

Chapter 2

Literature Review

Critical Incidents

2.1 INTRODUCTION

"It took years to get over it. Years! Long after, when you were working, married, had kids you would be lying in bed and you would see it all before you. Couldn't sleep, couldn't lie still. Many and many times I have got up and tramped the streets till it became daylight. Walking, walking – anything to get away from your thoughts ... that went on for years, that did" McDonald in Tehrani (2004:6) (soldier, after the First World War).

Traumatic events mostly always come as a shock to a person, it is never anticipated and most of the time there were not any opportunity for preparation. What is worse is the outcome of a trauma where people are confronted with almost unbearable pain, either directly or indirectly. This is a truth we cannot negate when facing major losses, the death of someone we love, unexpected and prolonged unemployment, violence or other trauma that painfully tests our ability to cope (Tedeschi & Calhoun, 1995:18).

In the last few years there was a significant expansion in the literature concerning trauma. Literature mainly records the following incidents as catastrophic and the possible causes of a traumatic reaction:

- Rape and sexual violence
- Assault
- Torture
- War situations
- Industrial accidents and fires
- Motor vehicle accidents
- Bomb attacks
- Air craft accidents
- Natural disasters, for example floods, fires, hurricanes, tornados, cyclones and earthquakes

- Child molestation and child abuse
- Incest
- Civil violence
- Riots
- Crime situations and crime scenes
- Armed robberies and hijackings
- Physical violence either as victim or witness
- Shooting incidents and shooting accidents
- Shooting or killing someone or witnessing such an event
- Domestic violence.

Although there is a broad range of incidents that may qualify as a critical incident, the person's reaction to such an event determines if it is a traumatic event or not. According to Solomon (1986:30), any situation in which a person feels overwhelmed by a sense of vulnerability and/or lack of control over the situation can be defined as a critical incident that may lead to traumatic reactions.

The following literature review focuses on the experience of trauma and more significantly how people are affected by critical incidents. It also reviews how the employee's psychosocial functioning is affected.

2.2 DEFINING CRISIS, CRITICAL INCIDENT AND TRAUMA

Trauma, like any other obstruct concept, has fuzzy boundaries and is often used loosely. Terminology such as critical incidents, crisis and trauma is often used to refer to a similar incident. Although this terminology is closely related there are differences. By defining crisis, critical incident and trauma the researcher hopes to clarify the differences between these terms.

2.2.1 Crisis

Gilliland and James (1993:3) defines a crisis as "a perception of an event or situation as intolerable difficult that exceeds the resources and coping mechanisms of a person. Unless the person obtains relief, the crisis has the potential to arouse severe affective, cognitive and

behavioural malfunctioning". A crisis results from stress and tension in a person's life. Stress is the key element in crisis development. As stress mounts to unusual proportions and the individual's coping skills become increasingly ineffective, the potential for a crisis occurs (Greenstone & Leviton, 2002:1)

According to Plaggermars (2000:80), a crisis represents an acute emotional upset, less of equilibrium and an upset in a steady state which temporarily hinders one's ability to employ previously used problem-solving capabilities.

Trauma creates a crisis by overwhelming a person's usual coping strategies. A crisis makes it difficult or impossible to conduct one's daily activities (Friedman, 2003:20)

The researcher views a crisis as a state of emotional disorganisation caused by stress resulting from a trauma the person experienced or when confronted with an event he/she is not ready to handle or lacks the capacity to handle at that moment. The inability to handle or cope with the event results in emotional and behavioural difficulties for the person.

2.2.2 Critical incident

A critical incident refers to "an event that is extraordinary and produces significant reactions for the intervening person". It may be so unusual that it overwhelms the natural abilities of people who have to cope with difficult situations. It may lead to stress, burnout or even PTSD (Lewis, 1996:15).

A critical incident, according to O'Conner and Jeavons (2002:53), is an extraordinary event that has the potential to cause unusually strong emotional reactions.

Solomon (1986:30) views a critical incident as "any situation in which one feels overwhelmed by a sense of vulnerability and/or lack of control over the situation".

Although the last definition may seem very broad, the researcher agrees that when defining a critical incident the focus should be on the reaction of the individual. The researcher, therefore, defines a critical incident as any incident that causes emotional distress for a

person, and which affects his/her psychosocial functioning temporarily or permanently to some extent.

2.2.3 Trauma

Trauma, according to Sonderup (1996:14), necessitates the presence of a traumatic event. This can be defined as an extraordinary event or series of events which are sudden, overwhelming and often dangerous, either to the individual or significant others.

Trauma occurs when a sudden, extraordinary event overwhelms one's capacity to cope and master the feelings aroused by the event (Terr, 1991:409).

Any unpleasant psychological experience that have a negative influence, usually with long-term effects, on the personal development of a person. For example, an accident or death of a loved one or a physical injury or wound a can be described as trauma (Plug *et al.*, 1997:305).

A traumatic event (Plaggermars, 2000:80) is more severe than a crisis and has a more unpredictable onset.

The researcher defines trauma as an event or an experience that threatened the emotional wellbeing of a person and it has a negative and usually long-term effect on the psychosocial functioning of a person.

The terms critical incident and trauma both refer to an extraordinary event with a sudden unpredictable onset. This event impacts on the person's psychosocial functioning and may have long-term consequences for the person.

According to the literature and definitions for a critical incident and a trauma, there is no significant difference between the terms. Traditionally *trauma* is used more in a medical context, referring to a physical injury or a wound. The term *critical incident* is used more often in a social context, where the incident is more abstract, for example for a retrenchment or a divorce where it is difficult to detect the physical impact, but the emotional and psychosocial

impact is clearer. For the purposes of the study, the researcher made use of the term *critical incident*, which was also inclusive of the term *trauma*.

The term *crisis* can be distinguished from the term *critical incident* in the sense that a crisis is often the result of a critical incident. A critical incident creates a crisis by overwhelming a person's usual coping strategies (Friedman, 2003:20). The crisis results from stress and tension caused by a critical incident (Greenstone & Leviton, 2002:1).

2.3 DIFFERENT TYPES OF CRITICAL INCIDENTS

When a person is involved in an event that takes place in a specific manner, under particular circumstances and at a given point in time, various characteristics of the situation turn the event into an experience of powerlessness, disruption and discomfort. Characteristics of the event and its context, which include the severity of stress, are highly decisive factors in the process of coping with traumatic stress. Most critical incidents are unexpected and the onset of the event is virtually always sudden and not anticipated. Such experiences challenge a person's ability to accurately assimilate and comprehend the experience; as such an event is capable of devastating even the most secured person or family (Kleber & Brom, 1992:40).

The individual may experience a critical incident when he/she is alone, with others or in the context of a community. When a critical incident is experienced while alone, the individual may feel particularly helpless, terrorised, afraid, vulnerable and at the mercy of forces beyond his/her control. When the individual experiences the trauma within a group, the effect of the critical incident might well be different due to the group dynamics and psychological processes that take place. When a critical incident affects an entire community it can produce many secondary stressful experiences if the devastation and destruction is intense enough (Wilson, 1989:53).

Critical incidents have an inherent structure. They may comprise a single or multiple stressors, be psychologically simple or complex, and be natural or man-made. Typical examples of natural critical incidents are the tsunami disaster which was responsible for the death of thousands of people in Indonesia in December of 2004. A typical example of a man-made incident is the September 11 attack in 2001 on the World Trade Centre and the Pentagon in the USA. Single traumatic incidents are common and typically involve an

accident, which may result in an injury. Most traumatic experiences, however, contain multiple stressors. For example, hijacking typically involves dimensions such as a threat to life, loss of property and personal injury. Critical incidents may be conceived as being relatively complex or simple. Complex traumatic events have many sub-components inherent in the trauma and require the victim to make a number of complex decisions, which may result in ambiguity due to possible alternative actions in the event. A simple critical incident is typically one-dimensional and clear with respect to the nature of the event and the possible behaviours one can enact. Complex traumas might be of such an immensity that ideological perspectives and beliefs about human nature and life itself may be profoundly altered (Wilson, 1989:56). Whether it is a complex or a simple trauma is to a great extent determined by the victim's reactions to the critical incident. When the critical incident results in traumatisation and severely affects the victim's psychosocial functioning, it can be referred to as a complex traumatic event. A simple traumatic event has no or minimal effect on the psychosocial functioning of the victim.

The severity of a critical incident can be classified according to the level to which these dimensions exist in the traumatic event. The more these dimensions are present in any particular trauma, the greater the potential for a pathological outcome. However, this is not a simple cause-effect linear relationship. Rather, personality and situational variables (such as social support and economic resources) interact with the stress or dimensions in determining the individual's post-trauma adaptation. There seems to be consensus in the literature that "man-made" traumas are experienced as more disturbing than natural disasters (Wilson, 1989:72).

Meichenbaum (1994:231) makes a very interesting distinction between different types of critical incidents. He divides critical incidents into type I and type II traumas.

2.3.1 Type I trauma

According to Meichenbaum (1994:231), this type of incidents includes rape, a shocking accident, a car accident or an earthquake. Type I traumas have the following characteristics:

- A single, dangerous and overwhelming event
- Limited duration
- Sudden and surprising

- Quick recovery is more likely
- Likely to lead to typical PTSD with symptoms of re-experiencing, avoidance and hyper-arousal.

2.3.2 Type II trauma

Meichenbaum (1994:232) states that a type II trauma is an incident which most likely has the following characteristics:

- Multiple, chronic and repeated critical incidents
- More likely of intentional human design
- Initially a type I trauma; as the critical incident recurs the victim expects and fears recurrence
- The victim feels helpless to prevent the critical incident
- Dissociation
- May lead to an altered view of the self and the world
- More likely to lead to long-term characteristic and interpersonal problems, for example detachment from others, and a restricted range of affect
- Attempts to protect the self-dissociated responses, by using coping strategies such as denial, numbing, withdrawal and the misuse of addictive substances
- Likely to have poor prognosis (complex PTSD).

Meichenbaum (1994:235) distinguishes between the different types of traumas according to the effect they have on the individual and the anticipation of recurrence of the critical incident the victim may fear. His distinction is not based on the fact that the critical incident is man-made or natural but rather on the individual's reaction to the critical incident.

