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The effect of anger expression and perceived injustice on the formation of a beneficial therapeutic alliance in chronic pain management: A systematic review

Phelim Ryan, Dominic Harmon

ABSTRACT

Aims: The negative role of anger expression in chronic pain has been described. However, there is a poor understanding of the impact of anger and perceived injustice in the therapeutic alliance in this setting. The aim was to review the current literature examining anger and perceived injustice and its impact on the therapeutic alliance in the context of chronic pain.

Methods: In July 2020 a search was carried out of electronic databases [Academic Search Complete, Allied and Complementary Medicine Database (AMED), Biomedical Reference Collection, General Science, Medline, PsycArticles, PsycInfo, Social Sciences Full Text and SPORTDiscus]. Further results were obtained from reference lists. Inclusion and exclusion criteria were applied using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for systematic reviews.

Results: The initial search yielded 255 results, and after duplicates were removed and inclusion and exclusion criteria applied, the final result was three papers to be reviewed. In total 225 patients were analyzed. Of the papers reviewed, all showed a negative correlation between perceived injustice and patient rating of the therapeutic alliance. Anger expression is the mediator of the proposed perceived injustice and therapeutic alliance relationship.

Conclusion: The review addresses the potential role of anger expression in the modulation of the therapeutic alliance. The assessment of anger expression in chronic pain patients may be beneficial. Clinicians should be aware of its implications on the therapeutic alliance. The review highlights the need for further research which could lead to potential therapeutic interventions for such patient groups.

Keywords: Anger, Chronic pain, Perceived injustice, Therapeutic alliance

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INTRODUCTION

Chronic pain affects 20% of the population [1]. It has a significant impact for patients, their families and society [1]. There are biological, psychological, and social components that are interrelated [2]. These components are important in the source of pain, the suffering, and in its outcome. The greatest predictor of persistent pain is perceived injustice [3]. This injustice is often real but patient perception of injustice is the greatest predictor of pain persistence [3]. Perceived injustice in chronic pain patients also predicts psychological distress and rehabilitation success [4].

Perceived injustice can be defined as an appraisal of the severity and irreparability of injury-related losses, unfairness and external attribution of blame [3]. Such perceptions can manifest when patients believe they have experienced underserved hardship [5–10]. Perceived injustice equates with anger and distorted attention. Distorted attention leads to catastrophizing and poor self-management [11]. The most recent systematic review by Carriera 2020 regarding perceived injustice and chronic pain, further illustrates adverse chronic pain outcomes, including psychological distress and poor rehabilitation outcomes [12]. Despite such evidence there is little understanding of the reasons behind the association.

Therapeutic alliance between patient and clinician is instrumental in therapeutic outcomes [13]. Therapeutic alliance may be affected by perceived injustice and patient anger in chronic pain patients. Patients with severe perceived injustice may pose a challenge for the clinician owing to increased patient hostility and therapeutic disengagement [14]. Furthermore, challenging patient behavior may provoke ineffective responses from clinicians [15]. Anecdotally building good rapport in such circumstances is difficult. We hope to better understand the potential impact of perceived injustice and anger on the therapeutic alliance and whether this may partly account for the poor outcomes aforementioned. In addition, we discuss the development of potential therapeutic interventions.

This systematic review intends to add to the literature by focusing specifically on the relationship between perceived injustice and therapeutic alliance in chronic pain patients. No such systematic review exists.

MATERIALS AND METHODS

The aim of this review is to interrogate the literature currently in existence regarding the proposed relationship between perceived injustice, anger, and the therapeutic alliance among patients experiencing chronic pain. In June 2020 a search was carried out using several electronic databases (Academic Search Complete, AMED, Biomedical Reference Collection, General Science, Medline, PsycArticles, PsycInfo, Social Sciences Full Text, and SPORTDiscus). Non-database resources reviewed included relevant article reference list screening and author searches using ResearchGate. Searches were limited to studies involving English language only publications including adults aged over 18. Searches were filtered for relevant publications meeting pre-defined inclusion criteria. The process of the search build-up for this review is outlined in Table 1. The database search was carried out using the key words “perceived injustice,” “anger,” “chronic pain,” and “therapeutic alliance.” The search yielded 255 results. Exact duplicates were removed at this point from the search, reducing the number of studies to 179. The abstracts of all yielded results were then analyzed by two parties. Excluded at this point were studies which focused only on psychological outcomes including depressive symptom scales without focusing on pain related outcome measurements including the McGill Pain questionnaire and the Pain Disability Index. The number of studies remaining thereafter was 16. At this point inclusion criteria were applied. The studies included were studies which employed a measurement of the therapeutic alliance such as a survey. A further inclusion criterion was that the study should look at pain in its health-related outcomes. This resulted in three studies to be reviewed. Sources of funding and grants for the final three included studies are as follows:

