

The Association between Perceived Injustice Following Traumatic Injury and Its Impact on Pain-Related, Mental Health and Functional Health Outcomes: A Systematic Review

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Abstract

Background: There is growing evidence suggesting that those who suffer traumatic injury display high levels of perceived injustice which impedes their recovery, both physically and mentally. **Aim:** The aim of this systematic review was to examine the association between perceived injustice and pain-related, mental health and functional outcomes in patients who have suffered a traumatic injury. **Methods:** In May 2023, a systematic review of the literature was performed on the electronic databases of PubMed, Google Scholar, Embase, and the Cochrane Database of Systemic Reviews. Papers were collected and analysed as per PRISMA guidelines for systematic reviews. The outcomes of interest were pain intensity, pain interference, disability, depression, anxiety, and quality of life. The initial search identified 59 papers. Of these papers, five studies met the inclusion criteria and were subsequently analysed (N = 1172). Each of the papers was published in peer-reviewed journals in the English language. Individuals with pain or pathology prior to the trauma and those who were not hospitalised following the trauma were excluded from the study. **Results:** Of the papers reviewed, each study indicated significant associations between perceived injustice and pain, disability, depression, anxiety, post-traumatic stress disorder, as well as reduced return to work status. **Conclusion:** This systematic review investigated the relationship between perceived injustice and pain-related, mental health, and functional outcomes in trauma patients. The results highlight the negative role that perceived injustice has on recovery following traumatic injury. Further, it provokes the need for future research regarding the implementation of therapeutic interventions and the development of predictive models of injustice.

Keywords

Perceived Injustice, Trauma, Pain Outcomes, Mental Health Outcomes, Disability

1. Introduction

Traumatic injury is a significant cause of morbidity and mortality worldwide and is calculated to account for 16% of the world's disease burden, according to the World Health Organisation [1] [2]. Traumatic injury encompasses a multitude of aetiologies relating to an insult to the human body that has an external cause without the interference of internal input, such as disease [3]. Krug and colleagues [4], 2000, highlighted the long-term physical and psychological morbidities individuals suffer from following a traumatic event. Such outcomes consist of chronic pain [5], decreased quality of life [6] and psychological sequelae. The latter includes depression, anxiety, and post-traumatic stress disorder [7].

Literature and the creation of the Injustice Experiences Questionnaire (IEQ) have found that people who perceive their health challenges as unfair and unjust may have a negative impact on the course of their recovery [8] [9] [10]. This measure allows for the conceptualisation of perceived injustice as a cognitive assessment, constructed around an individual's feelings of unfairness, severity, and blame. Pertaining to traumatic injury, this perceived injustice can be described as a self-constructed evaluation of one's injury as being severe, unjust, and irreparable. Furthermore, it encompasses attributions of blame to others for one's suffering [10] [11].

Perceived injustice is strongly related to increased pain, disability, decreased return to work status and higher levels of depression and anxiety amongst those who suffer musculoskeletal pain as a result of injury and longstanding comorbidities [8] [12]. Similar results have been reported for pain-related outcomes when other psychosocial variables have been controlled in trauma samples [13]. In addition to individual suffering, high levels of perceived injustice and its associated negative outcomes have considerable occupational, financial, and medicolegal burdens on the individual and the healthcare system [3] [14].

Higher levels of perceived injustice have been reported among patients who suffer traumatic injury compared to illness-related suffering, resulting in negated recovery and longstanding sequelae [11]. To date, the impact that perceived injustice has on physical, mental and functional outcomes in the traumatic population who require hospitalisation as a result of their injury remain to be systematically examined. Given the potential consequences of traumatic injury to the patient and the healthcare system it is imperative to determine the impact perceived injustice has on such a sample. Thus, the primary aim of this paper is to provide a comprehensive review of the literature regarding perceived injustice, pain, mental health and functional outcomes in patients who have had a trau-

matic injury that requires in-patient admission.

2. Methodology

2.1. Search Strategy

The electronic databases of PubMed, Google Scholar, Embase, and the Cochrane Database of Systemic Reviews were searched for the terms “perceived injustice”, “trauma”, “pain”, “mental health”, “disability” and, “functional outcomes”. Additional studies were identified on review of additional literature and references to ensure potential studies omitted from the initial search were included. Relevant studies were exported to EndNote Version 20 and duplicates were removed.