Friedman (2003:2) explains further by stating that researchers originally believed that trauma may be defined merely and exclusively as a catastrophic event which happened to an individual who was in the wrong place at the wrong time. Thus anyone who was exposed to such an incident would be traumatised. Friedman (2003:3) states that, although exposure to a catastrophic stress event is a prerequisite for the developing of a disorder (acute stress disorder or PTSD), it is insufficient in itself to traumatise the individual. The critical discriminator is the emotional response of a person to such an event.

According to Van der Walt (2001:36) trauma specialists make a further distinction between types of trauma which exist:

- Once-off critical incident. This is a once-off incident which traumatises the victim, for example a hijacking.
- Cumulative or multiple critical incidents. This is where a large number of critical incidents occur at the same time, for example domestic violence and robbery, two hijackings one after the other, a war situation with torture in concentration camps, a motor vehicle accident followed by an earthquake, a hijacking followed by torture and rape.
- Repetitive, re-occurring or continuous critical incidents. This refers to continuous and chronic exposure to critical incidents and being under threat constantly, for example civil unrest and domestic violence.
- Routine critical incidents. This is the regular exposure to critical incidents as a result of the work situation, for example police officers, emergency officers, fireman, ambulance personnel and security guards.
- Secondary or vicarious trauma. Secondary or vicarious trauma refers to where support personnel and professionals, for example psychologists, social workers and debriefing personnel become traumatised by exposure to traumatised clients.

2.4 RISK FACTORS IN TRAUMATISATION AS A RESULT OF A CRITICAL INCIDENT

According to Van der Kolk and McFarlane (1996:3), experiencing trauma is an essential part of being human. There are, however, some factors that play a part in the victim's reactions to a critical incident.

Friedman (2003:21) mentions that research indicates that the following pre-trauma risk factors may have an influence on the individual response to a critical incident:

2.4.1 Pre-trauma risk factors

The pre-trauma risk factors include:

- Gender – the possibility of women developing PTSD is twice as likely as in men
- Age – people under the age of 25 years are more vulnerable
- Education – people without tertiary education are more at risk

- Childhood adversity, for example deprivation and divorce, may have an effect on a person's coping strategies
- Previous exposure to critical incidents in childhood, for example child abuse, rape, war or motor vehicle accidents
- Prior psychiatric disorders and family history of psychiatric disorders
- Attention deficit disorder and hyperactivity disorder
- Previous exposure to a critical incident as an adult
- Adverse life events, for example divorce, loss of job or financial problems
- Physical health problems, for example asthma, heart disease, cancer or back problems.

O'Brien (1998:93) mentions that post-traumatic illness or the reaction to a critical incident should be short-lived and should only become chronic if there are some pre-existing "maladjustment" or vulnerability factors. Pre-existing mental illness seems to be a very good predictor of PTSD. In studies by Greenwald and Leitenberg (in O' Brien, 1998:05), it was found that the highest rates and also the widest variation of PTSD were with female survivors of sexual abuse, rape and physical abuse O'Brien (1998:95) states that a person's personal view of life and his/her perception of events happening to him/her are of major importance as a predisposing factor in the development of PTSD after exposure to a critical incident. He further mentions that certain personality traits, especially neuroticism, are associated with the development of PTSD following a critical incident. Family instability, academic difficulties, a childhood history of abuse and neglect, a history of mental illness and illicit drug use are pre-trauma risk factors that have to be considered in the development of PTSD, but seemingly have a smaller effect as the exposure to the critical incident itself (O'Brien, 1998:97–98).

2.4.2 Trauma risk factors

Gilliland and James (1993:64) mention that there are a few variables relating to the type of critical incident that seems to influence its impact on the victim:

- Degree of life threat
- Speed of onset
- Degree of displacement in home continuity
- Degree of exposure to death, dying and destruction
- Degree of moral conflict inherent to the situation
- Role of the person in the trauma

- The proportion of the community affected
- Degree of bereavement
- Duration of the trauma
- Potential for re-occurrence.

Tomb (in Meichenbaum, 1994:183) concludes that a critical incident is more likely to lead to the development of PTSD if the critical incident is severe, sudden, unexpected, intentional, prolonged and likely to be repeated.

2.4.2.1 Situational factors

There are certain situational and personal predisposing factors (Lewis, 1996:52–57) that may affect the victim's reaction to a critical incident and have an influence on the development of PTSD. These are:

- **Warning**

The less the warning, the more profound the emotional impact of a critical incident. If a critical incident is sudden and unexpected, for example an earthquake, it leaves people with no time to prepare emotionally for the possible outcome.

- **Nature of the crisis**

Lewis (1996:52) and Friedman (2003:24) are of the opinion that the victim's emotional response is different to a man-made situation than to a natural disaster. In the case of a man-made critical incident where there is interpersonal violence, for example rape, physical attack or torture, it is more likely to cause traumatisation than in the case of an impersonal event such as a natural disaster. Often victims of crime go through reactions of self-blame and guilt for not being able to prevent the critical incident. The feelings of blame and responsibility may also be directed at others.

- **Severity of the crisis**

According to Lewis (1996:53) positive correlations exist between the severity of a critical incident and the reactions of people involved. It is, however, difficult to define severity. Every person perceives a critical incident differently and what may be a severe incident to one person may be a minor incident to another. It is, however, essential to remember that the critical incident and the nature thereof is not the most important, but rather the

different perceptions and/or association's people have with the critical incident. Friedman (2003:22) mentions that the higher the severity ("dose") of the critical incident, the greater the magnitude of trauma exposure, the greater the likelihood of being traumatised. The most severe trauma often includes a perceived life threat or serious injury.

- **Physical proximity**

The closer to an incident and the victims, the stronger the reaction (Lewis, 1996:53). When a person is directly affected by a critical incident, the trauma reaction has the potential to be more severe. Where a person know the victims of a critical incident or are closely related to him/her, the risk of secondary or vicarious trauma increases.

- **Feelings of guilt**

Participation in atrocities or being responsible for the harm of others, either as a perpetrator or as a witness, poses a risk for being severely affected by a critical incident (Friedman, 2003:24).

- **Time**

The longer the critical incident continues, the greater the risk of being traumatised (Friedman, 2003:25).

- **Psychological proximity**

When the critical incident has a personal impact on the victim, the risk of not coping with the event is greater. When a person's child is the victim of a critical incident or a child at similar age to your own child is the victim of a critical incident, there is a tendency of automatic identification with the victim, which improves the possibility of secondary traumatisation (Lewis, 1996:54).

- **Concurrent stressors**

According to Lewis (1996:55), stress is cumulative; if there are many other losses, changes, or transitions in an individual's life, another crisis (especially dealing with trauma) may be the last straw. People under stress tend to be more prone to accidents, illnesses or other crises and their capacity to resolve this crisis is diminished. This may become a vicious cycle, where stress leads to diminished capacity to cope with trauma,

which may lead to more stressful events, which further diminishes the person's ability to cope.

- **Role and conflict or overload**

If a person is in the position of being a victim of a critical incident, but professionally in the helping professions in dealing with trauma regularly, it may lead to a difficult emotional bind (Lewis, 1996:56). Being aware of the impact of the incident and possibly being overloaded by critical incidents previously as a debriefer or therapist, it might lead to the surfacing of emotions that were not resolved and influence the coping ability in the present.

- **Age**

Age also plays a factor in the coping with a critical incident. The younger the person, the greater the tendency to experience a stronger reaction to the critical incident. This may relate to a person's lack of experience and existing coping skills. An older person usually has more experience in coping with and resolving critical incidents in his/her life (Lewis, 1996: 57).

2.4.3 Post-trauma risk factors

Friedman (2003:27) also refers to the following post-trauma risk factors:

- Poor social support. If a person has a poor or limited support network, the likelihood to be traumatised or to develop PTSD is greater.
- Immediate traumatic reactions such as dissociation or avoidance symptoms. This may be an indication of the severe and sudden impact of a critical incident. Immediate reaction poses a greater risk for the development of PTSD at a later stage.

In terms of post-trauma risk factors, Lewis (1996:11) mentions some factors that can encourage the development of resilience after a critical incident, especially in children. These factors include:

- The availability of a close loving relationship, with a supportive, available caregiver
- A stable, supportive family environment which provides a child with structure, clear rules and good supervision

- Sources of emotional support outside the family, for example community or religious leaders, neighbours, teachers or peers
- Role models who display positive problem solving skills and who themselves may have lived through a critical incident.

Although these factors focus on how resilience can be developed in children after a critical incident, they are also applicable to adults affected by a critical incident. The availability of a loving, supportive relationship the structure of a family, the support of religious or community leaders and positive role models may help to minimise the risk of a critical incident and prevent the development of PTSD.

2.5 REACTIONS TO A CRITICAL INCIDENT

The experiences of a critical incident vary from person to person and from one event to another, since differences in the individual variables affect the way in which stressful events are perceived and experienced. Trauma in itself can alter personal functioning in pathological ways and influence life-course development (Wilson, 1989:12). It must also be noted that trauma never occurs in a contextual vacuum. Critical incidents have the capacity to shatter the fundamental assumptions of survivors about themselves and their inner world, which forces them to confront their own vulnerability (Jannof-Bullman, 1997:56). It is important to understand how a long-term response to an experience of trauma is shaped by a variety of social, psychological and environmental processes, which interact in complex ways to co-determine and construct an experience of trauma (Tedeschi & Calhoun, 1995:24).

Bisson's (1995:718) study states that any traumatic event, including violent crime, may precipitate an acute psychological response. Characteristic features of this response include fear, anger, recurrent distressing thoughts, guilt, depression, anxiety, bad dreams, irritability and generalised hyper-arousal. The results of the aforementioned study propose that such responses should be considered normal immediately after a violent crime.

