



Review

**Mental health following traumatic physical injury: An integrative literature review**

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ABSTRACT

**Aim:** To investigate the state of knowledge on the relationship between physical trauma and mental health in patients admitted to hospital with traumatic physical injury.  
**Background:** Adults who sustain traumatic physical injury can experience a range of mental health problems related to the injury and subsequent changes in physical health and function. However early screening and identification of mental health problems after traumatic physical injury is inconsistent and not routine during the hospital admission process for the physically injured patient.  
**Methods:** Integrative review methods were used. Data were sourced for the period 1995–2010 from EMBASE, CINAHL, MEDLINE and PsycINFO and hand searching of key references. Abstracts were screened by 3 researchers against inclusion/exclusion criteria. Forty-one papers met the inclusion criteria. Data were retrieved, appraised for quality, analysed, and synthesised into 5 main categories.  
**Results:** Forty-one primary research papers on the relationship between mental health and traumatic physical injury were reviewed. Studies showed that post-traumatic stress disorder, depression and anxiety were frequent sequelae associated with traumatic physical injury. However, these conditions were poorly identified and treated in the acute hospital phase despite their effect on physical health.  
**Conclusion:** There is limited understanding of the experience of traumatic physical injury, particularly in relation to mental health. Greater translation of research findings to practice is needed in order to promote routine screening, early identification and referral to treatment for mental health problems in this patient group.

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## Introduction

Traumatic (physical) injury accounts for 11% of global mortality and is a leading cause of significant physical and psychological disability across all ages.<sup>1</sup> Trauma exerts a multi-dimensional influence on physical health, resulting in changes in employment, subsequent financial status and return to work.<sup>2,3</sup> The personal impact of physical injury on the survivor can have such an extensive effect that it is reported to impinge on all aspects of the person's physical functioning, including sexual function, fatigue levels and ability to carry out general physical activities.<sup>4</sup>

Traumatic physical injury can also lead to a range of mental health problems relating to the injury and associated changes in physical health and functioning. Post-traumatic stress disorder (PTSD), depression and anxiety are increasingly recognised post-injury, however there is a lack of systematic identification and prompt treatment for these conditions.<sup>3,5</sup> Despite knowledge that mental health is an integral aspect in the physically injured patient's recovery and quality of life,<sup>5</sup> there remains a lack of consistent policy for routine assessment of mental health in traumatically injured patients in Australian hospitals. No previous syntheses of research on the relationship between mental health and traumatic physical injury have been conducted and this review was undertaken to synthesise and report the knowledge base on their co-association and inform clinical practice.

### Aim of the study

To investigate the state of knowledge on mental health following traumatic physical injury in patients admitted to hospital with traumatic physical injury.

Specifically, the study objectives were to:

- Establish what is known about the relationship between traumatic physical injury and mental health;
- Determine the frequency of depression, anxiety, and post-traumatic stress following traumatic physical injury;
- Identify the subjective experience of traumatic physical injury

### Design/method

An integrative review method was chosen to summarise and synthesise findings from literature. A key difference between this type of review and other rigorous review methods is that the integrative review is inclusive of diverse methodologies.<sup>6</sup> Given the perceived complexity of the relationship between traumatic physical injury and mental health this method was considered the most appropriate for the present review. The review process involved problem identification, search of current literature, evaluation of recovered data, and analysis.<sup>7</sup>

Four electronic databases EMBASE, CINAHL, MEDLINE and PsycINFO were searched from 1995 to 2010 using combinations of the terms 'trauma', 'mental health', 'depression', 'anxiety' and 'stress'. Further refinement of searching included addition of the term 'injury'. Key references were also hand searched. The outlined time period was selected as this was inclusive of major advances in knowledge on the relationship between traumatic physical injury and mental health.

The initial search resulted in a total of 197 abstracts following the removal of duplicates. Three reviewers assessed the titles and available abstracts according to inclusion and exclusion criteria. After initial screening, full text articles were retrieved and assessed against inclusion/exclusion criteria. Any disparity between reviewers' rating were discussed and group consensus reached based on the inclusion/exclusion criteria. Articles published in

English that were primary quantitative and/or qualitative research reports on aspects of mental health with admissions to hospital as a result of traumatic injury were included. In the case of reports on injury, this needed to be physical in nature rather than psychological to qualify for inclusion. Therefore, papers which addressed emotional trauma and injury; included participants who were below 16 years of age; were not primary (original) research reports; and/or where participants had not been admitted to hospital, were excluded. Following a rigorous selection process 30 articles were included for review. A further 11 references identified by hand-searching of key articles were included, resulting in a total of 41 papers for review (Fig. 1). Data were extracted from each study according to: research design, sample type and size, data collection tools used, setting, methods, and appraised for quality as per criteria recommended by Polit and Beck.<sup>8</sup> The 41 studies were read and re-read several times, and in an iterative process findings were compared and contrasted and then synthesised and clustered into emergent and then final categories.

## Results

The 41 papers were grouped into five categories according to the findings of the analysis: Acute Stress Disorder and physical injury; Post-traumatic stress disorder (PTSD) and physical injury; Anxiety and physical injury, Depression and physical injury, and subjective experiences of physical injury. Pre-injury mental health status was not identified in many of these studies. Summary findings of the papers are provided in Table 1. The majority of studies (35/41) used quantitative methods; Purposive Cohort Designs, Descriptive Follow-up Designs, Prospective Randomised Longitudinal designs, and Randomised Control Trials. The remaining papers included mixed method studies (2/41) and qualitative studies (4/41).

### Acute Stress Disorder (ASD) and traumatic physical injury

Acute Stress Disorder (ASD) is an anxiety disorder and, similar to PTSD is characterised by symptoms of fear, anxiety, helplessness and distressing memories following a physical or psychological traumatic event.<sup>9</sup> ASD can result in impaired physical function, reduced ability to conduct activities of daily living and diminished quality of life. However, unlike PTSD in which symptoms must be evident for a minimum of 30 days, ASD can be diagnosed as early as 2 days following the onset of symptoms. If symptoms persist beyond 30 days, a diagnosis of PTSD is made. ASD is shown to affect up to 33% of those in the general population who are exposed to a traumatic event.<sup>9</sup>

In the literature, ASD was found to occur in the range of 23–45% of patients following traumatic physical injury.<sup>10–12</sup> Yet despite these statistics, ASD was investigated in only 3 of the 41 reports as sequelae of traumatic injury and each report investigated ASD in conjunction with PTSD.<sup>10,11</sup> McKibben et al.<sup>12</sup> found that ASD was evident in up to 25% of their sample following traumatic burn injury and over 80% of these patients demonstrated symptoms of PTSD at 24 months post injury. This finding suggests that ASD may be an accurate predictor of PTSD and subsequently, early identification of ASD symptoms may decrease the incidence of long term PTSD. ASD was assessed by Bryant et al.<sup>10</sup> in traumatic brain injury patients and, similar to McKibben et al.<sup>12</sup> was found to be a predictor of PTSD in an estimated 80% of this patient group. A prospective study investigating traumatically injured patients from a range of mechanisms in 2 Level 1 US trauma centres showed the occurrence of ASD to be evident in up to 45% of study participants.<sup>11</sup> The study authors concluded that designated trauma centres need standardised screening tools and referral

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