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Investigating the phenomenology of imagery following traumatic burn injuries

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ABSTRACT

Intrusive images related to adverse experiences are an important feature of a number of psychological disorders and a hallmark symptom of posttraumatic stress disorder (PTSD). Depression, anxiety, and PTSD are all common reactions following a burn injury. However, the nature of burn-related trauma memories and associated intrusions and their contribution to psychological disorders is not well understood. The aim of the study was to take a broad look at the nature of imagery experienced by people who have sustained a burn injury. Nineteen participants completed self-report questionnaires assessing depression, anxiety, and PTSD symptoms and were administered a semi-structured interview which explored the characteristics (vividness, sensory modalities, intrusions, emotion intensity) of imagery formed in relation to their burn injuries. Ongoing intrusive imagery was reported by over half the participants and there were significant correlations between frequency of intrusive images and posttraumatic symptoms, and between intensity of emotions associated with intrusive images and depression and posttraumatic symptoms. A thematic analysis of the memory narratives revealed four main themes: threat to self, view of the world, view of others, and positive psychological change. These results are discussed in relation to existing trauma theory and burn injury literature. Implications for clinical practice and recommendations for further research are proposed.

1. Introduction

Burn injuries may be followed by a painful rehabilitation, functional limitations, disfigurement and body image issues, work and financial problems, lifestyle changes, sexual problems, mixed or negative reactions from others, and loss of interpersonal relationships [1–9]. Despite these challenges, many burn survivors experience posttraumatic growth (PTG) [10] following their injury, reporting personal growth and transformation (e.g., becoming more resourceful, resilient, and religious/spiritual), taking up new interests, defining themselves in a more meaningful way, and developing new outlooks [2,4,9,11,12]. A significant proportion of burn survivors, however, experience psychological disorders. Palmu et al. [13] found that 55.4% of their sample had experienced an Axis I disorder in the 6 months following their injury. Assessing survivors 1–4 years (average 2.2 years) post-injury, Ter Smitten et al. [14] found that, in the year prior to data collection, 27.8% had at least one Axis I disorder that had developed after the injury.

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The most prevalent disorders among burn survivors are anxiety and mood disorders, particularly posttraumatic stress disorder (PTSD) and depression (e.g. [8,13,14]). A review of the literature by Van Loey and Van Son [8] reports a prevalence of 13–23% for depression and 13–45% for PTSD 1 year following the injury. More recent studies report a 1–4-year post-burn prevalence of 10–16% for depression or depression symptoms (e.g. [14–16]) and 7–29% for PTSD or posttraumatic symptoms (e.g. [14,15,17]). The discrepancies in prevalence estimates among the different studies are partly due to the fact that many studies in the area suffer from methodological issues such as small sample sizes and high attrition rates. In addition, the different methods used to assess psychopathology (questionnaires and structured diagnostic interviews) tend to yield different prevalence estimates [13]. Nevertheless, findings are consistent in indicating that some burn survivors are at risk of developing at least one Axis I psychological disorder and that they are more likely to do so than the general population [8,13,14].

To date, research has identified a series of factors that may put burn survivors at risk of psychopathology. The evidence on the role of injury characteristics such as total body surface area (TBSA) affected is inconsistent, with some studies (e.g. [13,18]) finding that this role is significant and others (e.g. [14,19]) failing to do so. The evidence on other risk factors, on the other hand, is relatively more consistent. For example, risk factors for the development of depression and PTSD include psychiatric history, burn visibility, patients' perceptions (e.g., perceived threat to life), peri-traumatic anxiety and dissociation, maladaptive coping styles (e.g., avoidant coping), perceived lack of social support, and blaming others for the injury (e.g. [5,8,19–21]). Peri-traumatic anxiety and dissociation, in particular, may play an important role in the onset of psychological disorders because of their influence on the processing of the burn trauma and development of intrusive mental images.

Mental images are cognitive representations which contain sensory qualities despite arising in the absence of external sensory input [22]. A growing body of research (see [23,24]) suggests that intrusive (involuntary) mental images are an important feature of several psychological disorders, including depression [25], PTSD [26,27], agoraphobia [28], and social phobia [29]. These images tend to be recurrent, vivid, and associated with negative emotions such as fear, helplessness, anger, guilt, anxiety, and shame (see [24]). They often relate to memories of adverse experiences and to negative core beliefs about the self, other people, and the world that may have been formed as a result of those experiences (e.g. [28,30]). Images are frequently triggered by stimuli that activate trauma memories (see [24]).

In PTSD, recurrent, involuntary, and intrusive recollections of the traumatic experience that include sensory, emotional, or physiological behavioural components are one of the key diagnostic criteria [31]. PTSD intrusions often consist of brief sensory fragments of the trauma that can lead to reliving the trauma as if it is happening currently [27,32]. On some occasions, they are related to the worst moments of the trauma, during which individuals experienced cognitions revolving around two main themes: threat to one's physical integrity (e.g., injury, death) and threat to one's sense of self (e.g., blame, abandonment) [26]. At other times, intrusive images in PTSD are related to the moment when events in the trauma suddenly got worse. In these cases, intrusions become warning signals that indicate impending danger if encountered again [32]. In depression, intrusive images are often related to past experiences such as one's own or significant others' illness or injury, threatened or actual assault, and interpersonal problems [25].

Partly because of their link with negative beliefs and their emotional impact, intrusive mental images may contribute both to the development and to the maintenance of psychological disorders [24]. For many patients with social phobia, for example, the symptoms appeared or became more intense after the adverse event associated with the intrusions [33]. Intrusions are also frequently accompanied by negative emotional and/or behavioural responses that help maintain symptoms. For example, in PTSD intrusive images may contribute to a sense of impending threat and to the use of maladaptive coping strategies such as avoidance [34]. In depression, images may trigger associated negative beliefs and negatively impact on patients' mood [25]. In each of these cases, the experience of the intrusions may prevent patients from disconfirming and updating the negative meanings they have attached to the adverse experience (e.g., "*I am a failure*") and from modifying their behaviour (e.g., avoidance).

Despite the occurrence of psychological disorders among burn survivors and the fact that burn injuries may result from life-threatening traumatic experiences, to date little is known about how the memories of these experiences and associated mental images contribute to disorder onset and maintenance. Quantitative studies (e.g. [18,35]) have found that burn patients report recurrent intrusive memories of, and flashbacks related to, their burn injury during hospitalisation. Qualitative studies (e.g. [7,9]) suggest that some burn survivors can have vivid memories of the scene of the accident and subsequent hospitalisation, associated flashbacks, and associated negative emotions several years after their accident. The development of these vivid memories and intrusions may be partly related to dissociation, which is a frequent response during a burn accident and has been found to develop as a result of peri-traumatic anxiety and to be related to symptomatology (e.g., anxiety, depressive symptoms) upon discharge from hospital [36]. Peri-traumatic anxiety and dissociation have also predicted posttraumatic symptoms in burn survivors 1 year following the injury [37], whereas intrusive symptoms at the time of discharge from hospital have been found to predict such symptoms 4 months later [38]. These findings are in line with the cognitive model of PTSD [34], which postulates that peri-traumatic factors such as strong emotions and dissociation may prevent adequate processing of the traumatic experience, leading to a failure to integrate the trauma memory into the individual's more general autobiographical memory store and resulting in the development of trauma-related intrusions. Whereas peri-traumatic factors contribute to intrusion development, factors such as burn scars may contribute to their persistence by acting as trauma reminders [3,39,40].

While the involvement of trauma-related intrusions in psychopathology in general is becoming increasingly clearer,