However, the study also indicates that the response to violent crime can become problematic at any stage. Bisson's (1995:718) research acknowledges that a severe initial response often represents an acute stress disorder. With time, other conditions such as PTSD, anxiety disorders, depressive disorders and substance abuse/dependence may develop. These

conditions can have devastating effects on victims' lives and markedly affect their functioning at personal, social and occupational levels. Across a wide spectrum of traumatic events, however, there is positive evidence that variables other than the dimensions of the trauma itself do influence outcome. Bisson (1995:719) proposes that an acute stress disorder, a psychiatric history, a family psychiatric history, lack of social support and high "neuroticism" are all possible factors associated with exacerbating the experience of trauma as well as increasing the rate of PTSD and PTSD-like symptoms. Individuals exposed to highly stressful events and trauma are likely to experience a constellation of distressing emotions. Although the specific patterns will vary from person to person, it is correct to say that unpleasant emotional states are almost certain to occur. In part, this distress may be due to a sense of hopelessness that is produced when certain events are acknowledged to be irreversible and unchangeable. Also, if a trauma is of human origin, the incidence of PTSD is higher than in cases where the trauma is of natural origin (Tedeschi & Calhoun, 1995:24). It is claimed by Jannof-Bullman (1997:57) that in essence, and contrast to our inherent assumptions, trauma is the abrupt disintegration of the victim's inner world. The survivor's basic elements of trust and confidence are shaken. Consequently, thoughts and images of meanness and meaninglessness may arise.

Findings by Macgregor (1998:41) are in accordance with the aforementioned studies that support the notion that traumatic events can produce negative outcomes. It was found that negatively perceived responses such as telling the victim that he/she was "lucky" had the primary effect of invalidating the traumatic nature of the individual's experience and his/her response to it.

With reference to emotional functioning that is negatively affected after an experience of a critical incident, depression is considered one of the more common reactions. Depression is said to be more likely to develop when circumstances involve significant loss. The study below acknowledges that depression and, significantly, major depression are interconnected with PTSD. Shalev, Freedman, Peri, Brandes, Sahar, Orr and Pitman (1998:638) prospectively evaluated the onset, overlap and course of PTSD and major depression following an experience of trauma. Their results reveal that major depression and PTSD occur early on after a critical incident. Secondly, patients with these diagnoses had similar recovery rates: 63 survivors (29,9%) met criteria for PTSD at one month and 37 (17,5%) had PTSD at four months after the event. Forty subjects (19,0%) met criteria for major depression

at one month and 30 (14,2%) had major depression after four months. Co-morbid depression occurred in 44,5% of PTSD patients at one month and in 43,2% at four months. Co-morbidity was associated with greater symptoms severity and lower levels of functioning. Prior depression was associated with a higher prevalence of major depression after exposure to trauma. Shalev *et al.* (1998:639) conclude that major depression and PTSD are independent consequences of traumatic events, have similar prognoses, and interact to increase distress and dysfunction. The study proposes that both major depression and PTSD should be targeted by early treatment interventions and by neurobiological research.

"When the event has passed, it does not mean that the experience is over for those involved" (Kleber & Brom, 1992:2). The person affected by a critical incident has to face the after-effects for a long period.

Van der Kolk (1987:3) describes a traumatic event as a phasic reliving and denial of the event with altering intrusive and numbing responses. The intrusive responses usually involve hyper-reactivity, explosive aggressive outbursts, startle responses and intrusive recollections in the form of nightmares and flashbacks and enactment of situations reminiscent of the trauma. The numbing response after a critical incident usually consists of emotional constriction, social isolation, retreat from family obligations and a sense of estrangement. Common responses to critical incidents may include various forms of re-experiencing and avoidance (Carlson, 1997:43). These forms of re-experiencing and avoidance may be experienced in different modes or levels. In Table 2, Carlson (1997:44) explains that the cognitive, affective, behavioural and psychological mode of a person who has experienced a critical incident can be affected.

Table 2: Manifestations of re-experiencing and avoidance across modes of experience

Mode	Re-experiencing	Avoidance
Cognitive	Intrusive thoughts Intrusive images	Amnesia for trauma De-realisation/ depersonalisation
Affective	Anxiety Anger	Emotional numbing Isolation of affect
Behavioural	Increased activity Aggression	Avoidance of trauma-related situations
Physiological	Physiological re-activity to trauma reminders	Sensory numbing
Multiple modes	Flashbacks and nightmares	Complete activities in dissociated states

(From Carlson, 1997:44)

According to Schulz, Van Wijk and Jones (2000:29), a person who experiences a critical incident and is traumatised by the event can be recognised when the individual's mind repeatedly replays reminders of an incident, for example re-experiencing a smell or visual sight or a sound that reminds the victim of the incident. According to Schulz *et al.* (2000:30), the replay of such an incident can be so severe in certain cases that the person literally acts as if he/she feels that he/she is experiencing the critical incident. The re-experiencing of such an incident usually involves the cognitive, affective, behavioural and psychological reliving of the incident.

The critical incident also activates certain processes in the individual. The process in the reaction to the critical incident is an emotional response. The first reaction is usually shock. The shock includes numbness, denial of the incident, sometimes withdrawal and at times hysteria. After the initial shock, normal emotional reactions such as anger, depression, sobbing, and even praying and bargaining with God follows.

After the emotional processes, the behavioural process starts to play an important role. According to Schulz *et al.* (2000:32), the behavioural processes are initial attempts to cope with the reality of loss and what has happened. It might involve going back to work, or

throwing out the clothes of the lost one or having sex for the first time after being raped. These attempts will probably be painful and unsatisfactory. It will take time to restore these behavioural processes to the state they were before the critical incident. The final stage of these reactions is the cognitive or intellectual processes whereby a person starts to think and reason about what has happened to him/her. The person needs to reframe his/her experience in order to reach a stage of acceptance, adjustment and healing.

Reaching the stage where the individual can adjust to and accept the critical incident is usually a long and painful process. In this period the individual is subjected to the re-experiencing of the incident on a cognitive, affective, behavioural and physical level. The re-experiencing of the incident can be as painful as the actual critical incident. Owing to the pain and discomfort caused by a critical incident, the earliest response is an overall feeling of numbness. This is a form of avoidance to help the individual adjust to the severity of the incident, which usually threatens the individual's psychological wellbeing. "Avoidance serves the purpose of protecting the individual from exposures to reminders of the traumatic event" (Carlson, 1997:47). Cognitive avoidance can involve putting the critical incident or reminders thereof out of a person's thoughts or it can involve the distortion of a person's perceptions or amnesia. Affective avoidance of a critical incident is commonly experienced as a feeling of emotional numbness. Behavioural avoidance typically involves the avoidance of reminders of the incident. This includes avoiding situations, places or people associated with the critical incident (Carlson, 1997:47).

2.6 SHATTERING OF ASSUMPTIONS

According to Schulz *et al.* (2000:10), a critical incident shatters the life assumptions of the person who is the victim of such an incident. People construct a cognitive and mental frame around reality that forms our assumptions about how the world should operate. Inside this frame our deepest hopes, expectations and dreams are placed. This frame is shattered when a person is exposed to a critical incident. A critical incident challenges and shatters a person's assumptions of the world; the world suddenly becomes crazy and does not make sense. The assumptions shattered by a critical incident are the following:

2.6.1 Assumption of invulnerability

A critical incident affects a person's sense of security. After a person has become a victim of a critical incident he/she no longer sees the world as a safe secure place, but sees it as an unsafe dangerous environment in which he/she has to live. This leaves a person with a strong sense of vulnerability as a result of the fact that his/her safe world was intruded on and violated (Schulz et al., 2000:11).

2.6.2 Assumption of rationality

People live their lives assuming that the world they live in is a rational place. We expect the world to be an understandable and orderly place. When a person is exposed to a critical incident, the assumption that we live in a rational world is shattered. A critical incident makes a person realise that the world and the people in it are not rational and predictable. This leaves a person with a sense of uncertainty and vulnerability. As rational beings we seek the rational in the critical incident and, when no rational explanation is found, it tends to heighten the traumatic blow (Schulz et al., 2000:12).

2.6.3 Victim's sense of morality

A critical incident affects a person's sense of morality to a great extent. People have the assumption that they live in a fair and just world. The expectation exist that good people who do good things should be rewarded and bad people who do bad things should be punished. In the event of a critical incident, the sense of morality is disturbed. Morality no longer seems valid in the face of irrational and undeserved torture. This may lead to conflict in a person's religious belief systems. When a person suffers injustice, he/she might feel someone is to blame, and somehow justice has to be restored. The urge to retribution may be an uncommon emotional response and may lead to conflict in a person's belief system (Schulz et al., 2000:16).

2.6.4 Assumption of self-identity

Every person has a certain picture of who he/she is. This includes an idea of our capabilities and assets and also of our shortcomings. The traumatising of a critical incident changes a person's self-perception. The person who has had a healthy sense of who he/she is, now views him-/herself differently. The person sees him-/herself as a victim. The person's self-

perception has changed to that of a victim. This new sense of the self, changes how a person approaches life and relationships (Schulz et al., 2000:18–19).

The fact that a person's life assumptions are shattered may be a reaction to what has happened to him/her. The degree to what life assumptions are shattered may differ from person to person and the time it may take to restore these assumptions will also depend on the individual.

2.7 FACTORS MEDIATING THE EXPERIENCE OF A CRITICAL INCIDENT

Although the literature seems to focus on the more dominant predisposing factors that have an intensifying effect on the reactions to a critical incident, attention should also be given to some positive outcomes a critical incident may facilitate in the victim's life.

Acknowledging aspects of renewed self-confidence, looking at what the critical incident has meant to the survivor as well as having to face his/her vulnerability are some of the factors discussed below.

Although a critical incident can lead to the worst of times, struggling with crises in our lives can also lead to the best of times by providing us with the opportunity for psychological growth that would not have been possible without the challenges of a critical incident. Recently, there have been attempts to account for the phenomenon of psychological growth by using contemporary theories as explanations for the process of developing profound and healthy insights into living as a result of surviving trauma (Tedeschi & Calhoun, 1995:38)

One class of benefits cited by individuals who have faced difficult experiences, are positive changes in perception of the self. Figley (1994:67) reports in two separate studies that respondents indicated emotional growth as a positive outcome of dealing with their difficulties. Living through life trauma provides a great deal of information about self-reliance. These experiences affect not only the perception of competence in various situations but the likelihood that one will choose to address difficulties in an assertive fashion.

People coping with a critical incident often draw the conclusion that they are stronger as a result of the event. A psychotherapy client cited in Tedeschi and Calhoun (1995:39) described how her traumatic rape experience had enabled her to become stronger within herself as she had to face her own vulnerability and limitations as a person, something she had never done before. They also state that the experience of overcoming trauma, and the sense of survival, appears to generate a functional pattern of greater strength and confidence that generalises to all kinds of situations in their lives that are less difficult than the trauma they had faced.