Table 1: Process of search build-up for the review

Formulation of research question
Construction of key search concepts
Construction of key search terms
Vocabulary terms used
Construction of search fields
Construction of advanced searches
Use of Boolean operator terminology
Use of search limits
Initial search run
Redefining and reconstruction of search terms

- Scott et al: Supported by funds from the Canadian Institutes for Health Research, Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST) [16].
- Burns et al: None declared [17].
- Gerhart et al: None declared [18].

Prisma methodology is outlined in Figure 1.

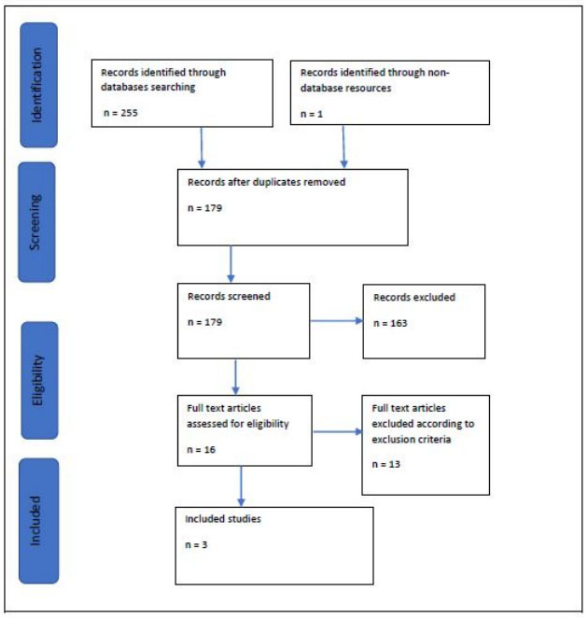

Figure 1: Prisma methodology flow chart.

RESULTS

Two of the studies reviewed included patients with musculoskeletal (MSK) pain [16, 17]. The study by Burn included 71 patients diagnosed with chronic MSK pain following work related injury [17]. Patients were partaking in a work hardening program to facilitate recovery. Occupational therapists recruited and consented participants on intake. Patient hostility was measured using the Ho scale which attempted to identify tendencies for mistrust resentment and antagonism [19]. Anger-Out subscale (AOS) scores were employed as predictors of anger expression with Faber and Burn demonstrating good predictability for anger expression following provocation [17, 20]. Pain severity scores (PSS) were also recorded. The therapeutic alliance between patient and care provider was measured using the working alliance inventory (WAI; Table 2). The WAI was completed by both patient and therapist without disclosure to each other.

There was a weak correlation between therapist and patient WAI scores suggesting that each party had different expectations and interpretations of the therapeutic alliance. Therapist WAI scores were not related to AOS scores or Ho scale. Burn demonstrated that Ho scale and AOS scores correlated with patient WAI scores with hierarchical regressions determining a possible interrelationship between hostility and anger expression on the patient's perception of the TA ($p = 0.13$; $p < 0.09$) [17].

