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Investigation of the relationship between trauma and pain catastrophising: The roles of emotional processing and altered self-capacity



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ABSTRACT

This study aimed to investigate the interrelationship between posttraumatic stress, emotional processing difficulties, altered self-capacity, and pain catastrophising. A cross-sectional design gathered data from 249 participants completing an internet based survey. Respondents completed: The Posttraumatic Stress Diagnostic Scale; Emotional Processing Scale (EPS), the Inventory of Altered Self-Capacities (IASC), General Health Questionnaire-28 (GHQ-28) and the Pain Catastrophising Scale (PCS). Respondents were allocated to post-traumatic stress disorder (PTSD), no-PTSD (depending on whether they met the screening criteria of PTSD using the Posttraumatic Stress Diagnostic Scale), and control group. Partial least squares (PLS) analysis confirmed the hypotheses: PTSD was significantly associated with pain catastrophising and poor psychological well-being. PTSD was significantly correlated with altered self-capacity which was in turn significantly associated with emotional processing difficulties. Emotional processing was significantly associated with pain catastrophising and poor psychological well-being whilst poor psychological well-being was associated with pain catastrophising. Emotional processing difficulties mediated the association between altered self-capacity and pain catastrophising and poor psychological well-being. To conclude, people's psychological well-being and perceptions of pain are closely related to PTSD severity from past traumas as well as self-capacities. Furthermore, the way in which they process their emotions also has an important role to play.

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1. Introduction

People who experience a traumatic event may go on to develop post-traumatic stress disorder (PTSD) with persistent re-experiencing of the traumatic event, avoidance of stimuli that trigger memories of the event and increased arousal which cause significant impairment to social functioning for a month or more (American Psychiatric Association, 1994). PTSD symptoms have also been shown to have a direct influence on depression and other psychological difficulties (Weathers and Keane, 2007) which in turn affects pain intensity (Roth et al., 2008; Sachs-Ericsson et al., 2009). People with PTSD report a number of physical problems, including chronic pain, (e.g. Davis et al., 2005; Banyard et al., 2009, 2009; Paras et al., 2009) with 20–30% of outpatients with PTSD and between 20% and 85% of war veterans or fire-fighters with PTSD reporting pain (Otis and Pincus, 2008). The purpose of the current study is to investigate the interrelationship between posttraumatic

stress, emotional processing difficulties, altered self-capacity, and pain catastrophising.

Chronic pain is "...an unpleasant sensory emotional experience with or without obvious pathology and persisting for a period of over 6 months" (Meredith et al., 2008: p. 408). Pain in people with PTSD may have a clear aetiology resulting from motor-vehicle accidents (Asmundson et al., 2002; Otis et al., 2003; Jenewein et al., 2009) combat (Beckham et al., 1997; Amital et al., 2006) and illnesses (e.g. HIV/AIDS) (Smith et al., 2002). However, in other types of pain associated with trauma, the pathways are less clear such as fibromyalgia syndrome and chronic fatigue (Roy-Bryne et al., 2004; Van Houdenhove et al., 2009), migraine (Ifergane et al., 2009), and irritable bowel syndrome (Ali et al., 2000). Literature also reveals a relationship between types of trauma and pain with child physical abuse being related to chronic pelvic pain (Lampe et al., 2003) and witnessing violence (Sansone et al., 2006) related to fibromyalgia syndrome (Kendall-Tackett and Klest, 2009; Van Houdenhove et al., 2009).

One explanation for the relationship between PTSD and pain is pertaining to anxiety sensitivity which is a vulnerability factor for some individuals (Keogh and Asmundson, 2004). People with

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anxiety sensitivity tend to have amplified anxious symptoms thus increasing PTSD symptoms that exacerbate physiological sensitivity (e.g. heart rate increase and trembling). At the same time, they may become hypersensitive to and fearful of pain with a tendency to catastrophise pain (i.e. a strong tendency to ruminate, magnify pain experience and feel helpless about one's ability to cope with pain) (Sharp and Harvey, 2001; Keogh and Asmundson, 2004). Most research has focused on pain intensity, pain experience and pain related disability (Otis et al., 2003; Roth et al., 2008) whilst little has been done looking at PTSD and pain catastrophising (Sullivan et al., 1995; Keogh and Asmundson, 2004). Closer examination of pain catastrophising is needed because how one thinks and feels about their pain is reported to be a critical factor not only for adjustment to acute and chronic pain, but also, their overall psychological well-being (Keefe et al., 2001; Keogh and Asmundson, 2004).