The study of Veronen and Kilpatrick (1983:108) is in accordance with Tedeschi and Calhoun's (1995:40) debate, as they also pose that trauma survivors seem to develop a greater awareness of themselves and of others. Their study indicates that a large part of the positive development of social relationships among survivors comes from their increased compassion, greater sensitivity to the needs and feelings of other people, and efforts directed at improving relationships. Therefore, people who suffer from trauma may be more likely to offer support to others in turn. Veronen and Kilpatrick (1983:108) further describe one of the survivors that they had counselled. The woman, who was a rape survivor, learned to discriminate positive from negative relationships after in-depth counselling. This changed approach to relationships subsequently allowed her to be in a position to establish more positive and intimate relationships.

Change in one's philosophy of life is another possible benefit reported by many people coping with life traumas. Tedeschi and Calhoun (1995:40) state that surviving a critical incident may also lead to an enhanced appreciation of one's vulnerability and greater awareness and sensitivity to one's emotional experiences. Survivors who experience extreme stress appear to lose their sense of invulnerability and have to confront their mortality. At first glance, recognition that one is vulnerable may not appear to be a positive outcome. A loss or tragedy challenges one's sense of invulnerability, as does the recognition that it may be impossible to cope without some assistance. However, extreme trauma can create totally new conditions as it may be too much to bear alone. As a result they appear to gain a new appreciation for life. Some people recognise, as never before, that their time and their relationships are precious. They acquire a renewed appreciation for simple moments in everyday life and the relationships previously taken for granted (Tedeschi & Calhoun, 1995:41).

The changed philosophy of life may have a spiritual component. A strengthening of spiritual beliefs may serve a variety of purposes for an individual coping with trauma. Gaining a sense of control and comfort at a spiritual level can facilitate a deeper relationship with a higher and immortal being as well as grow one's spiritual belief system. Attempting to recognise and acknowledge meaning of the trauma is another mediating factor in coping with a critical incident. The debate posed by Tedeschi and Calhoun (1995:38) suggests that when one is in the aftermath of the trauma, searching for meaning allows one to experience emotional release. The attempt to question, search and despair over the experience tends to maintain strong negative emotions, however, finding meaning in a traumatic event results in emotional comfort and release. Perceiving meaning can allow the development of a new philosophy of life that alters the most basic assumptions that the individual holds about how life works its meaning.

White and Epton (1990:33) present another dimension to trauma. They hypothesise that the narrative or storyline of one's life is generated from a variety of incidents or scenes as well as idealised images of the self, which also include the experience of trauma. People confronted with these events must come to terms with how their attempts to cope reflect their narrative— which they have been creating for themselves— or how the way that they have coped with the situation has interrupted their assumed story line. It appears that benefits are derived from such experiences to the extent that these life scenes are incorporated as dramatic devices or plot twists that further one's life narrative. This process of assimilating the critical incident into the life narrative and into the fundamental assumptions about life, or changing the narrative and its assumptions to accommodate what has happened, involves great effort. But despite these efforts and the profound changes that may be wrought in the survivors' fundamental understanding of life and its proper path, there is the possibility that the survivor may perceive beneficial and positive outcomes. The benefits come from the new-found order and purpose that this meaning provides, not only to the event itself but also to other aspects of life which need to become integrated into the survivor's life narrative.

The various findings in the literature presented above indicate that there are factors that can in fact mediate the experience of a critical incident. This process of finding or gaining meaning and initiating personal growth takes a lot of personal effort from the trauma survivor as well as his/her family and support system. Often psychotherapy can be a significant facilitator in this process of finding and making meaning.

2.8 PHASES OF TRAUMA

Most authors agree that there are mainly three phases that a person may go through after the experience of a critical incident. Lewis (1996:57) refers to a fourth phase, namely the pre-impact phase. The four phases consist of the pre-impact phase, the impact phase, the recoil phase and a reintegration phase.

2.8.1 Pre-impact phase

According to Lewis (1996:57) this stage refers to the time the individual becomes aware that a crisis is about to develop. This may only be a moment of warning, a matter of seconds to prepare the person for a flight or fight response.

2.8.2 Impact phase

This phase is the experiencing of the actual critical incident. During this phase survival efforts are initiated. Lewis (1996:15) indicates that the impact phase starts immediately after the critical incident has taken place. This phase can last from a few seconds to a few days. This phase is associated with emotional numbness, disorientation, confusion, being irrational and disorganised. The person usually performs with a sense of detachment and emotional disconnection. Schulz *et al.* (2000:4) indicate that the person who has been exposed to a critical incident experiences temporary helplessness and seeks reassurance and direction in this phase. Retief (2004:31) mentions that the victim may find it difficult to believe what he/she is seeing or hearing; it might feel like witnessing the incident from a distance. Lewis (1996:58) describes this state of shock, depersonalisation or de-realisation as a feeling of being outside of oneself. The victim experiences him-/herself as functioning in a dream-like state similar to having a *déjà vu* experience or may feel that the world around him/her has a sense of unreality. In this phase, where a person experiences helplessness, confusion and shock, a person needs a safe environment with structure and support. Practical assistance such as contacting police or relatives may be of help to give the victim direction in his/her state of confusion (Lewis, 1996:15).

2.8.3 Recoil phase

According to Lewis (1996:16), this phase follows shortly after the impact phase when the reality of the critical incident starts to sink in and the person begins to experience feelings such as anger, sadness and guilt. This phase could start approximately 18 to 24 hours after the incident and could last between three and six weeks until three months. This is the phase where the individual starts to adapt, starts to doubt and experiences feelings of anger, apathy, sadness and guilt. The victim might experience intrusive ideas and may be re-living the critical incident. He/she may also experience fantasies of revenge (Schulz et al., 2000:4). Lewis (1996:16) states that most of the post-traumatic stress symptoms start to develop during this phase.

Lewis (1996:58) refers to this phase as the post impact phase. This phase can be divided into three sub-phases: the honeymoon phase, the disillusionment phase and the reconstruction phase. The reconstruction sub-phase refers to the last phase of the trauma recovery phases and is also referred to as the reorganisation or reintegration phase (see paragraph 2.8.4).

The honeymoon sub-phase is a brief phase in the recoil phase, lasting hours to weeks. During this phase the victim experiences a sense of relief of having survived the critical incident. After the honeymoon sub-phase follows the disillusionment sub-phase.

During this sub-phase the victim of the critical incident realises that a permanent disruption and sense of loss have occurred as a result of the crisis. The person may experience feelings of anger, rejection and frustration. This is often manifested through contradictory blaming of others while concurrently looking to others to fix his/her problems. In this phase people often feel the need to make dramatic changes in their lives. Some leave spouses or jobs or move to another location. During this sub-phase people may become depressed and have difficulty coping.

2.8.4 Reintegration phase

In the final recovery phase the person begins to live with the trauma as a memory that is not overwhelming and begins to re-engage with other people. In this phase the person's trust in others starts to be rebuilt and he/she begins to relate emotionally to others in the same way as before the trauma. According to Schulz *et al.* (2000:4), the person begins to re-establish

former patterns of adaptation to life. This process, according to Lewis (1996:17), starts months after the critical incident and can last for years. The process of recovery is not a linear process; it is likely to involve progress and setbacks. Movement can be backwards and forwards between these last two phases of recovery until a person eventually return to their previous level of functioning, as before the critical incident. Lewis (1996:59) mentions that during this phase the person should take responsibility for the rebuilding of his/her physical and emotional life. It is often a slow and difficult process and requires the support and understanding of others.

2.9 NEUROBIOLOGICAL REACTIONS TO A CRITICAL INCIDENT

A critical incident has an impact on the brain, the nervous system and the immune system of the survivor. A person's response in every phase of the reaction to the critical incident is determined by the body's neurobiological reactions to the critical incident. To understand the effect of a critical incident on the body it is important to understand the function of the brain, the nervous system and the immune system.

According to Tehrani (2004:20), a number of brain structures are closely associated with a trauma response to a critical incident. The most important are the locus cereleus, amygdala, hippocampus, thalamus and the cortex.

The locus cereleus is involved in the access and retrieval of memories through its connections with the hippocampus and amygdala (Tehrani, 2004:21).

According to Schulz *et al.* (2000:71), the thalamus relays the incoming sensory information through its projection fibres to the appropriate region of the cortex. To accommodate the different types of sensory information that must be sorted out, the thalamus is divided into a number of nuclei (groups of nerve cells) that pass the information to the cortex. The thalamic nuclei relay visual, auditory, somatosensory and equilibrium-related information. The thalamus also has a function in controlling sleep and awakening.

The amygdala is involved in the interpretation of the emotional strength and significance of incoming information, which is achieved by the creation of an internal sensory representation of the creation of the external world (Tehrani, 2004:21). When the amygdala is stimulated in a human, a variety of emotions such as fear, anxiety, pleasure and anger are elicited.

The hippocampus is responsible for categorising and sorting incoming stimuli in the short-term memory. The hippocampus processes new stimuli to decide whether the experience was punishing or rewarding. A person's ability to learn from experience depends on the functioning of the hippocampus (Tehrani, 2004:22).

The cortex, according to Schulz *et al.* (2000:73), is divided into various parts. Each part of the cortex is responsible for processing different sensory information. The parietal lobe is responsible for somatosensory processing (sensation in the skin and muscles of the body), in the temporal lobe of the cortex auditory processing takes place and in the occipital lobe the visual processing takes place.

When a person becomes the victim of a critical incident, the body reacts to trauma and the person exhibits certain emotional responses. The schematic representation in Figure 1 illustrates the interactions in the brain that lead to emotional arousal when a person is confronted with a critical incident.