2.2. Study Selection

Literature was collected and analysed per the Preferred Reporting Items for Systematic Reviews and Meta-analysis checklist (PRISMA) [15]. Articles were subsequently screened by title and abstract per the following inclusion criteria:

- 1) Adults over 18 years.
- 2) Patients who sustained a traumatic injury who required in-patient admission to a trauma service at the time of injury.
- 3) Trauma patients whose perceived injustice was measured using the validated Injustice Experiences Questionnaire (IEQ).
- 4) Published in the English language.
- 5) The study reported a relationship between injustice and pain-related, psychological, disability, and/or quality of life outcomes.

Studies which met the inclusion criteria underwent a full-text review by two independent researchers. Articles were excluded if;

- 1) Patients had traumatic pain/pathology before the trauma.
- 2) Patients were not initially admitted to a trauma service following the injury.
- 3) The studies were not published in the English language.
- 4) Participants in the study involved the paediatric population.

Studies which met the above criteria were included in the analysis. Disagreements between the independent researchers were resolved by a third independent researcher.

2.3. Data Extraction

Included studies were extracted based on author, year of publication, the country in which the study took place, sample age, sample sex, pain intensity, pain duration, disability, in-patient admission following trauma, depression, anxiety, quality of life, return to work, the measure of perceived injustice, and the mean perceived injustice reported.

2.4. Quality Assessment

The quality of the included papers was assessed using the Modified Newcastle-Ottawa Quality Assessment Scale (NOS) [16]. The studies were subsequently

classified as low, medium, or high quality based on the NOS.

3. Results

3.1. Study Selection

The electronic search identified 12 papers based on the search criteria once duplicates were removed to assess eligibility. Five studies were subsequently identified for full-text review based on their abstracts and titles. The study selection process is depicted in **Figure 1**.

3.2. Study Characteristics and Quality Assessment

A total of five studies were included in the qualitative analysis and the characteristics of each are presented in **Table 1**. 1172 patients were identified with a mean age of 44.50 years. The sample consisted mainly of the male sex (74.40%; N = 827). Four of the studies measured injustice using the Injustice Equality Questionnaire (IEQ). One study used the Questionnaire of Perceived Injustice (QPI) to quantify perceived injustice. It should be noted that the QPI is a wording modification of the validated IEQ. The NOS ranged from 5 - 8 in each of the

