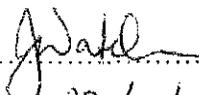


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## Abstract

Psychological trauma results from exposure to an inescapable stressor that overwhelms a person's ability to cope. During the period of perceived threat a defensive process of denial and suppression frequently operates to control a person's emotional response to the situation. Emergency services personnel in particular, may actively employ a task-oriented approach to traumatic incidents: and suppress their anxiety and fear in order to maintain concentration and undertake their duties most effectively. In psychological terms, this behaviour may be seen as purposeful, adaptive dissociation. However, recent studies of emergency services personnel reveal that there are possible long-term risks associated with the experiencing dissociation during a traumatic situation. While the ability to control an emotional response may be viewed as an effective way of coping during an intense or traumatic situation, there is an inherent danger that this inhibition of emotions may become the source of long term psychological and physiological disturbance.

Psychological debriefing is a popular method of assistance for emergency services personnel following a traumatic incident. It is designed to promote the cognitive and emotional processing of a traumatic event. During a debrief, participants describe the traumatic experience (including their reactions and emotions) in order to begin to integrate and master key features of the experience.

While there is abundant anecdotal evidence suggesting that psychological debriefings can be beneficial, there have also been conflicting reports as to their actual effectiveness. Investigators have indicated that rigorous investigation of the effectiveness of psychological debriefing and its role in post-trauma recovery is urgently required. In particular, such investigations need to provide a clear answer to the question 'Is psychological debriefing related to the prevention of PTSD symptoms and associated psychological sequelae?'

In this study, an investigation was undertaken of 96 emergency services personnel involved in the response to the 'Port Arthur massacre', a critical incident in which a lone gunman randomly killed 32 visitors in a popular tourist venue in southern Tasmania. All participants were individually interviewed on two occasions: eight months after and twenty months after the incident. Two key findings from the research project are presented. Firstly, experiencing dissociative symptoms at the time of the incident was predictive of long-term psychological and physiological distress. Secondly, within the group of emergency services personnel who experienced dissociation at the event, those who disclosed their related thoughts and feelings at the subsequent group debriefings showed significantly less long-term psychological distress.

The results of this study offer insight into how the impact of biological changes caused by a traumatic event can be modified by the psychological processing of that event. The results support the suggestion that following a traumatic situation, a person needs to process and integrate the memory of that event if he or she is to 'recover' from his or her reaction to the situation. Psychological debriefing appears to provide an opportunity for the necessary psychological processing to commence and assist emergency services personnel in managing what might otherwise develop into PTSD.

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## **Introduction**

## Introduction

We have within us a limiting switch for pain that may assist us to escape from life-threatening physical danger by numbing our experience of physical pain (Siegfried, Frischknecht & de Sousa, 1990). A similar biological mechanism also controls our experience of psychological pain by shutting us off from emotional overload during an intense or traumatic situation (Young, 1995; Litz, 1992). However, when a physical danger has passed, we need to allow the physical pain to be experienced to facilitate the process of healing our body. Similarly, following a traumatic situation, we may need to process and integrate the emotional memory (psychological pain) of the event so that we may escape long-term psychological distress (van der Kolk, 1994).

Post Traumatic Stress Disorder (PTSD) is the most common diagnostic classification used to describe symptoms arising from traumatic experiences. Researchers are still endeavouring to isolate the risk factors for developing psychological problems, including PTSD, following trauma. Consequently, effective techniques for reducing their impact and assisting recovery are yet to be fully realised. This thesis explores the determinants of the impact of psychological trauma on emergency services personnel and the effectiveness of subsequent recovery programs. In particular, the thesis focuses on the use of dissociation as an adaptive strategy for avoiding the immediate impact of a traumatic event, its impact on long-term psychological health, and implications for the process of psychological debriefing as a trauma recovery method.