A cross-sectional study by Scott recruited patients attending a rehabilitation program who had chronic MSK pain [16]. Similarly, as per the study of Burn, the patients had a history of work-related injury [17]. Scott's study included 66 patients of equal gender distribution, unlike Burn's study which analyzed a male only cohort [16, 17]. As with Burn, Scott used the WAI to assess both patient and care providers perception of the therapeutic alliance [16, 17]. The WAI assessed 12 elements relating to the therapeutic alliance by exploring feelings relating to trust, agreement, and shared goals. Patients described their current pain intensity using the McGill Pain Questionnaire (MPQ). The Pain Disability Index (PDI) was used to determine what level of disability secondary to pain the patients perceived to experience. The PDI assessed categories including home, social, recreational, occupational, sexual, self-care, and life support [21, 22]. The Injustice Experiences Questionnaire (IEQ) was used to measure perceived injustice among patients. Patients rated the frequency of thoughts including "most people don't understand how severe my condition is," and "it all seems so unfair." The IEQ has demonstrable internal reliability and has been validated for use in such groups. The State-Trait Anger Expression Inventory–II (STAXI–II) [23] was used to assess anger intensity and regulation [24, 25].

Scott reported a significant negative association between perceived injustice and the client rating of the therapeutic alliance Table 3 [16]. Contrary to Burn, Scott demonstrated a significant correlation between patient and clinician therapeutic alliance ratings [16, 17]. Like Burn, Scott reported a negative association with anger expression and the client's perception of the therapeutic alliance [16, 17]. Similar to findings by Burn, Scott reports anger expression as a potential mediator within the perceived injustice and therapeutic alliance relationship. This was due to the demonstrated correlation between anger expression and both patient rated therapeutic alliance and perceived injustice [16, 17]. Using regression analysis, anger expression was found to contribute significant variance (19%) to predict client therapeutic alliance rating. Through Sobel's test, Scott indicates that anger expression is the mediator of the proposed perceived injustice and therapeutic alliance relationship [16].

The final paper analyzed was a prospective study by Gerhart that attempted to describe the relationship between patient anger expression and the therapeutic alliance as well as markers of physical distress including pain [18]. The study involved 88 patients receiving stem cell transplants (SCT) for the treatment of hematological malignancy. Patients completed questionnaires at time points before, 30, 60, and 90 days after the SCT. The cancer treatment and distress scale (CTXD) was employed to evaluate the level of physical discomfort experienced and included a question relating to cancer associated pain. The study did not include a specific pain questionnaire such as the PSS and MPQ or PDI used by Burn and Scott [16, 17]. The study included the Derogatis Affect Balance Scale (DABS) which invited patients to record recently experienced feelings. Feelings recorded were both positive and negative and included "anger," "worthlessness," and "hopelessness." The therapeutic alliance was assessed using the Sources of Social Support Scale (SSSS) which rated the patient's perception of the clinical team as a source of positive support. Unlike Burn and Scott who used the WAI, Gerhart did not account for the care providers perception of the therapeutic alliance [16–18].

Gerhart analyzed the SSSS negative interactions data using generalized linear mixed models [18]. The modeling demonstrated a significant association between anger and negative interactions. Gerhart states that "greater anger was associated with greater perceptions of negative interactions with providers at each time point" [18]. Gerhart's findings are in agreement with both Burn and Scott who also demonstrated anger as a predictor of poor patient perceptions of the therapeutic alliance (Table 3) [16–18]. As described in previous literature Gerhart also demonstrates the relationship between anger and increased physical distress including pain [18]. However, Gerhart found that neither perceptions of negative interactions nor anger could predict changes in physical distress [18].

Table 2: Methodology of measurement of reviewed variables

Study	Anger and hostility	Pain and disability	Perceived injustice	Therapeutic alliance
Burn	Ho scale AOS	PSS	–	WAI
Sullivan	STAXI-II	MPQ PDI	IEQ	WAI
Gerhart	DABS	CTXD	–	SSSS

STAXI-II. State-Trait Anger Expression Inventory–II, AOS, Anger-Out Subscale, Ho, CookMedley Hostility Scale, CTXD, Cancer Treatment and Distress Scale, IEQ, Injustice Experiences Questionnaire, SSSS, Sources of Social Support Scale, MPQ, McGill Pain Questionnaire, PDI, Pain Disability Index, PSS, Pain Severity Score, WAI, Working Alliance Inventory.