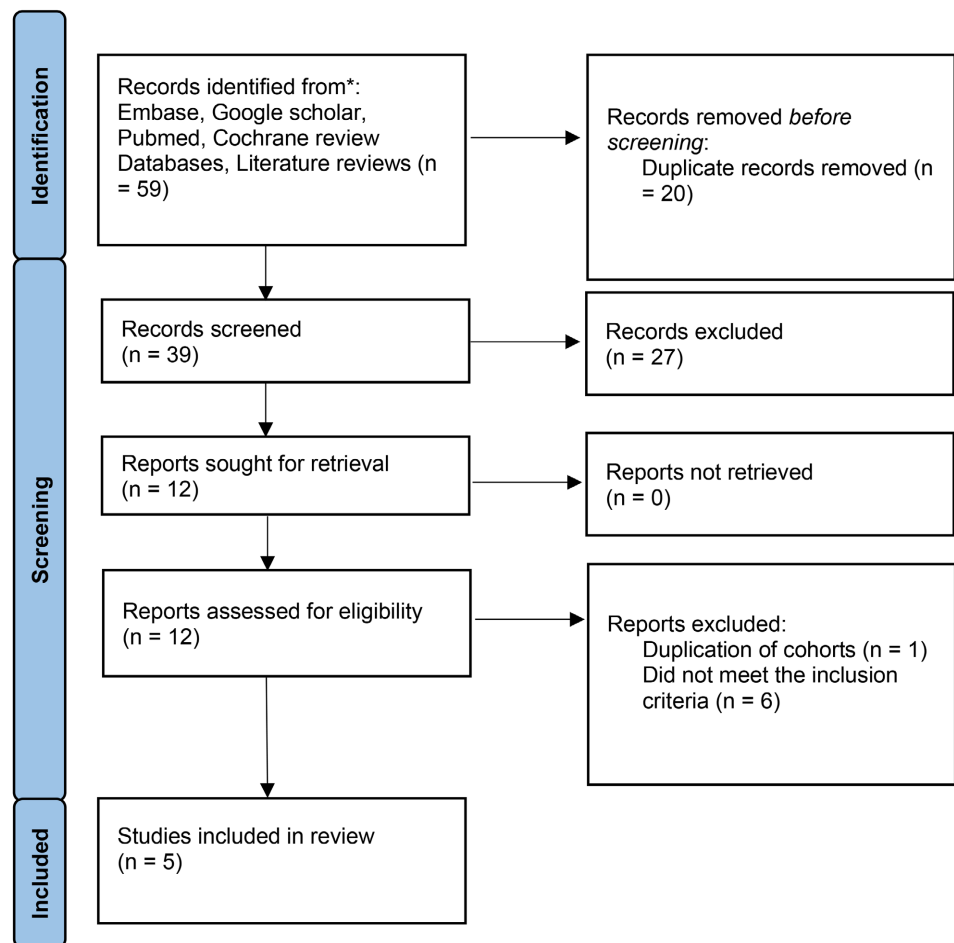


Figure 1. PRISMA flowchart of the study selection process.

Table 1. Characteristics of studies included in qualitative analysis.

Author	Year	Country	Sample Size (n)	Sex (n; Male/Female)	Mean Age (years)	Injustice Measure	Mean IEQ Score	Study Design	NOS Score (Max 9)	Trauma type
Zelle <i>et al.</i> [18]	2017	United States of America	43	19/24	42.7	QPI	20	Cross-Sectional	6	Isolated orthopaedic injuries requiring surgical fracture management
Giummarra <i>et al.</i> [40]	2016	Australia	364	275/89	43.0	IEQ	11.79	Cross-sectional	6	Major trauma per the VSTR and VOTOR guidelines
Trost <i>et al.</i> [36]	2015	United States of America	155	91/64	47.50	IEQ	17.07	Cross-sectional	8	Fall, RTA, violent crime (gunshot, stab wound), machine injury, animal attack
Boals <i>et al.</i> [22]	2020	United States of America	176	118/58	44.47	IEQ	17.04	Prospective	6	Interpersonal (gunshot wound, aggravated assault) and non-interpersonal trauma (fall, RTA, etc.)
Ioannou <i>et al.</i> [42]	2017	Australia	433	324/109	44.8	IEQ	16.24	Cross-sectional	5	Major trauma per the VSTR and VOTOR guidelines

* = Combined means were calculated using the raw data provided; NOS = Newcastle-Ottawa quality assessment scale; IEQ = Injustice Equality Questionnaire; QPI = Questionnaire Perceived Injustice; RTA = road traffic accident; VSTR = Victorian State Trauma Registry; VOTOR = Victorian Orthopaedic Trauma Outcomes Registry.

included studies, indicating medium to high-quality studies. The mean IEQ score was 16.43. The studies included encompassed a range of traumatic injuries including visceral and musculoskeletal trauma. The outcome measures of interest in the trauma sample were pain interference, pain intensity, disability, depression, anxiety, post-traumatic stress symptoms, and quality of life.

3.3. STUDY FINDINGS

A key summary of the individual studies is outlined in **Table 2**, including whether associations between perceived injustice and the outcomes of interest were analysed using univariate or multivariate analyses.

3.3.1. Perceived Injustice and Pain-Related Outcomes

A high proportion of the studies in the analysis included a pain-related outcome measure. The outcomes of interest were pain intensity and pain interference. Two studies demonstrated an association between perceived injustice and pain intensity in trauma patients using both univariate and multivariate analysis.

Table 2. Synopsis of key findings by outcome measure.