Section 1 of this thesis explores the impact of psychological trauma. The discussion will explore recent theoretical perspectives of psychological trauma; in particular, the suggestion that PTSD may represent the overreaction of a life-preserving neural mechanism to normal social stimuli. Initially, The next chapter explores the diagnosis of PTSD, the symptomatology of psychological trauma and the longer-term biological and behavioural changes evident in PTSD sufferers.

Chapter 2 provides a description of the prominent theoretical models of trauma and traumatic stress. Diagnostic reports of PTSD reveal that there are distinct differences in individuals' capacity to cope with traumatic stress. It is suggested that a traumatic experience is filtered through cognitive and emotional processes before it can be assessed as a threat (van der Kolk, 1994). Recent brain research exploring the processing of traumatic memories has supported these findings (LeDoux & Romanski, 1989; LeDoux, Iwata, Cicchetti & Reis, 1988, LeDoux, Cicchetti, Xagorasis & Romanski, 1990; LeDoux 1995, 1998; Davis, 1984, 1986, 1992; Goleman, 1996; Metcalfe & Jacobs, 1996). Metcalfe and Jacobs (1996) have also furthered understanding of trauma by describing it within a framework that assumes the operation of two memory systems, a 'cool' cognitive system and a 'hot' emotional fear system. They suggest that the systems respond differently to increasing levels of stress.

Chapter 3 details the influence of biological factors on the processing of traumatic experiences and the implications of recent brain research findings (LeDoux, 1998) for our understanding of the anatomy of trauma. Biological investigations (Yehuda & McFarlane, 1995) have suggested that the substrates of PTSD may not in fact be similar to the 'normative stress response' described by Selye (1956). They may indeed be a progressive sensitisation of biological systems that render an individual hyper-responsive to a variety of stimuli.

When we are exposed to a traumatic experience, an increased level of stress may negatively affect performance of the hippocampus (and the hippocampal/cortical memory system). This offers us a hypothesis to explain why memory disturbance occurs during a traumatic situation (van der Kolk, 1987a, 1994; van der Kolk & van der Hart, 1991; Squire, 1992; van der Kolk, McFarlane & Weisaeth, 1996). It would appear that extremely high levels of stress debilitate conscious (cognitive) memory and strengthen unconscious (emotional and sensory) memory of an event. This in turn leads to the

possibility of unconscious sources of intense anxiety (Goleman, 1996). In recent years, research of traumatised individuals has demonstrated that the high arousal and the resultant dissociative symptomatology that frequently occurs during a traumatic event may lead to the disorganisation and fragmentation of the memory of that experience and ultimately to the development of PTSD.

The finding that PTSD is not an inevitable consequence of trauma leads researchers to be increasingly precise in their codification of the impact of trauma and the vulnerability factors that give rise to and perpetuate the course of PTSD (Yehuda & McFarlane, 1995; van der Kolk, 1987a, 1997). Although there has been substantial research into the psychological processes that characterise those people who exhibit PTSD (see Raphael & Wilson, 1993), considerably less is known of the risk factors for developing psychological disorders following exposure to a traumatic stressor. Subsequently, effective techniques for reducing their impact and assisting recovery are also at an early stage of development.

One recognised PTSD risk factor is the experience of dissociative symptoms at the time of a traumatic event (Marmar, 1997). While experiencing dissociative symptoms during an event may temporarily serve a beneficial function (i.e. the ability to control an emotional response may be an effective way of coping and ensure 'efficiency' during an intense situation), in the long term, the resultant lack of integration of traumatic memories appears to be a critical element that may lead to the development of PTSD (van der Kolk & Fisler, 1995). Chapter 4 of this thesis explores the role of dissociation as an adaptive coping strategy. The chapter then focuses on the numerous studies that have demonstrated a strong relationship between dissociative symptoms and psychological trauma (Bremner, Southwick, Jonsson, Yehuda & Charney, 1993; Marmar, Weiss & Schlenger, 1994; Weiss, Marmar, Metzler & Ronfeldt, 1995; Bremner & Marmar, 1998). Recent studies have further suggested that experiencing dissociative symptoms at the moment of a traumatic event is the single most significant predictor of the ultimate

