EMERGENCY WORKERS' REACTIONS TO TRAUMATIC INCIDENTS

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DECLARATION

I declare that this dissertation is my own, unaided work. It is being submitted in partial fulfillment of the requirements of the degree of Bachelor of Arts (Masters) in the University of the Witwatersrand. It has not been submitted before any degree or examination in any other university.

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ABSTRACT

As the past decade has witnessed a growing interest in the nature, causes and management of stress reactions in emergency workers, the present study examined emergency workers' reactions to traumatic work related incidents.

Furthermore, although Job Dissatisfaction and Increased levels of Turnover have been identified in literature and research on emergency workers as being behavioural manifestations of the traumatic stress associated with emergency work, the effect of occupational trauma on these variables has not been documented extensively in trauma literature or research. A second aim of the study was therefore to provide further insight into the effects of work related trauma on these constructs. Moreover, although literature on emergency workers has not documented the impact of occupational trauma on Job Involvement, the present study undertook to examine the effects of trauma on this construct. The study was considered to be exploratory in this regard. By examining how exposure to occupational trauma impacts on Job Satisfaction, Job involvement and Propensity to Leave, it was hoped that this will lead to a better understanding of the effects of occupational trauma and its implications for employees and organisations alike.

One hundred full-time paramedics completed a self-report questionnaire. The questionnaire also included questions to obtain demographic variables as it has been documented that the relationship between exposure to traumatic events and the expression of distress is constructed by personal factors. In addition, qualitative data pertaining to the constructs under investigation was obtained from 30 paramedics.

The reported symptoms revealed that 17% of the sample was suffering from PTSD. Correlational analyses using a non-experimental, cross-sectional design, revealed a significant relationship between PTSD and Job Satisfaction. A non-significant relationship was found between PTSD and both Job Involvement and Propensity to Leave. Of the demographic variables measured, stepwise regression analysis revealed that gender and previous exposure to trauma were the most efficient predictors of PTSD. Content Analyses performed on the qualitative data indicated that paramedics were subjected to numerous job stressors which seemed to associated to Job Involvement and Propensity to Leave.

The results of the study are discussed with respect of the literature reviewed and limitations and implications of these findings are discussed thereafter. Lastly implications of the present study for future research are presented.

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3. CHAPTER 1 - LITERATURE REVIEW

3.1 INTRODUCTION

The official recognition of Post Traumatic Stress Disorder in the DSMIII (American Psychiatric Association 1980) and its succeeding volumes, the DSMIIIR and more recently the DSMIV, has had a considerable impact on the business community (Williams, 1993). This is due to the increasing awareness, particularly over the past 2 decades, of the stress to which employees in high risk occupations (*e.g. emergency medical and rescue personnel*) are exposed (Mitchell and Dyregrov, 1993). Recent research has clearly shown that these professional helpers are exposed to work related stressors which may impact on their physical, psychological, social and behavioral well-being. Employers have thus realised that not only do they need to identify potential work related stressors but they also need to provide prevention orientated strategies to reduce work related stressors or to mitigate the emotional aftermath following traumatic events (Mitchell and Dyregrov, 1993; Williams, 1993).

As the effects of trauma have been studied for many centuries, it has become well known that victims of distressing events may suffer short and/or long term psychological injury. Research conducted over the past 3 or 4 decades has however focused on the victims or survivors of traumatic events while failing to acknowledge that workers offering assistance to victims *(e.g. emergency medical service personnel)* may also suffer psychological injury as a result of traumatic stress (Bryant and Harvey, 1996; Kinchin, 1994; Mitchell and Dyregrov, 1993). Prior to 1978, researchers and clinicians thought that because emergency personnel such as firefighters, paramedics, police officers and disaster workers, were trained to deal with stressful events, that this exempted them from suffering any stress reactions. This view however, does not provide a complete nor adequate understanding of emergency service stress as it fails to acknowledge that stress responses are a normal and expected aspect of the emergency work itself (Everstine and Everstine, 1993; Mitchell and Dyregrov, 1993). This view is reflected in a document which was prepared in 1954 by the American Psychiatric Association (APA), entitled " *First Aid for Psychological Reactions in Disasters*" wherein emergency workers are cautioned,

> *"You will naturally extend yourself to the limits of capacities. Do not push yourself beyond these limits, lest you become as ill as those who need your help" (p20.)*

The document continues by saying that,

> *"Your training should prepare you to handle your own emotional problems first and promptly... the training you receive as a disaster worker will in it itself protect you somewhat in time of stress" (p20-21).*

Although these workers are trained to deal with constant traumatic events they may encounter on the job, it was only after 1978 that clinicians realised that there are moments when these job demands will take their toll on even the most hardened professional (Everstine and Everstine, 1993; McCammon, Durham, Jackson Allison JR and Williamson, 1988; Mitchell and Dyrergrov, 1993). However, although it has become nowadays recognised that individuals may become indirectly or secondarily traumatised as a result of working with the pain and suffering of others, attention has mostly been paid to those individuals in harms way rather than those who care for them (McGammon and Jackson Allison, 1995; Mitchelll and Dyregrov, 1993). As indirect or secondary traumatic stress is considered to be the least understood and least studied aspect of Post Traumatic Stress, knowledge about this phenomenon needs to be generated as secondary trauma has been found to clearly be an occupational hazard for caring service providers. By understanding how caregivers become traumatised due to their exposure to victims, not only can further additional traumatic stress amongst these workers be prevented but by helping these caregivers, the quality of care for victims can be enhanced. Moreover, by understanding the impact of trauma on these workers, they can be informed about the hazards of this type of work which will enable them to be prepared to cope with potentially traumatic events (McGammon and Jackson Allison, 1995; Mitchell and Dyregrov, 1993).

At present, it is not possible to establish what portion of the population is at risk for developing PTSD. This is in part due to the fact that studies on PTSD vary considerably and because different methodological procedures are used to assess the percentage rate of individuals in the general population suffering from traumatic stress reactions (Green, 1994). As a result, no absolute PTSD rates exist at present. However, despite PTSD rates differing across studies, this disorder is more prevalent in the general population than many other mental disorders as several population studies on trauma have found that approximately 25% of individuals who are exposed to a traumatic event proceed to develop PTSD. Recent studies have therefore shown that following the exposure to traumatic events, PTSD rates in the general population average around 25% although exposure to certain types of traumatic events *(e.g. rape)* have yielded higher rates (Green, 1994).

Within the emergency services, it has been found that 15% of workers may suffer from PTSD symptoms (Everstine and Everstine, 1993; Kinchin, 1994). As it has been found that PTSD may result in psychological difficulties which are a predominant cause of employee absenteeism, turnover and may lead to decrements in job performance and job satisfaction, work-related trauma may have negative consequences for organisations and employees alike (Everstine and Everstine, 1993; Kinchin, 1994; Mitchell and Dyregrov, 1993). Due to the fact that exposure to potential trauma is a common occurrence in the emergency services, the impact of trauma on the above mentioned organisational variables may readily be assessed. As PTSD is more common in the general population than many other disorders, these findings may have important implications for other work population groups. This could be of benefit to employers who have recently shown a marked interest in helping employees deal with mental health

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problems in an attempt to prevent performance decrements (Kinchin, 1994; Mitchell and Dyregrov, 1993; Moran and Britton, 1994). Thus, as there is a need for research on the effects of trauma on emergency workers and because research in this regard may have implications for other work population groups, this research study hopes to provide a framework for understanding emergency service stress and its implications for employees and organisations alike.

In order to understand what implications PTSD has for employees in high risk professions as well as organisations, the concept of PTSD must first'y be clearly defined as literature in the past has failed to adequately conceptualise this clinical entity. As such, the history of PTSD will be discussed next as it will reflect how an understanding of PTSD has evolved throughout the history of mankind (Figley. 1993; Everstine and Everstine, 1993).

3.2 HISTORICAL BACKGROUND

Over the centuries, numerous concepts such as trauma, traumatic neurosis and PTSD have been coined in an attempt to describe the outcomes resulting from extreme experiences (Everstine and Everstine, 1993; Peterson, Prout and Schwartz, 1991). These concepts were generated by and served as the impetus for theoretical advancements which were influenced initially by psychoanalysis and more recently by cognitive and stress research. However, although emotional reactions to extremely stressful events have been documented throughout the centuries, theories and explanations of these reactions have varied. The history of the field of traumatic stress will therefore reveal how concepts which were advanced to explain post traumatic stress outcomes, were contingent upon the theoretical backdrop of the time (Everstine and Everstine, 1993; Figley, 1993).

3.2.1 THE CONTRIBUTIONS OF FREUD AND HIS PREDECESSORS

Physicians as early as 1880 showed a marked interest in the effects of traumatic stress (Figley, 1993). The term "psychic trauma" was first introduced by Eulenburg a German physician to refer to a reaction of outcry and fear resulting from extreme shock (Everstine and Everstine, 1993). According to Trimble (1981), the first theoretical discussion pertaining to post traumatic syndromes can be traced to Erichen's thesis, entitled " *On the Concussion of the Spine: Nervous Shock and Other Obscure Injuries of the Nervous System in their Clinical and Medico-Legal Aspects*", wherein Erichen maintained that mild trauma could cause impairment to one's physical functioning. According to Erichen, railway collisions or the abrupt stopping of a train could result in symptoms which could assume the form of traumatic hysteria. Although it was hypothesized that the cause of this condition was physical in nature, physicians at that time debated whether the condition was neurological or psychological (Everstine and Everstine, 1993; Figley, 1993; Peterson *et al*, 1991).

It is thought that Oppenheim was the first to introduce the concept of "traumatic neurosis" in the 1880's which according to him developed from the effects of injuries whose causes were physically determined. This concept emerged due to the growing recognition that highly stressful events resulted in emotional

effects. Numer ... other physicians however maintained that the causes of emotional reactions to accidents and injuries were psychological in nature stemming from anxiety, tension and suggestions (Everstine and Everstine, 1993; Peterson *et al,* 1991). Although the psychogenic explanation eventually took precedence, there was little understanding at that time of the mech . ism of this illness (Peterson *et al,* 1991).

Hysteria subsequently became the prime explanatory principle in respect of traumatic reactions at the turn of the century. The early analytic writers brought about a change in the theoretical understanding of trauma as they emphasised the importance of the "psychological trauma" rather than the psychological reaction to a physical trauma. They maintained that the overexcitation of the individual's drives was traumatic and that an overstimulation thereof caused a disturbance to the equilibrium of the individual's psyche (Everstine and Everstine, 1993; Peterson *et al,* 1991). Trauma-related disorders were conceptualised as psychoneuroses of individuals and their drives in the early 1900's. This view was markedly influenced by Freud's theory on infantile sexuality wherein hysteria was held to stem from the individual's sexual desires and aggressive wishes. In his early writings on trauma, Freud (together with Breuer, 1895), identified two important aspects of the trauma response namely the affect of fright which was considered to be the energetic etiological factor in traumatic hysteria and the subjective nature of trauma. Freud also stressed that vulnerability to trauma was non-specific and could manifest within individuals of " *the cleanest intellects, the strongest wills, the greatest principles and the subtlest minds*" (Freud [1895], 1936, p9).

World War I resulted in renewed interest in the consequences of extreme events. The emotional problems which manifested in World War I influenced the psychoanalytic view of post trauma related disorders (Everstine and Everstine, 1993). The aforementioned two types of explanation for symptoms, *(i.e. the psychogenic and neurological explanation)* became the focal interest point. At the onset of the war, it was generally accepted that the causes of emotional problems were physical in nature thereby reflecting the reluctance to attribute its causes to an extreme stressor (Figley, 1993). For example, the term "shell shock" replaced "traumatic neurosis" as physical brain damage was thought to ensue following an overdose of carbon dioxide, flying shrapnel or from the displacement of air (Everstine and Everstine, 1993; Figley, 1993). It became generally accepted that the predisposing character of individuals could account for why some soldiers manifested PTSD symptoms whilst others did not. This view was, however, eventually abandoned as soldiers who were not subjected to shellfire were also found to be susceptible to "shell shock" and were found to recover if removed from the trenches. As a result, the psychogenic explanation became the leading viewpoint in academic psychiatry (Everstine and Everstine, 1993).

World War I clearly affected Freud's thinking relating to trauma. Freud's conceptualisation of the subjective nature of trauma was reinforced in his description of war neuroses where he rebutted the argument that the cause of trauma was an organic lesion to the nervous system resulting from a mechanical

force. He also refuted claims that soldiers who displayed "hysterical symptoms" had a weak constitution (Everstine and Everstine, 1993; Peterson *et al,* 1991).

Moreover, his former hypothesis relating to the affect of fright was reinforced and expanded upon in his account of war neuroses. In documenting that the experience of fright was an important antecedent factor in war neuroses, Freud distinguished between anxiety and affect. The former referred to the preparation or expectation of danger. Anxiety therefore served to protect the individual against traumatic neuroses. In contrast, fright manifests in one who has been faced with unanticipated danger and suggests a loss of control and a sense of helplessness. Freud ([1895], 1936 p.3) acknowledged that, "*Every experience which produces the painful effect of fear, anxiety, shame or of psychic pain may act as a trauma"* In sum, Freud stressed that a particular event is not inherently traumatic but is interpreted as traumatic only if the individual in question perceives it as such. As will be seen later this conceptualisation of trauma has informed much of what is currently understood and written about trauma (Everstine and Everstine, 1993).

Trimble (1981) notes that whereas the early analytical writers saw trauma producing conflicts as being housed in the agency of the mind, later writers viewed trauma as resulting from adaptation. According to the later view, the individual's attempts to respond to changes in the environment was referred to as "adaptation" whereby post traumatic neurosis was held to be the result of failed adaptation (Peterson *et al,* 1991). This view marks the first important move towards the acknowledgment of the significance of the environmental demands of reality (Peterson *et al,* 1991).

3.2.2 THE PERIOD OF WORLD WAR II

Despite the upsurge of interest in extreme events both during and after WWI, this waned until the 1940's where traumatic neuroses and similar concepts once again gained prominence in the psychiatric literature (Everstine and Everstine, 1993; Peterson *et al,* 1991). The ego became the focus of attention while the drives were emphasised considerably less. Traumatic neuroses were accordingly perceived as the ego's inability to deal with the degree of trauma which consequently led to the impairment of the ego's functioning (Everstine and Everstine, 1993; Peterson *et al,* 1991).

In literature on traumatic neuroses, debate once again arose about the extent to which neurotic predispositions contributed to the existence of traumatic neuroses (Peterson *et al,* 1991). The role of this factor was however, not readily apparent against the backdrop of the war, nor was the delineation between normal and abnormal, healthy or unhealthy responses to trauma clear at that time. The status of the term " traumatic neurosis" in the psychological and psychiatric literature was also unclear at the time. For example, publications on the effects of the concentration camps seldom used this term as it was argued that it did not describe the enduring and far reaching consequences arising from such an event. Moreover, although the effects resulting from the loss of a loved one were likened to those resulting from other traumatic events, the term "traumatic neurosis" was never used in this regard. Furthermore, although this concept was referred to in psychiatric handbooks it was normally only done so in an obscure manner

(Peterson *et al*, 1991). The obscure status of traumatic neurosis is reflected in the way that it was never included in official terminology such as the volumes of the Diagnostic and Statistical Manual advanced by the APA (Peterson *et al*, 1991).

3.2.3 TRANSIENT DISTURBANCES

Both during and immediately after WWII, numerous concepts emerged in literature some of which did not show a clear relation to traumatic neuroses. For example the term "stress" was used frequently to denote a general sense of unpleasant situations and tension. In the first version of the Diagnostic Manual of the APA in 1952 (i.e. DSMI), the category of "gross stress reactions" was included to refer to all reactions of adults towards extreme events. This category comprised the group of "transient situational personality disorders" (Everstine and Everstine, 1993). At that time, psychological problems resulting from combat gradually ceased to evoke much interest in the Western World. The decline in attention paid to traumatic neuroses was expressed in the second publication of DSM in 1968. "Transient situational disturbances" was the term used to denote this group of disorders and the term "adjustment reaction during adulthood" replaced "gross stress reaction" (Scrignar, 1988). The words "during adulthood" were included to distinguish this disorder from adjustive reactions occurring in infancy, childhood, adolescence or old age. This new concept was used to refer to the acute responses of individuals, without any prior disorders, to overwhelming environmental strains. Unwanted pregnancy, war, retirement and failure at school were examples of stressors/strains specified by the American Psychiatric Association. As opposed to DSMI, short lived psychotic reactions to a shock were also held to be an aspect of adjustment reactions (Everstine and Everstine, 1993; Peterson *et al*, 1991).

From the period spanning between 1950 and 1970, hardly anything was written on post traumatic neuroses. This periodic absence of investigation is according to Herman, (1992), characteristic of the history of the trauma which she refers to as one of "episodic amnesia". It is important to note that the fluctuating periods of investigation and hibernation are not as a result of a lack of interest but rather serve to characterise the controversial nature of the field of trauma. This is because, the study of trauma has throughout history challenged the fundamental beliefs held by individuals about the natural world and about the benevolent nature of humans. To study psychological trauma means to be confronted with atrocities, horrors and evil. Herman (1992) posits that when the trauma is as a result of natural disaster or "an act of God", those who have observed the event readily sympathise with the victim. However, when the event is of human origin, those who witness the event, are forced to take the side of either the victim or the perpetrator. Leo Eitinger, a psychiatrist who studied survivors of Nazi concentration camps, describes the conflict of interest between victims and bystanders,

> *"War and victims are something commonly something one wants to forget, a veil of oblivion is drawn over everything painful and unpleasant. We find the two sides face to face; on one side the victims who perhaps wish to forget but cannot, and on the other all those with strong, often unconscious motives who very intensely both*

wish to forget and succeed in doing so. The contrast ... is frequently painful to both sides. The weakest one ..... remains the losing party in this silent and unequal dialogue". (Leo Eitinger cited in Herman, 1992, p8).

Herman (1992) notes that throughout the history of trauma, there has been a tendency to discredit the victim or to regard him/her as being invisible . The study of psychological trauma is characterised by a history wherein disputes have raged over whether victims with PTSD are worthy of care and respect or should be treated with contempt, whether or not they are truly suffering or malingering. Despite the extensive literature documenting this phenomenon, controversy prevails around the issue of whether the phenomenon is real and credible. According to Herman (1992), in order to contain traumatic reality in consciousness, a social context which protects and affirms victims and which brings victims and witnesses in alliance with each other is needed, The social context for individual victims is formed through relationships with friends, lovers and family. The social context for the greater society is created by political movements which give a voice to the silencing and denial present in the disempowered. The study of psychological trauma therefore, relies on the support of a political movement because in the absence of a movement for human rights, the process of being a witness inevitably becomes overshadowed by the process of forgetting. Denial, dissociation and repression are therefore phenomena which manifest in both individual and social consciousness (Herman, 1992).

Herman (1992), notes that over the past century, two forms of psychological trauma have emerged into the realm of public consciousness. The field of trauma has at each time advanced in conjunction with a political movement. Hysteria was the first to emerge and was followed by shell shock or combat neuroses. Our current understanding of trauma has therefore developed as a result of a synthesis of these two investigations. Herman's (1992) account of psychological trauma's forgotten history therefore contributes to our understanding of why "episodic amnesia" has characterised the field of trauma especially during the period spanning between 1950 to 1970.

However, despite the fact that trauma was forgotten periodically from 1950 to 1970, it was also during this period that the psychological movement was undergoing considerable transformation. The cognitive and behavioural paradigms as well as systemic and ecological explanations of pathology and health were making valuable contributions to the field of trauma. The 1970's and 1980's once again witnessed the rapid increase in the value of research pertaining to trauma related disorders (Peterson *et al,* 1991). The psychological casualties of the Vietnam war undoubtedly played a significant role in reviving the interest in post traumatic neuroses. This was evident in the early literature on post traumatic neuroses at that time which was predominantly about Vietnam veterans (Figley, 1993; Peterson *et al,* 1991). Of significance was the fact that the stressor became the new focus of attention and that strong empirical evidence was collected in support of the causal relationship between the traumatic nature of the stressor and PTSD (Peterson *et al,* 1991). Moreover, the new name given to the disorder namely Post Traumatic Stress Disorder depicted the growing emphasis on the stressor itself.

3.3 STRESS AND POST TRAUMATIC STRESS

The term Post Traumatic Stress is nowadays commonly used to refer to as a distinct phenomenon within the broader field of stress. Although the concept of stress was frequently used by physicians and technicians in the 18th century, it was not until the 1930's that it emerged as a scientific concept (Everstine and Everstine, 1993; Peterson *et al,* 1991). In the 1950's this concept rose to prominence within the fields of psychiatry mainly through the work of the Canadian endocrinologist, Hans Selye who posited that stress was the causal factor responsible for certain physiological changes which could ordinarily not be explained. As a result, many psychosomatic disorders (*i.e. hypertension, peptic ulcers*) were perceived to be causally determined by stress. More recently, the finding that stress is a causal factor in respect of certain physical changes has been generalised to such an extent that nowadays stress is perceived to be an outcome rather than an aspect of the process. Thus, whereas stress was originally considered to be a physiological phenomenon, it is now perceived to be a psychological one (Peterson *et al,* 1991; Scrignar, 1988). As such, what was originally confined to the physiological system is now housed within the domain of thoughts and feelings. As a result of this term being generalised beyond its intended meaning, it has been misused and devaluated. For example, individuals nowadays use the term "stress" to denote any possible factor in the development of psychological symptoms. Likewise trauma theorists have used the term "stress" to denote what a trauma victim is feeling thereby muddling the distinction between the two concepts (Everstine and Everstine, 1993).

If we however, narrow the use of the term "stress" to refer to a state which is like the one referred to by tension, the delineation between stress and trauma is more readily apparent (Everstine and Everstine, 1993). In this regard, stress refers to a condition similar to that of extreme frustration and is held to be the outcome of a number of causal factors. This differs from trauma reactions which are event-specific and depend on the personal significance which the individual attaches to that event. Thus, as stress can be produced in the absence of a traumatic event, this concept describes a condition which differs from that of a traumatic response (Everstine and Everstine, 1993).

Although numerous definitions of stress have been advanced, it has been posited that it refers to a disrupted interaction between the environmental demands and the skills and needs of the individual (Everstine and Everstine, 1993). Whereas extreme events have not featured extensively in stress research, they do in fact fall within the ambit of the field of stress. According to this view, extreme events constitute a severely disrupted interaction between the environment and the individual. Thus, although the concept of stress has a wider meaning, stress and trauma are not distinct concepts but instead exist on a continuum with relatively mild events and extreme situations found at either end. The relationship between stress and trauma was established by Bastian (1957) cited in Everstine and Everstine (1993), who posited that traumatising stress is a special kind of stress which places more emphasis on shock and alarm than normal stressful events. It is important to note that this view of traumatic stress is in keeping with Freud who identified one of the crucial elements of the traumatic response as the experience of fright. This reflects

how Freud's conceptualisation of trauma did contribute a great deal to what has been written about traumatic responses over the past two decades. In sum, although theorists often use the terms stress and PTSD interchangeably to indicate the effects of extreme experiences, the term stress is too general to be used in trauma analysis. Rather, trauma is a distinct phenomenon which falls within the ambit of the wider field of stress (Peterson *et al,* 1991).

3.3.1 HOROWITZ'S CONTRIBUTION TO THE FIELD OF TRAUMA

The American psychiatrist, Horowitz introduced the term "stress response syndrome" in the 1970's which he used to refer to all *"personal reactions when a sudden, serious life event triggers internal responses with characteristic symptomatology patterns"* (Horowitz and Kaltreider, 1979, p. 163). Although Horowitz did not give a precise definition of this term, he did posit that the stress response syndrome constitutes a pattern of coping with extreme circumstances which occurs in phases. According to Horowitz, in order for stress response syndrome to ensue, two categories of responses to stressful life events must be present, namely denial and intrusion (Peterson *et al,* 1991). Denial is an intrapsychic process whereby the event is denied. Denial is manifested through emotional numbness, the avoidance of images and thoughts relating to the extreme event, the avoidance of images which serve as a reminder of the event and the loss of a sense of reality. Intrusion occurs when the individual experiences a surge of images and emotions related to the event which either directly or indirectly causes him/her to re-experience the extreme event. Intrusion is expressed through nightmares, recurring thoughts about the event, startle responses and recurring behaviours related to the event (Peterson *et al,* 1991).

Through his research findings on disaster and war grief, Horowitz posited that individuals cope with serious events by transcending through three phases. According to Horowitz, the first phase is characterised by feelings of bewilderment and disbelief which may be accompanied by an "outcry". Thereafter, denial occurs which may either be accompanied or followed by intrusion. Denial and Intrusion frequently alternate which Horowitz refers to as "oscillation". At this stage, feelings of sadness and memories associated with the event alternate with feelings of numbness until the event and its implications are eventually integrated into the individual's awareness (Peterson *et al,* 1991). The integration or working through phase follows whereby uncontrolled thoughts and emotions emerge which serve to enhance the individual's sense of reality. The completion of the coping process which constitutes the final phase of the stress response syndrome eventually occurs wherein the significance of the event is more easily accepted and the individual's mood stabilises. Horowitz's formulation of the stress response syndrome is significant as it is based on the premise that behaviour is an interaction between the individual and the situation which implies that symptoms are a function of the person and the event itself. Horowitz's theory is central to an understanding of PTSD as he provides a detailed theory on coping with extreme stress which is akin to the coping process in PTSD (Peterson *et al,* 1991).

3.4 THE CLASSIFICATION OF POST TRAUMATIC STRESS DISORDER

Knowledge about PTSD has developed through several distinct yet related fields. Psychiatrists, psychologists, stress researchers and behaviourists have all studied the same phenomenon but have put forward different conclusions depending on their point of interest and experience (Scrignar, 1988). As it became increasingly evident that the term "neurosis" could not adequately describe the post traumatic response, the terminology used to conceptualise traumatic responses, had to be re-evaluated (Scrignar, 1988). Moreover different psychological disorders *(i.e. anxiety, depression, hysteria)* were classified under the umbrella term of "neurosis" thereby reflecting the lack of consensus concerning the definition of neurosis (Scrignar, 1988). As noted by Bayer and Spitzer (1985), prior editions of DSM "*were severely flawed by their failure to provide formal criteria for determining the boundaries of their diagnosis*". Due to the absence of defining criteria, clinicians tended to rely on "*global descriptions of disorders that frequently entailed etiological assumptions*" (p180). However, as the etiologies of most mental disorders were not known and because it became no longer acceptable to define disorders by making inferences from unproven theories, classification in DSMIII was to be atheoretical (Peterson *et al,* 1991; Scrignar, 1988).

As such, instead of endorsing a theoretical conceptualisation of PTSD, the term neurosis was abandoned in favour of the atheoretical heading "anxiety disorders". The classification of mental disorders in DSMIII was based solely on observable symptoms which differed from previous editions of DSM which did not contain explicit criteria for the diagnosis of disorders. Therefore, although the field of trauma has strong historical roots, it was not until 1980 with the publication of the American Association's 3rd edition of the Diagnostic and Statistical Manual, that symptoms now classified under PTSD were included under a single diagnostic category (Figley, 1993; Peterson *et al,* 1991; Scrignar, 1988).

PTSD is one of the few psychological disorders included in the DSMIII that is partially defined by the environment. The essential feature of PTSD according to DSMIII, is that in order for PTSD to result, theses traumatic events have to be "*outside the range of normal human experience*" and "*should be markedly distressing to most individuals*". According to this criterion, simple bereavement, chronic illness, work losses and marital conflict would not be perceived as constituting stressors "outside the range of normal human experience". Such stressors would therefore not be sufficient to precipitate PTSD as defined by DSMIII (O'Donahue and Elliott, 1992).

Literature following the publication of DSMIII did not however generate support for the argument that a distinct class of stressors is associated with PTSD symptomatology (Breslau, 1990). Findings by Horowitz, Wilner, Kaltheider and Alvarez (1980), proved to be significant in this regard as subjects who were suffering from bereavement were found to manifest symptoms of PTSD. These findings served to question whether DSMIII was correct in stipulating that the distinctive feature of PTSD is a traumatic event which is normally "*outside of the range of normal experience*". Horowitz *et al's,* (1980) findings suggested that the definition of PTSD should be revised to include incidents such as bereavement which are within the normal range of human experience (Breslau, 1990). These findings as well as subsequent

publications by Horowitz emphasi ed the subjective meaning which individuals attach to traumatic events which are shocking to the individu al. However, although the definition of PTSD was revised in 1987 in DSMIIIR, it was not modified to include events which are within the normal range of human experience (Breslau, 1990; Robins, 1990). Thus DSMIIIR defines PTSD as a constellation of characteristic symptoms that develop when "*the person has experienced an event that is outside of the range of usual human experience and that would be markedly distressing to almost anyone*" (Breslau,1990).