Outcome	Author	Outcome measure	Univariate	Multivariate	Result	Magnitude of association
Depression	Boals <i>et al.</i> 2020 [22]	PHQ-8		✓	Higher levels of depression at baseline, 3 and 6 months follow up	Baseline $r_s = 0.67$, $p < 0.001$ 3 months $r_s = 0.72$, $p < 0.001$ 6 months $r_s = 0.79$, $p < 0.001$
	Giummarra <i>et al.</i> 2016 [40]	HADS	✓		Higher levels of depression	$r_s = 0.65$, $p < 0.00001$, 95% CI [14.47, 17.28]
	Trost <i>et al.</i> 2015 [36]	PHQ-8	✓	✓	Higher levels of depression	$r = 0.64$, $p < 0.01$ IEQ accounted for 13% of the variance in depression; $\Delta F = 36.63$, $p < 0.001$
Anxiety	Giummarra <i>et al.</i> 2016 [40]	HADS	✓		Higher levels of anxiety	$r_s = 0.58$, $p < 0.00001$, 95% CI [14.47, 17.28]
Pain intensity	Ioannou <i>et al.</i> 2017 [42]	BPI	✓		Higher levels of pain intensity	$r = 0.56$, $\alpha = 0.01$ $\Delta R^2 = 3.5\%$, $p < 0.001$
	Trost <i>et al.</i> 2015 [36]	NRS 0-10	✓	✓	Higher levels of pain intensity	$r = 0.63$, $p < 0.01$ IEQ accounted for 17% of the variance in pain intensity; $\Delta F = 46.15$, $p < 0.001$
Pain interference	Ioannou <i>et al.</i> 2017 [42]	BPI	✓		Higher levels of pain interference	$r = 0.65$, $\alpha = 0.01$ $\Delta R^2 = 6.0\%$, $p < 0.001$
	Zelle <i>et al.</i> 2017 [18]	PCS	-	-	No trends identified	
Quality of life	Trost <i>et al.</i> 2015 [36]	VR-12	✓	✓	Lower physical QoL in bivariate analysis, no trend in regression analysis, Lower mental QoL in bivariate and regression analysis.	$r = -0.41$, $p < 0.01$ IEQ accounted for 1% of the variance in physical quality of life; $\Delta F = 3.69$, $p = 0.06$ $r = -0.60$, $p < 0.01$ IEQ accounted for 19% of the variance in physical quality of life; $\Delta F = 46.32$, $p < 0.01$
	Ioannou <i>et al.</i> 2017 [42]	SF-12	✓		Lower QoL levels	Mental function $r = -0.39$, $\alpha = 0.05$ Physical function $r = -0.56$, $\alpha = 0.05$ $\Delta R^2 = 18.4\%$, $p < 0.001$
	Giummarra <i>et al.</i> 2016 [40]	RTW status (yes/no)		✓	Those with a high perceived injustice (≥ 30) had a decreased likelihood of returning to work, one-year post-trauma	RR = 4.05, 95% CI [3.30 - 11.48], $p < 0.0001$

Continued

						Blame/unfairness subscale Median (Q1; Q3) No RTW, N = 73, 13 (5;20) vs RTW N = 302, 4 (0;10), $p < 0.001$
	Ioannou <i>et al.</i> 2017 [42]	RTW status (yes/no)	✓		Decreased likelihood of returning to work, one-year post-trauma	Severity/irreparability of loss subscale Median (Q1; Q3) No RTW, N = 73, 15 (9;19) vs RTW N = 302, 7 (2;13), $p < 0.001$
Disability	Ioannou <i>et al.</i> 2017 [42]	RMDQ	✓		Higher levels of disability	$r = 0.63$, $\alpha = 0.05$ $\Delta R^2 = 7.1\%$, $p < 0.001$
Post-traumatic stress disorder	Giummarra <i>et al.</i> 2016 [40]	PTSD-Checklist	✓		Higher levels of PTSD	$r_s = 0.65$, $p < 0.00001$, 95% CI [14.47, 17.28]
	Trost <i>et al.</i> 2015 [36]	PC-PTSD screen/PTSD checklist	✓	✓	Higher levels of PTSD	$r = 0.61$, $p < 0.01$ IEQ accounted for 4% of the variance in PTSD; $\Delta F = 4.28$, $p = 0.007$
	Boals <i>et al.</i> 2020 [22]	PC-PTSD		✓	Higher levels of PTSD at baseline, 3-month and 6-month follow up	Baseline $r_s = 0.48$, $p < 0.001$ 3 months $r_s = 0.59$, $p < 0.001$ 6 months $r_s = 0.62$, $p < 0.001$