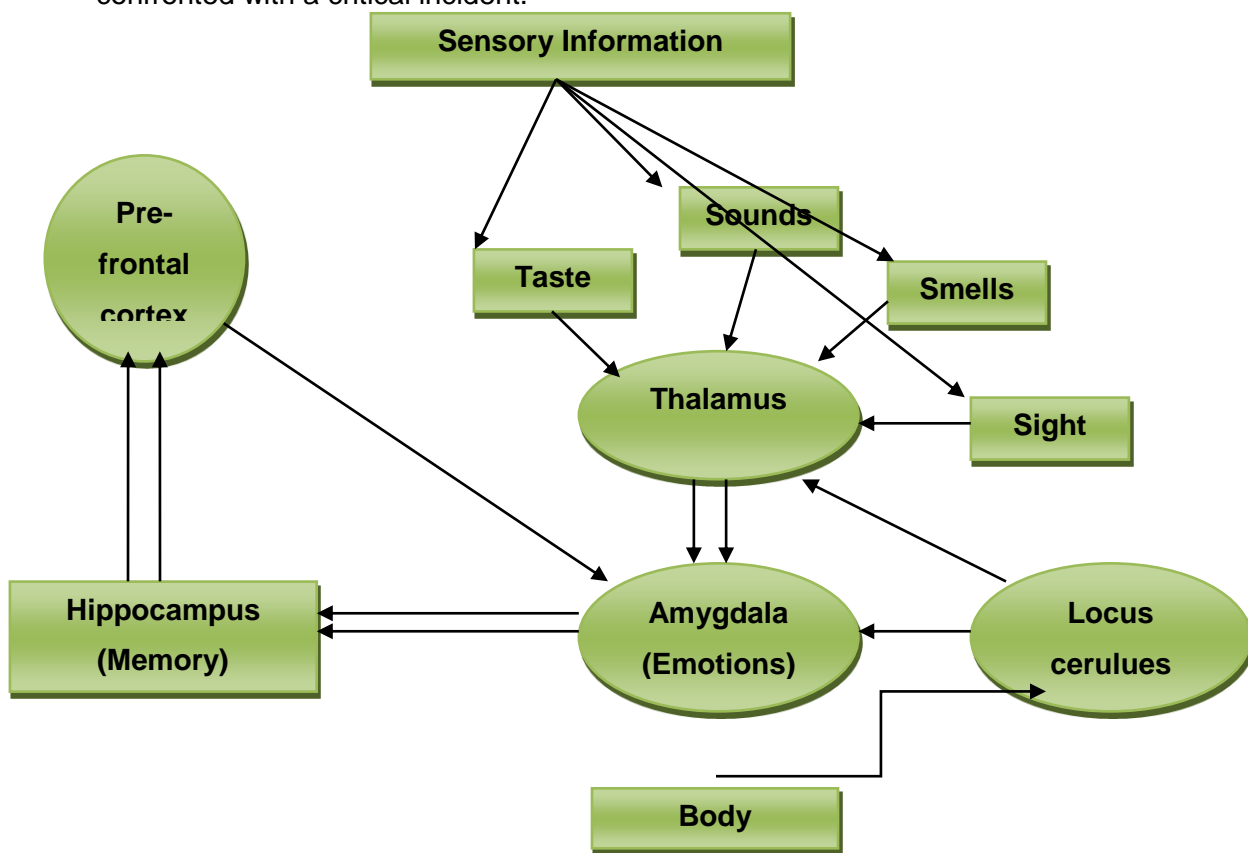


Figure 1: Schematic representation of emotional arousal pathways (adopted from Tehrani, 2004 and Retief, 2004)

When a person becomes involved in a critical incident, the sensory information is transported through the central nervous system directly to the brain. Most of the sensory information is passed to the thalamus where initial processing takes place. From the thalamus, the sensory information goes via the amygdala and the hippocampus to the pre-frontal cortex, and at each stage additional processing of the sensory information takes place (Tehrani, 2004:20). When sensory information reaches the cortex it has been assigned meaning. It is then fed back to the locus cereleus and the amygdala. According to Tehrani (2004:21) connections to and from the locus cereleus and amygdala to the hypothalamus, hippocampus and pre-frontal cortex are then able to affect the behavioural, autonomic and hypothalamic-pituitary-adrenal response systems, which in turn initiate and control the body's responses.

2.9.1 Bio-psychosocial model of stress

A model for the way in which personality factors, stressful circumstances and health interact has been proposed by Folkman and Lazarus (in Schulz *et al.*, 2000:78). According to the bio-psychosocial model of stress, a person goes through a two-step appraisal process, which interacts with both the person's unique personality and/or the situation at hand, when he/she is confronted by a potential stressful situation such as a critical incident.

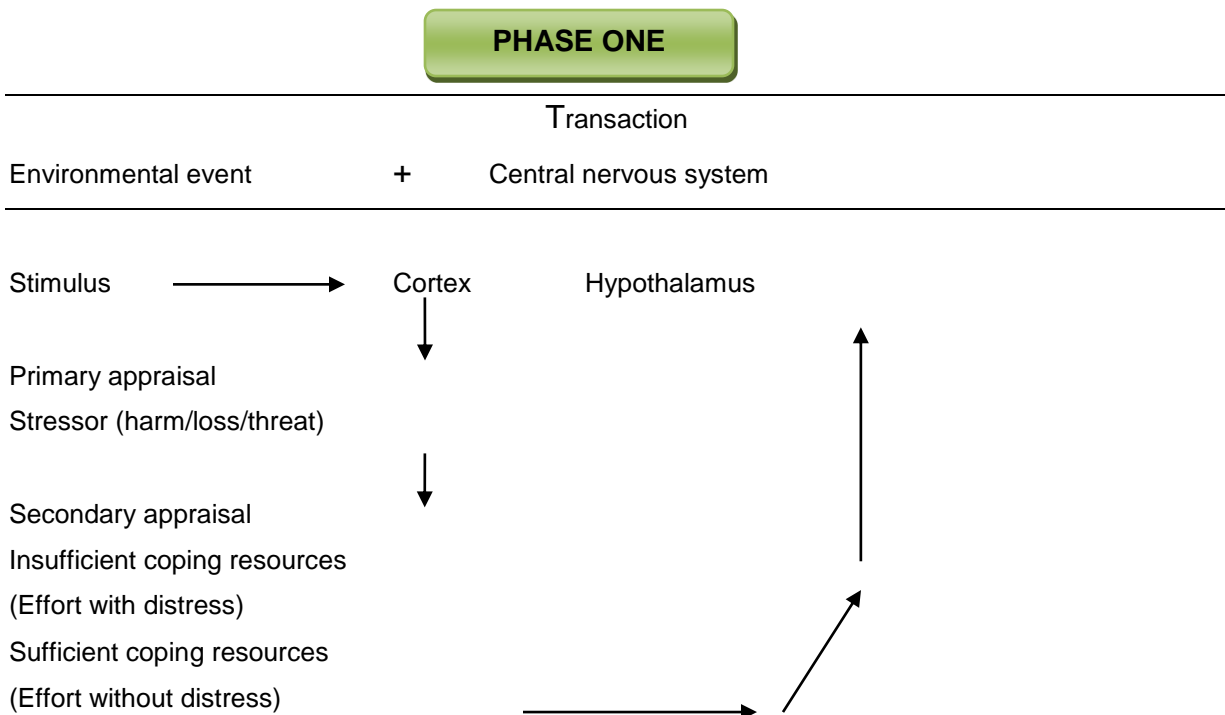
When a person experiences a critical incident, the central nervous system registers that there is danger and the possibility of harm. The interaction between the critical incident and the central nervous system is called a transaction. This transaction, called phase 1 (see Figure 2), activates the brain as follows: a stimulus is registered in the brain by the thalamus, then a message is sent via the amygdala and the hippocampus to the cortex that receives and processes the sensory information, which activates the two-step appraisal process.

The first step in the two-step appraisal process is the primary appraisal. In this step the person analyses how much harm, loss or threat there is in the outcome of a particular situation. If there is potential harm, loss or threat posed by the critical incident, the next step in the appraisal process, namely the secondary appraisal, takes place. In the secondary appraisal step the person assesses what he/she can do to maximise the likelihood of potential beneficial outcomes and to minimise the likelihood of potential harmful outcomes of the situation. This step distinguishes between insufficient coping resources (effort with

distress) and sufficient coping resources (effort without distress). Once the first and second steps have been completed, the person is ready to start coping with the situation, which implies that the person starts managing the internal and external challenges the critical incident poses. This phase is completed by sending the appropriate message to the hypothalamus, which controls the endocrine system, the autonomic nervous system and which regulates behaviour.

Phase two depends on the message sent to the hypothalamus. As soon as the autonomic nervous system and the endocrine system have been activated by the message of the hypothalamus, the second phase, namely arousal, is entered. Arousal is accompanied by the sympathetic response which increases heart rate, respiration and blood pressure, decreases digestion and activates the pituitary glands. The pituitary gland then activates the adrenalin glands, which prepare the body for the fight or flight reaction. The adrenalin glands release catecholamine that consists of norepinephrine (responsible for prolonging the sympathetic response), epinephrine (which arouses the body for action) as well as corticosteroids (which increase metabolism, provide energy and decrease the immune inflammatory response).

The transaction of phase 1, coupled with the arousal of phase 2 is referred to as the general adoption syndrome (GAS) (Figure 2).