As such, DSMIIIR still tried to define the stressor objectively rather than adopting Horowitz's subjective criterion. The original definition of the PTSD stressor advanced in DSMIII therefore appears unchanged in DSMIIIR (Breslau, 1990; Scrignar, 1988). The only difference evident in DSMIIIR is that a list of examples of traumatic events follows the definition which include, *witnessing destruction or violence, a serious threat or h.rm to one's children , spouse or other close relatives, the sudden destruction of one's home or community and seeing another person who has recently been, or is being, seriously injured or killed as the result of an accident or physical violence* (A , 1987; Breslau, 1990; Kasl, 1990; O'Donahue and Elliot, 1992; Scrignar, 1988). In a publication by Brett, Spitzer and Williams (1988), the authors comment on the DSMIIIR revision and refer to the list of examples as "*a list of generic characteristic of traumatic stressors... an attempt to specify the general factors across particular stressors that are responsible for the ensuing stress reaction. Thus, DSMIIR emphasises that PTSD occurs in response to events of a particular and increasingly specifiable type*" (p.1233). This reflects that the revised definition does not represent a material advance in attempting to specify the nature of PTSD (Breslau, 1990; Kasl, 1990) .

As specified in Section B of DSMIIIR, the persistent re-experiencing of the traumatic incident is the *sine qua non* of PTSD. Before PTSD can be diagnosed as such the traumatic event must be re-experienced in at least one of the following ways:

1. Recurrent and intrusive distressing recollections of the event.
2. Recurrent distressing dreams of the event.
3. Dissociative episodes *(i.e. flashbacks)* or intense psychological distress due to the exposure of events which symbolise or resemble aspects of the trauma (APA, 1987; Scrignar, 1988).

Section C of DSMIIIR acknowledges that many traumatised individuals develop phobic avoidance behaviour associated with the trauma. Attempts to avoid thoughts, feelings or activities and situations related to the trauma is characteristic of PTSD. Moreover, symptoms associated with the numbing of general responsiveness include: *Marked diminished interest in significant activities, feelings of detachment or estrangement from others, restrictive range of affect and a sense of foreshortened future.* According to DSMIIIR, in order for PTSD to be diagnosed at least 3 of the above mentioned responses associated with either avoidance or numbing must be present (APA, 1987; Scrignar, 1988).

The final criterion necessary for a diagnosis of PTSD is that of persistent symptoms of increased arousal. Difficulties falling or staying asleep, irritability or anger, difficulties concentrating, hypervigilance, exaggerated startle responses and psychological reactivity upon exposure to events which symbolise or resemble the trauma all represent increased arousal and are indicative of autonomic hyperactivity or anxiety. Because situations which resemble the trauma generate high levels of anxiety in traumatised individuals, they engage in avoidance behaviour which may lead to the development of phobic behaviour (Scrignar, 1988). Moreover, according to DSMIIIR, symptomatology must be present for more than 1 month as symptoms normally subside before 1 month if individuals are able to cope with traumatic events (APA, 1987; O'Donahue and Elliott, 1992; Scrignar, 1988).

Despite the inclusion of PTSD in DSMIII and DSMIIIR, it has remained a controversial addition to the psychiatric diagnostic inventory. Although there is little disagreement about the face validity of the disorder, there still remains uncertainty about the scope of the diagnosis especially in respect of the potentially traumatic interaction between the individual and the environmental stressor (Breslau, 1990; Kasl, 1990). DSMIIIR did attempt to add precision to the definition of trauma by advancing a list of typical PTSD inducing events and by including the words *"outside the range of usual human experience"*, *"markedly distressing to almost anyone"*, *"serious threat to one's life or physical integrity"*. There is debate however, about which events qualify as being *"outside the range of human experience"* or what the words *" serious threat" or " markedly distressing"* actually mean. It has been argued, for example, that "serious threat" is not specific to PTSD as threat is an aspect of stress responses in general (Breslau, 1990; Kasl, 1990).

Furthermore, the listed traumatic events are assumed to be "catastrophic" in their intensity (*or magnitude*) as it has been posited that the stressor magnitude of the event is associated with the development of PTSD (Bryant and Harvey, 1996, March, 1993). However, the delineation between "catastrophic" and "everyday" events is not clear cut (March, 1993). It has therefore been argued that DSMIIIR does not provide any rule of thumb for determining if a specific event is so extreme as to result in PTSD (Scrignar, 1988). Moreover, numerous events which are associated with the onset of PTSD (*e.g. rape, child abuse*), occur too commonly to be considered "unusual" (O'Donahue and Elliott, 1992). In a study by Solomon and Canino (1990), PTSD symptoms especially re-experiencing symptoms were more frequently found in individuals experiencing common events (*i.e. household illness/injury, monetary problems*) than individuals who had experienced a natural disaster. Likewise Burnstein (1985) found that 8 out of 73 patients satisfied the criteria necessary for a diagnosis of PTSD without meeting the DSMIIIR criteria in respect of the severity of the stressor. These findings suggest that the distinction between catastrophic and everyday environmental stressors may not be as great as implied by DSMIIIR (Bryant and Harvey, 1996; March, 1993; Scrignar, 1988).

Undoubtedly, the range of responses to any stressors specified in DSMIIIR, vary as a function of individual susceptibilities and perceptions (Breslau, 1990; March. 1993; Robins, 1990; Scrignar, 1988). Accordingly, hysteria, anxiety or even indifference are possible responses to the same traumatic incident. As PTSD does not occur in isolation but requires an initiating event or environmental stressor, the way in which the environmental stressor is perceived by the individual determines if it will be perceived as traumatic (*i.e. if the event will become a stressor)* (Kasl, 1990; March, 1993; Scrignar, 1988). Thus, because traumatic events vary in respect of their intensity, it is important to note that the perceived trauma lies in the "eye of the beholder " (Everstine and Everstine, 1993; Kinchin, 1994). As such, because the significance which the individual attaches to the event is the crucial determinant of PTSD, the view that the event must be "*outside the range of normal experience*", lacks an understanding of the normality and individualised nature of traumatic stress responses. The shortcomings inherent in this view lead to the redefinition of PTSD in DSMIV which reflects the individualised nature of PTSD.

The definition of PTSD has thus changed from stating that,

> *the essential feature of this disorder is the development of characteristic symptoms following a distressing event that is outside the range of a usual experience (APA, 1987 p247),*

to that of,

> *The essential feature of PTSD is the development of characteristic symptoms following exposure to an extreme stressor (APA, 1994 p425).*

The revised definition of the stressor in DSMIV reflects that although it has been noted that PTSD seems to be associated with more extreme stressors like injury, exposure to grotesque death and participation in atrocities, evidence suggests that PTSD is not specifically related to distinct traumatic events (Breslau, 1990; Bryant and Harvey, 1996). It is important to note at this stage, that Freud's conceptualisation of the subjective nature of trauma is in keeping with the contemporary view of trauma which has only been adopted in the current version of DSM. This once again reflects the important contribution which Freud's formulations have made to our current understanding of trauma (Herman, 1992).

3.5 THEORETICAL CONSIDERATIONS

With the inclusion of PTSD as a category of mental disorders in DSMIII, scientific interest in traumatic stress syndromes has resulted in a dearth of empirical studies being generated in an attempt to examine the nature and dynamics of PTSD (Raphael and Wilson, 1993). As part of this undertaking, theoretical models have been advanced in an attempt to explain PTSD. Despite the growth in the field of Post Traumatic Stress, there is still presently however, a lack of consensus relating to a theoretical understanding in respect of the complex interaction between:

1. The nature of the stressor.
2. Personality attributes and coping processes of the individual.

(Figley, 1993; Raphael and Wilson, 1993).

A number of conceptual models have been advanced in order to explain the development of PTSD and the onset of Post Traumatic Stress symptomotology. The information processing model proposed by Horowitz (1973; 1974; 1976; 1979), is considered to be the most influential theoretical perspective within the field of trauma research (Peterson *et al*, 1991). This model has made an immense contribution to theory relating to PTSD and forms the basis for the diagnostic criteria for PTSD found in DSMIII. According to this model, catastrophic events involve a massive amount of external and internal information, the majority of which cannot be matched with the individual's cognitive schemata as it lies outside the domain of their normal experience (Peterson *et al*, 1991). As a result, information overload ensues whereby this new information cannot be integrated into the individual's self. A catastrophic event continues to impact on the individual's psychic equilibrium until information pertaining to that event can be matched with the individual's current cognitive model or a new model is created which can integrate the new information. According to the information processing model, individuals transcend through a number of progressive stages in their reaction to massive stress. As these stages have been discussed previously in Horowitz's account of how individuals react to stress, it suffices to say that the emphasis of this model is on completing the processing of information (Horowitz, 1992; Peterson *et al*, 1991).

The behavioural/learning theory model advanced by Keane, Fairbank, Caddell, Zimering and Bender (1985) explains PTSD in terms of classical conditioning and instrumental learning. Keane *et al*, (1985) advance a two factor learning theory of psychopathology to explain the onset and perpetuation of PTSD. According to this view psychopathology is considered to be a function of "both (a) classical functioning, wherein a fear response is learned through associative principles, and (b) instrumental learning whereby individuals will avoid those conditioned cues that evoke anxiety " (Mowrer [1947, 1960], cited in Peterson *et al*, [1991] p.75). Thus the conditioning of cues, stimulus generalisation, higher order conditioning and incomplete exposure to traumatic memories are used to explain the complex nature of PTSD symptomatology (Peterson *et al*, 1991).

The psychosocial framework suggested by Green, Wilson and Lindy (1985) is a general model which builds on the information processing model and applies to all types of traumatic experiences. Numerous psychodynamic models have also been advanced (*i.e. classical Eriksonian theory, object relations theory*) which focus on how the individual's psyche reacts to traumatic stress thereby contributing to an understanding of PTSD as it relates to the individual's internal functioning. Two biological models namely the psychophysiological and psychobiological models have been advanced in order to explain PTSD and have generated much interest in the field (Peterson *et al*, 1991). According to the former model it is posited that constitutionally based factors may explain why some individuals are predisposed towards

developing towards developing PTSD. According to the psychobiological model advanced by Van der Kolk, Greenberg, Boyd and Krystal, (1985), altered brain physiology is a factor which initiates as well as sustains PTSD. PTSD is therefore considered to be a biologically based disorder according to the latter model. The cybernetic model of Schultz (1984) cited in Peterson *et al*, (1991), contributes to the understanding of PTSD from a system's theory perspective. The strength of this model is that multiple causes and multiple solutions are taken into account which contrasts to behavioural and psychoanalytic theories whereby causality is held to be linear. The cybernetic model advocates circular causality whereby the persistence of PTSD symptomatology is considered to be a concomitant of the cybernetic circuit (Peterson *et al*, 1991).

Numerous therapeutic strategies have been developed to treat traumatic stress which specifically relate to one of the above mentioned models. However, due to the complex nature of PTSD, no "one" model can provide a comprehensive understanding of the factors involved in the development of PTSD. Therefore, in order to provide a more integrated understanding of PTSD, the ecosystemic model advanced by Peterson *et al*, (1991) will be discussed. This model includes an understanding of how the nature of the traumatic event itself, the individual involved as well as the environment in which the individual recovers, will influence traumatic stress reactions. The inclusion of a ecosystemic model may therefore contribute to a more holistic understanding of PTSD as it builds on the strengths of the above mentioned models and attempts to overcome the weakness in attempting to explain the development of PTSD from a single theoretical model (Peterson *et al*, 1991). As the ecosystemic model builds on Green *et al's*, (1985) psychosocial model which is considered to be an integrated model, the latter model will firstly be examined as it provides a framework for understanding PTSD from the ecosystemic approach (Peterson *et al*, 1991).

3.5.1 PSYCHOSOCIAL THEORY

Clinicians and theorists have acknowledged that interactionist models of behaviour are needed to specify how variables function together to explain sociopsychological and psychobiological processes (Wilson, 1989). It has been suggested that within the field of stress and coping, an interactionist paradigm is needed to explain and understand stress response syndromes (Wilson, 1989). The psychosocial model advanced by Green *et al*, (1985) [*see Appendix A*] is an interactionist model which is widely known and accepted in the field of trauma and proposes that post traumatic adaptation depends on the interaction between numerous variables which include:

1. The nature and dimensions of the trauma.
2. Individual characteristics.
3. The nature of the recovery environment.
4. The individual's coping resources.

This model builds on Horowitz's model and seeks to account for why specific individuals exposed to extreme trauma proceed to develop PTSD and others do not. As noted by Wilson and Krauss (1985),

individuals experience "psychic overload" until the traumatic incident can be assimilated into the context of the other aspects of their lives. According to Wilson and Krauss (1985), psychic overload refers to "*a state in which the nature, intensity and meaning of the experience(s) are not readily understandable in terms of existing conceptual schemata of reality*" (Wilson and Krauss [1985], cited in Peterson *et al*, 1991, p.72). According to this view, individuals are unable to cognitively process the traumatic incident as their coping mechanisms and ego defenses have failed. The recovery environment also influences the way in which the individual will work through the trauma thereby determining whether or not post traumatic adaptation will be positive or pathological (Peterson *et al*, 1991; Wilson, 1989).

The Trauma Experience

Wilson (1983) cited in Peterson *et al*, (1991) and Green *et al*, (1985) posit that numerous characteristics of the trauma will determine the amount of information processing which will occur and hence the likelihood of PTSD developing. These characteristics include:

1. Severity of the stressor.
2. Duration of the trauma.
3. Degree of bereavement.
4. Exposure to death.
5. Participation (*including the role taken by the survivor i.e. passive/active*).

According to Green *et al*, (1985), the more frequent the occurrence of the above mentioned characteristics, the more probable it is that PTSD will develop.

Individual Characteristics

As discussed above, the major debate in the field of trauma pertains to the role of individual versus trauma factors in determining reactions to traumatic incidents. The psychosocial model acknowledges the importance of individual variables and postulates that a number of variables are crucial in this regard, namely:

1. Pre-existing psychopathology.
2. Prior stressful/traumatic experiences.
3. Nature of coping defenses.
4. Behavioural tendencies.
5. Present psychosocial stage of development.
6. Appraisal/Meaning
7. Demographic factors (*i.e. education, age, socio-economic status*).

(Peterson *et al*, 1991; Wilson, 1989).

Moreover situational variables are taken into account, in particular, the place where the traumatic incident was experienced (*i.e. a foreign country/home*) (Peterson *et al*, 1991).

Recovery Environment

Green *et al*, (1985) posit that numerous environmental factors are correlated with Post Traumatic Stress response outcomes. The inclusion of the recovery environment in the psychosocial model stems out of Green *et al's*, (1985) acknowledgment that this variable is most often excluded in theoretical formulations of PTSD. Included in the category of environmental factors is:

1. Social support.
2. Protectiveness of family and friends which is referred to as the "trauma membrane" by Lindy (1988) cited in Peterson *et al*, (1991), as significant others tend to form a protective membrane of support around the victim in an effort to prevent them from experiencing further harm or stress.
3. Attitudes of society.
4. Intactness of the community.
5. Cultural characteristics.

Outcomes

Exposure to traumatic stressors results in one of two types of outcomes which represents the individual's post trauma adaptation. Pathological outcomes refer to the development of PTSD and other DSMIII disorders (*i.e. psychosis*). "Personal growth and restabilisation" occurs when individuals work through the trauma and signifies that the experience has been integrated in a non-pathological manner although the individual may experience some symptoms associated with the trauma (i.e. *occasional nightmares, hypervigilance*) (Peterson *et al*, 1991; Wilson, 1989).

3.5.2 THE ECOSYSTEMIC MODEL

In keeping with the definition of PTSD, the ecosystemic model maintains that PTSD is initiated through a traumatic experience. The manner in which the individual experiences the event is the first factor which will determine the onset of PTSD. The variables which are associated with how the person experiences the event include: degree of life threat, bereavement, role of the survivor (*active or passive*), type of trauma (*man-made or natural*), length and intensity of the trauma (Peterson *et al*, 1991).

According to the ecosystemic model [***see Appendix B***], the individual's experience of the trauma itself will in turn influence three other variables namely:

1. The individual's cognitive processing.
2. The environment's response.
3. The degree of classical conditioning which will occur.

The first variable, namely post traumatic cognitive processing follows Green *et al's*, (1985) psychosocial model which focuses on the assumptive constructs which individuals develop about the world. Although Green *et al*, (1985) include cognitive appraisal and meaning in the category of individual characteristics, Peterson *et al*, (1991) place the appraisal of meaning in a separate category in order to reflect the importance of these processes. The cognitive appraisal process described in the ecosystemic model follows Epstein's (1989) and Janoff-Bulman's (1985) work relating to cognitive appraisals and meaning. As there is a marked increase in the empirical evidence being advanced in support of the importance of cognitive appraisals in trauma responses, the central tenets underlying these two author's work will be discussed (Bryant and Harvey, 1996, Peterson *et al*, 1991).

Janoff-Bulman (1985) and Epstein (1989) cited in Peterson *et al*, (1991), emphasise the importance of the assumptive constructs which individuals make about the world. In this regard, traumatic events are perceived as potential disrupters of individual's assumptions about the world and self . Although some form of post traumatic response is viewed as being healthy, PTSD is perceived to be a maladaptive coping response which occurs when these basic beliefs are invalidated Epstein (1989) cited in Peterson *et al*, (1991) p.78, posits that *"everyone unwittingly constructs a personal view of reality that contains subdivisions of a self theory and a world theory"*. There are four basic functions of a theory of reality namely:

1. To preserve an optimal pleasure-pain balance over the foreseeable future.
2. To allow for the assimilation of information in reality in a way which can be dealt with.
3. To allow for an optimal level of self esteem.
4. The need to relate to others.

It is posited that an individual's theory of reality grows and changes as a result of the interaction between assimilation and accommodation. Usually, this process proceeds without any difficulty . In the event however, of an extreme trauma, victims may be unable to assimilate the traumatic event into their personal theory of reality. A certain degree of intrusive imagery and anxiety are perceived as natural and healthy and occur until the maximum amount of information can be assimilated and accommodation has taken place. According to Epstein cited in Peterson *et al*, (1991) p. 78-79, *"PTSD is produced by a threatening event that invalidates at a deep experiential level the three most fundamental beliefs in personal reality"*. Janoff- Bulman identifies three basic assumptions which most individuals share and which are generally affected by the traumatic incident. These assumptions are namely:

1. **The belief in personal invulnerability** - whereas an individual normally assumes that a traumatic event "cannot happen to me', an individual who has been victimised feels a marked sense of vulnerability as well as the fear that since it happened once, the same victimisation may happen again.

2. **The perception of the world as meaningful and comprehensible** - whereas research has shown that individuals usually view the world as being just, predictable and controllable, victimisation forces individuals to look for new assumptions and meanings about the world in order to match with the new traumatic experience. The change in the belief that the world is benign to the belief that it is malevolent is analogous to the change in viewing oneself as invulnerable to viewing oneself as vulnerable.

3. **The view of the self as worthy** - whereas individuals tend to try and maintain an optimal level of self-esteem and function under the assumption that they are generally good people who do not deserve to be victimised, once they have been victimised their self worth tends to be undermined.

(Peterson *et al*, 1991)

Based on Epstein's and Janoff-Bulman's work, Peterson *et al*, (1991) posit that there are three perspectives which are relevant with respect to cognitive appraisal. The first issue regards the role of the appraisal which the individual has made about the traumatic incident and events which subsequently follow. The second perspective relates to the individual's pre-trauma personality, coping behaviours and defense style. The most important appraisals in this regard center around the manner in which the individual places the trauma, their behaviour (*i.e. affective, cognitive, motoric*) as well as the behaviour of others into the context of their life. The third way in which cognitive appraisal is significant, is on a macro-level. In this regard, the extent to which the individual's personal theory of reality is threatened determines the way in which the trauma will be cognitively processed. The more these basic beliefs are invalidated the more likely the individual will experience oscillations of intrusion and numbing (Peterson *et al*, 1991).

However, the more individuals are able to accommodate their personal theory of reality, the easier it is for the traumatic incident to be assimilated. Thus, an individual's coping behaviour and the degree to which their coping style is rigid will dictate how susceptible their personal theory of reality will be to traumatic events. An individual's theory may, however, accommodate too much which can result in the personality structure of the individual undergoing pathological changes. Accordingly, a new belief system may develop which is distorted because of the traumatic event (Peterson *et al*, 1991).

As mentioned above, the second variable which is influenced by the individual's experience of the trauma, is the environment. In this regard, the nature of the trauma and the individual's response thereto is held to impact on the environment and accordingly determines the environment's response to the incident (Peterson *et al*, 1991). For example, a terrorist attack, the rape of a woman and the murder of a child's parents generate different responses from the environment. Woman have on a societal level often been blamed for having done something to provoke a rape. As such a family or community may feel threatened as a result of the sexual overtones of rape. This may lead to the distancing of the family and community

from the victim. A child whose parents have been murdered may in contrast experience an outpouring of community support (Peterson *et al,* 1991).

The degree of classical conditioning is the third variable which will be influenced by the traumatic experience. It has been posited that the more intense the trauma is the higher the probability is that a strong conditioned response will develop (Peterson *et al,* 1991). Moreover, the characteristics of the trauma will determine which type of stimuli will become conditioned. The behaviouristic principles of classical and respondent conditioning are included in the ecosystemic model as it is posited that non-conscious non-volitional responses to stimuli and cues which have been conditioned, occur automatically following a trauma. These responses together with negatively reinforced avoidance responses determine the oscillations between intrusion and avoidance symptoms. Reinforcement contingency schedules are likewise influenced by the environment. For example a family's response may reinforce and support avoidance behaviour which will in turn influence the individual's response to the trauma (Peterson *et al,* 1991). In many instances, classically conditioned fear responses *(e.g. becoming startled at a loud noise)* become stressors which interact with the individual's appraisal system. This occurs as individuals need to make an appraisal of what has happened in order to explain why they are responding as they are. However , if individuals make self depreciating appraisals (*i.e. I am going mad*), or depreciating assessments *(i.e. people will think I am insane*), it is more likely that the symptoms will become magnified (Peterson *et al,* 1991).

The different factors responsible for the development of PTSD are according to the ecosystemic model, surrounded by a cybernetic deviation amplification circuit (CDAC). This conceptualisation has been adopted from Schultz's cybernetic model of PTSD which postulates that psychological dimensions of PTSD cause physiological dimensions of PTSD and vice versa. According to Schultz (1984) cited in Peterson *et al,* (1991), the circuit continues to amplify until it is broken or a higher order mechanism (*i.e. avoidance, denial, numbing)* depresses the feedback loop. The persistence of PTSD is thus viewed as a byproduct of the cybernetic circuit. According to the ecosystemic model, the circuit may either affect the other factors in a positive or negative direction and the degree of amplification may differ (Peterson *et al,* 1991). Thus although the CDAC may be viewed as a passive channel allowing for the interaction between different variables, it functions in a unidirectional manner with increasing levels of amplitude. Moreover, the more redundant and stronger the circuit, the more likely it is that any systemic changes will be prevented by the CDAC. Redundancy occurs when there is more than one factor to maintain the circuit which means that if one component changes the others will still maintain the circuit. The strength of the cybernetic model lies in its acknowledgment of multiple causes of interpersonal and intrapersonal variables which may occur at a micro level *(i.e. defense mechanisms, learning principles, responses from others)* or a macro level (*i.e. community responses, alterations in assumptive beliefs)* (Peterson *et al,* 1991)).

According to the ecosystemic model, trauma can be resolved either in a pathological or positive way. Pathological outcomes occur when either fear, withdrawal, anger or dissociation become generalised to the individual's behaviour. Positive resolutions may manifest themselves in a number of ways namely:

1. Individuals may develop mild symptoms which are short lived and which occur within the "normal" range of behavioural responses. In this regard the degree of disruption experienced is minimal.
2. Individuals may undergo a period of restabilisation which is viewed as a healthy resolution and allows individuals to return to a normal level of functioning. Individuals may in this instance not display any symptoms of PTSD or they may experience occasional symptoms (*e.g. dreams or sadness)* which they are able to cope with.
3. Individual may experience genuine growth which occurs when the trauma is worked through and individuals are able to attain a new level of functioning and maturity.

(Peterson *et al,* 1991).

It is clear that traumatic stress syndromes have been conceptualised from numerous theoretical perspectives and orientations which have attempted to enhance our knowledge of the nature and dynamics of this phenomenon. As it is argued that a theoretical model which includes the divergent theoretical perspectives is needed to account for the prevalence of PTSD, the ecosystemic model was discussed as it is considered to provide a integrated understanding of PTSD (Figley, 1993, Peterson *et al,* 1991). As theoretical explanations of PTSD contribute to our understanding of this phenomenon, the theoretical formulations discussed above will enable us to understand the nature of PTSD in high risk occupations as well as the implications of PTSD for individuals and organisations alike.

3.6 TRAUMATIC STRESS IN HIGH RISK OCCUPATIONS

Since the official recognition of PTSD in DSMIII over a decade ago, trauma literature has grown considerably. The term PTSD is now commonly applied to a wide variety of individuals who have been traumatised by many different types of traumatic events (Figley, 1995). A review however, of the traumatology literature indicates that almost all of the reports on traumatised individuals focus on those who have been traumatised directly and exclude those professional helpers who may be traumatised indirectly as a result if dealing with primary victims of trauma (Figley, 1995). However, descriptions of what constitutes a traumatic event in all three versions of DSM, clearly identifies the mere knowledge of another individual's traumatic experiences as a form of traumatisation. This is reflected in DSMIV where it is held that in order for an event to constitute a sufficiently traumatic experience, characteristic symptoms must develop following:

> *"...exposure to an extreme traumatic stressor involving direct personal experience of an event that involves threatened death, actual or threatened serious injury, actual or threatened serious injury, or threat to one's physical integrity; or witnessing an event that involves death, injury or a threat to the physical integrity*

of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or in other close association" (APA, 1994, p. 424)

This description of what constitutes a traumatic event emphasises that individuals may experience trauma without being threatened or physically harmed and that they may be traumatised by merely learning about the traumatic incident (Figley, 1995). This implies that people may be traumatised either directly or indirectly. As professional caregivers help traumatised people, they are exposed to knowledge about traumatising events experienced by others. In keeping with DSMIV's description of what constitutes a traumatising experience, this suggests that professional caregivers are vulnerable towards developing Post Traumatic Stress Disorder . However, despite the clear identification of indirect traumatisation in all three versions of the DSM, nearly all the attention in the past has focused on those who have been directly traumatised and little on those who have been traumatised indirectly. Moreover, even before indirect traumatisation was conceptually defined , trauma literature was full of implicit and explicit descriptions of this phenomenon. As such, there has been widespread although somewhat scattered attention paid to indirect traumatisation even in psychological literature (Figley, 1995).

Figley coined the term "*Secondary Traumatic Stress Disorder*" *(STSD)* or "*Compassion Fatigue*" to refer to "*the natural consequent behaviour and emotions resulting from knowing about a traumatising event experienced by a significant other - the stress resulting from helping or wanting to help a traumatised or suffering person*" (Figley, 1995 p. 7). In addition to the general theoretical definition advanced by Figley (1995), it has been posited that STSD has three operational components namely:

1. Having witnessed or being confronted by actual or threatened death or injury or by a threat to the physical integrity of oneself or others.
2. Provocation by the stressor of responses of fear, horror and helplessness.
3. Direct or indirect exposure to exceptional mental or physical stressors either brief or prolonged.

It has been noted that professions involving high risk activities wherein the job demands that these employees become involved with primary trauma victims, involve exposure to constant and repetitive trauma which falls within the scope of the above mentioned components of STSD. These workers are therefore at risk for developing STSD due to the nature of their work (Beaton and Murphy, 1995; Everstine and Everstine, 1993; Figley, 1993; Kinchin, 1994; Williams, 1993).

The most commonly known professions involving high risk activities include fire-fighting, law enforcement, paramedics, counsellors and nurses. Moreover, it has been noted that PTSD is particularly prevalent amongst professional emergency workers which include paramedics, ambulance drivers, firefighters and rescue workers (Figley, 1993; Figley, 1995; Kinchin, 1994; Williams, 1993).