PC-PTSD = Primary Care Post-traumatic Stress Disorder Screen; RMDQ = Roland Morris Disability questionnaire; RTW = Return to Work; QoL = Quality of Life; SF-12 = 12 Item Short Form Survey; PCS = Pain Catastrophizing Scale; VR-12 = Veterans RAND 12 Item Health Survey; BPI = Brief Pain Inventory; NRS 0 - 10 = Numeric Rating Scale for Pain, Graded 0 - 10; PHQ-8 = 8 Item Patient Health Questionnaire Depression Scale; HADS = Hospital Anxiety and Depression Scale; ✓ = denotes type of analysis present in the selected studies; r_s = spearman's rank correlation coefficient; r = correlation; α = Cronbach's alpha; ΔR^2 = Hierarchical regression analysis; N = sample size; Q1; Q3 = first and third quartile; ΔF = F test of overall significance.

Furthermore, two studies analysed pain interference as an outcome measure. Of these studies, one concluded that high levels of pain interference are observed in patients who display heightened perceived injustice. However, one study identified no trends between perceived injustice and pain interference. The studies used the Brief Pain Inventory (BPI), Numeric Rating Scale for Pain (NRS 0 - 10) and the Pain Catastrophizing Scale (PCS) to determine pain-related outcomes.

3.3.2. Perceived Injustice and Psychological Outcomes

Perceived injustice was significantly associated with adverse mental health outcomes in three studies using both univariate and multivariate analysis. Three studies described positive associations between perceived injustice and depression, while one study reported that high levels of perceived injustice are associated with anxiety symptoms. The aforementioned studies implemented the eight-

item Patient Health Questionnaire Depression Scale (PHQ-8) and the Hospital Anxiety and Depression Scale (HADS) to determine the patient's psychological health following a trauma.

Moreover, Post-traumatic Stress Disorder (PTSD) was found to be significantly associated with perceived injustice in three studies using both univariate and multivariate analyses. The studies quantified the PTSD symptoms using the Primary Care Post-traumatic Stress Disorder Screen and checklist for the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).

3.3.3. Perceived Injustice and Disability

The results of the present study suggest that there is a significant association between perceived injustice and disability outcomes using univariate analysis. One study included in the review determined that trauma patients with higher IEQ levels also displayed greater levels of disability when the level of impairment was analysed using the Roland Morris Disability Questionnaire (RMDQ).

3.3.4. Perceived Injustice and Quality of Life

There is mixed evidence to suggest an association between perceived injustice and quality of life in those who suffer a traumatic injury. One study found lower quality of life during univariate analysis but no association during multivariate analysis when using the Veterans RAND 12-item health survey (VR-12) to determine health-related quality of life. However, in a separate study, a significant affiliation was found using univariate analysis. The abovementioned study used the Short Form Health Survey (SF-12) to determine functional health and well-being.

Furthermore, two studies concluded that patients with high IEQ levels were less likely to return to work twelve months post-trauma. The studies found a significant association between perceived injustice and return to work using both univariate and multivariate statistical analysis.

4. Discussion

The association between perceived injustice following traumatic injury and its impact on pain-related, mental health and functional health outcomes was assessed in a systematic review. Perceived injustice was strongly associated with higher levels of pain interference, pain intensity, depression, anxiety, disability, PTSD symptoms and decreased return to work status following traumatic injury resulting in admission to a trauma service. While this is the first study to pertain specifically to a trauma sample, the results of the current study are in keeping with previous literature that examined the relationship between perceived injustice, musculoskeletal pain and depression [12] [17].

Perceptions of injustice may occur following a traumatic injury, leading to feelings of irreparability, unfairness, and blame [10]. The quantification of perceived injustice was facilitated by the development and subsequent validation of the IEQ across multiple groups, including trauma patients [9] [10] [14]. The IEQ

is comprised of 12 questions that represent the subject's cognitive appraisal of injustice as it pertains to their illness or injury. This tool allows for a homogeneous way of quantifying perceived injustice and has been implemented across a myriad of subjects and conditions to date. All but one of the studies included in this review assessed perceived injustice using the IEQ. Zelle and colleagues [18], 2017, instead used the QPI to measure perceived injustice. As previously mentioned, this is a wording modification of IEQ.