development of PTSD (Marmar, Weiss & Schlenger, 1994; Spiegel, 1991, 1994; Cardena & Spiegel, 1989; Spiegel & Cardena, 1991; Bremner & Marmar, 1998; Koopman, Classen & Spiegel, 1994; Holen, 1991). Other important factors that may be implicated in the development of post-traumatic stress are further explored in Chapter 5.

Section 2 of the thesis investigates the process of recovery from psychological trauma. Chapter 6 begins with an exploration of current thinking and practice on the management and treatment of trauma. Therapists working with patients who have survived a variety of traumatic events generally work through several phases of treatment in a specific order. The approaches of two international experts on the treatment of psychological trauma (Bessel van der Kolk and Judith Herman) are then explored.

Emergency services (EMS) personnel are one group who are at risk of developing psychological disturbance from exposure to traumatic stressors (Westerink, 1995). It is likely that workers' methods of coping with their stress responses will be associated with the success or otherwise of 'integrating' a traumatic incident and adaptively learning from the experience (Lazarus & Folkman, 1984; Yehuda, Keefe & Harvey, 1990). During a traumatic situation, a process of denial and suppression of emotional reactions may assist an emergency services worker in optimising their work performance (van der Kolk & Fisler, 1995). Such practices, as they occur within the emergency services, may be labeled 'adaptive dissociation'. However, it is important to remember that many studies of people who develop PTSD have found significant prior and/or current evidence of dissociation (see Bremner & Marmar, 1998).

The prevention of severe post-traumatic reactions in the emergency services personnel has become a major focus in the last decade (Dyregrov, 1997). Chapter 7 explores the popular process of psychological debriefing, its historical development and our current understanding of its operation. Critical Incident Stress Debriefing (CISD) has been widely proposed as a major vehicle for modifying the stress reactions of emergency

services personnel (Mitchell, 1983; Mitchell & Bray, 1990; Mitchell & Everly, 1993, 1996, 1997; Robinson, 1994; Robinson & Mitchell, 1993, 1995). Despite the general support for psychological debriefing, the question of whether or not CISD is an effective or necessary intervention following a traumatic event has been a point of debate for some years (Bisson & Deahl, 1994; Ostrow, 1996; Raphael, Meldrum, & McFarlane, 1995; Robinson & Mitchell, 1995). Several studies have failed to reveal any effect resulting from this intervention, while other studies have shown either a strong positive or negative affect. Furthermore, it has been suggested that most studies, be they in favour of debriefing or not, have serious methodological flaws (Dyregrov, 1997). Psychological debriefing and in particular the process of CISD is explored in Chapter 8.

It has been suggested that there are important variables in the development of traumatic stress that need to be considered, in order to evaluate the effectiveness of psychological debriefing (Westerink, 1995). Exploring these variables may assist researchers understand the therapeutic agency in debriefing and help to anchor psychological debriefing within a stronger theoretical context. Chapter 9 explores this theme using an assessment of previous psychological debriefing and CISD research. Chapter 10 summarises the methodological issues that need to be addressed in future debriefing studies.

Section 3 of this thesis presents the Port Arthur Research Project. The study method is outlined in Chapter 11, including an overview of the incident and recovery operations. A description of the results in Chapter 12 is summarised within four key areas: pre-incident factors, incident factors, the critical incident stress management program, and post-incident factors. The chapter further explores the interrelationship of two significant variables in this study, dissociative experiences at the event and self-disclosure at the subsequent group debriefs. Finally, Chapter 13 summarises the implications of these and other recent findings for our understanding of the process of dissociation in the

development of post-traumatic stress and the pivotal role of psychological debriefing in the recovery process.