According to Figley (1995), the diagnostic criteria necessary for STSD and PTSD are identical except that the onset of STSD is associated with the knowledge of another individual's exposure to a traumatic event and PTSD is considered to be experienced by the victim him/herself (Figley, 1995). In respect of professional caregivers, numerous studies have found that the stress responses of victims and caregivers do not vary considerably. Avoidance symptoms and intrusive recollections manifesting in emergency workers have been found to be similar to those reported by victims of extreme trauma. As such, almost all DSMIV, PTSD symptoms have been evidenced in emergency workers following exposure to a traumatic event (Beaton and Murphy, 1995). This is supported by Horowitz (1974) who notes that emergency workers manifest the same range of PTS symptoms as Vietnam veterans although they may be on a somewhat milder scale. The main difference therefore between the PTSD outcomes of primary and secondary victims is that firstly, professional caregivers perceive trauma as an aspect of their job and as such are more likely to express less severe responses. Secondly, as exposure to occupational trauma is a daily occurrence, exposure is repetitive and may have cumulative effects on caregivers. Caregivers are also subjected to numerous job related stressors like sleep disturbances and unpredictability which may exacerbate or combine with traumatic stressors (Beaton and Murphy, 1995; Figley, 1995).

Although STSD is also referred to as "Compassion Fatigue" and "Compassion Stress", "burnout" is a term which is often incorrectly associated with STSD. Many view the problems experienced by workers with job stress merely as burnout. Pines and Aronson (1988) cited in Figley (1995) p.11, define burnout as a "*state of physical, emotional and mental exhaustion caused by long term involvement within emotionally demanding situations*". Measures of burnout seem to indicate that emotional exhaustion is the key feature of burnout. As such, burnout has been defined as a collection of symptoms related with emotional exhaustion. Kahill (1988) cited in Figley (1995), in a comprehensive review of the empirical research on symptoms of burnout identified 5 categories of symptoms namely:

1. Physical symptoms which include fatigue, exhaustion/physical depletion, sleep disturbances and somatic problems like headaches, colds and gastrointestinal disturbances.
2. Emotional problems which include a sense of helplessness, irritability, anxiety, depression and guilt.
3. Behavioural problems which include aggression, pessimism, cynicism and substance abuse.
4. Work related problems which include work performance, absenteeism, thefts and quitting the job.
5. Interpersonal problems like inability to concentrate, withdrawal from clients and co-workers and dehumanisation.

It is posited that burnout is normally found in professionals involved in emotionally demanding work like human service providers (Berry and Houston, 1992). Usually work stressors like role conflict, work overload and low decision influence contribute to burnout in these professions. Research also suggests that burnout is more likely to result when other coping mechanisms are unavailable to these workers. A lack of

social support at work has for example been found to be linked to job burnout. Moreover, burnout has been associated with depersonalisation, a reduced sense of personal accomplishment as well as discouragement as an employee (Figley, 1995). A review of research literature on burnout indicates that the most prominent factors linked with symptoms of burnout include the perception that a service provider does not have the capacity to deal with the client's problem. It has also been noted that service providers find themselves caught in a battle of trying to ensure the well-being of their clients and attempting to deal with the structures and policies found within the human services system which according to Figley, 1995, p12, tend to "*stifle their empowerment and well- being*".

As opposed to burnout, which begins gradually and becomes progressively worse and results from emotional exhaustion, STS may emerge abruptly, without warning (Figley, 1995). Moreover, a sense of helplessness, confusion and isolation from supporters accompanies STS in contrast to burnout. STS symptoms are also often disconnected from any real cause and individuals usually tend to recover at a faster rate than those suffering from burnout. It is therefore important to distinguish between STSD and burnout as there are fundamental differences between the sequelae of responses of people suffering from Secondary Traumatic Stress and those experiencing burnout. Only by identifying these differences can our understanding of STSD be enhanced and can STSD be prevented and treated (Berry and Houston, 1993; Figley, 1995).

Although, as noted by Figley (1995), "Compassion Fatigue" or "Secondary Traumatisation" is found to be prevalent in the caregiving professions, for purposes of the present study, reference will still be made to PTSD in this regard. It is however important to bear in mind that although the term "PTSD" will be used in the present context, it nevertheless refers to the phenomenon of Secondary Traumatic Stress as defined above by Figley (1995). At this stage it is important to note that as paramedics are professional emergency workers who are constantly exposed to trauma inducing factors, reference will be made to these workers as they constitute the sample under investigation. However, although reference will at times be made to the effects of trauma on paramedics, the effects of emergency work stress in general will be discussed (Beaton and Murphy, 1995; Figley 1995).

3.7 TRAUMATIC STRESS IN EMERGENCY PERSONNEL: AN OVERVIEW

In emergency medical services, experience, training and prior exposure to stressful situations have been associated with favourable adjustment following a trauma (Bryant and Harvey, 1996; Mitchell and Dyregrov, 1993). However, although these workers are well trained, experienced and professional people, there are moments like trying to give CPR to a dying child and looking for survivors of a disaster amongst corpses which will affect even the strongest character. As such, although it has been posited that training equips these workers with the skills necessary to cope with traumatic events, recent studies have shown that trauma has in fact been found to be prevalent within these professions thereby supporting Figley's (1995) notion of "Compassion Fatigue". This suggests that prior exposure and experience with trauma

may, perhaps not be associated with favourable post trauma outcomes (Mitchell and Dyregrov, 1993; Moran and Britton, 1994; Williams, 1993). For example, Rayner (1958) in a study on emergency care workers listed overintellectualisation, emotional suppression, rigid thinking and limited decision making amongst the effects of working in a traumatic environment. In a study by Myles, Ramsden, Levene and Swansen (1990) cited in Peterson *et al*, (1991), emergency workers reported PTSD symptoms following CPR. These findings are significant as they imply that routine CPR may be trauma inducing thereby reflecting the deletious effects of routine emergency work. Paramedics have been found to list child abuse, mass casualties, disasters, infant deaths and high rise fires amongst the most emotionally stressful calls that they have had to deal with. Moreover, in questionnaires developed to measure job related stress, paramedics' scores were found to be higher than those of firefighters whose psychological stress was already elevated above that of the general population (Marmar, Weiss, Metzler, Ronfeldt and Foreman, 1996; Mitchell and Dyregrov, 1993).

The higher levels of distress amongst paramedics in comparison to firefighters may be attributed to differences in organisational support as well as the quality of rescue and recovery experiences (Bryant and Harvey, 1996; Paton, 1994). Fire personnel have strong natural support systems as they usually live together as a close and cohesive unit sharing leisure time which often allows for the discussion and cognitive processing of traumatic events. Firefighters also have more contact with the public thereby gaining more support and recognition for their efforts. Paramedics, in contrast have lengthier and more intimate contact with injured victims following an emergency situation and during transportation thereby making it harder to develop a detached attitude towards their work. Moreover, as paramedics are usually the first to arrive at the trauma scene, if they are unable to perform the necessary operations, they are likely to feel helpless and impotent which may increase the possibility of PTS symptomatology developing (Figley, 1995).

Paramedics also make emergency medical interventions which have life or death consequences which are extremely stressful. Furthermore, paramedics do not have further contact with the injured victims after they have been transported to emergency medical facilities thereby causing them to wonder about the outcome of their efforts (Marmar *et al, 1996).* As a result, paramedics as compared to firefighters are more likely to accept responsibility for the outcome of victims. This sense of exaggerated responsibility is important as guilt arising from irrational self blame has been found to increase the risk of developing PTSD (Marmar *et al,* 1996). Therefore, recent research indicates that these helpers are confronted with stressors which can result in a range of social, physical and psychological responses which may be extremely stressful and may threaten the individual's well-being (Moran and Britton, 1993).

Studies on emergency workers have in the past, mostly focused on occupational stress where factors contributing to burnout like organisational variables and working conditions have been examined (Beaton and Murphy, 1995; McCammon and Jackson Allison JR., 1995). It has however, now become readily

acknowledged that although these workers are exposed to numerous job-related stressors, they are also subjected to workplace trauma. As noted by Beaton and Murphy (1995), job-related stressors may interact or compound with traumatic stressors and associated Secondary Post Traumatic Stress symptoms in emergency workers. As such, it has been posited that by assessing the source and degree of job stressors as well as the manner in which they are manifested, that this information can be used to develop intervention strategies to prevent psychological injury to emergency workers. As possible indicators of psychological injury include changes in personnel patterns, job performance and job satisfaction, some of these variables will be examined in the present study as they reveal how traumatic stress is manifested in the emergency services (Beaton and Murphy, 1995; McCammon and Jackson Allison JR., 1995). These measures can accordingly be used to enhance the work environment and develop strategies for the psychosocial care of emergency workers (McCammon and Jackson Allison, 1995) . The aforementioned indices are considered to be behavioural manifestations of the traumatic stress associated with emergency work. It is however important to note that traumatic stress may also result in a variety of cognitive, physical and emotional effects. Thus, although the emphasis of this study is on the behavioural effects of emergency work, in order to understand the devastating impact which traumatic incidents may have on emergency workers, the entire range of traumatic stress effects will be examined below (Mitchell and Dyregrov, 1993; Williams, 1993).

3.7.1 COGNITIVE EFFECTS OF EMERGENCY WORK

Laube (1973) posits that trained emergency workers during a disaster can cope with their anxiety without impairing their performance on the job. Emergency workers do however, vary in respect of their responses, with signs of cognitive distress being observed in many instances. Poor cognitive performance has been found to be associated with high levels of anxiety and psychological stress, with the complexity of the task being related to decrements in performance (Mitchell and Dyregrov, 1993). One of the most commonly cited cognitive stress-response symptoms is mental confusion. A poor attention span, concentration difficulties and memory problems are indicative of cognitive dysfunctioning arising from traumatic stress. Moreover, denial, selective inattention and constricted thought are listed amongst the defenses used to ward off distressing thoughts resulting from traumatic events (Gersons, 1989; Mitchell and Dyregrov, 1993). It has also been noted that routine emergency work can result in cognitive dysfunctioning which may have serious implications for individuals and organisations alike. For instance, Lazarus (1969) noted cognitive rigidity and mental disorganisation in stressed emergency workers whilst Sedgwick (1975) observed an inability to think clearly, reduced ability to competently perform cognitive or eye-hand skill tasks and increased distractibility.

3.7.2 PHYSICAL EFFECTS OF EMERGENCY WORK

Emergency work is characterised by novel and unanticipated situations, long working hours and disturbed rest periods which tend to affect workers physically (Mitchell and Dyregrov, 1993). It has been noted that exposure to stressful events may result in physical stress-related symptoms. For example in a study by Byl

and Sykes (1978), physical fatigue and dizziness was found to be prevalent amongst stressed workers whilst sleep disturbances, nausea and lowered eating appetites have also been observed in emergency workers (Mitchell and Dyregrov, 1993). The physical effects of traumatic stress may develop immediately and are usually reflected in increased levels of injuries amongst emergency workers. Keena (1981), in a study on emergency medical technicians, noted that the injury rate increased from 22% during routine calls to 50% in extremely stressful emergency situations. Thus, exposure to extremely stressful situations may result in numerous physical stress-related symptoms which tend to affect most workers negatively (Mitchell and Dyregrov, 1993).

3.7.3 EMOTIONAL EFFECTS OF EMERGENCY WORK

Just as individuals differ in respect of their cognitive and physical reactions, the emotional effects on emergency workers vary considerably. Anxiety, anger and guilt are amongst the most common emotional responses listed following work in stressful conditions whilst denial and emotional numbing are also common responses to emergency work (Mitchell and Dyregrov, 1993). Long-term emotional disability amongst emergency workers is common following extreme stressors. In this regard, it has been posited that PTSD constitutes a long term emotional disability which has been found to occur amongst emergency workers as a result of their work. According to this view, the emotional response to duty related trauma, consists of numerous stages (Williams, 1993).

It has been posited that employees due to their training may either bypass the first phase referred to as the "shock phase" by Williams (1993), or they may experience some psychological and physiological symptoms associated with this phase (*e.g. denial, numbing*). Normally if the traumatic experience lies outside of their training or has a personal significance for them, they may manifest symptoms of PTSD (Lundin and Bodegard, 1993; Williams, 1993). It has therefore been found that where emergency workers identify with victims, PTS symptoms are likely to ensue (Figley, 1995). Moreover the prior trauma history of the employee as well as their pre-existing susceptibilities may ameliorate the impact of traumatic stressors. Thus, in keeping with the ecosystemic model, individual differences as well as the subjective meaning which employees attach to traumatic events will determine one's emotional response to a traumatic event (Williams, 1993). As the emotional response to trauma consists of numerous phases, these phases will be examined in order to provide an understanding of the emotional effects of emergency work ***[see Appendix C for a diagram of the phases of PTSD].***

The Shock Phase

Psychological and physiological shock characterises the shock phase. Time expansion, tunnel vision and various dissociative states of consciousness are examples of numerous perceptual changes which occur in this phase (Williams, 1993). At this stage, the body's flight or freeze responses are alerted and prepares the individual for action. Normally there is an intense focus on the trauma event which may be likened to the "freeze framing" of every millisecond of the trauma. Freeze framing may result in perceptual distortion which can either be in the form of time expansion or time acceleration. Although perceptual mechanisms

may be adaptive during the traumatic event, they may turn out later to be maladaptive where for example the survivor believes that they had more time available than they actually did to react to the trauma. The intense focus on the trauma may cause the survivor to experience a psychological and physiological sense of tunnel vision which may subsequently become associated with survivor guilt. It is therefore evident that numerous dissociative states of consciousness may occur at this stage which include a sense of derealisation (Williams, 1993).

Impact Phase

The impact phase usually results in high levels of emotional distress wherein emotional arousal, anxiety, anger, rage, tension and fear are accompanied by symptoms of hypervigilance or hyperarousal (Williams, 1993). The impact phase includes a sense of "self doubt" which is characteristic of duty related trauma and is evident in the way workers often ask themselves , *"Did I do the right thing"*, *"Should I have done something differently"* (Williams, 1993). Naturally, self questioning may be adaptive as carefully reviewing the traumatic incident will enable the employee to determine their role in the event. This will allow the employee to progress through the recovery phase. If however, they do not examine their role in the trauma, they will not have the opportunity to reappraise their actions which may result in them assuming too much responsibility for the outcome following the trauma . As such, if the individual's role in the traumatic event is not cognitively processed, PTSD symptomatology will continue (Williams, 1993).

When death is an aspect of the trauma , survivor guilt often develops. A form of survivor guilt which is particularly prevalent in high risk occupations is "content guilt" whereby the individual feels guilty about the way in which he/she failed to behave during the traumatic event (Beaton and Murphy, 1995; Williams, 1993). In order to resolve feelings of guilt, the event must be examined step by step in order to show them that there was nothing more which they could have done to alter the outcome. If workers are able to come through this phase feeling that they used their resources adequately in the situation, recovery will ensue. Resources include the worker's knowledge, training, previous experience, response time and equipment. Depression marks the last stage in the impact phase and is characterised by sleep disturbances, the tendency to oversleep, weight loss/gain and withdrawal from significant others. Some individuals at this stage tend to be lethargic and irritable. It is difficult however, when dealing with employees who change shifts, to assess if this lethargy is as a result of traumatic stressors or rather behaviour changes which accompany shiftwork (Williams, 1993).

Recovery Phase

Often workers in the recovery phase try to lead a "normal life" and attempt to confront the traumatic experience by for example, revisiting the scene of the trauma (Williams, 1993). When workers acknowledge that the trauma is a constant and inevitable aspect of the work then the "acceptance step" of the recovery phase emerges. However, the acceptance step is characterised by a higher level of emotional response than before the traumatic experience thereby indicating that individuals return to a different

sense of "normal functioning". As such, if the individual experiences a subsequent traumatic event, they will proceed through the recovery process at a higher level of physiological and psychological stress than before (Williams, 1993).

As high risk occupations involve repetitive trauma, multiple and continuing traumatisation may occur (Beaton and Murphy, 1995; Figley, 1995; Mitchell and Dyregrov, 1993; Williams, 1993). The phases of PTSD in this regard are similar to those which result from exposure to a single stressor. Accordingly, physiological and psychological shock initially manifests with denial following and then the impact phase developing. It has however been found that individuals at this stage normally have higher levels of susceptibility to trauma. Moreover, individuals who have not resolved previous traumatic experiences or feelings of guilt often develop more distressing and pathological emotional responses towards the subsequent traumatic event (Williams, 1993). In many cases, workers as a result of heightened distress leave their occupation which in turn can be a major stressor which can result in the development of stress disorder. It has been noted that emergency medical personnel and police officers are amongst the workers most prone to develop pathological and heightened emotional responses following repeated traumas (Williams, 1993).

Therefore, although it was previously assumed that prior experience with trauma may help individuals to withstand the negative effects arising from subsequent traumatic incidents, increased exposure may infact result in the breakdown of coping mechanisms. As noted by Mitchell, emergency workers who previously were "*able to demonstrate proficiency in previous stressful situations, may decompensate upon continued exposure to severe stress*" (Mitchell, 1988; cited in Moran and Britton, 1994, p. 576). This view suggests that length of experience in the emergency services may modify the effects of the exposure to traumatic events (Bryant and Harvey, 1996; Michelson, 1994; Moran and Britton, 1994).

3.7.4 DELAYED EFFECTS OF EMERGENCY WORK

When exposure to potential trauma is a frequent aspect of the job, workers are expected to develop a flexible defensive system which should allow them to withstand traumatic incidents (Lundin and Bodegard, 1993). As they are expected to deal with a range of potentially traumatic experiences, many emergency workers believe that part of their work entails the suppression of emotions (Everstine and Everstine, 1993; Gersons, 1989; Moran and Britton, 1994). Although the ability to suppress immediate responses is crucial under field conditions as it allows workers not to be handicapped by their reactions, when reactions are suppressed they are usually expressed later (Beaton and Murphy, 1995; Mitchell and Dyregrov, 1993). Nightmares and other intrusive images like flashbacks and obsessive thoughts about the incident, humour as well as occasional emotional outbursts are amongst the most common expressions of suppressed reactions (Beaton and Murphy, 1995; Gersons, 1989; Williams, 1993). Numerous studies have found symptoms of distress to manifest in individuals 6 or more months following traumatic incidents. For example in a study by McFarlane (1988) on the responses of volunteer firefighters in the Ash Wednesday

bush fire disaster, 32% manifested PTSD at 4 months, 27% at 11 months and 30% at 29 months following the disaster. Cox (1980) notes that:

> *"...it is not rare for there to be a latency period of a few months or occasionally a few years, before the psychological reaction becomes apparent. This presents a major problem for the diagnosis of PTSD and the management of the post trauma situation" (p.621).*

Psychological reactions to traumatic incidents are also not readily apparent within the emergency services as it is in many cases perceived as being "weak" or unprofessional to admit or discuss feelings associated with traumatic incidents (Figley, 1995; Gersons, 1989). Moreover, as most emergency workers are males, they believe that by expressing vulnerability and weakness that this will threaten their sense of manhood and control. Accordingly, denial frequently occurs which results in the effects of these intense psychological experiences being concealed (Lundin and Bodegard, 1993; Mitchell and Dyregrov, 1993; Moran and Britton, 1994; Williams, 1993). Denial, however may result in workers entering into a chronically defended state which may pervade into their personal lives and cause considerable alienation with significant others. An expression of this is the way in which many workers limit their social interactions to fellow workers. This affiliative cohesion results in them receiving emotional support from co-workers whom they believe are only able to care and understand because they have shared the same traumatic experiences (Everstine and Everstine, 1993, Williams, 1993). In many cases employees in high risk occupations develop an us/them attitude towards individuals who are not within their immediate work group (Williams, 1993). Moreover, as traumatised emergency workers are usually stigmatised by employers because of the need for them to operate efficiently and effectively under sub-optimal conditions, secondary PTS symptoms are not easily detected. Organisational norms and "macho" attitudes therefore, tend to prevent the disclosure of trauma symptomatology which may threaten the well-being of employees and organisations alike (Figley, 1995).

3.7.5 BEHAVIOURAL EFFECTS OF EMERGENCY WORK

Not only may emergency work affect individuals' cognitive, physical and emotional functioning but it may also result in individuals' work-related behaviour being affected (Mitchell and Dyregrov, 1993). For instance, it has been found that decreased job satisfaction, increased sick leave, absenteeism and decrements in job performance are products of the traumatic stress associated with emergency work (Mitchell and Dyregrov, 1993). Likewise, the traumatic stress resulting from emergency work may also negatively influence job turnover. This is evident in a study conducted by Razen (1974) who found that special care units yielded a 70% turnover rate in comparison with other hospital units who had a 28% turnover rate. It was also found that nurses working in intensive care units left their jobs at a younger age than nurses working in other units which provided more routine care (Mitchell and Dyregrov, 1993).

The aforementioned behavioural manifestations of the traumatic stress associated with emergency are indicators of psychological injury and reveal how traumatic stress is manifested in emergency work. As these organisational variables reflect traumatic stress in emergency work, the relationship between general work rela ss and the above mentioned organisational variables will be discussed. This will provide us with a understanding of the effects of occupational trauma on emergency workers. This is because, as noted by Beaton and Murphy (1993), emergency workers are exposed to numerous job related stressors in addition to workplace trauma which may interact or compound with traumatic stressors. As such, since occupational stressors may interact with traumatic incident stressors and associated secondary stress symptoms, it is necessary to assess the sources and degree of job stressors which may manifest as well as their relationship with the aforementioned organisational variables (Beaton and Murphy, 1995; McCammon and Jackson Allison JR, 1995).

Stress and its relation to Organisational Variables

There are different sources of stress in different occupations depending on the level of job complexity, job demands and differences in individual coping styles (Berry and Houston, 1992; Robbins, 1993). Although stressors at work are as varied as they are in other spheres of life, stressors arising from the job itself will be discussed as the emphasis of the present study is on the nature of the job itself (Berry and Houston, 1992). Characteristics of the job which have been identified as potential stressors include role conflict, role ambiguity, role demands, the nature and size of the workload and a lack of participation in decision making. These sources of stress have been found to be associated with depression, low motivation, job dissatisfaction and turnover (Berry and Houston, 1992, Cooper and Marshall, 1978). Relationships at work like a poor relationship with colleagues and superiors may also be a source of stress. Poor relationships with superiors may result in feelings of low self-esteem, job pressure and uncompetetiveness. This may lead to withdrawal behaviour like absenteeism and job dissatisfaction (Berry and Houston, 1992).

Organisational conditions or constraints which prevent employees from performing their work, like a lack of supplies and equipment have been found to be linked to employee frustration and anxiety. The organisational climate may also contribute to stress if restrictions on behavior and problems with effective consultation exist. This has found to result in high turnover and job dissatisfaction (Berry and Houston, 1993; Cooper and Marshall, 1978; Robbins, 1993).

It is important to note that indicators of psychological health a have been found to be positively related with job satisfaction. Intense job dissatisfaction has been found to result in an internal stress response which may lead to numerous psychosomatic disorders like ulcers and heart disease. Research has even shown that work satisfaction appears to be a better predictor of length of life than one's physical condition (Dubrin, 1984; Robbins, 1993; White and Bednar, 1991). It has also been posited that job and life satisfaction are inextricably linked. According to this view, individuals who experience high job satisfaction will experience a "spillover" of this in their personal life (Berry and Houston, 1993; Dubrin,

1984; Robbins, 1993). Job satisfaction therefore influences or generalises to employees' lives outside of the workplace. As such, employers have a social responsibility to provide jobs which employees can derive satisfaction from. The effects of job satisfaction on employee well being are supported by Dubrin (1984), who states that if an individual experiences a low level of job satisfaction, he/she will perceive their quality of work life to be poor.

Work stress has serious implications for employees as well as the organisation itself. Anxiety, depression, headaches, anger and cardiovascular diseases are all symptoms of stress which may lead to accidents, drug abuse and poor interpersonal relationships. At an organisational level, stress may lead to a decline in performance as well as increases in absenteeism, dissatisfaction, turnover and job burnout (Berry and Houston, 1992). It should be noted however, that work stress is not always dysfunctional and does not necessarily lead to decrements in job performance. For instance, numerous employees are more productive when experiencing moderate stress and when they have to meet strict deadlines. However, for the purposes of the present study we are concerned more with the adverse effects of stress on employees and organisations (Berry and Houston, 1992; Robbins, 1993).

A number of the above mentioned job stressors are cited by Beaton and Murphy (1993), as occupational stress factors which emergency workers are subjected to. Beaton and Murphy (1993) note that emergency workers are exposed to uncertainty, lack of predictability and ambiguity on every shift, little job latitude and sleep disturbances, which it is posited, "*probably potentiates their traumatic symptomatology*" (Beaton and Murphy, 1993, p65). They also identify the "conveying of news of a tragedy" as a potentially traumatic role stressor which is distressing for emergency workers. Beaton and Murphy (1993) do however note that it is not as yet clear how other occupational stressors may interact with traumatic event stressors in emergency workers. Nevertheless, although the relationship between occupational stressors other than those cited by Beaton and Murphy (1993), and traumatic stressors is unclear, it is still important to understand the relationship between job stressors and the aforementioned variables. An understanding of the sources of job stressors and the way in which they manifest is important because according to McCammon and Jackson Allison, JR. (1995), p.117, this "*is the first step in planning for improvement in the work environment and addressing the concerns of workers*".

As decrements in Job Satisfaction and increased levels of Turnover are behavioural manifestations of the traumatic stress found in emergency work and are indices of psychological injury, the impact of occupational trauma on these two organisational variables will be assessed in order to reflect how work-related trauma impacts on individuals and organisation alike (Mitchell and Dyregrov, 1993). It is however important to note that although the effects of emergency work on Job Involvement has not been documented in literature, the relationship between occupational trauma and Job Involvement will be assessed in the present study as it is considered to be an important variable which can be both a cause and effect of job behaviour (*i.e. both an input and an output variable*). In this regard, of importance to the

present study is the finding that individuals high in Job Involvement are less likely to experience burnout (Elloy, Everett and Flynn, 1991; Lodahl and Kejner, 1965). As mentioned previously, PTSD is considered to be a special kind of stress which focuses more on alarm and shock than normal stress. As such, because PTSD and burnout exist on a continuum, with PTSD obviously being on the more extreme end of the continuum than burnout, the present study aims to assess if the relationship between PTSD and Job Involvement is akin to that between Job Involvement and burnout. For the purposes of the present study Job Involvement is defined as the " *psychological immersion or absorption in the activities of one's work role*" (Cook *et al*, 1981, p.88). According to this definition, a person who is high in Job Involvement is considered to be engaged in and concerned with their job.

Also of importance for the present investigation is the finding that a positive relationship exists between Job Satisfaction and Job Involvement (Rabinowitz and Hall, 1977). Although no causality has been established, it has been posited that individuals high in Job Involvement are satisfied with the job itself as well as the supervision. Elloy *et al*, (1991) state that individuals who are satisfied with their security, co-workers, supervisors and growth are more likely to experience increased Job Involvement. As mentioned previously, PTSD has been found to result in decreased levels of Job Satisfaction. As such, because a positive relationship has been found to exist between Job Satisfaction and Job Involvement, a relationship between Job Involvement and PTSD may perhaps likewise exist. However, in order to assess if Job Involvement is a behavioural manifestation of PTSD, the relationship between the two needs to be assessed. In sum, as decreased Job Satisfaction and increased rates of Turnover are considered to be by-products of occupational trauma, the effects of emergency work on these variables will be assessed. Moreover although previous literature on the effects of emergency work has not examined if Job Involvement is also a behaviour manifestation of work related trauma, the present study aims to determine if infact PTSD does impact on Job Involvement. In this regard, this aspect of the study may be considered to be exploratory.

3.8 PREVENTION AND REDUCTION OF POST TRAUMATIC STRESS

As traumatic events may have crippling effects on an organisation's economic and social well-being, in order for an emotionally healthy work environment to be facilitated, employers must realise that they need to help employees deal with the emotional aftermath following traumatic incidents (Figley, 1995; Mitchell and Dyregrov, 1993; Williams, 1993).

Miller and Birnbaum (1988) note that those individuals who do not have adequate social and cognitive coping skills to deal with stressful events, are more likely to suffer psychological and physical stress as a result thereof. Accordingly, preincident stress education programs are perceived to play an important role in mitigating the stress responses of emergency personnel. Miller, as early as 1959, pointed out that effective education played a vital role in the learning of behaviours and could decrease the fear arising from danger. This is supported by Cox (1980) who posits that numerous positive factors such as education

and training can alter an individual's ability to deal with stress. This is reinforced by Clause (1980) who states that :

> *"Training professionals how to manage stress in the environment is largely cognitively oriented. People can be taught to become aware of those stimuli which trigger defensive reactions and to develop coping strategies. (p11)"*

Pre-incident stress training or stress education programs have been successfully used in many high risk professions. For instance, numerous stress researchers and clinicians have reported that stress education programs have had considerable success in the field of emergency work. Graham (1981) and Claus (1980) have noted the positive effects resulting from training nurses in stress management. Stress education programs have likewise been found to successfully eliminate the stress reactions found in the paramedic population. For instance, Mitchell (1983) noted a decrease in the measured stress of paramedics 3 months following a stress management training program.