In line with existing literature, this review highlights that perceptions of injustice have a meaningful impact on recovery outcomes, stressing that disability following traumatic injury is associated with factors beyond the restrictions inflicted by the injury. That is, when variables such as injury severity are accounted for in the trauma population, perceived injustice maintains a significant relationship with disability levels and therefore hinders the functional outcomes achieved by such patients [14]. The results of the current review are further strengthened by existing literature which concluded that trauma patients with higher levels of perceived injustice also had greater levels of disability levels when analysed using the Glasgow Outcome Scale (GOS-E) [14]. Moreover, the association between appraisals of injustice and disability are likely bidirectional [10]. Interventions targeting either an individual's injustice appraisal or their level of disability can have a reciprocal improvement on the other [11]. With this in mind, interventions aimed at perceived injustice may be beneficial in improving functional outcomes in trauma patients that suffer persistent disability as a result of their injury.

Further, the damaging effects of perceived injustice occur relatively early in the disability course, impacting the therapeutic alliance between patient and practitioner, and influencing behaviours that impede recovery [14] [19] [20] [21]. Boals and colleagues [22], 2020, screened for perceived injustice at baseline that is within 24 hours of admission and 24 hours of discharge to a trauma centre. IEQ was raised at baseline (IEQ = 17.04; SD = 12.93) in a trauma group encompassing interpersonal (gunshot wounds, assault) and non-interpersonal (car collision, fall, etc.) trauma patients. Given the associations between perceived injustice and disability outcomes, screening trauma patients presenting in the aftermath of injury provides an opportunity for clinicians to recognise and ameliorate the early impact that perceived injustice has on functional outcomes. Future literature may expand on the paucity of research regarding acute IEQ screening following admission for a traumatic injury as the majority of the studies included in the current review initially measured IEQ 12 months following injury. Additionally, this would also allow for the identification of any confounding variables related to the injury or the patient demographic.

Following a traumatic event, anger is a common reaction [23]. A previous review paper concluded that sufferers of trauma display high levels of anger both peri- and post-trauma [24]. Furthermore, anger has been theorised to occur as a result of the deliberate actions of a discernible agent [25]. Thus, it is possible that

when an individual suffers a trauma that they perceive as unjust and assign blame to others, they display increased anger. Moreover, this appraisal of injustice negatively impacts the therapeutic alliance between patient and clinician [19].

Therapeutic alliance can be defined as the relationship between the client and the clinician and is centred around feelings of trust, collaboration, and a shared understanding of the treatment purpose and goal [26] [27]. There is strong evidence available that identifies therapeutic alliance as a robust indicator of recovery outcomes in individuals with persistent physical and mental health problems [28] [29] [30]. Furthermore, previous literature examining the relationship between perceived injustice and therapeutic alliance has revealed anger as a mediating factor in those with chronic musculoskeletal pain [12] [19] [31]. Prospective research examining the sources of injustice have yet to be fully elucidated and is likely multifactorial. However, potential sources of injustice include; the magnitude of loss [32], others' contribution to the injury, and interestingly, inadequate assessment and treatment of pain in the healthcare setting [12]. Therefore, when trauma patients receive what they determine as inadequate treatment, they develop high levels of perceived injustice that they externalise as anger to many sources, including family members and healthcare professionals [33]. This expression of anger prevents collaborative engagement with treating clinicians and impedes recovery. Clinicians should be cognisant of the relationship between perceived injustice and therapeutic alliance when interacting with trauma patients and the potential implications this can have on recovery.

Consistent with the above evidence from the studies that investigated the association between perceived injustice and pain-related outcomes, indicates that those with heightened IEQ levels have greater pain intensity and pain interference across a wide range of trauma pathology that requires hospitalisation. Moreover, these associations were observed when other variables associated with poor outcomes such as injury severity and demographic factors were accounted for during statistical analysis [14]. These results are with the exception of one study which found no trend between perceived injustice and pain related-variables [18]. However, this study excluded patients who suffered non-orthopaedic trauma with an abbreviated injury scale of less than two. This resulted in omitting major trauma survivors. Such patients commonly display persistent moderate to severe pain and this exclusion may explain the discrepancy in the results obtained [34].