PHASE TWO

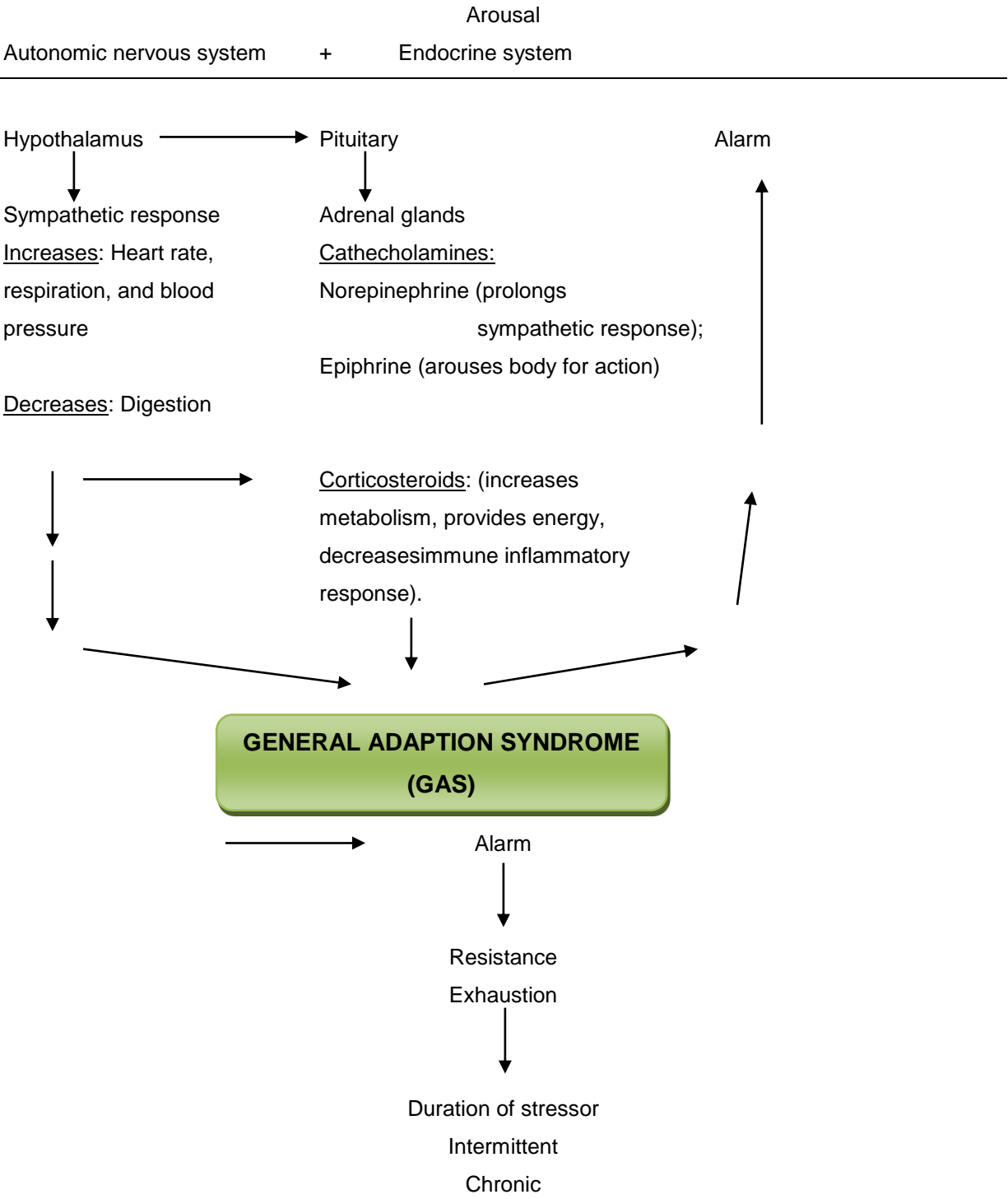


Figure 2: Bio-psychosocial model of stress (Schulz et al., 2000:81–83)

Retief (2004:83) mentions that any critical incident with a high stress impact tends to activate the hypothalamic-pituitary-adrenal pathway. When this occurs, high volumes of stress hormones are released by the adrenal glands. The stress hormones flood the brain receptors in the hippocampus, of which the primary function is memory, leading to short-term memory problems. This explains why a person who has been a victim of a critical incident at times finds it difficult to remember what happened and sometimes needs some assistance to remember the details of the incident.

According to Bernard and Krupat (1994:72), the release of catecholamines and corticosteroids after exposure to a critical incident, due to the stress response to the critical incident, can suppress the immune system of the person. The immune system is crucial in dealing with trauma in the long-term. Stressors have different effects on the body and the body reacts to each stressor in a unique way. The body may interpret powerful, inescapable stressors as illness. Kalat (2001:29) mentions that people exposed to a severe critical incident might develop a fever, increase their sleep and experience decreased appetite and sex drive. Prolonged stress can be harmful to the body and lead to an impaired learning ability, memory loss, behavioural problems and an increase in the vulnerability to develop physical illness.

2.9.2 Psychological system

The trauma of a critical incident does not only affect a person's physical well-being, but also his/her psychological functioning.

According to Newman and Newman (1999:83), the psychological approach views human behaviour as a product of the interaction between the individual and society. The way in which these interactions take place is discussed according to the basic concepts of the systems theory, namely balance, feedback and change.

Erikson (in Louw, 1994:62) suggests eight stages in which ego qualities develop. In each stage an individual is challenged to resolve a particular crisis, which always consists of a positive as well as a negative component. If the individual is able to resolve the crisis in a positive manner, the person develops into a well-adjusted person; if the crisis is resolved in a negative way, adjustment problems occur. Each crisis demands the development of a specific

capability. If it is not achieved, some impairment will occur in later development and an unhealthy aspect of personality will prevail. People then tend to withdraw from others, prevent the exploration of interpersonal relationships and resist change and growth, resulting in an ineffective, negative crisis resolution.

In his theory, Erikson (in Louw, 1994:62) proposes that primary adaptive ego qualities develop from the resolution of a trauma or a crisis by active efforts to resolve the stress, and by creating new solutions for the challenge. The creation of individual strategies depends on the talent and motives of the individual and the individual's unique style of coping may be influenced by factors such as gender, resources, interpersonal relationships and life experience (Newman *et al.*, 1999:85).

In the following discussion based on findings by Louw (1994:63), Newman *et al* (1999:86) and Roos (1997:24), the focus is on the challenges survivors of critical incidents might experience in coping with traumatic life events, referring to the eight stages of ego development according to Erikson's theory.

- **Trust vs. mistrust**

The first stage of ego development is trust versus mistrust. According to Erikson's theory, a person who develops mistrust in the course of his/her life will have little hope. Hope is important as it enables a person to handle new challenges successfully. The trauma of a critical incident can disturb the relationship with hope and contribute to the development of social and emotional detachment towards the world and the people in it. The mistrust and hopelessness, which develops as a result of a trauma, may continually recur in a person's life and may affect a person's reactions and sense of coping when confronted with a new crisis.

- **Autonomy vs. doubt**

People have to learn that they have their own will and that they can enforce it and make choices. A person develops and learns to exercise self-control over his/her body. If a person successfully develops a sense of autonomy, he/she develops pride and feels confident to master new skills. Optional development of autonomy leads to the synthesis of powerfulness and a positive sense of self-confidence. The trauma of a critical incident shatters a person's feeling of autonomy, reinforcing a feeling of doubt, anxiety and

insecurity regarding his/her abilities. A person's response to restore autonomy may include excessive control, over protection and a lack of will power. Emotional vulnerability is related to the experience of powerlessness, exposure, insecurity and instability, which may result in a feeling of purposelessness.

- **Initiative vs. guilt**

An ego quality that develops in the course of a person's life is either initiative or a feeling of guilt. Initiative is associated with developing the skill of being task orientated. The individual's sense of initiative and task orientation may expose him/her to situations where he/she could be potentially hurt. When a person is traumatised by a critical incident, it may lead to inhibiting his/her sense of initiative and leave him/her with feelings of excessive guilt about acts that are initiated.

- **Industry vs. inferiority**

A person develops a sense of inquisitiveness and courage to imagine and pursue valued goals in favourable circumstances. Encouraging creative attempts leads to a feeling of self-worth and effectiveness. New social interactions become important to counter the paralysis of action and thoughts that prevents productive work after the trauma of a critical incident. A feeling of inferiority may develop in a context where social support is lacking. This may result in a person withdrawing from challenges. Trauma may emphasise the feelings of incapability and being inadequate, prohibiting the person to meet a challenge with confidence and enthusiasm.

- **Role identity vs. role confusion**

Role identity leads to a sense of security of the self and establishes a feeling of reliability in the self. The sense of reliability is especially crucial for the survivor of a critical incident; because a person should be able to integrate new roles and to connect with others after a critical incident. A person has to explore new possibilities gradually in order to function more independently and to find common ground with other people. The development of a role identity allows possibilities for more social involvement and for conceptualising the trauma on an abstract level. A well-integrated ego identity is characterised by an inner feeling of uniqueness and the ability to determine clear goals. Without an integrated identity, feelings of confusion, insecurity and unhappiness may be prominent.

- **Intimacy vs. isolation**

Intimacy is an ego quality that allows a person to share and care for others without the fear of loss. Survivors of a critical incident are particularly challenged to deal with issues of intimacy versus isolation. Critical incidents have the ability to limit the development of intimacy and reinforce a feeling of being lonely, as if no one cares for the survivor.

- **Generatively vs. stagnation**

People who have been able to integrate the trauma of critical incident in a meaningful way have feelings of creativity and productivity. The opposite is also true, where people have been unable to integrate a critical incident in a meaningful way, and continue to struggle with the negative components of the trauma; they have feelings of being trapped. This can lead to a pre-occupation with the self to such an extent that they exclude others. Trauma and the fear of re-experiencing trauma may limit a person's mobility and prevent them from being socially active and involved with other people.

- **Integrity vs. despair**

The ego quality of integrity versus despair is prominent in a person's development through trauma. Integrity develops when a person feels satisfied with his/her ability to cope with challenges, has a conscious trust in his/her own ability and gets re-assurance of the meaningfulness of life. Being a victim of a critical incident re-enforces the fact that life can be meaningless and questions a person's ability and trust in the self. This may lead to a feeling of extreme hopelessness and despair.

2.10 SYMPTOMS AND DIAGNOSIS

According to Friedman (2003:2), research on trauma is still in its infancy. The importance of dissociation as the hallmark of acute stress disorder, as a predictor of PTSD, is unclear – based on recent findings. Research shows that 80% of trauma victims with acute stress develop PTSD, but some persons diagnosed with PTSD have never suffered from acute stress disorder. They develop sub-clinical acute stress disorder without dissociative symptoms. Research further indicates that some persons develop PTSD without any acute stress disorder or sub-clinical acute stress disorder symptoms being present.

Friedman (2003:4) states that formal PTSD is a significant health problem affecting millions of people. According to him, 10% of American men and 5% of American women will develop PTSD at some stage of their lives. In South Africa with the country's political unrest and history of violence, current high crime figures for rape, armed robbery and hijacking, and farm murders, the high domestic violence, high road accident figure and high sexual crime figures, it seems likely that the number of people suffering from PTSD is far higher, possibly as high as 25 to 30% (Van der Walt, 2001:151). It is important to mention that if left untreated, people suffering from PTSD do not recover. Researchers working with veterans of the Second World War and victims of the Nazi Holocaust indicate that a PTSD will continue for 50 years or longer. Prevention is, therefore, better than cure. People suffering from PTSD also frequently begin a pattern of violence and thus the saying "the victim today becomes the perpetrator of tomorrow" is appropriate.