A biopsychosocial model provides a framework from which to investigate the possible mediating factors that influence trauma and pain perception (Banyard et al., 2009; Kendall-Tacket and Klest, 2009; Sachs-Ericsson et al., 2009). Psychological factors identified to influence the relationship between trauma and pain relate to affect regulation difficulties of dissociation/somatisation (Badura et al., 1997; Heckman and Westefeld, 2006) and interpersonal sensitivity (Van Houdenhove et al., 2009). These factors are identified along with other features of altered self-capacities (Briere and Runtz, 2002), a construct used to describe self-capacities in the areas of interpersonal relatedness, identity and emotional regulation as potential mediators of the impact from traumatic experiences. Altered self-capacities have been associated with PTSD as well as suicidality, self-harm, eating disorders and other psychological difficulties (Briere and Runtz, 2002). Following trauma, a person's capacity may alter to try and cope with affect dysregulation. The demand placed on them to tolerate and control perhaps unfamiliar high level emotions might lead to reliance on various defence mechanisms to cope with underlying distress including tension reduction and avoidance activities (e.g. illicit drug use and/or self-harm). Interpersonal functioning may also be impaired. For example, a person who has been victimized may have difficulty in detecting boundary violations and rely on strong projections of idealisation and disillusionment feeling driven to repair past experiences whilst overlook cues signalling damaging relations (Briere and Runtz, 2002). In other words, the self-capacities alter in areas that mediate processes involved in trauma. It has been postulated that interpersonal and emotional factors may be important in patients with comorbid trauma and pain (Kendall-Tacket and Klest, 2009).

Considering people's self-capacities are challenged when required to regulate intense emotions related to a trauma, the mediating affects of emotional processing could be compromised. This echoes the traumatic reaction described in Horowitz's (1986) stress response syndrome. When a traumatic event occurs, people are confronted with information which is incompatible with their existing schemas of the world and themselves. Consequently, they experience a great deal of emotional distress. To prevent emotional exhaustion, patients employ an inhibitory mechanism (e.g. dissociation, avoidance, suppression) in order to control or regulate the flow of information. That is, using such inhibitory mechanisms is in fact avoiding processing one's emotion related to the event.

Recent research suggests that engaging in avoidance of emotional processing (e.g. repression or minimising) results in poor psychological well-being such as anxiety, depression, somatising and dissociation (Badura et al., 1997; Burns, 2000; Heckman and Westefeld, 2006; Jenewein et al., 2009; Roth et al., 2008; Roy-Bryne et al., 2004; Sachs-Ericsson et al., 2009; Stein et al., 2004; Van Houdenhove et al., 2009). These psychological consequences

could increase sympathetic arousal (poor muscle tension, difficulty in breathing) and exacerbate pain sensitivity, the onset of pain, and indeed the catastrophising of pain (Keefe et al., 2001). Research indicates that people who come for treatment for their pain (e.g. irritable bowel syndrome, fibromyalgia, chest pain and headache) may have underlying emotional distress that has not been addressed (Burns, 2000; Keefe et al., 2001; Meredith et al., 2008).

To articulate further the idea that avoiding emotional processing leads to poor psychological well-being and ultimately pain perception, one could refer to Engel's (1959) theoretical framework that brought together psychoanalytic, biological, social and interpersonal understandings of health and chronic pain (Taylor, 2002). Engel's theory of pain incorporated that of Melzack and Wall (1965) gate-control theory that exemplified how pain experience could actually be stored in the brain and not only occur following peripheral stimulation (Engel, 1970). Therefore, once pain has become part of a subjective physical experience it has the potential to be provoked with or without obvious tissue damage. According to Engel, pain experience, similar to affect, evolves as part of a regulatory system inextricably connected with emotional and interpersonal experiences. Pain may serve to regulate underlying emotional and interpersonal conflicts around reward and punishment, good and bad with an unconscious need to suffer, to assuage guilt, or as a response to loss (Ssaz, 1957; Engel, 1959; Burns, 2000). Resolution of unconscious conflicts may come through emotional suppression or avoidance whereby there is a 'splitting off' onto the body what cannot be tolerated by the mind (Ssaz, 1957; Engel, 1959; Gamsa, 1994; Burns, 2000).

In summary, there is an established relationship between PTSD and pain perception. Psychosocial factors have been identified that influence this relationship including emotional processing difficulties, interpersonal sensitivity and affect regulation difficulties incorporated under the rubric of altered self-capacity. The foregoing complex relationship has not been investigated in literature on PTSD and pain catastrophising. The aim of this study is to address this gap of knowledge.

1.1. Aim and hypotheses

This study aimed to investigate the interrelationship between altered self-capacity, emotional processing difficulty, PTSD and pain catastrophising. In light of the research evidence depicted in the introduction, a number of hypotheses were constructed:

- H1.** There would be an association between PTSD severity and pain catastrophising and level of psychological well-being.
- H2.** There would be an association between PTSD severity, altered self-capacity which in turn would be associated with emotional processing difficulties.
- H.** Emotional processing difficulties would be associated with pain catastrophising and level of psychological well-being which in turn would be associated with pain catastrophising.

The three hypotheses are combined to form the path diagram shown in Fig. 1.

2. Methods

2.1. Participants

Of the two hundred and forty nine participants, 47 were male and 202 female. Mean age of the participants was 32 (mean = 31.72, S.D. = 9.18, range: 18–63). The majority ($N = 179$, 71.9%) were attending university or had done so; 20.1% ($N = 50$) attended higher education colleges. Otherwise were educated to secondary level (8%). Less than half were single ($N = 104$, 41.9%), a quarter were co-habiting

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