Similar to therapeutic alliance, anger has proven to also mediate the association between perceived injustice and pain severity in patients with musculoskeletal pain [35]. As stated above, anger is a common emotional response to trauma and it can have a detrimental impact on the client-clinician relationship and impede recovery outcomes. In addition, it can cause the formation of psychological and physiological responses that result in undesirable pain outcomes [12] [35]. Despite indirect evidence, future research should explore the mediating factors between perceived injustice and physical, psychological and functional outcomes in trauma survivors. Understanding the determinants and

processes by which perceived injustice hinders recovery will allow for the development of targeted interventions in this demographic.

The persistence of pain-related variables and the relationship with perceived injustice can be used to explain the reported lower quality of life in trauma patients [14] [36]. The strong association between perceived injustice and pain intensity accounted for the marginal lower physical quality of life reported by Trost and colleagues [36] as the VR-12 used to determine health status specifically asks about the pain experience. Conversely, the presence of persistent pain also influenced engagement in activities of daily living in trauma patients [14]. The conflicting results may be due to the lack of consistency between papers regarding measures used to determine the quality of life.

The findings of the current study suggest that perceived injustice not only influences physical recovery but is a salient contributor to detrimental mental health outcomes in those who suffer traumatic injuries. While not all traumas result in mental health disturbance, this review provides strong evidence to suggest an association between depression, anxiety and PTSD symptoms when trauma patients who are hospitalised as a result of their injury display high levels of perceived injustice.

Following physical trauma, early symptoms of psychological distress are common [37] [38] [39]. When not recognised and dealt with effectively anxiety, depression and PTSD can develop. In turn, this can negatively impact patients' functional and pain related-outcomes, as well as decrease their likelihood of returning to work [34] [40] [41]. A proposed mediator between trauma and both depressive and PTSD symptoms is perceived injustice [22]. Future research should continue to explore perceived injustice as a proposed mediating factor and explore the pathways through which it may impact functional and mental health outcomes. However, in light of the association between perceived injustice and psychological outcomes, interventions designed to negate psychological symptomology may be important in reducing perceived injustice. Moreover, integrating a valid measure of injustice (IEQ) into the trauma population may not only allow for the identification of those who are at risk of mental-health sequelae, but allow the clinician to gain an understanding of the patient's trauma experience and suffering.

5. Limitations

Trauma patients included in the study encompassed a wide range of aetiology. Given this variation and complexity, there is the potential for confounding within this sample. While the studies included in the review used modalities such as the Abbreviated Injury Score (AIS) and the Injury Severity Score (ISS), as well as strict inclusion criteria to contain only major trauma that required in-patient admission, the possibility of confounding variables should be considered when applying the results to such a diverse population.

A large proportion of the research included in the review was cross-sectional,

making strong statements regarding the causality of the relationships difficult. While prospective studies revealed promising results that suggested perceived injustice is associated with a poor recovery in trauma patients, future research should continue to implement prospective study designs to solidify these findings. Only one study included in this review used baseline measures of IEQ following trauma. The other variables were self-reported between a period of six weeks to one-year post-trauma. Self-reported measures in such instances may incur several limitations such as memory bias [12]. Future research should explore the role of measuring perceived injustice in the acute setting following trauma.

6. Conclusion

This systematic review illustrates that based on the current literature available, perceived injustice is associated with poor pain-related, mental health, and functional outcomes in trauma patients who require inpatient admission as a result of their injury. Although the current review highlights the implications that perceived injustice can have on those recovering from traumatic injury, it is imperative now to design and test interventions during the acute phase following trauma. Further investigation will allow for a greater understanding as to whether these appraisals of injustice can be modified when specifically targeted and the impact this can have on recovery following traumatic injury. Moreover, future research must continue to investigate a predictive model for the emergence of perceived injustice to further strengthen our understanding.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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