Researchers however, do not all agree that stress education is instrumental in reducing or eliminating stress responses. Numerous studies have shown that when stress results from situations which are too complex, chronic or broad spectrum, stress education can do little to alleviate existing stress reactions. Likewise, Saranson, Johnson , Berberich and Siegal (1979) noted that evidence supporting the positive outcomes of stress education is scarce and that research is needed before the effectiveness of these programs can be ascertained. Nevertheless, despite the lack of consensus relating to the effectiveness of stress education programs and the lack of empirical evidence advanced in respect of these programs, numerous studies have provided support for the utility and value of such programs (Mitchell and Dyregrov, 1993). Therefore, although the effectiveness of the stress education programs must be assessed by further research, these programs may successfully mitigate the negative effects of occupational trauma arising from emergency work (Mitchell and Dyregrov, 1993).

It has found that stress education programs may desensitise emergency workers to the sounds, sights and traumatic scenes and may allow them to be less stressed by these stimuli. It has also been noted that stress educated and trained emergency workers are more likely to recognise their stress responses as well as those of others and are more prone to seeking help earlier (Williams, 1993). Moreover, stress trained emergency workers have been found to experience a greater sense of control as well as feeling as though they are not abnormal but rather are experiencing a normal aspect of their work itself. Stress Mitigation Programs for emergency workers consists of a numerous strategies which include:

1. The giving of general information in respect of the nature of stress response syndromes, their causes and effects.
2. Advancing information pertaining to typical symptoms which usually manifest shortly after an emergency intervention.

3. The giving of information about stress survival strategies which should be employed during on the scene operations. For instance emergency workers should be advised to take breaks frequently , restrict their exposure to disturbing sounds and sights and to offer support to each other.
4. Stress related information may be given to spouses and significant others through stress workshops which may allow them to recognise and respond appropriately to any stress responses which may manifest following any traumatic event. This may allow significant others to encourage emergency personnel to seek out and request help in dealing with their traumatic stress responses (Mitchell and Dyregrov, 1993).

Prevention orientated stress strategies may however, not always be able to mitigate the negative effects arising from emergency work. As such, numerous stress intervention or reduction strategies should be used where emergency workers are experiencing distress as a result of their work (Mitchell and Dyregrov, 1993). Post-trauma intervention for emergency workers may take one of two forms. Support services on site or directly associated with the scene of the trauma are included in the first category whereas support services provided either immediately following or in the first few weeks or months after a traumatic event are included in the second category. Support services include: psychological debriefing, individual counselling, assessments and spouse support programs (Mitchell and Dyregrov, 1993).

As numerous strategies for the treatment of workplace related traumatic stressors have been adopted in recent years, employers need to identify the type, amount and location of stressors. Although the stressor may in some cases be eliminated or attenuated, in many high risk occupations this is not usually possible as the trauma is an aspect of the work itself (Williams, 1993). As such, the provision of direct services *(e.g. debriefing)* following a trauma and before the onset of PTSD symptomatology constitutes a secondary preventative strategy which is mostly utilised in high risk professions (Williams, 1993).

Therefore, where work related trauma can be avoided, organisations have the responsibility of identifying and eliminating stressful situations. Where the trauma is non-predictable and unavoidable, programs and procedures for dealing with the traumatic aftermath must be provided (Mitchell and Dyregrov, 1993; Williams, 1993). Through peer support, EAP's and outside counseling resources, the normal recovery process can be facilitated which can result in the restabilization of the employee and organisation alike. As work related trauma can impede the organisation's operations, personnel and financial future, the business community must acknowledge that employees in high risk occupations are not exempt from the devastating effects of trauma. Thus, in order to minimise personal trauma as well as the disruption of operations, the prevention of trauma related disorders is important as most emergency workers are exposed to occupational trauma and will experience PTSD symptomatology at some time during their working life (Beaton and Murphy, 1995; Williams, 1993).

3.9 SUMMARY

1. Although the phenomenon of PTSD has enjoyed a long history, most of all the attention has been directed to those who have been directly traumatised (i.e., *the victims)* and little to those who have been traumatised indirectly or secondarily.

2. Professional emergency workers which include firefighters, paramedics, emergency medical technicians, ambulance drivers, law enforcement personnel, rescue workers and disaster response teams are front-line responders who are at risk of experiencing Secondary Traumatic Stress. As exposure to occupational trauma is a fact of everyday life for emergency workers, exposure to trauma is repetative, potentially cumulative and threatens one's health and well-being.

3. The costs arising from not attending to Secondary Traumatic Stress in emergency workers include, short and long-term emotional and physical disorders, burnout, substance abuse, strains on interpersonal relationships and shortened careers. Included amongst the negative byproducts of the traumatic stress associated with emergency work are Job Turnover and decreases in Job Satisfaction.

4. Emergency workers are also exposed to numerous job related stressors in addition to workplace trauma which may compound or interact with traumatic stressors. These job stressors have been found to include sleep disturbances and a lack of job latitude and predictability on shifts.

5. Individual, social, organisational and traumatic event factors may potentially either increase or decrease one's susceptibility to Secondary Traumatic Stress.

- Individual factors which have been shown to directly influence outcome variables or to produce significant outcome differences include: a history of psychiatric symptoms, personality traits and demographic variables.

- Social networks have been shown to assist individuals in coping with stressful events. Within the emergency services, social support normally arises from co-workers as they believe that only people who have shared experiences can understand or care. If emergency workers' friends and spouses originate from their immediate work group or a closely related field they are also considered to be a source of social support.

- Cultural norms present in emergency work occupations prescribe, in part how individuals should respond to duty related trauma. In most cases, it is considered as unprofessional or weak to discuss feelings associated with traumatic events and as such workers are encouraged to be tough and suppress their feelings. Occupational and organisational barriers therefore prevent the identification and treatment of secondary traumatic stress reactions.

- Traumatic events vary according to the suddenness, controllability, duration of damage and the extent of damage and destruction. The magnitude and type of events interact with antecedent, mediating and outcome factors.

6. Repeated exposure to occupational trauma, a lack of recognition and a failure to treat secondary stress will result in negative consequences for the individual and organisatuion alike..

7. As most emergency workers will be exposed to work related trauma and as such will experience some Secondary Traumatic Stress at some stage in their career, written policies regarding trauma need to be developed and implemented. This will encourage the prevention and treatment of occupational trauma.

3.10 RATIONALE FOR PRESENT RESEARCH

It has been found that within the emergency services that 15% of workers may suffer from PTSD symptoms (Everstine and Everstine, 1993; Kinchin, 1994). Thus, in addition to the fact that work for most emergency personnel is temporarily stressful, it may also result in short and long term psychological difficulties for others. As it is well known that psychological problems are a predominant cause of employee absenteeism, turnover and may lead to decrements in job performance and satisfaction, work related trauma may have negative consequences for employees and organisations alike. Due to the fact that exposure to occupational trauma is an aspect of daily life for emergency workers, the impact of trauma on the aforementioned organisational variables may be readily examined (Beaton and Murphy, 1995). As the incident rate of PTSD in the general population is approximately 25%, the present findings may have important implications for other work population groups. This could be of benefit to employers who nowdays have a responsibility not only to identify potential stressors within the work environment but also to develop strategies to prevent or reduce duty related stressors.

Most of the published accounts of emergency workers are descriptive. Although studies in this regard are important primary steps towards the understanding of trauma in emergency work, descriptive studies are over represented (Beaton and Murphy, 1993). As such, studies with a sampling group of sufficient size and representation need to be conducted in order to allow for statistical analyses to be performed beyond the descriptive statistics which have been reported thus far. The present study will therefore attempt to provide an understanding of the effects of emergency work by making use of both quantitative as well as qualitative statistical analyses. This may provide a better understanding of the deletious effects of occupational trauma on emergency workers as well as the factors contributing to secondary traumatisation.

The present study aims to assess if emergency workers suffer from PTSD symptomatology due to the nature of their job. In particular, the study aims to assess if there is a significant correlation between Post Traumatic Stress symptoms and numerous work related variables namely Job Satisfaction, Job Involvement

and Propensity to Leave. Moreover, as it has been posited that individual variables may either increase or decrease one's susceptibility towards the development of PTSD, the impact of several biographical variables on PTSD will be measured. These variables include: gender, age, length of service, occupational position and race.

From the literature reviewed, the following hypotheses will be examined:

HYPOTHESIS 1: *Do paramedics suffer from PTSD as a result of job stressors?*

HYPOTHESIS 2 : *Is there a significant correlation between PTSD and work related variables for the whole sample?*

HYPOTHESIS 3 : *Is there a significant relationship between age, gender, occupational position, length of service, race and PTSD?*

4. CHAPTER 2 - METHODOLOGY

4.1 RESEARCH DESIGN

As the purpose of the present study was to examine if a significant relationship exists between traumatic symptoms and numerous dependant work related variables namely Job Satisfaction, Job Involvement and Propensity to Leave, the study may be regarded as a correlational design. The research investigation was a cross-sectional study as what was being studied was observed at a single point in time which differs from a longitudinal study where data is collected at more than one point in time (Baker, 1994). A self-report questionnaire comprised of numerous scales was used to assess the relationship between the independent and dependent variables under investigation.

The present study may also be regarded as a field research design as the present researcher became a participant in the social setting under investigation (Baker, 1994; Neuman, 1994). The present study focused on the entire social unit under investigation whereby the researcher sought to understand how the social unit functions in its own terms. In order to achieve this, the researcher was required to become immersed in the daily life of social unit under investigation. As the primary aim of field research is to observe the social environment as it is rather than as the researcher may expect it to be, the researcher is required to be unobtrusive. In other words the researcher must not make his/her presence too forceful but should instead blend in with subjects in order to attain their trust and not make them self-conscious. Due to this, field studies are regarded as being the least intrusive and artificial way of studying a social context (Baker, 1994).

An investigation of field research provides a rich contrast to more quantitative and controlled data collection techniques found in survey research and experimental studies. As noted by Baker (1994), the techniques for studying a social unit may, as in the present study, be entirely observational. As such, field research is said to possess an "openness" in its design because instead of entering the setting with definite fixed questions, the researcher begins with a few general que. ' ns and lets his/her experiences guide the course of his/her research. This differs from the highly controlled and prearranged design of an experiment or the accuracy and exactness of a questionnaire (Baker, 1994; Neuman, 1994). In this regard, the researcher in the present study was guided by a set of general concerns, namely the variables under investigation, and the desire to break through the guise of the social context under investigation in order to gain an accurate and true understanding of the nature of emergency work (Baker, 1994).

4.2 RESEARCH PROCEDURE

Access to the sample was obtained by contacting the Deputy Director of the Johannesburg Emergency Services, who granted permission for the research to be conducted at the Brixton, Rietfontein and Jabulani paramedic stations. The researcher was also given permission to travel in any ambulance vehicle thereby allowing her to observe the working conditions and stressors which paramedics are subjected to. A covering letter *(see Appendix E)*, specifying the aim of the study and assuring the respondents of the confidentiality of their responses was attached to each questionnaire. As subjects were not required to place their name on the questionnaire, the questionnaire was anonymous which ensured that their responses would be treated confidentially.

In order to obtain the participation and trust of the paramedics, the researcher accompanied them on their shifts by driving with them in their ambulances. As the researcher was in direct contact with them, they were informed that participation in the study was entirely voluntary and were reassured of the confidential nature of the research study. Since paramedics are routinely called out to perform emergency duties, the questionnaires were handed out at the beginning of each shift *(i.e. day shift at 7 a.m. and night shift at 7 p.m.)* and the paramedics were requested to fill out the questionnaire when they were not busy on an emergency call. Due to the fact that most paramedics expressed a distrust of management, the researcher personally collected the questionnaires after they were completed which served to reassure them of the confidentiality of their responses. As the researcher was in direct contact with the paramedics, she was given the opportunity to talk to a number of them about their working experiences, working conditions, satisfaction/dissatisfaction felt towards their job as well as any other issues which they wished to discuss. Once again, participation in this regard was voluntary. This form of communication with the paramedics provided valuable information and insight into the factors contributing to their perceptions of Job Satisfaction, Job Involvement and Propensity to Leave.

4.3 SAMPLE

The study was conducted on a sample of 100 full-time paramedics. According to Beaton and Murphy (1995), emergency workers are "*front-line first respondents for whom potential exposure to occupational trauma is a fact of everyday life*" (p.51). As such, they posit that emergency workers which include firefighters, paramedics and ambulance drivers are at risk for developing PTSD. As paramedics are involved in emergency situations and are therefore exposed to potentially traumatic incidents, they were an appropriate group on which to conduct the present research. The sample was drawn from 3 paramedic stations which comprised the Johannesburg Emergency Services namely: Brixton, Rietfontein and Jabulani. Each station consisted of approximately 50 paramedics working on a 5 day shift system. This means that paramedics work for 5 days and then are off for a time span of 5 days. As all the paramedics worked for the same organisation, homogeneity was ensured.

The sample consisted of 20 females and 80 males with 44 of the sample being Black, 50 being White and 6 being Indian. As seen in Table 1, the ages ranged from 21 years to 54 years with a mean age of 30.5 being reported. As can be seen in Table 2, the sample included paramedics whose length of service varied from less than 1 year to over 10 years. Moreover, the sample was comprised of paramedics who were qualified either in Basic Ambulance Care, Ambulance Emergency Assistance or Critical Care Assistance. As seen in Table 3, Basic Ambulance Care is the lowest level where paramedics are trained to perform basic ambulance care like giving oxygen and stabilising patients. Ambulance Emergency Assistance constitutes the second level. Paramedics trained at this level are able to set up intravenous lines, administer glucose and dextrose to diabetics, treat asthma patients and are able to administer certain drugs. Critical Care Assistance is the third level whereby paramedics are trained to deal with all kinds of emergency situations. Thus, the job responsibility of paramedics increases as the level of training increases. The above mentioned demographic variables were measured in order to assess if these variables impacted upon paramedics' reactions to traumatic events.

Table 1: Descriptive Statistics on Age

	N	Min.	Max.	Mean	St. Dev.
Age	100	21.00	54.00	30.54	7.33

Table 2: Descriptive Statistics on Length of Service

	N
less than 1 yr.	2
1-5 yrs.	40
5-10 yrs.	45
more than 10 yrs.	13

Table 3: Descriptive Statistics on Occupational Position

Level	N
1	49
2	34
3	17

The sampling method used in the present study was that of non-probability sampling. Studies based on non-probability samples have disadvantages in that they are regarded as being less reliable than probability sampling. Nevertheless, despite its limitations, its use may be justified because in some studies it is either more appropriate or practical to use non-probability methods (Baker, 1994). In order to gain the trust of the paramedics it was necessary that the present study be voluntary. In this regard non-probability sampling was the only form of sampling appropriate for the present study. It has been noted that a major threat inherent in using volunteer subjects, regards the fact that the utilisation of such subjects may enhance the possibility of sampling error. This may occur because many statistical tests require probability sampling and as such the use of non-probability sampling may limit the statistical procedures used as well as the interpretation thereof. Nevertheless, as noted by Baker (1994), in many cases probability sampling is not feasible and as such in these instances, the best way of developing and explaining a non-probability sample must be considered.

Although individuals who seek treatment for PTSD may provide valuable information in respect of traumatic incidents, most of the population under investigation in the present research may never seek treatment due to the high incidence of denial amongst emergency workers (Kulka and Schlenger, 1993). Thus, by examining a sample of emergency workers who have not sought treatment, the present findings can be generalised to other populations most of whom will also probably never seek treatment. Likewise as the study aims to assess the prevalence of PTSD in the emergency services, the only means of obtaining this rate is by examining subjects irrespective of if they have sought treatment or not (Kulka and Schlenger, 1993).

4.4 MEASURING INSTRUMENTS

As many victims of trauma are unable to provide an oral description of their feelings, a structured interview may not be the most suitable technique for collecting data in respect of emergency workers' reactions to trauma (Everstine and Everstine, 1993). It has rather been posited that severely traumatised individuals respond well to objective data collection instruments as they can check descriptions of stressors or symptoms and highlight those descriptions which apply to them without having to articulate this information (Everstine and Everstine, 1993; Kinchin, 1994). Thus a self-report questionnaire was used to assess if in fact emergency workers do suffer from PTSD and if this influences the job related variables under investigation. The questionnaire was comprised of three sections: *a biographical section, a section assessing if the sample is suffering from PTSD and a section measuring the dependent job related variables* (i.e. Job Satisfaction, Job Involvement and Propensity to Leave).

As mentioned previously, the researcher did have the opportunity to speak to a number of paramedics about numerous work related issues. It is however important to bear in mind that the information obtained in this regard, pertains to the paramedics' perceptions of their working conditions and feelings of Job Satisfaction, Job Involvement and Propensity to Leave. As such, this form of communication was not used

to assess if the paramedics were suffering from PTSD but rather served to provide qualitative data about the organisational variables under investigation. As noted by Baker (1994), the content obtained through communication must be representative of the population being investigated. As such the sample of 30 paramedics which stated this content were assumed to represent important aspects of the social unit under study. The method of sampling used in this regard was also that of non-probability sampling and as such the limitations inherent therein were once again present. This sample consisted of 8 women and 22 men whose ages ranged from 21 to 54 years and whose mean age score was 28.96. The sample consisted of 18 Blacks, 10 Whites and 2 Indians.

4.4.1 THE BIOGRAPHICAL SECTION

As it has been posited that age as well as length of service influence how individuals cope with traumatic events, questions relating to these demographic variables were included in the questionnaire (Bryant and Harvey, 1996). As such, the impact of these variables on the development of PTSD could be determined. Questions assessing the gender, race and occupational position of paramedics were also included in order to determine if a relationship exists between these variables and PTSD. Moreover, in order to determine if the organisation provided any form of counselling service and if so what the paramedics' perceptions of this service were, a question relating to this issue was included in this section.

4.4.2 POST-TRAUMATIC STRESS MEASURES(INDEPENDENT VARIABLE)

Traumatic Stress Schedule

In order to determine if any reported trauma symptoms were due to work related incidents and not events outside of the workplace, Norris' (1990) Traumatic Stress Schedule was used . This instrument is primarily used to assess the occurrence and impact of traumatic events. The 8 item schedule refers to traumatic events which fall outside the ambit of work-related stressors and is based on DSMIIIR's definition of common traumata. Although Norris (1990) did not provide any psychological measures of this schedule, this scale was merely used as a screening test to assess if any reported trauma symptoms were as a result of emergency work duties or if they were been caused by non-work related traumatic incidents (*e.g. rape, hijacking, death*). Obviously, if subjects indicated that they had been exposed to any traumatic incident listed in the TSS and were found to be suffering from PTSD, it could not be concluded that these subjects were suffering from work related trauma as their trauma may have been attributed to personal events.

Impact Of Events Scale

In order to assess emergency workers' responses to traumatic events, a suitable instrument must be used to establish whether or not these workers are suffering from psychological trauma. However, in the past and still presently, few methods for assessing the impact of traumatic events have been available even to clinicians in practice (Everstine and Everstine, 1993). Identifying traumatic effects is not an easy task as some severely traumatised individuals engage in defense strategies such as denial and repression thereby

appearing not to suffer from any symptoms. Others, may be unable to articulate or describe their feelings during or after traumatic incidents. Many victims may also attempt to hide how they are feeling as they would prefer not to talk about their feelings or may be ashamed to admit that they are suffering for fear of being perceived as being "psychologically weak" (Everstine and Everstine, 1993). Due to the difficulties associated with trying to assess the effects of trauma, one successful method of measuring the impact of the traumatic incident is to inventory the symptoms experienced by the victim since the occurrence of the trauma. As this approach simply requires the victim to identify feelings or thoughts, it is a fairly non-intrusive data collection method which may be advantageous in cases where victims have had extremely traumatised experiences and where caution must be taken by the researcher not to enhance this distress. This method may also be beneficial where subjects may be reluctant to share their experiences because they may be too painful (Baum, Solomon and Ursano, 1993). Based on *DSMIV (1994, p 428),* trauma symptoms can be classified into approximately 3 main types namely :

1. *Persistent re-experiencing of the trauma which has been termed as "intrusion".*
2. *Avoidance of thoughts relating to the trauma.*
3. *Increased arousal or vigilance due to the trauma.*

The instrument used to measure the psychological symptoms must be sensitive to the impact which the symptoms have made on the victim's life and should assess how long the symptoms have persisted. Therefore, the ideal instrument for assessing trauma responses should measure the entire range of symptoms which constitute the trauma response, the impact of the trauma reaction on the victim's life as well as the duration of the symptoms (Evestine and Everstine, 1993).

As the Impact of Events Scale (IES) developed by Horowitz, Wilner and Alvarez (1979) has been used by researchers in assessing the effects of traumatic events and as it is viewed favourably in clinical research literature due to its good psychometric properties, it was used in the present study to assess if emergency workers do indeed suffer from psychological trauma (Baum *et al,* 1993). Zilberg, Weiss and Horowitz, (1982) link the IES to the diagnosis of PTSD and suggest that its validity reflects the characteristics of PTSD and that it measures the intensity of the victims' distress. Zilberg *et al,* (1982) as well as Foa, Riggs, Danco and Rothbaum (1993) posit that the dimensions measured by the IES mirror the defining characteristics of PTSD as specified in DSMIIIR. Moreover, it has been stated by Figley (1988), p.8 that *"other than the IES, nothing has been published which enjoys sufficient reliability and validity to be adopted as a generic measure of PTSD".* This is supported by Neal, Busuttil, Rollins, Herepath, Strike and Turnbull, (1994) who note that the IES has received high reliability and validity on the populations on which it has been tested.

Although the instrument devised by Horowitz *et al,* (1979) measures the subjective impact which the event has made upon the individual's life, it only measures 2 of the 3 trauma symptoms necessary for PTSD to be

diagnosed. The scale therefore consists of 15 items, 8 of these pertaining to "avoidance" and 7 thereof dealing with "intrusion" and does not in effect measure the third symptom necessary for the diagnosis of PTSD namely: increased arousal or vigilance (Creamer, Burgess, Buckingham and Pattison, 1993; Lees-Haley, 1990; Neal *et al*, 1994).

The Impact of Events Scale is a self-report instrument and requires the respondent to read a list of statements and to highlight those statements which apply to him/her in respect of the past 7 days. Responses are scored on a 4 point scale ranging from "Not at all" to "Often" (Lees-Haley, 1990; Horowitz *et al*, 1979; Kinchin, 1994; Neal *et al*, 1994). The split half reliability of the IES has been reported as 0.86 with internal consistencies as measured by Cronbach's coefficient alpha being: intrusion = 0.78 and avoidance =0.82 (Foa *et al*, 1993; Horowitz *et al*, 1979). The intrusion and avoidance sub-scales have been correlated at 0.42 which reflects independence. Test-retest reliability has been found to be 0.87 with the avoidance sub-scale measuring 0.89 and the intrusion sub-scale measuring 0.89 (Foa *et al*, 1993, Horowitz *et al*, 1979). Lees-Haley (1990) also noted that the IES may be applied to individuals from a diverse range of educational, economic and cultural backgrounds thereby providing support for the utility of the IES.

However, due to the revised definition of trauma in DSMIIIR and more recently DSMIV, it has been argued that the IES fails to measure certain aspects of trauma (*i.e. symptoms of increased arousal or vigilance*). Although this does not negate the usefulness of Horowitz *et al's*, (1979) scale, the IES cannot be conceived of as being a comprehensive instrument in assessing the trauma response. A revised version of the IES which measures the full range of symptoms comprising traumatic reactions was therefore used in the present study to assess emergency workers' reactions to traumatic incidents (Everstine and Everstine, 1993). The IES has been revised by Esprey (1996) and includes a sub-scale with 6 items which measures increased arousal.

In respect of the Revised Impact of Events Scale (RIES), Esprey (1996) reported a Cronbach alpha of 0.87 on the whole scale with the individual scales measuring: Intrusion = 0.83, Avoidance = 0.67 and Arousal = 0.69. The RIES therefore reflects satisfactory internal consistency in respect of the scale items. The psychometric properties obtained by Esprey (1996), therefore seem to warrant the use of the RIES. This is substantiated in the present study following a Cronbach alpha of 0.93 being found for the whole scale and a Cronbach alpha of 0.85 on the Intrusion, 0.83 on the Avoidance and 0.81 on the Arousal sub-scales being found.

4.4.3 JOB INVOLVEMENT(DEPENDENT VARIABLE)

Job involvement was measured by using Buchanan's (1974) Job Involvement scale. Job involvement is defined as the, "*psychological immersion or absorption in the activities of one's work*", p(92). This scale has been selected from Buchanan's (1974), 23 item scale measuring organisational commitment which is comprised of 3 sub-scales, namely: Identification, Job Involvement and Loyalty. Buchanan (1974) defines commitment as "*a partisan, affective attachment to the goals and values, and to the organisation for its*

own sake, apart from its purely instrumental worth" (p.533). As such, organisational commitment is measured through the three aforementioned sub-scales. As the study was concerned with how the nature of the employee's job affects their job attitudes, the Job Involvement component was used as it measures an attitude to one's job and not their broad attitude towards their employing organisation as would be measured by using Buchanan's (1974) original scale. The Job Involvement scale consists of 4 items which are scored on a 7 point Likert scale, with dimensions ranging from "Strongly disagree" to "Strongly agree". This sub-scale has been found to have a coefficient alpha of 0.84 (Cook *et al*, 1981). In the present study this sub-scale was found to have a Cronbach alpha of 0.61.

4.4.4 PROPENSITY TO LEAVE(DEPENDENT VARIABLE)

Lyon's (1971) Propensity to Leave scale was used to measure the subjects' tendency to leave their employing organisation. This measure of potential turnover has been reported as having a Spearman Brown internal reliability coefficient of 0. 81. In the present study, an adapted version of Lyon's (1971) scale was used. This adapted version has been developed by Bluen (1986) who combined Lyon's (1971) Propensity to Leave scale and Cammann, Fichman, Jenkins and Klesh's (1979) Intention to Turnover scale. Bluen (1986) reported an alpha coefficient of 0.77 when using this adapted scale on a South African sample. In the present study a Cronbach alpha of 0.89 was found on the adapted Propensity to Leave Scale thereby reflecting adequate reliability.

4.4.5 JOB SATISFACTION(DEPENDENT VARIABLE)

The construct of job satisfaction can be distinguished into measures of Overall Job Satisfaction or measures which assess Specific Satisfaction. This distinction is based on the reasoning that attitudes may be observed on numerous levels of abstractness, spanning from an overall evaluation of the attitude object to specific attitudes about limited aspects of the object in question (Cook *et al* , 1981). Overall Job Satisfaction has been referred to as a general measurement of Job Satisfaction whereas Specific Satisfaction focuses on distinct aspects of the job such as working conditions, pay or the supervisor. However, the two measures are not entirely different as some Overall Job Satisfaction scales may be scored in terms of sub-scale items, each tapping into different job features. Warr, Cook and Wall's (1979) Overall Job Satisfaction scale is an example of such a scale which is comprised of measures of Intrinsic and Extrinsic Job Satisfaction and refers to separate reactions to specific features of a job. This scale contrasts to Brayfield and Rothe's (1951) scale which provides an index of Overall Job Satisfaction and is used to obtain several general evaluative reactions to a job and does not contain items referring to specific aspects of a job. As it has been proposed by Cook *et al*, (1981), that the inclusion of measures of both Overall and Specific Job Satisfaction may be useful, for the purposes of the present study both Brayfield and Rothe's (1951) as well as Warr *et al's*, (1979) scales were used.

Brayfield and Rothe's (1951) scale consists of 18 items scored on a 5 point Likert scale with responses ranging from "Agree" to "Disagree" and has a Spearman Brown coefficient internal reliability of 0. 87. In a study by Mobley, Horner and Hollingsworth (1978), a strong correlation of -0.54 was found between

Overall Job Satisfaction and Intention to Leave. This scale demonstrated an adequate reliability in the present study with a Cronbach alpha of 0.82 being reported.

Warr *et al's*, (1979) scale is comprised of 15 items and is scored on a 7 point Likert scale whereby subjects indicate their satisfaction or dissatisfaction with specific features of their job. The scale was reported as having a coefficient alpha of 0.85 and 0.88 on two studies and a test- retest reliability of 0.63 was observed. In a study by Clegg and Wall (1981), this scale was found to have a coefficient alpha of 0.92. Two South African studies one by Bluen, Barling and Burns (1990) and the other by Mbabane (1990) also used this scale successfully, with reliability's of 0.88 and 0.90 respectively being reported. In the present study Warr *et al's*, (1979) scale achieved an adequate Cronbach alpha of 0.86 on the whole scale and 0.78 and 0.69 on the Intrinsic and Extrinsic sub-scales respectively.