Table 3: Zero order correlations between patient rated therapeutic alliance and defined variables $p \leq 0.05$

Study	Anger expression	Pain/ disability	Perceived injustice
Burn	$p < 0.01$	$p < 0.01$	–
Sullivan	$p < 0.01$	$p < 0.01$	$p < 0.01$
Gerhart	$p < 0.01$	$p < 0.05$	–

DISCUSSION

The aim of this systematic review was to assess the current literature relating to anger and the therapeutic alliance among chronic pain patients. Initial interrogation of the databases revealed several studies analyzing the role of perceived injustice and anger in chronic pain, but few studies focused specifically on the therapeutic alliance in such groups. The studies included in this review support the concept that perceived injustice negatively impacts the therapeutic alliance and consequently patient outcomes.

Musculoskeletal pain following work-related injury was the most frequently reviewed source of chronic pain [16, 17]. Perceived injustice in the context of pain can be defined as an appraisal of the severity and irreparability of injury-related losses, unfairness, and external attribution of blame [3]. Consequentially such perceptions can manifest when patients conclude they have experienced disproportionate and underserved hardship [5–7, 9, 10]. Perceptions of injustice provoke feelings of unfairness with the terms often used interchangeably. It is likely such groups experience greater anger and perceived injustice as their cause of pain may challenge ingrained just world beliefs. The review also suggests that patient anger and poor perceptions of the therapeutic alliance are not limited to MSK pain as demonstrated by Gerhart [18].

Each of the studies reviewed employed measurement tools for the therapeutic alliance. The WAI was used by Burn and Scott and demonstrated a negative relationship between patient anger expression and perceptions of the therapeutic alliance [16, 17]. Interestingly, Burn noted poor correlation between patient and therapist rating of the alliance which was in contrast to Scott [16, 17]. This suggests that patient and therapist views on the same alliance are complex with the patient and therapist likely focused on different aspects of the alliance. The disparity between the patient's and therapist's perceptions of the therapeutic alliance requires more investigation in order to develop potential interventions. Anger expression and hostility data measured using the Ho and AOS scales by Burn demonstrated a possible interrelationship between hostility and anger expression on the patient's perception of the alliance [17]. Using regression analysis, Scott went further by suggesting that the relationship between perceived injustice and the therapeutic alliance is modulated by anger [16].

The association between poor pain outcomes and patients experiencing perceived injustice and anger has been well documented by Margiotta and Sullivan [4, 26]. A recent review by Carriera et al. summarizes that perceived injustice is associated with increased pain intensity, disability, and poor mental health [12]. Despite such evidence there is little understanding of the reasons behind the association. This review contributes to the understanding of this potential relationship by addressing the clear interrelationship of anger and perceived injustice in poor therapeutic alliances.

It's becoming increasingly accepted that dehumanizing interactions may facilitate poor social relationships and thus patient outcomes [27]. A study by Zautra and Castro argued that active humanization was essential for well-being and resilience during hardship [27]. Dehumanization refers to the failure to consider and individual preferences, feelings, and ideas, thus dehumanization facilitates inhumane treatment. We should consider that dehumanization of chronic pain patients may occur during the course of treatment. Harris and Fiske 2011 maintain that it is possible to reverse dehumanization via interventions that focus on understanding of an individual's perspective [28]. According to Zautra and Castro humanization facilitates regular positive moments that promote resilient and sustainable relationships, thus humanization as an intervention could potentially improve the therapeutic alliance [27].

Limitations of the review included having a relatively small cohort of 225 patients. The measurement tools used for perceived injustice and therapeutic alliance perceptions varied between studies, thus affecting potential comparison of findings. Scott was the only author to use a recognized measurement of perceived injustice. The studies included the explored therapeutic alliance between various healthcare workers, this may limit the extrapolation of findings to pain specialists.

CONCLUSION

The review achieved its aim of adding to the understanding of the complex relationship between anger and the therapeutic alliance. In particular, the review highlights the potential role of perceived injustice in the modulation of the therapeutic alliance. Anger expression could be assessed in chronic pain patients as standard. Clinicians should be aware of its implications on the therapeutic alliance. The review provokes the need for further research on the topic with the potential for future interventions focusing on improving the therapeutic alliance.

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Author Contributions

Phelim Ryan – Conception of the work, Design of the work, Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Dominic Harmon – Conception of the work, Design of the work, Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.