Scott and Stradling (1994:178) point out that PTSD was only given official recognition as a general diagnostic category in 1980 when the American Psychiatric Association included the disorder in the third edition of its Diagnostic and Statistical Manual of Mental Disorders (DSM-III). Although PTSD is a new category achieving official designation, it has been in existence for a long time. Gilliland and James (1993:46) describe how Sigmund Freud formulated the concept of hysterical neurosis to describe trauma cases that included symptoms of warded-off ideas, denial, repression and emotional avoidance, compulsive repetition of trauma-related behaviour and recurring attacks of trauma-related emotional sensations.

2.10.1 Definition of post-traumatic stress disorder (PTSD)

Meichenbaum (1994:94) describes traumatic events as events that are so extreme or severe, so powerful, harmful and threatening that they demand extraordinary coping efforts. They represent an unusual event (or series of continuous events) that subjects people to an extreme, intensive, overwhelming threat to themselves or significant others. These events may overwhelm a person's sense of safety and security, and can cause very long-term changes in affect (emotions), stress-related behaviour, physiological functioning and mental health— but not for all victims. For some victims this traumatic event may reactivate unresolved issues from previous traumatisation.

Scott and Stradling (1994:176) point out that from this definition it is clear that it is not necessary for a person to be a victim of a traumatic incident in order to be traumatised. Just witnessing a tragedy may be enough to trigger subsequent PTSD. Armfield (1994:738) emphasises that a traumatic event can be actual or perceived.

What might be severely traumatic to one person might not be to another person. One person may develop PTSD as a result of a critical incident; the other person may only be traumatised. In defining critical incidents some authors focus on the actual event as being life threatening to the individual. Bohl (1991:27) describes a critical incident as "an incident in which human lives are lost and/or serious injuries are witnessed".

Van der Kolk (1999:16) defines critical incidents as "sudden terrifying experiences that explodes one's sense of predictability in life". Other authors highlight the individual's reaction to the actual event when defining a critical incident. Mitchell (1986:51) views a critical incident as "any significant emotional event that has the power, because of its own nature and because of the circumstances in which it occurs, to cause unusual psychological distress in healthy normal people". According to Solomon (1986:30), any situation in which a person feels "overwhelmed by sense of vulnerability and/or lack of control of over the situation" can be defined as a critical incident.

Gilliland and James (1993:48) describe PTSD as a complex and diagnostically difficult disorder to define. They further conclude that the likelihood of PTSD to develop is influenced by several factors: genetic predisposition, personality make-up, past life experiences, state of mind, phase of maturational development at onset, social support system before and after trauma, and content and intensity of the event. This is supported by Armfield (1994:740) who states that "vulnerability to PTSD is enhanced by pre-existing psychological disorder (especially if related to prior trauma), low self-esteem, family problems, and poor coping skills". It is often found that the level of a person's life skills (e.g. conflict management skills, flexibility and stress management skills) and the efficiency of a person's support system are major indicators of how successfully a person will deal with the emotional consequences of a traumatic event.

Besides the formal diagnosis of acute stress disorder and PTSD, the literature also makes a distinct differentiation between acute trauma and complex trauma (Friedman, 2003:10 –15).

Therefore, these are discussed in further detail below, together with acute stress disorder symptoms and PTSD symptoms.

2.10.2 Discussion of Post-Traumatic Stress Disorder (PTSD)

The DSM-IV diagnostic criteria for PTSD are the following (Friedman, 2003:12):

- A. The person has been exposed to a traumatic event in which both of the following were present:
 - 1. The person experienced, witnessed, or was confronted with an event or events that involved actual death or threatened death or serious injury, or a threat to the physical integrity of self or others.
 - 2. The person's response involved intense fear, helplessness, or horror.

- B. The traumatic event is persistently re-experienced in one (or more) of the following ways:
 - 1. Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions.
 - 2. Recurrent distressing dreams of the event.
 - 3. Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes).
 - 4 & 5 Intense psychological distress or physiological reactivity on exposure to internal or external clues that symbolise or resemble an aspect of the traumatic event.

- C. Persistence avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:
 - 1. Efforts to avoid thoughts, feelings, or conversations associated with the trauma.
 - 2. Efforts to avoid activities, places, or people who arouse recollections of the trauma.
 - 3. Inability to recall an important aspect of the trauma.
 - 4. Markedly diminished interest or participation in significant activities.
 - 5. Feeling of detachment or estrangement from others.
 - 6. Restricted range of affect (e.g. unable to have loving feelings).
 - 7. Sense of a foreshortened future (e.g. does not expect to have a career, marriage, children, or a normal life span).

- D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:
1. Difficulty in falling or staying asleep.
 2. Irritability or outbursts of anger.
 3. Difficulty in concentrating.
 4. Hyper-vigilance.
 5. Exaggerated startled response.
- E. Duration of the disturbance (symptoms in criteria B, C and D) last longer than one month.
- F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify:

- Acute: If duration of symptoms is less than three months.
Chronic: If duration of symptoms is three months or more.

Specify:

- With delayed onset: If onset of symptoms is at least six months after the stressor.
Flashback episode: A dissociative state in which an individual feels as if he/she is reliving a traumatic event.

Physiological reactivity– quickening of the heart rate, blood pressure, and breathing resulting from exposure to internal or external clues that symbolise or resemble an aspect of the traumatic event.

Gilliland and James (1993:45) explain that psychic trauma is a process initiated by an event that confronts an individual with an acute, overwhelming threat. The individual's mind is unable to effectively answer basic questions on how and why it occurred, and what it means. These results in the individual experiencing a traumatic state last for as long as the mind has a need to reorganise, classify and make sense of the traumatic event.

If the event is not effectively integrated into the person's awareness, the initiating stressor will re-emerge in a variety of symptomological forms, months or years after the event. This is referred to as delayed traumatic stress disorder or PTSD.

Armfield (1994:741) emphasises that symptoms may begin immediately after the trauma, but often they lay dormant for weeks or even years after the trauma.

The American Psychiatric Association, according to Friedman (2003:12), emphasises that the duration of the symptoms (A-F) must be for at least one month before a person can be diagnosed as suffering from full-blown PTSD. If the symptoms have not been experienced for full month as yet, the person is traumatised, but is not suffering from PTSD as yet.

The DSM-IV-TR (2000:209) also distinguishes between (a) acute; (b) chronic and (c) delayed PTSD, based on the duration and onset of the symptoms. PTSD is defined as:

Acute: When the victim has experienced symptoms for less than three months.
Chronic: When the victim has endured symptoms for three months or more.
Delayed: When the victim did not develop symptoms until at least six months after the trauma.

The disturbance should cause clinically significant distress or impairment in social, occupational, or other important areas of functioning before it can be classified as full-blown PTSD.

According to the American Psychiatric Association (in Friedman, 2003:14), Scott and Stradling (1994:128) and the DSM-IV-TR (2000:209), in order to be identified as suffering from full-blown PTSD, a person must experience the following characteristic symptoms.

- **Re-experiencing symptoms**

According to Friedman (2003:14) one of the major symptoms of PTSD is that the victims re-experience the event. Re-experiencing the traumatic event might take place in the form of either nightmares or having flashbacks of the event. Flashbacks are normally triggered by something (such as a smell or sound) that is associated with the traumatic event.

Whenever the person re-experiences the event, it is normally with the same intensity of emotions that the person experienced during the actual event.

Gradually intrusive, repetitive thoughts about the traumatic event begin to dominate the individual's existence (Gilliland & James, 1993:49). These intrusive thoughts generally take the form of visual images that are sparked by sights, sounds, smells, or tactile reminders that bring the repressed images to awareness.

- **Avoidance numbing of general responsiveness**

According to the DSM-IV-TR (2000:210), the second major symptom of PTSD is avoidance and denial. The person persistently avoids any stimuli associated with the trauma.

Friedman (2003:15) mentions that efforts to avoid thoughts, feelings or conversations about the trauma may be typical. Thoughts and the memories about the critical incident evoke intense emotional and physiological reactions. It is, therefore, common that victims of a critical incident make specific effort to avoid activities, places or people associated with the trauma. Trauma victims display a tendency not to feel, because exposure to feelings invariably makes them vulnerable to further pain. Instead they often become passive and emotionally paralysed. They may wander around aimlessly in a daze of shock. It is also common for victims of severe trauma not to remember certain aspects of the trauma. In this way they detach themselves from overwhelming fear, pain and helplessness.

Gilliland and James (1993:50) explain that, as individuals attempt to cope with catastrophe, they become passive (immobile and paralysed) or active (able to cope with the situation).

Individual reactions tend to fall into three major groupings:

- Momentarily freezing
- Flight reaction
- Denial or numbing.

Denial or numbing is the most common response. Desensitising one to totally unacceptable events and then trying to return to normality in a peaceful world is a very common characteristic pattern of traumatising. This allows the victim to get through the trauma and cope with it without losing complete control. Typically, survivors of trauma will let down their defence barriers and will have acute stress disorder immediately after the trauma, but will recover. For those who do not, continued emotional numbing and repression can have severe consequences.

- **Hyper-arousal symptoms**

Another major symptom of PTSD is physiological arousal. Research has discovered that neurotransmitters, hormones, cortical areas of the brain and the nervous system play a much greater role in PTSD than was previously suspected (Gilliland & James, 1993:52). When a person is exposed to severe stress, neurotransmitters, hormones and specifically cortical functions designed to deal with the emergency are activated. Although the person may be removed from danger after the traumatic event, the nervous system may continue to function in an elevated and energised state as if the emergency were still continuing. This may cause the individual extreme physical and psychological distress long after the traumatic event but also explains why people do not "get over PTSD" (Gilliland & James, 1993). This could be easiest explained to the victim that his/her body is full of adrenaline as a result of the critical incident.

According to Friedman (2003:17), survivors of a critical incident may exhibit irritability or outbursts of anger, difficulty concentrating, hyper-vigilance or an exaggerated startle response and difficulty falling and staying asleep as a result of the date of arousal.

2.10.3 Complex post-traumatic stress disorder (PTSD)

Friedman (2003:19) indicates that many clinicians who have worked with victims of longstanding trauma such as torture or hostage victims believe that the victims present with complex PTSDs. These include the following symptoms together with those of PTSD:

- Behavioural problems, for example impulsiveness, aggression, sexual acting out, eating disorders, alcohol/drug abuse and self-mutilation
- Emotional problems, for example emotional instability, anger outbursts, panic attacks and depression

- Cognitive problems, for example fragmented thoughts, dissociation and amnesia.