4.5 DATA ANALYSIS

4.5.1 QUANTITATIVE ANALYSIS

Three types of statistical analyses were used in the present study in order to analyse the raw data obtained. These are namely:

A. Pearson's Correlation Coefficient

This statistical method was used in order to assess if there was a significant relationship between traumatic symptoms and work related variables for the entire sample (i.e. Hypothesis 1). Pearson's r is a numerical index which reflects the presence of a linear straight line relationship between the 2 variables which are being measured (McCall, 1990). As such, r was used to determine the relationship between the IV namely, PTSD and each of the 3 DV's namely, Job Satisfaction, Job Involvement and Propensity to Leave. Additional correlations were also conducted between all the DV's in order to assess their relationship with each other. Moreover, a correlation was also conducted between previous traumatic experiences and PTSD as well as between age and PTSD in order to assess if a relationship exists between these constructs. It is important to note that although r represents the degree of observed linear association between 2 variables which may range from perfect positive to a perfect negative one, it does not represent the degree of their causal relationship. This is because although correlation suggests association it does not necessarily imply causality (McCall, 1990).

B. Analysis of Variance (ANOVA)

In order to determine if length of service, occupational position, gender, education and race were associated with the development of PTSD, ANOVA's were conducted because all these biographical variables were categorised. As such, each category of the independent biographical variables (IV's) had to be taken into account in determining the constructs' impact on the dependent variable, namely PTSD (Plewis 1985). One way ANOVA's were therefore used to assess the relationship between gender, race, occupational position, length of service and PTSD as these biographical variables consisted of multiple

categories. Thus, the purpose of ANOVA is to determine the between group differences of each biographical variable for PTSD. The F-ratio is a test statistic determining the significance of a difference between the means (McCall, 1990). Assumption of this test is that subjects in each group are randomly and independently sampled, that the groups are independent, that the population variances for the groups are homogeneous and that the population distribution of scores is normal in form (McCall, 1990).

C. Regression

Regression is a statistical technique which is useful for predicting one variable from another (McCall, 1990). This is achieved by using the association between variables as a method of prediction. This statistical method was applied in the present study so that previous traumatic experiences as measured by Norris' (1990) scale, could be used to predict PTSD levels. Stepwise Regression was also used in order to determine the extent to which the biographical variables could explain the variance in PTSD.

4.5.2 QUALITATIVE ANALYSIS

In order to analyse the content of communication obtained as a result of speaking with the paramedics, content analysis was used. Neuman (1994) posits that content analysis is a data collection technique which is used to analyse the content of a text. The content in this regard refers to any words, meanings, themes or message which may be communicated. The text refers to anything written or spoken which acts as a medium for communication. Researchers through objective and systematic coding and recording procedures use content analysis as a data collection technique and are able to provide a quantitative description of the content of communication (Baker, 1994; Neuman, 1994).

In the present study, the communication was categorised in terms of the major themes which were reported by the subjects. As such, content analysis was used in order to determine the major "message" or "theme" which each subject in question tried to make through his/her communication. Therefore, by studying the patterns in the communication , subjects' perceptions about the organisational constructs under investigation could be assessed. Content analysis was thus undertaken in order to obtain more information about the hypotheses under investigation. This is in keeping with Baker (1994) who posits that content analysis always needs to possess "generality" which refers to the fact that the communication needs to have theoretical relevance. As such, the aim of content analysis is not merely description but instead it is posited that the analysed content should be associated with some other factor or factors about the people generating the content (Baker, 1994; Neuman, 1994).

A major challenge in content analysis is the development by the researcher of objective categories for coding the data. Often communication is categorised in terms of how the researcher sees the material thereby causing content analysis to be prone to the bias and subjectivity of the researcher (Baker, 1994; Neuman, 1994). As such, several coders need to be used in an attempt to ensure reliability in the way that the communication is categorised. However, when using more than one coder, inter coder reliability needs to be measured. In this regard, several coders can be asked to categorise the same data independently in

order to ensure that consistency across coders exists. As such, 2 coders were used in the present study to categorise the data. This was done in order to assess if another researcher would set up similar criteria for data selection and interpretation in order to analyse the communication for the present research hypotheses (Baker, 1994; Neuman, 1994).

Content Analysis constitutes a form of qualitative analysis. As noted by Neuman (1994), qualitative researchers analyse data which is mostly in the form of words, sentences and paragraphs rather than numbers. However, although qualitative research rarely entails the use of statistics it nevertheless provides reports which are rich in their description of the social setting under investigation. The social context is of prime consideration for qualitative research because the social actions or statements are held to depend to a large degree upon the context wherein these actions or statements occur. This concern with the social context is reflected in the way events preceding and surrounding the study are taken into consideration by the qualitative researcher. As such, qualitative research tries to place a social situation within the broader frame of society thereby adding meaning to the social situation under examination (Neuman, 1994).

Due to the fact that qualitative research does not depend on mechanical techniques to collect and analyse data, qualitative research designs have been criticised by quantitative researchers for their reliance on analyses performed by individual researchers (Neuman, 1994). They argue that individual researchers through their subjective analyses, bias and contaminate objective facts. This criticism may be unwarranted as the mere presence of the human element in qualitative research does not necessarily imply that researchers impose their personal opinions on the research or that they manipulate evidence to support their views. Although qualitative researchers may use their feelings and personal insights in order to understand the social phenomenon being investigated, they should be aware of their values and opinions . In this respect, qualitative researchers should ensure that their beliefs do not influence the study in question (Neuman, 1994).

In quantitative research, data is expressed in terms of numbers with frequent use being made of tables and charts. This differs from qualitative research where data is hardly ever interpreted through the use of tables and numbers (Baker, 1994; Neuman, 1994). Qualitative data is reported in terms of discussions where data is represented in word form or through descriptions of specific events. Numerical information is provided in some instances but in such cases this is merely used to supplement the discussion. Qualitative data therefore does not preclude the use of numbers, statistics or precise and accurate quantitative measures. In this regard, quantitative data can be used as a source of information which can compliment or supplement qualitative data. Qualitative and quantitative methods of research may however be used in combination with each other so as to overcome the limitations and weaknesses inherent in each technique. In this regard the biases which are said to arise from the subjectivity associated with the qualitative researcher and the mechanistic techniques used in quantitative research may be reduced (Neuman, 1994).

3. CHAPTER 3 - RESULTS

order to perform the necessary statistical analyses, use was made of the computer programme, *Statistica.* The findings which were obtained through the analyses are discussed below. The discussion will be structured according to the hypotheses being investigated in the present study.

3.1 *HYPOTHESIS 1*

Although Hypothesis 1 relates to the prevalence of PTSD amongst paramedics, findings obtained with respect to Norris' (1990) Traumatic Stress Schedule and the counselling service in the organisation are also discussed here as they relate to the traumatic nature of the job.

3.1.1 PREVALENCE OF PTSD

As individuals must manifest both symptoms of intrusion and avoidance in order to be diagnosed as suffering from PTSD, Horowitz *et al's,* (1979), mean subscores for intrusive and avoidance responses were used to measure the dimensions and prevalence of PTSD. The mean total score obtained on Horowitz's (1979) original sample was 39.5. The mean intrusion subscale obtained by Horowitz *et al,* (1979) was 21.4 and the mean avoidance subscale score obtained was 18.2. Horowitz *et al's,* (1979), mean subscale scores were used in the present study to compare the present subjects' mean intrusion and avoidance responses to those obtained by Horowitz *et al,* (1979).

As can be seen in Table 4, the mean intrusion subscale score for the whole sample in the present study was 10.99. The mean avoidance subscale was found to be 15.18 and the arousal subscale was 10.59. The reported means on the intrusion and avoidance subscales are clearly lower than those found by Horowitz *et al,* (1979) which suggests that the present sample as a whole was not suffering from PTSD.

Table 4: Mean subscale scores for PTSD

	N	Min	Max.	Mean	Std.Dev
Intrusion	100	0	58.0	**10.99**	9.156
Avoidance	100	0	36.0	**15.18**	9.704
Arousal	100	0	58.0	**10.59**	9.156

Although a comparison of the present subjects' means with Horowitz *et al's,* (1979) mean subscale scores suggests that the entire sample may not be suffering from PTSD per se, this does not mean that some individuals may not be suffering from either avoidance or intrusive symptoms. The finding that the present samples' means differ to those obtained by Horowitz *et al,* (1979) also does not rule out the possibility

that although the entire sample may not be traumatised as such, that a percentage of the sample may be suffering from PTSD.

As such, Horowitz *et al's*, (1979) mean sub-scale scores were used as cut-off points for each individual. This means that Horowitz *et al's*, (1979) means were used as cut-off points in order to assess the percentage of individuals falling above and below these mean sub-scale scores. As can be seen in Table 5, although **82%** of the paramedic sample did not suffer from intrusive responses, **18%** reported experiencing intrusive responses according to Horowitz *et al's*, (1979) intrusive cut-off point. Likewise **40%** of the subjects reported experiencing avoidance behaviour. In order to asse the prevalence of PTSD, the percentage of subjects falling above both cut-off points was calculated. As can be seen in Table 5, **17%** of the paramedic sample fell above Horowitz *et al's*, (1979) cut- scores on both the intrusion and avoidance sub-scales which indicates that **17%** of the subjects were suffering from PTSD in accordance with Horowitz *et al's*, (1979) measure thereof.

Table 5: Distribution of Scores falling above and below PTSD mean sub-scale scores

	Cut-off Points	N	Valid cum %.	valid%
Intrusion Cut-off	<21.4	82	82.00	82.00
	≥ 21.4	18	100.00	18.00
Avoidance Cut-off	<18.2	60	60	60.00
	≥ 18.2	40	100.00	40.00
PTSD Cut-off	< [21.4]+ < [18.2]	83	83.00	83.00
	≥ 21.4] + ≥ 18.2]	17	100.00	17.00

Although Horowitz *et al's*, (1979) instrument measures the subjective impact of a traumatic event on an individual's life, as mentioned in the Methodology section, it only measures 2 of the 3 trauma symptoms necessary for a diagnosis of PTSD. As it has been argued that the Impact of Events Scale (IES) fails to measure symptoms of increased arousal which are characteristic of PTSD, it is necessary to assess the percentage of subjects in the present study who displayed symptoms of arousal. As Esprey (1996) in her revision of the IES, included a sub-scale which measures symptoms increased arousal, her mean sub-scale score was used to compare the present subjects' mean arousal responses to those obtained by Esprey (1996). As seen above in Table 4, the mean arousal sub-scale score obtained by the present sample was **10.59**. This is clearly below that obtained by Esprey (1996) which was found to be **20.25** which suggests that the sample as a whole was not experiencing symptoms of increased arousal.

However, as in the case of the Intrusion and Avoidance mean subscale scores, Esprey's (1996) mean arousal sub-scale score was used as a cut-off point to assess the percentage of the individuals in the present

study which fell above or below this score. As seen in Table 6, 12% of the present sample were found to be experiencing symptoms of increased arousal. Moreover, in order to assess the percentage of subjects displaying the full range of symptoms comprising posttraumatic reactions, the percentage of individuals falling above the intrusion, avoidance and increased arousal cut-off points was assessed. As seen in Table 6, 8% of the sample were found to be experiencing all 3 of the trauma symptoms which are necessary for a diagnosis of PTSD.

Table 6: Distribution of scores falling above and below Increased Arousal mean sub-scale scores and PTSD mean scores.

	Cut-off Points	N	Valid Cumm %	Valid %
Avoidance Cut-offs	≥ 20.25	12	12.00	12.00
	< 20.25	88	100.00	88.00
PTSD Cut-offs	≥ 21.4]+ ≥ 18.2] + ≥ 20.25]	8	8.00	8.00
	< [21.4] + [18.2] + [20.25]	92	100.00	92.00

As mentioned above, the 17% prevalence rate of PTSD found in the present study was measured by Horowitz *et al's*,(1979) scale which only contains 2 sub-scales which are considered to parallel the 2 primary dimensions of PTSD. As such, it has been argued that this scale only measures a more restricted range of PTSD than that referred to in DSMIIIR and DSMIV and which is measured by the Revised Impact of Event Scale (RIES), developed by Esprey (1996). Thus the finding that 17% of the sample were suffering from PTSD in accordance with the IES, represents a more limited diagnosis of PTSD as opposed to the 8% of the sample who were found to display the full range of PTSD symptoms. As the reliability and validity of the RIES has only been evaluated thusfar through one study namely that of Esprey (1996), the discussion relating to the prevalence rate of PTSD which follows in Chapter 4, will refer to both measures of PTSD. It is however important to remember that the prevalence rate of 17% represents a more restricted measure of PTSD whereas the prevalence rate of 8% refers to the percentage of the sample who presented the full range of PTSD symptoms.

5.1.2 IMPACT OF PREVIOUS TRAUMA ON PTSD

Norris' (1990) Traumatic Stress Schedule was used to assess if the reported trauma symptoms were due to work related incidents and not traumatic events experienced outside of the workplace. However, all of the paramedics reported that they had experienced at least one of the traumatic events listed in the Traumatic Stress Schedule. As such, no conclusions could be made as to whether the reported symptoms were as a result of emergency work duties or if they had been caused by non-work related traumatic incidents. However, as noted by Norris (1990), the Traumatic Stress Schedule may be used in a variety of ways. Thus, in addition to using it as a screening instrument as was intended in the present study, it may be used to assess the frequency of traumatic event occurrence (Norris, 1990). In this regard, Norris'(1990) scale

may be used to assess the extent to which reported PTSD levels are influenced by previous traumatic experiences.

A correlation was therefore conducted between Norris' (1990) Traumatic Stress Schedule and PTSD in order to assess if a relationship exists between prior exposure to traumatic events experienced outside of the workplace and the prevalence of PTSD. As seen in Table 7, a significant positive relationship was found to exist between prior exposure to traumatic events and the onset of PTSD. This implies that as the number of exposures to prior traumatic events outside of the workplace increase so too does the incidence of PTSD increase.

Table 7: Pearson's Correlation Coefficients of PTSD with TSS

	Traumatic Stress Schedule
Traumatic Stress Schedule	1
PTSD	.3548 *

*p < 0.05

A regression analyses was also conducted between Norris'(1990) Traumatic Stress Schedule and PTSD in order to assess the proportion of variance in PTSD which previous trauma may explain. As can be seen in Table 8, r^2 shows that prior events experienced outside of the workplace explain 12% of the proportion of variance in PTSD.

Table 8: Regression Analysis on PTSD

	Traumatic Stress Schedule
PTSD	$r^2 = 0.1259$ * F = 14.11

* p< 0.05

5.1.3 COUNSELLING IN THE ORGANISATION

Subjects were asked if they knew whether or not their organisation had a counselling service. This was done in order to assess their awareness and perceptions of the counselling service provided by the organisation. As it has been posited that counselling services are necessary for the prevention and treatment of PTS symptomatology, the subjects' perceptions of the counselling service provided, may reflect the utility and usefulness of such services. As can be seen from Table 9, **79%** of subjects knew that their organisation did have a counselling service, **13%** reported that it did not and **8%** said that they were unsure of whether or not their organisation had a counselling service.

Table 9: Descriptive statistics relating to the counselling service

	N
Yes	79
No	13
Unsure	8

5.2 HYPOTHESIS 2

In order to assess if a relationship exists between the IV namely PTSD and the three DV's namely Job Satisfaction, Job Involvement and Propensity to Leave, Pearson's product-moment correlations were calculated on the entire sample (i.e. N=100). As can be seen in Table 9, a significant negative relationship was found between PTSD and Job Satisfaction.

It is important to note that Job Satisfaction in this regard represents a measure of Overall Job Satisfaction as measured by Warr *et al's*,(1979) scale. As mentioned in the Methodology Section, Warr *et al's*, (1979) measure of Job Satisfaction refers to separate reactions to specific features of one's job as opposed to Brayfield and Rothe's (1951) scale which is used to obtain several general evaluative reactions to one's job. The finding that PTSD was correlated with Warr *et al's*, (1979) measure of Job Satisfaction and not Brayfield and Rothe's (1951) measure thereof suggests that PTSD affects one's satisfaction with different features of one's job as opposed to the job as a whole. As noted by Cook *et al*, (1981) in deciding which of these two measures are more useful, it depends on the goal of the study Cook *et al*, (1981) posit that if the data being gathered is in order to identify organisational deficiencies, then scales tapping into different features of work are more useful as they have more information potential. Based on this reasoning, it was decided that Warr *et al's*, (1979) measure of Job Satisfaction was more useful in the present study as it allowed for the assessment of paramedics' reactions to specific features of their work which was useful in explaining several of the results obtained in the present study. As such, any reference to Job Satisfaction hereafter will be in respect of Warr *et al's*, (1979) measure thereof.

The moderately strong negative relationship between PTSD and Job Satisfaction suggests that an increase in the manifestation of PTSD is associated with decrease in Job Satisfaction. As can be seen in Table 9, no significant relationship was found between PTSD and the other two Dv's namely Job Involvement and Propensity to Leave. It is important to note that Brayfield and Rothe's (1951) measure of Job satisfaction is referred to as "Job Satisfaction" in Table 10, and Warr *et al's* (1979) measure as "Overall Job Satisfaction".

Table 10: Pearson's Correlation Coefficients of PTSD with each DV

	Job Satisfaction	Overall Job Satisfaction	Job Involvement	Propensity to Leave
PTSD	.1314 Not Significant	-.2387 *	.0440 Not Significant	.1690 Not Significant

*p < 0.05

Additional correlations were conducted between all the Dv's in order to assess the relationship between the organisational variables under investigation. As will be seen in the Discussion Section, these additional analyses help to explain the results obtained in respect of Hypothesis 2. As seen in Table 11, a strong negative association was found between Job Involvement and Propensity to Leave as well as between Job Satisfaction and Propensity to Leave. A strong positive association was found between Job Involvement and Job Satisfaction.

Table 11: Pearson's Correlation Coefficients between all the DV's

	Job Satisfaction	Job Involvement	Propensity to Leave
Job Satisfaction	1	.2429 *	-.5264 *
Job Involvement	.2429 *	1	-.2079 *
Propensity to Leave	-.5264 *	-.2079 *	1

*p< 0.05

Correlations were also performed between the two subscales of Warr *et al's,* (1979) Overall Satisfaction scale *(i.e. Intrinsic and Exrtrinsic Job Satisfaction)* and Propensity to Leave. As can be seen in Table 12, a significant negative relationship was found between Intrinsic and Extrinsic Satisfaction and Propensity to Leave.

Table 12: Pearson's Correlation Coefficients of Propensity to Leave with Intrinsic and Extrinsic Job Satisfaction

	Propensity to Leave
Intrinsic Job Satisfaction	-.4439 *
Extrinsic Job Satisfaction	-.4625 *

*p < 0.05

5.3 HYPOTHESIS 3

As all the biographical variables except age were categorised, one-way ANOVA's were used to assess the relationship between gender, race, position, length of service and PTSD. In respect of race, occupational position and length of service, as can be seen in Table 13, there was no significant differences in the effects

of the different categories of these variables on PTSD. This implies that the constructs of race, position and length of service did not account for any differences in PTSD. As seen in Table 13, PTSD was however found to differ significantly according to gender.

Table 13: One way Analysis of Variance of Biographical Variables on PTSD

Variable	df Error	F	p level
Gender	98	5.582	.0201*
Race	97	.6284	.5356
Position	96	2.282	.1076
Length of Service	96	.3212	.8100

*p < 0.05

By comparing the means of males and females as shown in Table 14, females yielded higher means on the PTSD variable scale. This indicates that women reported higher levels of PTS symptomatology than men did in the present study.

Table 14: Breakdown of Gender on PTSD

	Mean	Std. Dev.	N
Females	50.05	25.548	20
Males	35.688	24.009	80

As the construct of age was not grouped into categories, a correlation was conducted between age and the IV, namely PTSD. As can be seen in Table 15, no significant relationship was found between age and PTSD.

Table 15: Pearson's Correlation Coefficients of PTSD with Age

	Age
Age	1
PTSD	.1070

*p < 0.05

Stepwise Regression was also used to assess the proportion of variability in PTSD which is accounted for by the biographical variables. This statistical method was used as a means of using the association between variables as a method of prediction. Previous traumatic experiences as measured by Norris'

(1990) scale was included in the stepwise regression as it is a personal factor like the biographical variables which may influence PTSD outcomes.

From Table 16, it is evident that of all the variables, gender and previous traumatic experiences contribute the most to the variance in PTSD. Thus, 13% of the variance in PTSD was explained by previous trauma. Gender was found to account for 4% of the variance in PTSD. By looking at Table 16, it can be seen that the variables of race, position, length of service and age do not meet the 0.05 significance level. These demographic variables were therefore found not to make any significant contribution to PTSD levels.

Table 16: Stepwise Regression Procedure of Biographical Variables on PTSD

Age	r^2= 0.014	F= 0.61
Position	r^2= 0.001	F= 0.10
Race	r^2= 0.016	F= 0.63
Length of Service	r^2= 0.008	F = 0.39
Gender	r^2= 0.0	F= 5.58
Previous Trauma (TSS)	r^2= .1258 *	F= 14.11

*p<0.05

However, the percentage of variation in PTSD explained by previous trauma and gender is only 17% which is low. These variables therefore have a poor predictive value as they only a small percentage of variability in PTSD is accounted for by this model. This means that it is possible to link the dependent variable to some other independent variables. This implies that there are numerous other variables which were not measured in the present study which may account for the variability in PTSD. Obviously, data was only collected for a certain number of variables and therefore there are no other variables which can be used to assess if they predict PTSD. As such, although we have to accept r^2, we must bear in mind that there are a number of other factors which were not measured in the present study which may predict or explain more of the variance in PTSD.

5.4 RESULTS OF QUALITATIVE RESEARCH

During the course of working with the paramedics on their shifts, the researcher had the opportunity to speak to 30 paramedics ranging from all three work stations. Through informal communication, certain patterns were found to recur in the content of their communication. These patterns represented major "themes" which repeatedly arose throughout the communication with the paramedics. It is important to note that although quantitative analysis is usually a chief objective in content analysis, it is not necessary to count the frequency of certain attributes found in specific communication. As noted by Baker (1994), communication may be categorised in its totality by the major themes which are found. The 30 paramedics in the present study spoke about work related issues which concerned them individually rather than

answering standardised questions. As a result, they differed in terms of what they chose to speak about. Therefore, the frequencies with which the issues were referred to could not be assessed due to the lack of standardisation across the communication (Baker, 1994). The findings obtained in this regard will therefore be reported according to the number of subjects who referred to a particular theme.

The major themes which the researcher found that the paramedics were trying the make through their statements were regarding their feelings towards the organisational restructuring taking place at the time of the study, management, the working conditions and their feelings about the nature of the job itself. As such, the results obtained in this regard will be discussed in terms of the above mentioned themes by which the data was categorised.

5.4.1 REFERENCES TO THE ORGANISATIONAL RESTRUCTURING

It was found that 20 paramedics expressed a negative attitude towards the organisational restructuring. Some expressed that they felt as if the organisational change had been imposed upon them because they were not given a say in the restructuring. Others said that they did not want to merge with the fire department as such a change would be fraught with difficulties *(i.e. like a change in shift hours).*

5.4.2 REFERENCES TO MANAGEMENT

Of importance was the finding that all 30 paramedics complained about management. In this regard, the bureaucratic nature of the organisation, internal politics and the lack of concern by management for workers were listed amongst the factors resulting in workers having a negative perception towards management. It was found that 18 paramedics felt that management did not care about them or treat them as people. Moreover, 20 paramedics cited the bureaucratic nature of the organisation as the prime cause of the dissatisfaction felt towards management. They listed their lack of decision making power, the lack of recognition and remuneration received for working hours, quality of work and risk involved in their job as well as poor organisation by management as illustrations of the bureaucratic nature of the organisation. Internal politics were regarded by 12 paramedics as being major causes of the dissatisfaction felt towards management. Internal politics were reflected in the way paramedics reported that advancements within the organisation were not based on merit and that management often manipulated and undermined them.

5.4.3 REFERENCES TO WORKING CONDITIONS

The lack of adequate equipment, long working hours and public abuse were cited as the most common causes of poor working conditions. Nineteen paramedics expressed that they had to work with "old, unroadworthy" vehicles which they felt were a major cause of frustration and stress. Moreover, 12 paramedics said that they often did not have the basic equipment at the beginning of a shift to perform their duties. This resulted in them having to respond in many instances to emergency situations without the necessary equipment. Furthermore, 5 paramedics complained about the long working hours which they felt affected them negatively. Of these 5 paramedics, 4 complained that the long working hours had strained

their marriages. They said that the stress resulting from the long working hours was also compounded by the fact that they had children which they tended to worry about whilst working on their shifts.

Ten paramedics reported that public abuse was a big problem and that it contributed to the high stress levels experienced by paramedics. False calls were cited as the most common form of public abuse resulting in frustration. Paramedics also reported that a lack of awareness by the public of the duties which they perform was a major cause of public abuse. Eighteen paramedics reported that as a result of the poor working conditions, conflict experienced with management and organisational restructuring, that they were leaving or thinking of leaving.

5.4.4 REFERENCES TO THE NATURE OF THE JOB

Seventeen paramedics did make statements regarding the nature of the job itself. It was found that 9 paramedics felt that the traumatic nature of the job did not affect them. Of these 9 paramedics, 5 said that when the traumatic incident was personally significant to them like where a child or a colleague was involved in the incident, that it did tend to affect them. Moreover, 6 paramedics listed humour, smoking, and the use alcohol and drugs as common coping mechanisms found amongst paramedics. Personal attributions and beliefs about traumatic incidents were listed by 4 paramedics as mechanisms which helped them to cope with traumatic incidents.

Fifteen paramedics said that there was no form of debriefing available to paramedics. Although 10 paramedics expressed that they were aware that there was a social worker available who offered counselling, they said that they did not perceive her favourably because she was employed by management and therefore according to them had sided with management. Moreover, 5 paramedics expressed that they would not speak to a social worker or psychologist as they felt that because they had not experienced the traumatic situation that they would be unable to understand their problems. This belief was found to have pervaded into 5 paramedics marital lives where they expressed the belief that their spouse was also unable to understand their traumatic work experiences.

It was found that 5 paramedics felt that the traumatic nature of the job did affect them. Of these paramedics, 3 expressed that the stress experienced as a result of the work itself arose from the continuous exposure to traumatic incidents which they felt "added up". Four paramedics expressed the need for management to acknowledge that they do infact suffer from trauma as well as the need for someone to counsel them in this regard.

5.5 SUMMARY

The qualitative and quantitative results obtained will be summarised in the light of the hypotheses being examined.

5.5.1 HYPOTHESIS 1

Quantitative data showed that 17% of paramedics were suffering from PTSD in accordance with Horowitz *et al's,* (1979) measure thereof whilst, 8% were found to be experiencing all 3 symptoms of PTSD. This indicates that paramedics do indeed suffer from duty related PTSD. Qualitative results indicated that whereas 9 paramedics reported that the traumatic nature of the job did not affect them, 8 felt that it did. Humour, smoking and the use of alcohol and drugs were listed by 6 paramedics as common coping mechanisms used by paramedics to deal with the duty related trauma. Beliefs and personal attributions about traumatic incidents were listed by 4 paramedics as coping mechanisms which helped them deal with occupational trauma.

Quantitative results showed that 11% of the variance in PTSD was explained by previous traumatic experiences which indicates that previous traumatic experiences are associated with the prevalence of PTSD. I. this regard, individuals who had experienced previous multiple stressors were found to experience more symptoms of PTSD than those individuals who had been exposed to a single stressor.

Through quantitative analyses it was found that 79% of paramedics knew of the counselling service provided by the organisation, 18% did not know about the counselling service and 8% were unsure as to whether such a service was provided by the organisation or not . Qualitative results however indicate although a general counselling service did exist there was no form of debriefing available for paramedics. Moreover, although most paramedics were aware of the counselling service their perception thereof was negative.

5.5.2 HYPOTHESIS 2

Quantitative data revealed that there is a significant relationship between PTSD and Job Satisfaction for the whole sample. However, no significant relationship was found between PTSD and Job Involvement or Propensity to Leave. Qualitative results did however show that paramedics are subjected to numerous job stressors which seem to be associated more with Job Involvement and Propensity to Leave than PTSD. These job stressors were found to include:

1. The organisational restructuring occurring at the time of the study.
2. Dissatisfaction with management.
3. Dissatisfaction with working conditions.

