How do you obtain those (CPD)? Do you go to workshops, do you –

D, A & J: Conferences, courses

C: Who organises those? Do you have to do it yourselves? (HPCSA discussion)

C: So, you're saying university level will be a good starting point?

A: Even short courses, hey. So at the university level I think the model you presented will be incredibly useful.

C: And what do you guys think about the fact that those things were mostly based on military mental skills models?

A: I was surprised when I read your bibliography and I read the model – I was actually surprised that it was military-based.

C: Surprised why?

A: Because it was almost like from a psychology book. Ike when you think military, you think discipline, hardship. But this was very almost whimsical. So I was very surprised. Like the military and the model was in very stark contrast from what I had expected.

{Conversation turns to the food on the table – interview ends shortly after}