The argument against this diagnosis is that the majority of clients with complex PTSD already fulfill the criteria for PTSD and an additional diagnosis is unnecessary.

Pearlman (in Wilson, Friedman & Lindy, 2004:205) mentions that, in addition to the symptoms of PTSD that include intrusive experiences, avoidance and arousal, complex PTSD includes dissociation, relationship difficulties, revictimisation, affect deregulation and disruption of identity.

Lewis (1996:16–17) mentions that complex PTSD is a result of prolonged, repeated and severe traumas. A survivor of a critical incident with complex PTSD exhibits the symptoms of PTSD but also presents with a dulled or "frozen" appearance, dissociation, problems with concentration or memory, anger, self-mutilated behaviour, depression, anxiety and rational problems.

2.10.4 Acute stress disorder

According to Friedman (2003:17), acute stress disorder is diagnosed directly after the trauma and up to, and including, a maximum period of one month after the trauma. Acute stress disorder must be present for a minimum of two days. Here the emphasis is on the re-experiencing, avoidance and hyper-arousal symptoms but dissociative symptoms must also be present.

Friedman (2003:4) defines dissociation as "an abnormal psychological state in which one's perception of oneself and/or one's environment is altered significantly".

Dissociation is viewed as "a mechanism involving the segregation of any group of mental or behavioural processes from the rest of the person's psychic activity. It may entail the separation of an idea from its accompanying emotional tone, as seen in dissociative disorders" (Kaplan & Sadock, 1988:312).

According to Friedman (2003:16), three of the following five dissociative symptoms must be present in order to diagnosed acute stress disorder:

- Numbing. It is the subjective experience of numbing, detachment or absence of emotional reactions.
- Dissociative amnesia. This is the inability to remember important aspects of the trauma.
- Reduction in awareness. This is a lack of attention or response to the immediate environment. It may appear to an onlooker that the individual is in "a daze" or in "a world of his/her own".
- Derealisation. The world that the individual has always known is dramatically changed and he/she feels estranged or detached from the environment and has a sense that the environment is unreal.
- Depersonalisation. In the individual this may manifest as a distorted perception of his/her body, identify or him-/herself as a coherent entity. The person for example, feels that his/her body has been divided into sections.

In addition to the dissociative symptoms, one of the following also has to be present to make a diagnosis of acute stress disorder (Friedman, 2003:17):

- Re-experiencing
- Avoidance
- Anxiety
- Arousal symptoms.

In conclusion it can be stated that people's basic assumptions about their belief in the world as a meaningful and comprehensible place, their own personal invulnerability and their view of themselves in a positive light account for their individual manifestations of traumatisation and PTSD. Even in the most well-integrated person, who has excellent coping abilities, good rational and cognitive behaviour patterns and positive social support system, residual effects of traumatising events linger (Gilliland & James, 1993:56).

2.11 EFFECT OF A CRITICAL INCIDENT ON FAMILY AND RELATIONSHIPS

Research on trauma and the effects of trauma often focuses on the victim's experience of a critical incident and how he/she is affected. Engelbrecht (1997:109) states that studies have clearly shown that the symptoms of PTSD can have psychological repercussions on other family members as well. His study further states that the marital dyad, nucleus family and

even extended family are also possibly affected by the victimisation of one of its members. Figley (1994:23) suggests that traumatic events have a much wider systematic impact than only affecting the individual in isolation. Family members appear to suffer anxiety and bereavement and their lives may be disrupted as a result of the injury to their loved one. The literature presented by Engelbrecht (1997:110) suggests that the family system needs to be recognised in the recovery process.

Schulz *et al.* (2000:139–140) mention that the relationship with significant others may be affected in various ways as a result of exposure to incidents that cause post-traumatic stress.

Typical effects include the following:

- Changes in the way people see themselves, their wives, partners or children. Relationships can become strained and difficult with a lack of ability to communicate.
- If a person is suffering, they might find it difficult to talk to their partners and retreat behind a wall of silence and suppressed anger.
- Inability to stop talking about the event. This can become frustrating and irritating to family members.
- Nightmares and dreams. This can be disturbing and frightening to partners.
- Inability to make even simple decisions. Loss of concentration. Disinterest in family and friends can lead to feelings of anger and frustration to family members.
- Feelings of vulnerability, anxiety, confusion and disorientation can spill over to family members, leaving them with the same feelings.
- Pent-up feelings can result in anger and violence in the relationship.
- Loss of self-esteem and self-value can have a person feel worthless in a relationship.
- Loss of interest in work and hobbies resulting in changing jobs can cause upheaval in the family.
- Looking for new relationships or partners owing to dissatisfaction with the present partner or family.
- Constant pre-occupation with the incident or avoidance of anything to do with the incident can be frustrating to family members.
- Feelings of fear, guilt, shame, being a complete failure and an inability to cope affect the victim's self-esteem and the way he/she interacts with family members and friends.

Brende and Goldsmith (1991:121) propose a post-traumatic family victimisation cycle. According to their findings, there is a cycle of post-traumatic victimisation, which can fragment a family's functioning. The phases of the process include the original traumatic event, which often leads to alienation and isolation of family members with anger becoming the predominantly expressed emotion. Family shame, as well as fragmentation of the family system, seems to develop as the result of a sudden, shattering tragedy, with few couples able to survive the impact. Finally, triggering events can provoke responses that may cause repetition of symptomology.

It appears that trauma has the capacity to seriously affect the levels of functioning within the family. Child-parent relationships also seem to be directly influenced by the experience of trauma. Sack, Clarke and Seeley (1995:1160) considered the rates of psychological distress in two generations of Cambodian refugees living in the Western United States. PTSD was found to be significantly related across parent-child generations, where parents were more likely to report an earlier onset of PTSD symptoms. This study suggests that PTSD may cluster in families. Whether this phenomenon is caused by a genetic susceptibility to trauma awaits further research, according to their study.

De Vries, Kassam-Adams, Cnaan, Sherman-Slate, Gallagher and Winston (1999:1294) support the notion that trauma is a family experience, with the members' reactions to the trauma being closely interwoven and interrelated. Their study estimated the prevalence of PTSD in traffic-injured children and their parents and identified risk factors for PTSD development. Twenty-five percent of the children and 15% of the parents suffered diagnostic PTSD, but only 46% of the parents of affected children sought help of any form (including from friends) for their child and only 20% of affected parents sought help for themselves. The results reveal that PTSD in children and their parents is a common, yet overlooked consequences of pediatric traffic-related injury with prevalence rates similar to those found in children exposed to violence. De Vries *et al.* (1999:1295) suggest that pediatric trauma patients, as well as their significant others, should be screened for PTSD and referred for treatment where appropriate. This indicates that the experience of trauma may very well be maintained within the family context. It appears then that the family may act as a double edged sword in post-traumatic reactions; on the one hand the family provides a valuable resource and source of social support to traumatised individuals but, on the other hand, the family may support and maintain pathological reactions to traumatic experiences.

According to Smith (2005:1), family members who experience a shared trauma often become closer and appreciate each other more. Examples of traumatic events include life threatening car accidents, bush fires, floods, sudden illness or traumatic death in the family, crime or violence. A critical incident can change a person's attitudes, beliefs, feelings and behaviour.

Critical incidents have an effect on the family's functioning and dynamics even years after the incident. According to Smith (2005:1–3), family dynamics can be effected in the short, medium and long term.

2.11.1 Family dynamics – immediately following the event

Every family is different but, generally speaking, common changes to family dynamics soon after the event include the following (Smith, 2005:1–3):

- The parents may fear for each other's safety and the safety of their children outside the home.
- Family members may have nightmares about the event.
- Family members may be fearful of another trauma happening to them.
- Family members may be angry at whoever they believe was responsible for the critical incident. Sometimes this includes feeling angry with the affected loved one or angry with the family in general.
- Family members may feel overwhelmed by feelings of insecurity and lack of control.
- Family members may not know how to talk to each other, because each person is struggling to understand what has happened and how they feel about it, leading to constant arguments.

2.11.2 Family dynamics – weeks or months later

Family dynamics may change weeks or even months after the event. Because time has passed, family members sometimes do not realise that these changes are directly linked to the traumatic event. Every family is different but, generally speaking, common changes in the weeks or months after the event include the following (Smith, 2005:1–3):

- Family members may be short-tempered or irritable with each other, which leads to arguments and friction.
- Family members may lose interest in activities and perform less well at work or school.
- Children may be clingy, grizzly, demanding or naughty.

- Teenagers may become argumentative, demanding or rebellious.
- Some family members may work so hard to help their loved ones that they neglect to look after themselves.
- Family members may feel less attached or involved with one another.
- The parents may experience sexual problems.

2.11.3 Family dynamics—years later

An individual's response to trauma may take a long time to present itself. In some cases, it may take years for problems to surface. Every family is different but, generally speaking, changes to family dynamics can include the following (Smith, 2005:1–3):

- Family members may relive the trauma when faced with a fresh crisis.
- Fresh crises may be more difficult to handle.
- Changes to family dynamics that occurred in the days, weeks or months after the traumatic event could become permanent habits.
- Family members may cope differently with reminders of the event. For example, some may want to commemorate the anniversary or revisit the scene of the traumatic event, while others may want to forget about it. A conflict in coping styles can lead to arguments and misunderstandings if the family members are not sensitive to each other's needs.

It is important to remember that a family is a unit— what affects one member affects all members of the family. A critical incident primarily affects the victim, but the secondary victims of a critical incident are the family members of the survivor of the critical incident.

2.12 CONCLUSION

Chapter 2 explores the concept of a critical incident on various levels. The introduction of this chapter gives an indication of typical critical incidents and how they affect an individual's life and cause trauma. This is followed by defining the terms, crises, critical incident and trauma and discussing the difference between these terms. Different types of critical incidents are discussed in detail. The focus is on certain risk factors that play a role in the extent to which an individual is traumatised by a critical incident. The reactions following a critical incident and the shattering of assumptions as a result of a critical incident are reflected on in detail. Factors mediating the experience of a critical incident are presented.

The different phases of trauma are presented, followed by the neurobiological reactions an individual may exhibit as a result of the critical incident. The different symptoms and diagnosis, resulting from a critical incident, are critically discussed according to the DSM (IV) model. Lastly the researcher reflects on the effect of a critical incident on family and relationships.

The following chapter evaluates different intervention models in critical incident debriefing.