5.5.3 HYPOTHESIS 3

Quantitative results did show that there was a significant relationship between gender and PTSD. In this regard, females were found to be more vulnerable towards PTSD than males. No significant relationships were found between PTSD and the other demographic variables under investigation. Stepwise Regression revealed that previous traumatic experiences and gender are the most efficient predictors of PTSD. However as they were found only to account for a small proportion of the variance in PTSD, it must be

concluded that there are other variables which were not measured in the present finding that may explain a greater proportion of the variance in PTSD.

6. CHAPTER 4 - DISCUSSION

6.1 INTRODUCTION

As noted in the literature review, the publication of the American Psychiatric Association's DSMIII in 1980 is regarded by many as a major milestone as it was the first to include a diagnosis of Post Traumatic Stress Disorder. For the first time the common symptoms experienced by a large variety of traumatised individuals were regarded as a psychiatric disorder which could be accurately diagnosed and treated (Figley, 1995; Peterson *et al*, 1991).

Although the symptom criteria was somewhat modified in the revision of DSMIII, the use of the concept amongst professionals *(i.e. lawyers, researchers, therapists)* working with traumatised individuals has grown as has the empirical research which has been advanced to validate the disorder (Figley, 1995; Scrignar, 1988). The term PTSD is now commonly applied to individuals who have been traumatised by a variety of traumatic events. Since the advent of the concept of PTSD over a decade ago, trauma literature has grown significantly. However, a review of the traumatology literature reveals that almost all the reports on traumatised individuals focus on those who have been directly traumatised *(i.e. victims)* and exclude those individuals who have been traumatised indirectly (Figley, 1995).

Descriptions of what constitutes a traumatic event in DSMIII, DSMIIIR and DSMIV however, clearly indicate that the mere knowledge of another individual's traumatic experiences may be traumatising (Figley, 1995). This implies that individuals may be either directly or indirectly traumatised. Nevertheless, although this phenomenon is clearly identified as a form of traumatisation in all the versions of DSM, most of the emphasis has been placed on individuals directly harmed and little to those individuals who worry and care for these victims. Although indirect traumatisation was not conceptually defined until recently in trauma literature, literature has in the past and still presently, been full of implicit and explicit description of this phenomenon. There has therefore, been widespread yet scattered attention paid to indirect traumatisation in psychological literature which is now referred to as "Secondary Traumatic Stress Disorder" or "Compassion Fatigue" (Figley, 1995).

Beaton and Murphy (1993) explain that the reason why there are so few reports on these traumatised individuals may be because the field may be in a "pre-paradigm state" as defined by Kuhn (1970). According to Kuhn, paradigms follow the evolution of knowledge which in turn influence the development of new knowledge. As such, knowledge about experiencing and reacting to trauma evolves. In this regard, prevailing paradigms come to be viewed as anomalies when new information appears and when paradigm

shifts occur. This undoubtedly applies to the existing limiting view of PTSD and calls for the need to acknowledge that attending to the suffering of others may in itself be traumatising (Beaton and Murphy, 1995; Figley, 1995). Therefore, although the concept of PTSD has received widespread application for over a decade, the least studied and least understood aspect of traumatic stress, namely Secondary Traumatic Stress, needs to be considered and examined much more extensively (Beaton and Murphy, 1995; Figley, 1995).

Many sources have confirmed that the most frequently used and most important remedies for individuals suffering from PTSD are personal as opposed to medical and clinical (Figley, 1995). Included amongst these personal remedies are the social support of family, friends, acquaintances and professional caregivers. However, as mentioned previously , little has been written about the implications of a person's being confronted with the pain and suffering of others (Beaton and Murphy, 1995). It is important to understand how these supporters may become traumatised as a result of their contact with primary victims of trauma. Only by understanding this process can additional subsequent stress amongst supporters be prevented. This may in turn have important implications for the quality of care for victims which can be enhanced by helping these supporters (Figley, 1995; Beaton and Murphy, 1995).

Although a great deal more knowledge needs to be advanced regarding Compassion Fatigue, it is well known that it is an occupational hazard for professional caregivers. Previous studies on stress in emergency service personnel have focused on factors contributing to burnout like organisational variables, role perceptions and working conditions (Figley, 1995; Mitchell and Dyregrov, 1993). Although it has been found that levels of stress and strain amongst emergency workers are higher than those of other occupation groups, most emergency workers are also exposed to duty related trauma and will experience some Secondary Traumatic Stress during their careers. Emergency workers are therefore, exposed to numerous job related stressors in addition to occupational trauma which may interact or compound with traumatic stressors (Beaton and Murphy, 1995; McCammon and Jackson Allison, JR, 1995).

Caregivers need to be prepared to deal with occupational stressors in order to ensure both their own well-being as well as that of the organisation. An assessment of the sources and degree of job stressors and the way in which they manifest is the first step towards improving the work environment for these workers. Possible indicators of psychological injury have been found to include, personal turnover patterns, increased levels of absenteeism as well as decreases in job satisfaction (McCammon and Jackson Allison, JR 1995; Mitchell and Dyregrov 1993). Therefore, as these organisational variables are indices of trauma, information obtained in this regard can form the basis of developing strategies for prevention and remediation.

The present findings have important implications for the business community as employers have a responsibility towards their employees not only to identify possible stressors within the workplace but also

to develop and provide strategies to reduce and prevent work related stressors (Mitchell and Dyregrov, 1993; Williams, 1993). This responsibility stems from the need of employees to identify and deal with mental health problems in the workplace. As emotional problems may affect both the psychological and physical heath of the employee as well as the functioning of the organisation, modern organisations need to provide employees with some assistance in coping with mental health problems. As employers are nowadays becoming increasing positive about helping employees, existing programs should be expanded to deal with a broad range of employee health problems which include occupational trauma (Berry and Houston, 1993; Everstine and Everstine, 1993).

Furthermore, in keeping with Freud's two stage settings for ego functioning namely home and work, problems experienced by employees outside of the workplace usually manifest at work. In his regard, trauma experienced in the non-work sphere of employees' lives will usually tend to "spillover" to their worklife (Berry and Houston, 1992; Everstine and Everstine, 1993). Therefore, absenteeism, decreased job satisfaction and increased turnover are by-products of the traumatic stress found amongst emergency workers and most other persons (Mitchell and Dyregrov, 1993). As such, the present findings can be used to prevent the onset of PTSD or to reduce the emotional aftermath following a trauma in other occupational groups.

The present study therefore, aims to provide a framework for understanding the traumatic nature of emergency work. Such an understanding can assist employers in providing prevention orientated strategies to mitigate the impact of traumatic events on emergency workers as well as other employees who may suffer traumatic stress response syndromes (Berry and Houston, 1992; Williams, 1993). In this chapter, the results reported in Chapter Three will be discussed in respect of the literature reviewed earlier. Theoretical and practical implications of the present findings as well as limitations and conclusions will be presented thereafter and will finally be followed by some suggestions for future research.

6.2 HYPOTHESIS 1

As both quantitative and qualitative results were obtained in respect of the traumatic nature of emergency work, the discussion which follows in this regard will firstly be related to the prevalence of trauma amongst emergency personnel. Secondly, the phases of trauma responses will be examined, thirdly the impact of previous trauma on PTSD and lastly the counselling service provided by the organisation will be discussed .

6.2.1 PREVALENCE OF PTSD

Kinchin (1994), notes that the incidence of PTSD within the emergency services, which includes ambulance, fire and police, may be as high as 15%. This suggests that 15 out of every 100 professional rescuers engaged in uniformed duties will probably be suffering symptoms in accord with PTSD. The finding that 17% of the paramedic sample in the present study were suffering from PTSD supports the incident rate of PTSD found by Kinchin (1994) amongst emergency personnel. It is however, important to

remember that the finding that 17% of the present sample were suffering from PTSD represents a restrictive measure of PTSD and reflects the percentage of individuals who were found to be suffering from intrusion and avoidance symptoms. As only 8% of the sample were found to be suffering from all 3 of the symptoms of PTSD, this rate is clearly lower than that found by Kinchin (1994). However the PTSD rate of 8% agrees with that of Durham, McCammon and Allison (1985) who reported that 10% of rescue workers developed significant distress 5 months after a traumatic incident. The rate of 8% is also in keeping with Marmar *et al's,* (1996) finding that 9% of emergency workers were found to be suffering from PTSD. It is however important to note that the former findings are in keeping with the more restricted diagnosis of PTSD which indicates that the present prevalence rate of 8% is moderately high considering that it is a measure of all 3 symptoms of PTSD. Marmar *et al,* (1996) proceed to compare their finding of 9% PTSD rate to that of other PTSD populations and conclude that their, " *finding of 9% current symptom distress in the clinical range for emergency service personnel, as a consequence of critical incident exposure, generally agrees with the current PTSD prevalence rates for trauma victims in general and for female crime victims*" (Marmar *et al,* 1996 p.82). Thus in the same light , it may be argued that the present finding relating to the 8% PTSD rate is in keeping with the prevalence rate of PTSD found in other populations.

Both rates of PTSD found in the present study indicate that although rescuers and carers may through careful training prepare themselves to expect and deal with trauma thereby reducing the risk of suffering from PTSD, traumatic events may still nevertheless affect these professionals (Beaton and Murphy, 1995; Figley, 1995). The finding that trauma may affect even the most well trained individual supports the argument that PTSD is a "***normal emotional reaction to an abnormal and potentially life threatening event***" (Kinchin 1994, p16). This implies that PTSD is not confined to primary victims but may affect all groups in society. As the very job of rescuers and carers demands that they become involved with primary victims of trauma, in most cases involvement is on a personal level for these caregivers. In many instances the trauma may be so devastating that it may affect even the most well trained, experienced and professional person. In other situations which are less traumatic, trauma may be experienced as an aspect of the incident which affected the professional in a way which could not have been anticipated (Kinchin, 1994, Everstine and Everstine, 1993).

The finding that only 17% *(or 8%)* of paramedics were traumatised supports the argument that trauma does not affect everyone to the same extent and that there are many social and personal factors which are integral to the development of PTSD (Kinchin, 1994; Michelson, 1994). The subjective nature of PTSD was expressed by a paramedic at Brixton who said that although trauma did not affect him, one's response to trauma is, "*individualised and as such you cannot generalise how individuals will react to trauma*".

The subjective view of trauma was supported in the present study as it was found that whereas many paramedics stated that work related trauma did not affect them, others felt that that it did. Those

paramedics who did not feel that traumatic situations affected them said that they managed to cope with trauma as they were used to it and did not allow themselves t motionally attached because they felt that if they did, then they would suffer from trauma. This is reflected in the words of a paramedic who said " *I guess you get used to it, you become hard and learn that at the hospital, your job ends, after that it is not your responsibility. You start to see people as patients - you don't get emotionally involved*". Upon asking these paramedics if they made follow up calls, they said that they do not find out what happens to patients as they do not want to get emotionally involved.

Although these paramedics expressed that work-related trauma did not affect them, they did however say that if the trauma was personally significant to them it did affect them. This occurs as emergency workers identify with victims who they try and help, especially if victims possess characteristics which are similar to those of an emergency worker's significant others (Beaton and Murphy, 1993; Williams, 1993). It is posited for example, that the role relationships and the ages of victims cause over-identification with them and may infact lead to an attachment with the victim. In this regard, victims are viewed as similar in some aspect to the emergency workers him/herself or to a close friend or relative which leads to vicarious victimisation or co-victimisation (Beaton and Murphy, 1993).

In the present study, many paramedics said that because they themselves had children, when the traumatic incident involved children then it did bother them. This is reflected in the words of a paramedic from Brixton who said, " *For me a shocking experience was the drowning of a child the same age as my own. The resuscitation was unsuccessful and this incident worried me for a long time, I kept thinking of the parents and putting myself in their place*". This is in keeping with Mitchell and Dyregrov, (1993) who posit that paramedics list infant death and child abuse amongst the most stressful calls they have to deal with.

In the present study, paramedics also said that if the person involved in the emergency situation was a colleague, then it did affect them. This was succinctly expressed by a paramedic from Brixton who said "*because I've seen everything I can handle it, but we as paramedics cannot treat one of our own*". The inability to deal with a trauma involving a colleague was also reflected in the words of another paramedic from Rietfontein who said, "*A terrifying experience occurred when we were dispatched to an accident call on the freeway. On our arrival we were surprised to see that our colleague was involved and had died. This was an experience which I could not get out of my mind. Everytime I closed my eyes, the whole incident came to mind*". This finding supports Everstine and Everstine, (1993) who state that although professionals in high risk careers are trained to deal with the effects of traumatic incidents there are times, "*such as attempting to give CPR to a dying colleague who has been your friend for 10 years which can take their toll on even the most zealous and hardened professional* " (p.182-183).

Those paramedics who did express that they had experienced traumatic work-related incidents listed being assaulted by drunk patients, being shot at and held-up at gunpoint whilst on duty, maladministration, being unable to get to an accident scene on time to save a patient, seeing mutilated bodies and attending to an accident scene where multiple deaths have occurred as the most traumatic incidents that they had been subjected to. The latter findings are in keeping with Raphael, Singh, Bradbury and Lambert (1983-1984) who found that multiple deaths and the sights and smells of dead bodies were significant sources of stress amongst 70% of disaster workers. The present findings therefore clearly indicate that paramedics are at risk of experiencing secondary traumatic stress as a result of their exposure to primary trauma victims (Beaton and Murphy, 1995; Figley, 1995).

It has been estimated that approximately 25% - 30 % of Vietnam veterans have developed full blown PTSD. According to Frederick (1986), 89% - 96% of victims of violence have been found to show symptoms of PTSD. Furthermore, 36% of physical assault victims studied by Frederick showed symptoms of severe to extremely severe PTSD (Beaton and Murphy, 1995). The finding that 17% *(or 8%)* of paramedics were suffering from PTSD reflects that only a small percentage of emergency workers as opposed to other population groups develop PTSD. This is supported by Beaton and Murphy who posit that, "*in contrast to most trauma victims, crisis workers' post trauma reactions are generally mild to moderate. Only a small proportion of crisis workers develop full blown PTSD*" (Beaton and Murphy, 1995, p.66).

A possible explanation for why the rate of PTSD amongst paramedics was not higher, may be attributed to the training and cultural norms prevalent in emergency work occupations which in many instances prescribe partly how individuals should react to duty related trauma (Beaton and Murphy, 1995; Figley, 1995; Friedman and Kopel, 1995). For example, the fire services encourage an image of self-control and group cohesiveness. Anxiety, personal vulnerabilities and fears are hardly ever discussed. This "code of silence" normally does prove to be functional and protective because without a degree of self-deception these workers' fears may overwhelm them. However, the failure to discuss one's emotions acts as a cultural barrier towards reducing stress following a trauma. As noted by Moran and Britton (1994), because these workers are expected to deal with a wide range of potentially traumatic experiences, they believe that part of their work entails the suppression of emotions. It therefore seems as though most emergency workers learn to deny or dissociate from post trauma symptoms. Although such denial may initially prove to be functional it may eventually result in suppressed feelings, denial, emotional distancing and cynicism (Mitchell and Dyregrov, 1993; Williams, 1993).

Suppression and denial seem to have been prevalent in the present study as 40% of the sample were found to be suffering avoidance responses. The finding that 40% of the sample endorsed avoidance symptoms as opposed to the 18% who displayed intrusive symptoms and 12% who displayed symptoms of increased arousal , implies that the process of self preservation and denial mechanisms were used by the present

sample to block out intrusive images of trauma. As noted by Beaton and Murphy (1995), emergency workers need to respond in a non-emotional manner under field conditions which may result in them not being able to express feelings of pain and inadequacy. This occurs through extreme avoidance which is reinforced through training and peer responses.

In their study on members of the Internal Stability Unit (*which is a branch of the South African Police Force*), Friedman and Kopel (1995) found ICU members to be clearly using numbing and avoidance responses in an effort to cope with their daily work tasks. Friedman (1995) advanced The Twin Peaks Model (***see Appendix D***) to explain how emergency workers tend to deny their responses to traumatic exposure until they reach a point where their coping mechanisms break down.

As can be seen in Appendix D, exposure to a traumatic work related stressor results in a traumatic stress response. However , in order to block out intrusive images, emergency workers engage in a process of self denial and dissociation. Emergency workers' reactions to traumatic events may initially seem functional and as such help seems unnecessary. It may however be argued that emergency workers' reactions to such traumatic events may very well be in a delayed phase. As such, it may be argued that at this stage, avoidance mechanisms are in operation . As time progresses and as emergency workers are continually exposed to traumatic events, they may begin to develop Post Traumatic Stress symptomatology which may eventually result in burnout (Friedman and Kopel, 1995). This is in keeping with Mitchell and Dyregrov (1993) who note that although immediate reactions to work related trauma may successfully suppressed under field conditions, they are normally encountered later. Mitchell and Dyregrov (1993), list nightmares and other intrusive images like flashbacks and obsessive thoughts about the incident, humour and occasional outbursts amongst the most common expressions of suppressed reactions to work related trauma. As such, Mitchell and Dyregrov (1993) support the Twin Peak Model's account of the delayed effects of trauma experienced by emergency workers. This description of the delayed effects of emergency work is also in keeping with numerous studies which have found symptoms of distress to manifest in individuals up to 6 months or more following exposure to traumatic work related incidents (Cox, 1980; McFarlane, 1988).

The denial mechanisms used in the present sample may also be attributed, in part, to the nature of the South African society. As posited by Straker *et al*, (1987), cited Friedman and Kopel (1995), PTSD is a "misnomer" in the South African context. Due to the violent nature of the South African society, paramedics are exposed to continuous traumatic incidents. In many cases paramedics are also required to respond to emergency calls in townships where trauma is particularly prevalent. Trauma is therefore repetitive and continuous for long periods of time. As a result many paramedics may be unable to cognitively process their traumatic events and instead use denial in an effort to cope with their daily tasks (Friedman and Kopel, 1995; Mickelson, 1994).

The . . revalence of avoidance found in the present study has important practical implications for the diagnosis of PTSD. Clinicians need to be careful not to dismiss individuals who do not display the full range of PTSD symptoms because although these individuals may deny that they are experiencing PTSD, they may indeed be merely employing the defense of denial in an effort to cope with their daily duties (Friedman and Kopel, 1995).

6.2.2 PHASES OF TRAUMATIC RESPONSES

As noted by Williams (1993), individuals' emotional responses to traumatic incidents consist of a number of phases beginning with the shock phase and extending to the recovery phase. He posits that although employees who are well trained and inoculated to trauma, usually bypass the shock phase, the impact phase usually produces emotional distress for them. In the present study, no paramedics expressed responses characteristic of the shock phase which seems to support Williams' (1993) argument that the shock phase is generally avoided by well-trained workers.

Content guilt which arises when death is involved in the trauma is an important concomitant of duty related trauma at the impact phase and often results in the individual asking him/herself if they could have done something more in the situation to change the outcome (Williams, 1993). If they feel that they applied all their resources appropriately they will probably recover. Content guilt was found in the present study to be prevalent amongst paramedics and is reflected in the words of a paramedic from Brixton who said , *"if I know that I have done my job best in the situation, then I am able to cope with a traumatic situation like where a patient dies"*. The belief that the individual has done their best in the situation is important because if individuals are unable to evaluate their role in the event, they may assume too much responsibility for the outcome of the trauma which may result in the development of PTSD symptomatology (Williams 1993). By re-evaluating or re-appraising their role in the trauma, emergency workers are trying to assimilate the trauma, "search for meaning" or trying to "attain mastery of the situation" in an effort to cope with traumatic events (Williams, 1993).

It is posited that the impact phase is an extremely distressing phase whereby individuals develop a variety of mechanisms in an attempt to cope with intrusive symptoms which emerge at this phase (Williams 1993). Although adaptive coping mechanisms like exercise are used at this stage, many individuals use maladaptive mechanisms. Maladaptive mechanisms are normally associated with a dependency on alcohol or other chemicals and are used in an attempt to reduce the high levels of anxiety and tension arising from intrusive symptomotology (Beaton and Murphy, 1995). The finding that many paramedics in the present study cited the use of alcohol, smoking and drugs as common coping mechanisms, supports the finding that the use of drugs and alcohol are a behavioural manifestation of the trauma experienced in emergency work (Mitchell and Dyregrov, 1993; Williams, 1993). The frequent use of alcohol and drugs in the present study as a coping mechanism supports the finding by Blackmore (1978) that 23% of his sample reported drinking problems and 10% stated that they abused other drugs as a result of trauma experienced in their work.

Although humour was cited as being one of the most common coping mechanisms adopted by emergency workers in the present study, it is important to note that it is listed amongst the most common forms of expression for suppressed reactions to traumatic incidents. The frequent use of humour usually occurs in the denial or avoidance phase and is indicative of the delayed effects of work related trauma (Williams, 1993). This supports the Twin Peaks Model which maintains that although emergency workers may successfully suppress their reactions to stressful events under field conditions whilst saving lives, these reactions resurge later and manifest through other symptoms like humour. The use of humour may therefore in effect be indicative of the individual suffering from PTSD symptomotology (Williams, 1993). The frequent use of humour and alcohol in the present study supports Gersons' (1989) study on PTSD patterns amongst policemen where he found that " *making jokes helps them to survive and that if stress increases a beer works wonders*" (p.252).

Therefore, as noted by William's (1993) individuals in the present study were found to be experiencing emotional responses as a result as a result of duty related trauma. As noted by Williams (1993), professional caregivers in the present study tended to bypass the first phase of the emotional response to duty related trauma, namely the shock stage. Instead, subjects expressed symptoms of emotional distress characteristic of the impact phase. Personal factors which included individual coping mechanisms were found at this stage to influence one's emotional response to a traumatic event. In the present study individual coping mechanisms included the use of alcohol, drugs and personal appraisals. These individual coping mechanisms are one of several factors which influence if exposure to traumatic work related events would lead to the development of PTS symptomatology (Beaton and Murphy, 1995; Williams, 1993).

6.2.3 IMPACT OF PREVIOUS TRAUMA ON PTSD

As mentioned in the Results Section, Norris' (1990) scale was not used for its intended purpose in the present study but was instead used to assess the extent to which the reported PTSD levels were influenced by previous traumatic experiences. The role which previous trauma plays on subsequent coping processes is poorly understood. Studies have found that survival of previous trauma may strengthen individuals' resources and may allow them to cope more successfully with subsequent traumas (Bryant and Harvey 1996).

Other literature however, seems to indicate that individuals who have suffered from emotional disturbances or more negative life events prior the traumatic event tend to be more traumatised than other victims (Bryant and Harvey, 1996). This suggests that previous or ongoing stressors increase the possibility of individuals responding negatively to a traumatic event. Cognitive theories of PTSD posit that this occurs due to fear structures which develop in working memory following a trauma and are reinforced through successive traumas (Bryant and Harvey, 1996). According to this view, individuals who have experienced multiple stressors tend to experience more symptoms of PTSD than those individuals who have been

exposed to a single stressor. Although few studies have investigated an individual's exposure to previous traumatic events, there is increasing evidence that exposure to multiple events is more common than was previously thought and that previous traumatic exposure increases the risk for the onset of PTSD (Green, 1994).

In the present study, the correlation found between Norris' (1990) Traumatic Stress Schedule (TSS) and PTSD supports the argument that PTSD is influenced by previous traumatic experiences. The positive relationship found between the TSS and PTSD suggests that individuals who have experienced previous multiple stressors are more likely to experience more symptoms of PTSD than those individuals who have only experienced a single stressor (Bryant and Harvey, 1996).

A possible explanation for this finding may be that the accumulative effects of each traumatic experience may increase individuals' vulnerability to PTSD. This view was succinctly expressed by one paramedic who said, *"You see things and it adds up"*. This is in keeping with Breslau (1990) who states that, *"stress may build up cumulatively through exposure to traumatic events"* (p.1670). This reflects that there is no one "specific" event which is responsible for stress reactions. Paramedics who have been previously traumatised may also have a lower threshold at which they are able to handle stress (Breslau, 1990; Bryant and Harvey, 1996). This is in keeping with Williams (1993), who posits that survivors of previous trauma may be more susceptible to physiological and psychological stressors than individuals who have not been subjected to any such prior experiences. When individuals experience additional stressors they may bypass the shock phase referred to by Williams (1993) and express some elements of denial and then proceed to the impact phase where they have an even higher susceptibility to trauma than before. Individuals who have also not resolved previous traumas successfully usually react in more pathological and distressing ways to the new traumatic event (Bryant and Harvey, 1996; Williams, 1993).

Therefore, the finding that prior trauma accounts for 11% of the reported trauma indicates that paramedics may experience events both within and beyond their role as paramedics which add to their ongoing traumatisation and may compound their emotional state which may result in them suffering from PTSD (Bryant and Harvey, 1996). The area regarding the impact of previous multiple trauma on the development of PTSD is increasingly being explored and should contribute considerably to our understanding of susceptibility to PTSD (Green, 1994).

6.2.4 COUNSELLING IN THE ORGANISATION

The finding that 17% of paramedics were traumatised has important implications for debriefing and counselling services which need to be provided for those individuals whom the trauma does affect. It is important to note that although the counselling service provided by the organisation in the present study was a general counselling service offered by a social worker, there was no form of debriefing provided for paramedics. Upon asking a senior paramedic officer why no form of debriefing was provided for paramedics, he replied by saying that the Emergency Services does not have the equipment often needed

for emergency calls, let alone the infrastructure to provide for debriefing. He attributed this to the third world status of South Africa which he said differs to from first world countries like the USA where debriefing sessions are provided for paramedics. He continued to say that the only form of debriefing available to paramedics in South Africa is social support and debriefing amongst co-workers. It was found that the social support and debriefing found amongst co-workers in the present study stems from the belief held by many paramedics that people other than paramedics are unable to understand their trauma as they have not experienced the traumatic situation. This is reflected in the words of a paramedic from Brixton who said, "*medical aid does not pay for us to see a psychologist. As most of us earn approximately R3000, we cannot afford to see a psychologist because you need to see him/her for more than one session. And anyway, a psychologist cannot understand our problems as they are not in the situation and so it does not help to talk to them*".

The view that people other than paramedics are unable to understand their situation is problematic because as noted by Williams (1993), it results in them developing an us/them attitude towards individuals who are not within their work group. This affiliative cohesion whereby individuals draw support from co-workers often results in them developing a spirit of family and comradie (Everstine and Everstine, 1993; Williams, 1993). This is reflected in the words of a paramedic from Jabulani who said, "*we are trying to build a family bond but management does not care*". It has been noted that this attitude may pervade into their personal lives and cause significant alienation with significant others (Mitchell and Dyregrov, 1993). Another possibility for paramedics failing to share experiences with their family may stem from the belief that it is best to protect them from the brutal realities of their working life. Individuals therefore attempt to shield their loved ones by sparing them the details of their experiences. However, this attempt to protect ones loved ones requires a certain degree of self deception which may result in individuals denying to themselves that they are experiencing PTS symptoms (Everstine and Everstine, 1993). The reluctance by paramedics to disclose their experiences with their families was evident in the present study as paramedics felt that they could not discuss their experiences with partners who were not in the same occupational field. Those paramedics in the present study whose boyfriend/girlfriend or spouse was in the paramedic field felt that it was good to have a partner in the same line of work as they felt that they understood their experiences. They said that they felt that by sharing their experiences with someone who understood they were better able to cope with traumatic experiences.

Although it was found that . % of the subjects knew that a counselling service was provided by the organisation, it was found that they did not have a positive perception of the counselling service. Many paramedics expressed that they did not trust the social worker as she is situated at head office and as such is perceived as siding with management. If paramedics need counselling they are required to go to her as opposed to her coming onto the work site. This feeling of distrust for the social worker is reflected in the words of a paramedic from Rietfontein who said, "*the social worker should be on site, we don't trust a social worker who is off site as it is not confidential and there is no trust. If you want help you must go to*

her, this is wrong as she should come and get involved with the workers. Workers also may not think that they are traumatised and therefore won't go and see her but trauma may manifest in other areas like Job Satisfaction. The only way to observe and realise this would be by her coming on-site to workers".

It would also be more practical for the social worker to come to the work site because paramedics are usually out on calls and do not have the time to go off-site to see the social worker. Many paramedics expressed the need to have someone to counsel them and to acknowledge that paramedics do suffer from trauma. Organisations therefore need to realise that paramedics are traumatised and need to ensure that PTS symptomatology is detected and dealt with (Mitchell and Dyregrov, 1993). This view is supported by Everstine and Everstine (1993), who argue that the creation of a healthy work environment by employers does not merely entail the provision of a counselling service but should include the employer's support for participation by employees who are suffering from psychological problems. They argue that in addition to providing counselling services for dealing with emotional difficulties, progressive organisations should provide emergency services on a stand-by status. This means that counsellors should be on call to respond to the scene of a traumatic incident, to the workplace or to the home of workers (Everstine and Everstine 1993). This is in keeping with the need expressed by paramedics in the present study for the social worker to follow up on them and to come to their work station.

The present findings have shown that organisations need to provide stress management training programmes. This may prove to mitigate the negative effects of occupational trauma resulting from emergency work as noted by Mitchell and Dyregrov (1993). Moreover, where trauma has been experienced, stress intervention or reduction strategies should be provided. In this regard, as posited by Mitchell and Dyregrov (1993), support services which include debriefing, individual counselling and spouse support programmes should be provided on-site. This is in keeping with the present finding that support services off site are viewed with suspicion and mistrust and as such need to be provided at the work site. Therefore, as it is inevitable that a large percentage of emergency workers will at some stage experience a range of stress reactions to emergency work, techniques need to be provided to prevent or mitigate the development of Post Trauma Stress symptoms (Beaton and Murphy, 1995; Raphael and Wilson 1993).

6.3 HYPOTHESIS 2

The finding in the present study that Job Satisfaction was negatively correlated with PTSD supports previous findings which have shown that Job Satisfaction is a prominent by-product of the traumatic stress experienced by emergency workers and most other persons. Job Satisfaction does therefore appear to be a behavioural manifestation of PTSD (Mitchell and Dyregrov, 1993). Previous literature also indicates that Propensity to Leave seems to be influenced by the traumatic stress associated with emergency work. Moreover, the present study also undertook to examine the relationship between PTSD and Job Involvement. The present research with paramedics however, did not identify any significant relationship

between either Propensity to Leave or Job Involvement and PTSD (Mitchell and Dyregrov, 1993). Possible reasons for the latter findings will be discussed respectively.

6.3.1 PROPENSITY TO LEAVE AND PTSD

A possible explanation for the finding that PTSD was not associated with Propensity to Leave, may be found in the communication received as a result of speaking with paramedics. Paramedics expressed that the high rate of turnover was due to dissatisfaction experienced with the organisational change as well as poor working conditions and management and not the traumatic nature of job itself. As the qualitative data obtained in the present study suggests that Propensity to Leave was associated with the above mentioned factors, the communication obtained in this regard will be discussed in order to provide a possible explanation for the present findings.

The finding that most paramedics cited dissatisfaction with the organisational change, management and the working conditions as a major cause of the high rate of turnover is supported by the finding that both Intrinsic and Extrinsic Job Satisfaction (as measured by Warr *et al*, (1979) were negatively correlated with Propensity to Leave. It is important at this stage to note that Intrinsic Satisfaction included subjects' feelings of satisfaction with:

- ***The recognition received from one's boss for good work***
- ***One's opportunity to use their abilities***
- ***One's chance of promotion***
- ***The freedom to choose one's own method of working***

Extrinsic Satisfaction included subjects' feelings of satisfaction with:

- ***The physical work conditions***
- ***One's fellow workers***
- ***One's immediate boss***
- ***The rate of pay***
- ***The industrial relations between management and workers in the organisation***
- ***he way the firm is managed***
- ***The hours of work***
- ***One's job security***

The finding that both Intrinsic and Extrinsic Satisfaction were negatively correlated with Propensity to Leave is in keeping with previous research which has found Job Satisfaction to be one of the three important variables in determining Job Turnover (Berry and Houston, 1992). Although research has not shown a simple, direct relationship to exist as was previously expected, enough evidence has been generated to show that the satisfaction of employees will influence organisational outcomes. Satisfaction

affects performance as well as employee withdrawal , specifically absenteeism and turnover. It is however, important to distinguish between absenteeism and turnover which are qualitatively different. Absenteeism is considered to be a spontaneous behaviour probably as a result of dissatisfaction (Berry and Houston, 1992; Robbins, 1993). Quitting on the other hand is normally not decided on the spur of the moment and is more likely to indicate dissatisfaction. Therefore, as found in the present study, Job Satisfaction has important implications for the success of the organisation as it is an important determinant of Job Turnover (Berry and Houston, 1992).

As most of the sources of dissatisfaction and resultant causes of turnover cited by paramedics include items comprising both the Intrinsic and Extrinsic Satisfaction sub-scales as advanced by Warr *et al,* (1979) these sources of dissatisfaction will be discussed below. These items are referred to either in the paramedics perceptions' towards the organisational change, management or working conditions and as such will be examined under these three headings.

Perceptions of the Organisational Restructuring

It is important at this stage to explain the organisational restructuring taking place at the time of the study as the social context in which the research took place may provide us with a better understanding of why paramedics expressed dissatisfaction towards the organisational change. The organisational restructuring occurring at the time of the study concerns the merging of the Emergency Services with the Fire Department. This will result in both paramedics and fire-fighters operating from the same station as opposed to their own separate stations as was the case previously. Paramedics will be required to undertake a fire-fighter's training course and fire-fighters will likewise be required to undergo basic emergency care training. It is thought that this training will equip workers with adequate skills to be utilised either in fire-fighting or emergency care. Moreover, there is a move away from providing advanced emergency care towards that of basic ambulance care which means that paramedics will in future offer a basic emergency service. The rationale behind this decision lies in the argument that the money spent saving lives through advanced life support far exceeds the lives actually saved in this way and therefore it is considered to be too expensive to offer advanced emergency care. At the time of the study, it was still not clear as to how this restructuring would be implemented or to which stations employees would be redeployed. This was found, as a result of speaking with paramedics, to have caused a great deal of uncertainty and confusion amongst them.

The negative perception of paramedics' towards the changes occurring in the organisation was expressed by a paramedic from Rietfontein who said that, "*the ambulance service as we know it will cease to exist, we will become a basic transport service*". This paramedic was leaving to join a private company because she stated, " *at least I would be able to do the work I was trained for*". She continued to say that, "*many paramedics are leaving for private companies where at least they will have a future as they will be internationally recognised. They're losing people and are going to lose more people*". Upon asking other

paramedics who expressed a desire to leave, if they would consider joining a private company, many answered that by joining a private company one faces the threat of the company closing down. They said that although they would like to leave the present organisation, it offered them job security. As such, they felt that they were caught in a dead-end situation as they did not want to stay in their present job, yet they were unable to leave because of the job insecurity associated with working for a private company. Another paramedic from Jabulani expressed his negative view towards the restructuring by saying, "*we don't want to be firemen, having to become firemen is stressful. We did not become paramedics to become firemen. We may have to work 72 hour shifts rather than 12 hour shifts which we are used to. This restructuring is stressful and is causing many of us to think of leaving*".

As a result of the qualitative results obtained, it can be seen that the dissatisfaction expressed towards the organisational restructuring was as a result of job insecurity felt as a result thereof and the way in which the restructuring was managed. These sources of dissatisfaction and resultant causes of turnover comprise items found in Warr *et al's*, (1979) Extrinsic Satisfaction sub-scale.

Perceptions of Management

The finding that Propensity to Leave did not seem to be associated with the traumatic nature of job itself but rather with management is reflected in the words of a paramedic from Rietfontein who said that, "*the conditions are bad, I love my job but management does not take care of you. We receive no recognition or remuneration for the hours we work, for the risks we take or for the quality of our work. Most of us as a result are not happy and are thinking of leaving*". This was supported by another paramedic at Rietfontein who said that, " *most of us are dissatisfied with the organisation itself, not the work and that is what is causing us to leave*".

A general feeling of dissatisfaction towards management was expressed by paramedics from all three work stations. Most paramedics expressed that their feelings of dissatisfaction stemmed from the internal politics occurring in the organisation, the bureaucratic leadership style of management and the feeling that management did not care about the workers.

Many paramedics felt that the politics within the organisation was a major cause of the high percentage of paramedics leaving the organisation. Many of the Black paramedics felt that because they were Black, they did not get promoted and were through manipulations prevented from advancing themselves to higher paramedic levels. Others said that paramedics do not get promoted based on their merit but rather through internal politics.

The bureaucratic leadership style prevalent in the organisation was also cited as a prominent cause of dissatisfaction and a major reason for leaving. The bureaucratic nature of the organisation is evident in the way paramedics were not given a say in the restructuring of the organisation. As a result, many paramedics

expressed that they felt that the change was imposed upon them. One paramedic from Jabulani said, *"decision making in this organisation is unilateral, take for example this restructuring, it was imposed from above, we had no say"*. The feeling that management did not include paramedics in any form of decision making was likewise expressed by a paramedic from Brixton who stated that the ambulances were poorly designed and that management should have asked the paramedics themselves how to design the ambulances. Naturally, as paramedics work with the vehicles, they have knowledge of how they should be designed in order to facilitate the optimal treatment of patients. Moreover, many paramedics expressed that any suggestions made by them regarding their work are ignored by management thereby reflecting the bureaucratic leadership style prevalent in the organisation.

The authoritarian view of management is reflected in the words of a paramedic from Brixton who said, *"It is easy for management to sit behind their desks with their pens and shove papers around but they don't know what it's like to be on the road. They don't know because they sit far away, high above in their building and have forgotten what it's like to be on the road"*. It is important at this stage to note that a lack of participation in decision making has been identified in stress literature as being a job stressor which has been associated with job satisfaction and turnover. Moreover organisational constraints like a lack of effective consultation has also been found to result in job dissatisfaction and high turnover (Berry and Houston, 199..; Robbins, 1993). Thus, the present dissatisfaction felt towards the bureaucratic leadership style and the finding that it was one of the main causes of individuals thinking of leaving is in keeping with previous findings relating to job stressors.

As a result of internal politics and the bureaucratic leadership style, most paramedics felt that management did not care about them. This was reflected in the words of a paramedic from Rietfontein who said, " *You don't trust anyone in this department, we exist as two groups - management and us"*. She continued by saying, " *Michael Jackson's song "They don't care about us", sums up exactly how we as paramedics feel about management"*. The general negative attitude towards management was succinctly expressed by another paramedic from Rietfontein who said, *"There are too may big Chiefs and too few little Indians in this organisation"*.

Therefore, it can be seen that paramedics' negative perception of management is as a result of dissatisfaction experienced with the lack of recognition received for good work and the internal politics within the organisation which seem to stifle one's chance for promotion. Moreover dissatisfaction with the way the organisation is managed, one's immediate boss as well as industrial relations between management and workers contributed towards paramedics' negative perceptions of management. Whereas the former sources of dissatisfaction are included in Warr *et al's*, (1979) Intrinsic Satisfaction sub-scale, the latter sources comprise their Extrinsic Satisfaction sub-scale.

Perceptions of Working Conditions

Poor working conditions were listed among the major causes of turnover. The lack of adequate equipment, hours of work, public abuse and poor pay were felt to be the most common working conditions resulting in many paramedics leaving or thinking of leaving.

It is important to note that whereas the dissatisfaction expressed with the hours of work, public abuse and pay reflected a dissatisfaction with the physical conditions of the job itself, the lack of adequate equipment was not considered by paramedics to stem from the nature of the job itself but rather as a result of mismanagement. In this regard, paramedics were dissatisfied with the poor working conditions which they felt management was responsible for.

Many paramedics complained that on many shifts there are no vehicles available to perform their duties as the vehicles in many cases break down. As a result, many paramedics do not have a vehicle allocated to them which results in them having to sit in the rest room which essentially is a waste of these much needed human resources. The researcher herself as a result of working with paramedics on their shifts witnessed this waste of resources. Moreover, as a result of spending time at the Control Centre (*where the calls are received from the public and dispatched to the paramedics*), the researcher witnessed that the vehicles available could not meet the demands of the emergency calls. This resulted in paramedics only being able to attend to some calls perhaps only 2-3 hours after the call had been received. It is important at this stage to note that calls are prioritised in terms of Priority 1*(P1)*, Priority 2 *(P2)* or Priority 3*(P3)*. P1 calls are the most serious and life threatening calls and receive the highest priority and are attended to first. In these cases the call is not attended to after 2-3 hours if there is a shortage of vehicles but instead, as soon as possible. Paramedics also complained that vehicles last for approximately 3 days before they break down and that often they did not have the basic equipment necessary to perform their duties at the beginning of a shift. This often resulted in them having to respond to emergencies without adequate equipment. Organisational conditions which prevent employees from performing their work like a lack of equipment and supplies *(as found in the present study)* have been identified in stress literature as being sources of stress which may result in Job Dissatisfaction and Turnover (Berry and Houston, 1992; Robbins, 1993).

Whereas some paramedics did not complain about the 12 hour shifts, many felt that they did work long hours which they said taxed their system. Paramedics which felt this way said that one's body never gets used to working such long hours even if one has been involved in this field for many years. Many Black paramedics also complained that they had to travel long distances from the townships to work which together with the 12 hour shift, resulted in a long working day for them. Many paramedics expressed that the hours of work in many cases took their toll on their families. This is reflected in the words of a paramedic from Jabulani who said, "*I still live with my family so this type of work is all right, but I don't know how those who are married cope*". Paramedics stated that the working hours in many cases strained many marriages and often resulted in divorces. The hours of work and long absences from home also

tended to be more problematic where paramedics had children as they tended to worry about their children being alone at home. As a result, many paramedics said that they at times went during their shifts to check up on their families. The finding that paramedics complained about the long working hours supports Mitchell and Dyregrov (1993) who list long working hours and disturbed rest periods amongst the factors which affect emergency workers negatively.

Public abuse was cited as a prominent cause of frustration and stress. The false calls made by the public were found to be the most common source of stress as paramedics are often called to a scene which is reported as being an emergency only to find that the patient is suffering from a minor ailment (*i.e. headache, stomach ache*). This is stressful as paramedics respond to what they think is an emergency and as a result rush to the scene only to find that it is not a serious case. Moreover due to the shortage of vehicles, ambulances need to be used sparingly. As such, when the public makes a false call they may be making use of a vehicle which may be needed for a more serious call.

Due to the nature of their job, paramedics also need to be impartial in their treatment of patients. This means that due to their job, they are required to treat, for example, robbers and hijackers. Many paramedics reported that the public however, cannot understand how they can treat criminals who have victimised innocent people and in many cases verbally abuse paramedics. It is possible that this lack of consideration stems from the public's ignorance about the valuable work which paramedics do. This is echoed in the words of paramedics from Brixton who said, " *the public is not aware that we save lives on the road, they think we are just ambulance drivers. They don't realise that if we do our job well, patients live and if we don't, they die*". As a result of driving in the ambulances with paramedics, the researcher observed in many cases, the reluctance of the public to move out of the way of the ambulance which had its sirens on and was responding to a P1 call or was transporting a patient to the hospital. This does increase the stress experienced by paramedics who need to get to the emergency scene in a hurry or who need to take patients who are in need of urgent medical treatment to the hospital quickly. The present findings reflect the need for public education about the function of paramedics. This is supported by Ho (1988) cited in Everstine and Everstine, (1993), who stresses the need for public education about the intended function of an emergency service and has pleaded for the more rational use of emergency calls as he noted, (*as in the present study)* that emergency caregivers tend to get upset over non-emergency calls.

Many paramedics expressed that the poor pay they received was a major cause of turnover. This is reflected in the words of a paramedic at Brixton who said, " *at the end of the day you do this kind of work because you enjoy it and not because of the money, but you cannot work for nothing always*". Due to the low pay it was found that most paramedics had to hold down two to three jobs in order to make ends meet at the end of the month. Therefore on their off days it was found that most paramedics work in part time jobs which tends to be stressful as they are holding down a full-time job as well as a part-time job. It is therefore possible that the poor pay may also be a cause of turnover because in many cases paramedics who

expressed that they were planning on leaving the paramedic field cited one of their reasons for leaving as being the poor pay received.

Thus, poor working conditions which included the long hours of work and poor rate of pay were held by paramedics to be a prominent cause of turnover. These sources of dissatisfaction comprise Warr *et al's,* (1979) Extrinsic Satisfaction sub-scale.

One duty officer acknowledged that paramedics were dissatisfied with the working conditions and management and that this was a prime cause of many paramedics leaving the field. He however, argued that workers themselves do not accept responsibility that the bad conditions are due to them not looking after the equipment. As a result, he argued, they look for someone to blame, namely management. He however continued to say, *"It is not the workforce's' fault, management is to blame for letting the situation get so far, for the lack of discipline. But with the restructuring things will get better, the fire department has got more discipline and that's what we need".* It is important to note that this duty officer's reference to the discipline in the fire department reflects the paramilitary organisational structures inherent in most emergency work which according to Beaton and Murphy (1995), is a job related stressor which has been identified as being distressing for fire-fighters as well as paramedics.

6.3.2 PTSD AND JOB INVOLVEMENT

The finding that Job Involvement was not a by-product of PTSD may, as in the case of Propensity to Leave, be explained by the qualitative data obtained as a result of speaking with the paramedics. A number of paramedics expressed that as a result of poor working conditions, lack of recognition for good work and conflict with management that they felt stressed many times. They said that this caused them to make mistakes in their work and to take out their frustrations on patients. As stated by a paramedic from Brixton, *"stress is high here and you take it out on the patients because you are sick and tired of this department and the working conditions".* These feelings were reinforced by a paramedic from Rietfontein who said, " *because management messes us around, we take it out on innocent people and at the end of the day it affects the quality of our work as we are not as involved in our work as we should be* ".

The finding that dissatisfaction experienced with the management and poor working conditions influenced Job Involvement is supported by the finding that Job Satisfaction (which includes both Intrinsic and Extrinsic sources of satisfaction) was positively correlated with Job Involvement. This is in keeping with Rabinowitz and Hall (1977) who found a positive relationship between Job Involvement and Job Satisfaction. The finding that decreases in Job Involvement were associated with dissatisfaction with working conditions, organisational restructuring and management are in keeping with Elloy *et al,* (1991) who note that satisfaction with pay, security, supervision and growth come with increased Job involvement. Elloy *et al's,* (1991) findings are in keeping with the theoretical view which maintains that Job Involvement is a function of the situation. In this regard Job Involvement is considered to be influenced by job factors. For example, Saal (1978), posits that Job Involvement correlates with the job

characteristics of autonomy and variety. Knoop (1986) adds that individuals who are high in Job involvement are satisfied with supervision and actively participate in decision making and are lead by supervisors high in consideration and initiating structure. This view is based on the assumption that organisational conditions can stifle the gratification of growth needs which can result in decrements in Job Involvement. Therefore as dissatisfaction with organisational conditions was reported as being the cause of low Job Involvement, the present findings seem to support the theoretical assumption which maintains that Job Involvement is influenced by job factors (Elloy *et al*, 1991).

The finding that paramedics were experiencing low levels of Job Involvement also has important implications for Propensity to Leave because as noted by Blau and Boal (1987), Job Involvement seems to predict turnover consistently and has been found to have a negative relationship with turnover. This is supported by the present finding that Job Involvement was negatively associated with Propensity to Leave. Thus, in sum as paramedics were generally dissatisfied with both intrinsic and extrinsic aspects of the job, this rather than PTSD tended to affect their Job Involvement negatively. Moreover, the low levels of Job Involvement seemed to in turn be associated with Propensity to Leave. However, as the effects of PTSD on Job Involvement have not been documented previously in psychological literature, a great deal more research needs to be conducted in order to determine how PTSD impacts upon this organisational construct.

As noted by Beaton and Murphy (1995), emergency workers are subjected to numerous job related stressors in addition to trauma which may interact or compound with traumatic stressors. Although it could not be ascertained in the present study if the aforementioned job stressors interacted with work related trauma to cause PTSD, as illustrated above, occupational stressors were indeed prevalent in the present study and seemed to be a major cause of Propensity to Leave and decreased levels of Job Involvement. The finding that paramedics were subjected to occupational stressors is reflected in the high levels of dissatisfaction reported in the present study. This is because, indicators of psychological health have been found in stress literature to be positively related to Job Satisfaction. The present findings with regard to the effects of these occupational stressors on both Job Satisfaction and Propensity to Leave support stress literature which has found occupational stressors to be a cause of Job Dissatisfaction and Turnover (Berry and Houston, 1992; White and Bednar, 1991).

The finding that PTSD was not associated with Job Involvement or Propensity to Leave supports Marmar *et al's*, (1996) finding that emergency service personnel did not display symptoms of occupational difficulties. Instead Marmar *et al*, (1996) reported that high levels of sick leave which they posit are a "hard measure" of occupational functioning may in effect capture greater occupational functioning problems. The adverse effect of work related trauma on occupational functioning may likewise be reflected in mistakes made on the job which may be better captured by accident rates which may also be regarded as a "hard measure" of occupational functioning (Mitchell and Dyregrov, 1993). As such, it is

possible that the deleterious effects of PTSD on occupational variables may have been better captured better through "hard measures" of occupational functioning (Marmar *et al*, 1996).

6.3.3 SUMMARY

The present study indicates that PTSD is associated with Job Satisfaction but is unrelated with both Job Involvement and Propensity to Leave. By examining the qualitative data however, several trends seem to account for the finding that both Job Involvement and Propensity to Leave were not associated with PTSD. Thus, as a result of speaking to paramedics, it seems the traumatic nature of the job itself did not negatively affect Job Involvement or Propensity to Leave. Instead, Propensity to Leave and Job Involvement seemed to be associated with three main job stressors namely, organisational change, conflict with management and poor working conditions rather than PTSD.

6.4 HYPOTHESIS 3

It is well known that the relationship between exposure to traumatic events and the response thereto is not a simple one. It is comprised of numerous personal and situational factors (Michelson, 1994). In this regard, personal and social factors are not perceived as mediators in this process but rather are viewed as being integral to the production of PTSD. The expression of PTSD is therefore constituted and constructed by situational and personal factors (Michelson 1994). In the present study, it was hypothesised that paramedics' exposure and reactions to traumatic events may be influenced by personal factors like gender, age, race, occupational position and length of service. These variables are referred to as vulnerability factors as they predispose individuals to the development of Post Traumatic Stress responses (Bryant and Harvey, 1996; Creamer *et al*, 1993). The variable of gender was found in the present study to be the most efficient predictor of paramedics' reactions to traumatic incidents. Although age and length of service were not found in the present study to be predictors of PTSD, possible reasons for the present findings with regards to these two variables will be discussed as it has been posited that they are important factors which may influence one's reaction to traumatic events (Moran and Britton, 1996).

6.4.1 GENDER AND PTSD

Whereas some studies indicate that women are at risk for developing PTSD, others have found women to be resilient thereto (Green, 1994; Raphael and Wilson, 1993). The finding that gender was an important variable in influencing individuals' reactions to traumatic events is supported by Creamer *et al*, (1993) who in their study found that, "*gender was consistently a predictor of psychological distress, with females reporting a higher level than males*" (p.209). It argued that, the finding that females reported higher levels of psychological distress than males, may indicate a reluctance by males to acknowledge that they are suffering from any psychological problems. This may arise due to the fact that males may perceive negative reactions to trauma as being a sign of weakness (Creamer *et al*, 1993).

Another possible explanation for this finding lies in the broader issue of the role of men in society (Gersons, 1989). Men are perceived to be "macho" and tough and as such generally do not complain about

psychological issues or discuss emotional responses or feelings. If one compounds this with their role as paramedics where many of them believe that part of their job is to be tough and to entail the suppression of emotions, it is understandable that men would tend not to report feelings of distress (Gersons 1989). Therefore, as noted by Figley (1995), organisational norms compounded with "macho" attitudes tend to prevent the disclosure of trauma symptomotology by men . This may explain why women tended to report higher levels of psychological distress than men. The present findings therefore suggest that females are more vulnerable than males to the development of post trauma reactions (Creamer *et al* 1993; Gersons, 1989; Everstine and Everstine, 1993).

6.4.2 AGE AND PTSD

Jones (1985), performed a study on approximately 600 US Air Force personnel who transported the bodily remains of 1000 victims of the Jonestown, Guyana, mass suicide. It was found that subjects who were less than 25 years old reported higher prevalence rates of PTSD. In the present study however, no significant association between age and post trauma symptoms was found to exist. The present finding regarding age is also not in keeping with Norris' (1992) study cited in Green (1994), where younger rather than elderly subjects were found to be at higher risk for developing PTSD. The implications of the difference in the present findings and those of previous research regarding age, is that the relationship between age and PTSD requires further investigation.

6.4.3 LENGTH OF SERVICE AND PTSD

Numerous studies have suggested that past experience with emergency situations may help to mitigate the negative responses to subsequent traumatic events. In this regard, it is argued that experience in Emergency Services, in effect, equips workers to deal with the exposure to traumatic incidents (Moran and Britton, 1994). There is however, an alternate view which maintains that increased exposure to traumatic incidents is associated with a breakdown in individuals' coping mechanisms. In this regard, it is argued that individuals as a result of seeing too much pain , death or suffering become sensitised and may result in them becoming psychologically or physically debilitated. According to this view, length of service is an important variable in the response to traumatic incidents as the chance of exposure to qualitatively "more severe" incidents may increase as length of service increases (Bryant and Harvey, 1996). In the present case, this was however not found to be true as paramedics irrespective of length of service were exposed to the same severity of incidents. This may, in part, be attributed to the violent nature of the South African society whereby many emergency calls are of a severe and traumatic nature (Michelson, 1994). This may account for why length of service in the present study was found not to influence one's response to traumatic incidents.

Although demographic variables are not amenable to intervention at the time of the trauma, they indicate which groups are at heightened risk for developing PTSD and as such may help in targeting programmes to such groups (Raphael and Wilson, 1993). In this regard, the present findings indicate that woman are susceptible towards PTSD. As such, they should be provided with direct services after a trauma and prior

to the development of symptoms of emotional distress in order to ensure the amelioration and prevention of the onset of PTSD (Williams, 1993).

6.5 THEORETICAL IMPLICATIONS

The present study investigated paramedics' responses to traumatic work related incidents. In particular it assessed if Job Satisfaction, Job Involvement and Propensity to Leave are by-products of the traumatic stress associated with emergency work.

The present findings support the descriptions of Secondary Traumatic Stress found in psychological literature. As the present study has contributed to our knowledge of traumatic nature of professional caregivers' work, it adds to the increasing attention in psychological literature being directed to trauma within these professions. William's (1993) Framework of Stress Response Reactions served as a useful framework in which paramedics' reactions to trauma could be conceptualised in the present study. In this regard, the effect of personal factors (*like individual coping styles*) on emotional reactions to trauma could be understood. Moreover, Friedman's (1995) Twin Peaks Model provided insight into the denial and considerable resistance found within these professions towards admitting the emotional toll of work related trauma.

Although the study supports previous findings with regards to the effect of PTSD on Job Satisfaction, the same is not true with respect to its effects on Propensity to Leave (Beaton and Murphy , 1995; Mitchell and Dyregrov, 1993). The difference in the present findings to those of previous research with regards to Propensity to Leave, therefore requires further investigation. Furthermore, as previous literature has not documented the effects of PTSD on Job Involvement, research is needed to assess whether Job Involvement is a by-product of occupational trauma or whether infact it is not, as was found in the present study. As the effect of PTSD on these organisational variables has not been extensively documented in literature, it is evident that more research needs to be conducted in order to ascertain if and/or how PTSD impacts upon these variables (Beaton and Murphy, 1995).

Although the present findings are in keeping with previous theory which acknowledges that emergency workers are exposed to numerous work-related stressors which may compound or interact with occupational trauma, additional theory is needed to document how these occupational stressors may interact with traumatic work stressors. Furthermore, as literature has only referred to the interaction of trauma with a few of these occupational stressors, research is needed to identify how other job stressors may interact with Secondary Traumatic Stress in emergency workers (Beaton and Murphy, 1995).

The present finding are in keeping with previous reports which maintain that nearly all emergency workers will experience at least some post-trauma symptoms at some stage of their careers (Beaton and Murphy, 1995; Figley, 1995; McCammon and Jackson Allison, JR, 1995). The present study therefore provides

support for literature which advocates the establishment of organisational responsiveness to intervene and assist those workers adversely affected by occupational trauma. Furthermore, an important implication arising from a review of emergency work literature, is that organisational and cultural similarities and differences amongst emergency work occupations should be taken into account in developing post traumatic prevention and intervention strategies (Beaton and Murphy, 1995).

It is well recognised and acknowledged in trauma literature that personal factors are integral to the production of Post Traumatic Stress (Michelson, 1994). Although gender and previous traumatic experiences were found in the present study to be important factors which were predictive of post trauma reactions, factors contributing to PTSD have not been studied as extensively as have the consequences of exposure to trauma (Green, 1994). As such, future studies need to examine the phenomena contributing to the development of PTSD in more detail.

6.6 PRACTICAL IMPLICATIONS

An important implication of the lack of disclosure of trauma symptoms by many emergency workers, is that written policies in respect of trauma symptoms must be developed and implemented in order to encourage the prevention and treatment thereof. Written policies may also assist in the breaking down of occupational and organisational barriers which have been found to prevent the recognition and treatment of Secondary Traumatic Stress reactions (Beaton and Murphy, 1995).

The **REAPER** model advanced by Mitchell and Bray (1990) provides a comprehensive framework for the prevention and treatment of emergency work stress as well as traumatic stress. This could therefore be of benefit not only to emergency workers but also other work population groups who may suffer from traumatic stress responses. The **REAPER** model maintains that the prevention and treatment of stress entails:

1. Recognition of the existence of trauma and stress as well as the reactions thereto.

2. Education of workers, administration and family which should form part of emergency work training and continuous education.

3. Acceptance whereby the provision of empathy is regarded as being a vital element of acceptance.

4. Permission to express feelings openly and to provide psychological support on whatever level it is needed.

5. Referral of emergency workers where more intensive psychological support is necessary.

It is posited that the **REAPER** levels of prevention and treatment should be included in work site policies pertaining to trauma in order to maintain an optimal level of functioning in employees (Beaton and Murphy., 1995). Policies are important as most emergency workers will be exposed to trauma and will experience Secondary Traumatic Stress at some stage in their career. As such, these programmes are needed to assist emergency work personnel in maintaining physical and emotional health in their line of duty as well as in the sphere of their personal lives (Beaton and Murphy, 1995; McCammon and Jackson Allison , JR, 1995). As mentioned previously, trauma experienced in the personal sphere of an employees life may "spillover" into their worklife. As such, these programmes are also beneficial for those employee population groups which may experience trauma outside of the workplace (Berry and Houston, 1992).

6.7 LIMITATIONS

Methodological limitations may account for the lack of support obtained for some of the hypotheses under investigation in the present study. However, given that methodological limitations are inherent in most research studies, the limitations relating to the present study will be outlined.

6.7.1 SAMPLE

The paramedics who responded to the study comprised a self selective sample who may not be truly representative of paramedics. Therefore, as the study was based on volunteers, the sample was not randomly selected which is problematic due to the threats to both the internal and external validity of the study (Baker, 1994). However, as mentioned previously, this method of sampling was the only sampling method which was appropriate for the present study. As noted by McCammon *et al*, (1988) as well as Bryant and Harvey (1996), a factor which may have influenced sample selection may have been the reluctance of many paramedics to respond because they may have believed that admission of stress in their duties may be indicative of their inadequacy as paramedics.

Usually comparison groups are included in a study in order to eliminate alternate hypotheses related to the research findings. For instance, the inclusion of a comparison group would allow one to rule out the possibility that the presence of PTSD in the target group may attributed to the method of assessment (Kulka and Schlenger, 1993). Moreover, as PTSD may be associated with numerous demographic factors and predisposing characteristics, by including a comparison group, the prevalence of PTSD may be more easily attributed to these characteristics (Kulka and Schlenger, 1993). Therefore, as the study was a single group static design it poses several threats to the study's internal and external validity (Baker, 1994).

6.7.2 MEASUREMENT

It has been suggested that a diagnosis of PTSD should not be based entirely on one instrument but rather that use should be made of a battery of instruments which can be used collectively to diagnose trauma related disorders (Kulka and Schlenger, 1993). Of the numerous data sources used in the assessment of PTSD, the benefits of using a clinical interview has been extensively documented in literature on trauma (Bromet, 1990; Lees-Haley, 1990; Kulka and Schlenger, 1993). However, as an interview should be

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administered by an experienced clinician dealing with PTSD, this assessment tool was not used in the present study due to the lack of experience of the researcher. Nevertheless, the use of a single measure like a psychometric indice as in the present case, should be avoided and rather a number of PTSD assessment instruments should be used in order to ensure that the diagnosis of PTSD is valid (Bromet, 1990; Kulka and Schlenger, 1993).

Although a self-report instrument was needed in the present study to measure the subjective impact of traumatic events on subjects, it has been noted that self-report measures may lead to response set bias (Lee-Haley, 1990). This type of measure has also been criticised as it may lead to subjects answering in a socially desirable manner. Moreover, concerns regarding factitious responding in this respect have also been raised by numerous studies (Lyons, 1991). An attempt was made was made in the present study to prevent this response bias from occurring by emphasising confidentiality and anonymity in the covering letter (See Appendix E).

The retrospective nature of the paramedics' responses was potentially confounded by the length of time which passed between the occurrence of the traumatic incident(s) and the measurement of Post Traumatic Stress (Bromet, 1990). A delay in measurement represents a methodological limitation as delayed responses may be influenced by intervening factors which were not measured. As intervening factors were not controlled, certain factors which may potentially mediate posttraumatic stress could not be measured (Bromet, 1990).

Although the type and magnitude of traumatic events interact with antecedent, mediating and outcome factors, the present study did not objectively measure any characteristics of the traumatic event(s). The present study therefore failed to examine contextual factors which have been shown by research to influence the development of PTSD (Bryant and Harvey, 1996).

6.7.3 STATISTICS

Correlational research was used extensively in the present study. However, although this statistical technique can be used successfully to draw inferences, it cannot be used as a means of prediction (McCall, 1990). . The reason for this is that correlational analysis can only be used to establish direct linear relationships between variables and not for the purposes of model prediction. As such, this statistical analysis technique placed limitations on the present study as model prediction could not be confirmed (McCall, 1990).

6.7.4 DESIGN

Another limitation arose from the cross-sectional nature of the design. This limitation arose because what was being observed, was at a single point in time. As such, the study may have been influenced by temporal factors whose influence on the variables measured could not be fully assessed (Baker, 1994). In the present study, the organisational restructuring occurring at the time, may have influenced the results

obtained. As such, the attitudes and experiences studied and the conclusions reached, are as a result of the cross- sectional nature of the present study, limited to a specific point in time. Longitudinal research designs are therefore needed to overcome the limitations inherent in cross-sectional designs (Baker, 1994).

6.8 FUTURE IMPLICATIONS FOR RESEARCH AND CONCLUSIONS

In conclusion, the present study was able to provide an understanding of the effects of trauma on the lives of professionals. The findings indicate that emergency workers are at risk of experiencing PTSD or Secondary Traumatic Stress. From the range of phenomena in PTSD, outcomes were found to include substance abuse, impacts on personal relationships and work. In respect of work, Secondary Traumatic Stress was identified as being an occupational hazard for service providers through its negative effects on Job Satisfaction. Although this relationship was not found to exist between PTSD and Job Involvement or Propensity to Leave, the association between occupational stressors and these variables was documented. Moreover, the effects of previous traumatic experiences on subsequent trauma levels was demonstrated. PTSD was also identified as being constituted by personal factors, in particular gender in the present study. The above mentioned findings have several implications for future research and as such the following discussion aims to highlight some of these future implications.

One of the future implications pertains to previous traumatic experiences because although it appears that experience of previous trauma may predispose individuals to experience negative posttrauma responses, it has been noted that stress management skills may increase one's ability to cope successfully with trauma (Bryant and Harvey, 1996).

Future studies are thus needed to prospectively examine the interaction between multiple traumatic experiences and the implementation of stress management skills (Bryant and Harvey, 1996).

As mentioned above, one of the limitations of the present study was the failure to measure aspects of the traumatic stressor itself. However, it has been noted that the preparation of emergency workers to deal with occupational trauma requires an understanding of the relationship between posttraumatic stress and various characteristics of the stressor itself Further research is therefore required in order to assess the contribution and significance of trauma characteristics to PTSD (Bryant and Harvey,1996).

The delineation of personal and trauma factors, their interrelationship with each other and the past experience and personality of the individual and how this influences the outcome is very complex. As such, research is also needed in this regard to assess the contribution of these factors to PTSD (Bryant and Harvey, 1996; Green, 1994) .

Despite the fact that the present study allowed for statistical analyses and descriptive accounts of trauma in emergency work, it needs to be followed up by quasi-experimental, longitudinal designs with experimental

and comparison groups of sufficient size. Longitudinal studies on posttrauma reactions are rare and are needed to chart the course of posttrauma reactions over time. This may provide a greater understanding of PTSD in emergency workers (Bryant and Harvey, 1996; Green, 1994).

Although the cognitive processes of some paramedics were examined through qualitative analyses, the cognitive processing of traumatic events by paramedics was not measured objectively. Given the increasing interest in cognitive processing models, future research examining cognitive processes in emergency workers is needed (McCammon *et al*, 1988). This may be useful in helping emergency workers to process and integrate traumatic events.

As mentioned previously, the effect of PTSD on the organisational variables under investigation has not been documented extensively enough in literature. As the main purpose of the present study was to assess the impact of PTSD on these variables, future research is needed to assess the relationship between PTSD and these variables.

Lastly, as the most common studies on emergency workers are on police officers and fire-fighters, there is a need to extend research to a variety of emergency work populations (Bryant and Harvey, 1996).

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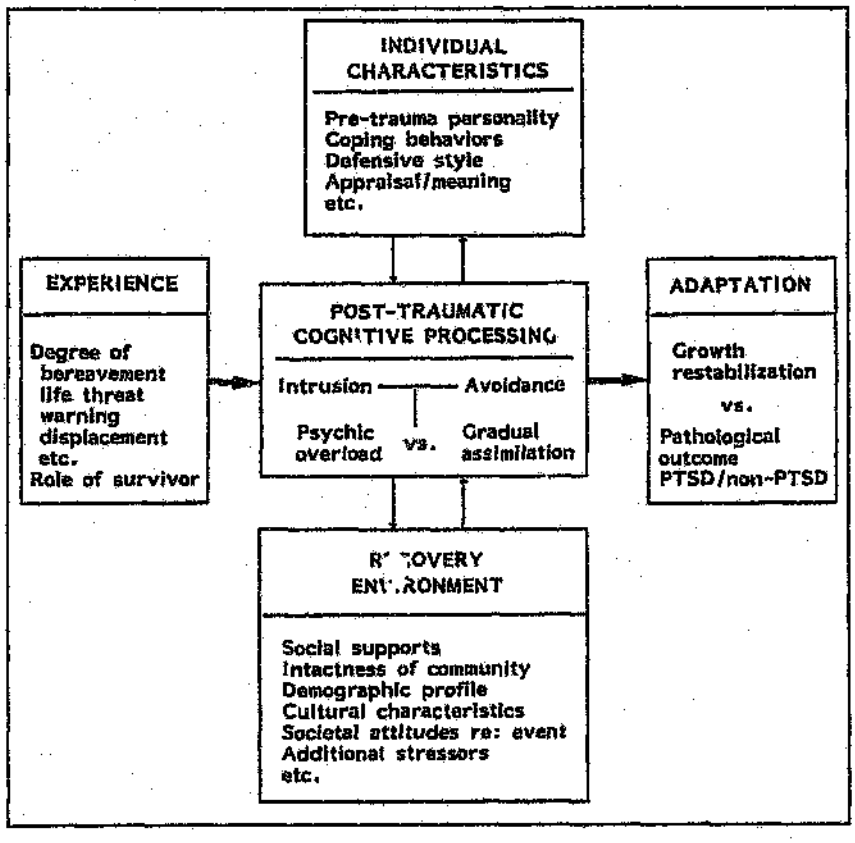
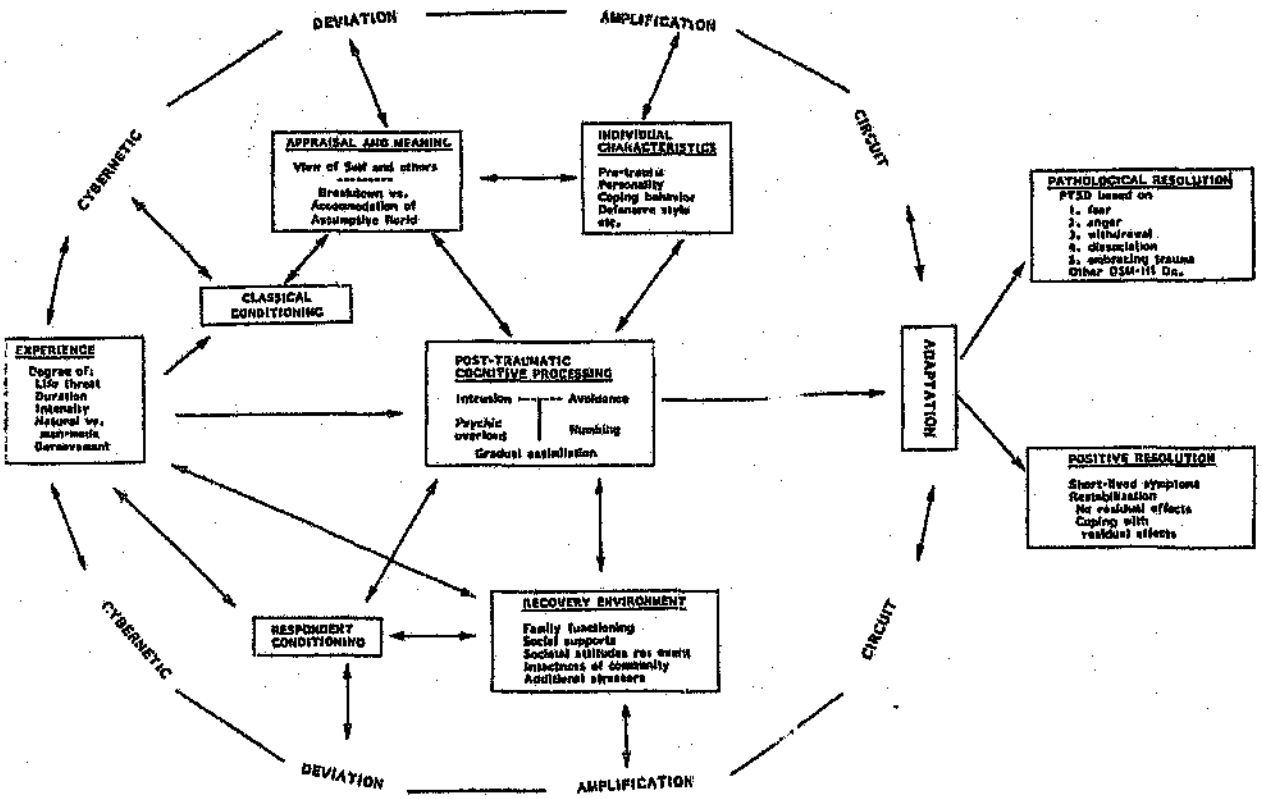
8. APPENDICES

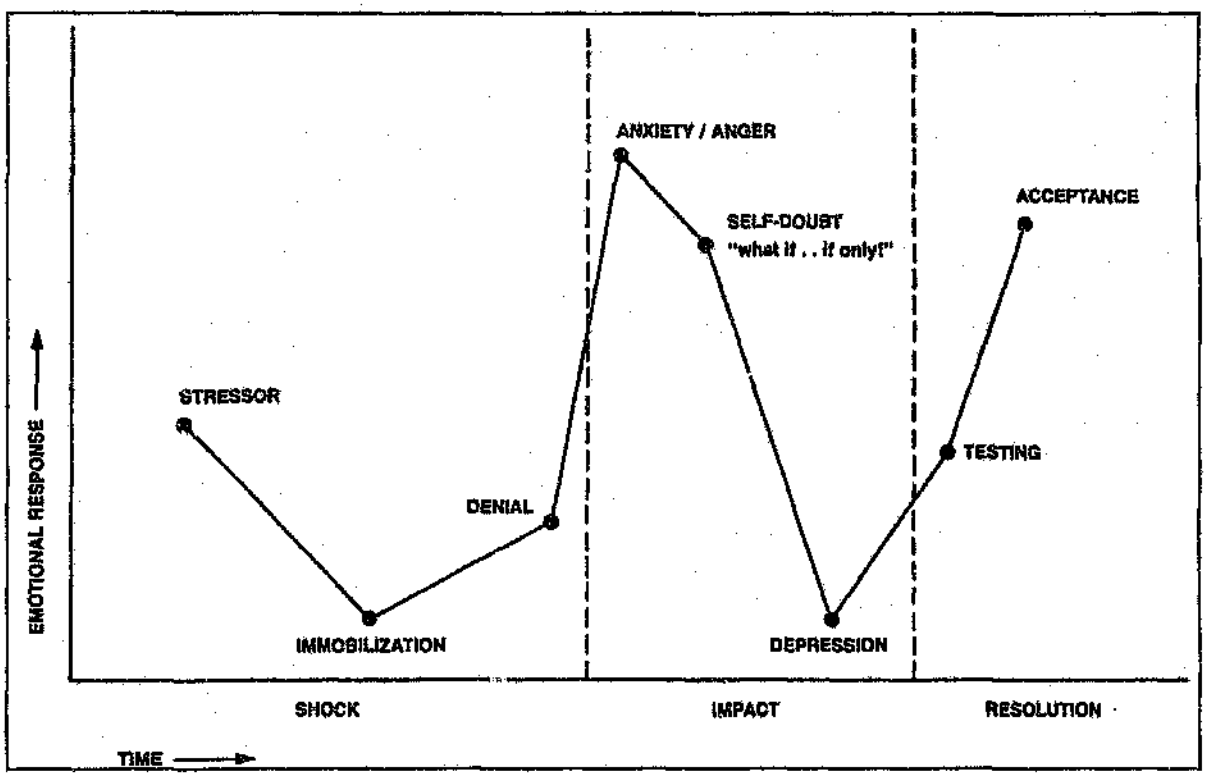
8.1 APPENDIX A - GREEN, WILSON AND LINDY'S (1985) PSYCHOSOCIAL MODEL.



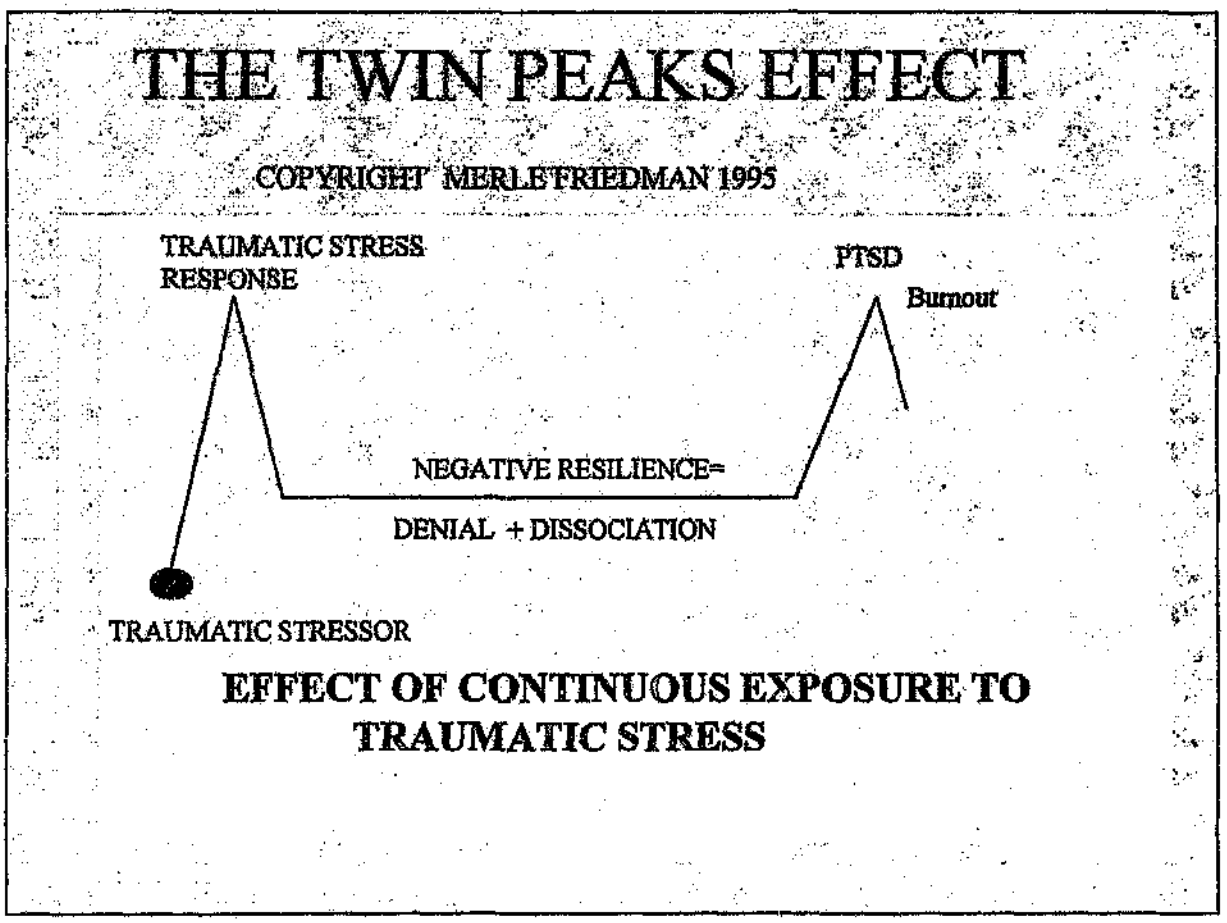
8.2 APPENDIX B - PETERSON, PROUT AND SCHWARTZ'S (1991) ECOSYSTEMIC MODEL.



8.3 APPENDIX C - WILLIAM'S (1993) PHASES OF PTSD.



8.4 APPENDIX D - FRIEDMAN'S (1995) TWIN PEAKS MODEL.



8.5 APPENDIX E - QUESTIONNAIRE

1. Questionnaire Covering Letter.
2. Biographical Questionnaire.
3. Norris' (1990) Traumatic Stress Schedule.
4. Esprey's (1996) Revised Impact of Events Scale.
5. Brayfield and Rothe's (1954) Overall Satisfaction scale.
6. Warr, Cook And Wall's (1979) Overall Satisfaction scale.
7. Buchanan's (1974) Job Involvement Scale.
8. Lyon's (1971) Propensity to Leave Scale.

Dear Participant,

The attached questionnaire is part of a research study that I am conducting through the University of the Witwatersrand as part of my Masters degree in Industrial Psychology. I have obtained permission to conduct this research in your organisation and would appreciate it very much if you would participate in this study.

The purpose of this study is to examine work-related experiences of paramedics. I also wish to examine certain attitudes which paramedics have towards their work (e.g. job satisfaction).

As the questionnaire is anonymous, I assure you that your responses will be treated confidentially. The questionnaire should not take you longer than 20 min to complete. There are no right or wrong answers to the questionnaire. All that is required is that you please answer as honestly and accurately as possible.

If you are interested in the results of this study which should be available by **January 1997**, please do not hesitate to contact me at **435-3955/6 (h)**. The results will only show group trends which will make individual identification impossible thereby ensuring confidentiality.

Thanking you for your time and participation.

Illeana Georgiou
(Masters Student)

Ms Karen Ortlepp
(Supervisor)

UNIVERSITY OF THE WITWATERSRAND

Where necessary place ☒ in the box of your choice.

SECTION 1

1. SEX

F	
M	

2. HOME LANGUAGE

ZULU		XHOSA		SOTHO	
ENGLISH		AFRIKAANS		OTHER	

3. If you chose the box labelled **OTHER**, please specify your home language.

.....

4. AGE.....

5. What position do you currently occupy?.....

6. How long have you been working in your present position?.....

7. How long have you been working in the "Paramedic field" ?.....

8. Highest educational qualification achieved.....

9. Does your organisation have a counselling service?..... .....

10. Have you ever received counselling for any traumatic work related experiences?

If **YES**, please specify when.....

SECTION 2

The following questions ask you about any traumatic experience(s) you may have had. Place an ☒ in the box which applies to you, either **YES** or **NO**. If you can remember the approximate date on which you experienced any of these incident(s) please specify this.

EXPERIENCE	YES	NO	DATE
1. Has anyone ever taken something from you by force or threat of force, such as in a *robbery, mugging,* or *hold-up*?			
2. Has anyone ever beaten you up or attacked you?			
3. Has anyone ever made you have sex by using force or threatening to harm you?			
4. Have you ever been in a motor accident serious enough to cause injury to one or more passengers?			
5. Has a loved one ever died of an accident, homicide, or suicide?			
6. Have you ever suffered injury or property damage because of a fire, severe weather, or a natural or manmade disaster?			
7. Have you ever been forced to evacuate from your home?			

8. Have you ever had some other shocking or terrifying experience?

If **YES,** briefly describe the incident as well as how often it has happened to you and approximately when it occurred.

.....

.....

.....

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.....

SECTION 3

Below is a list of statements made by people after experiencing a stressful event. Please look at each item and indicate how often any of these statements was true for you **DURING THE LAST 7 DAYS.** Was it **Not At All True, Rarely True, Sometimes True** or **Often True?**

Place an ☒ In the Column which applies the most to you.

	Not At All	Rarely	Sometimes	Often
1. I thought about it when I didn't mean to.				
2. I avoided letting myself get upset when I thought about it or was reminded of it.				
3. I had difficulty concentrating.				
4. I tried to remove it from memory.				
5. I had trouble falling asleep or staying asleep because pictures or thoughts about it came into my mind.				
6. I had waves of strong feelings about it.				
7. I constantly found myself being "*on guard*".				
8. I had dreams about it.				
9. I stayed away from reminders of it.				
10. I felt as if it hadn't happened or wasn't real.				
11. I was startled by loud noises or surprises.				
12. I tried not to talk about it.				
13. Pictures about it popped into my mind.				

	Not at All	Rarely	Sometimes	Often
14. Other things kept making me think about it.				
15. My body reacted when I was in a situation that reminded me of the event.				
16. I was aware that I still had a lot of feelings about it, but I didn't deal with them.				
17. I was more irritable or angry than usual.				
18. I tried not to think about it.				
19. Any reminder brought back feelings about it.				
20. I had trouble sleeping or falling asleep.				
21. My feelings about it were kind of numb.				

SECTION 4

The next set of items deals with the Overall Satisfaction you feel regarding your present job. Please indicate your degree of agreement or disagreement with each of the following statements by placing an ☒ in the column which applies to you.

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. I find real enjoyment in my job.					
2. I like my job better than the average person.					
3. I am seldom bored with my job.					

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
4. I would not consider taking another kind of job.					
5. Most days I am enthusiastic about my job.					
6. I am fairly well satisfied with my job.					

Please indicate how satisfied or dissatisfied you feel about the following aspects of your job at the present moment.

	Extremely Dissatisfied	Dissatisfied	Unsure	Satisfied	Extremely Satisfied
1. The physical work conditions.					
2. The freedom to choose your own method of working.					
3. Your fellow workers.					
4. The recognition you get for good work.					
5. Your immediate boss.					
6. The amount of responsibility you are given.					
7. Your rate of pay.					
8. Your opportunity to use your abilities.					
9. Industrial relations between management and workers in your company.					

	Extremely Dissatisfied	Dissatisfied	Unsure	Satisfied	Extremely Satisfied
10. Your chance of promotion.					
11. The way your company is managed.					
12. The attention paid to suggestions you make.					
13. Your hours of work.					
14. The amount of variety in your job.					
15. Your job security.					
16. Taking everything together, your job as a whole.					

SECTION 5

Listed below are series of statements that represent feelings that people may have about the role of work in their lives. Please place an ☒ in the column which you think best describes the way you feel about your job.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Disagree or Agree	Slightly Agree	Moderately Agree	Strongly Agree
1. The major satisfaction in my life comes from my job.							

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Disagree or Agree	Slightly Agree	Moderately Agree	Strongly Agree
2. I do what my job description requires; this organisation does not have the right to expect more.							
3. I don't mind spending a half-hour past quitting time if I can finish a task.							
4. The most important things that happen to me involve my job.							
5. I live, eat and breathe my job.							
6. Most things in life are more important than my work.							

SECTION 6

Place an ☒ where necessary

1. If you were completely free to choose, would you prefer to continue working in your present job or not?

Not at all likely		**Somewhat likely**		**Quite likely**		**Extremely likely**	

2. If you were completely free to choose, how likely is it that you will actively look for a new job in the next year?

Not at all likely		**Somewhat likely**		**Quite likely**		**Extremely likely**	

3. I often think about leaving this organisation.

Strongly Disagree	
Disagree	
Slightly Disagree	
Neither Agree or Disagree	
Slightly Agree	
Agree	
Strongly Agree	

4. I will probably look for a new job in the next year.

Strongly Disagree	
Disagree	
Slightly Disagree	
Neither Agree or Disagree	
Slightly Agree	
Agree	
Strongly Agree	

☺ **Thank You for your participation**