



## Perceived injustice in fibromyalgia: Psychometric characteristics of the Injustice Experience Questionnaire and relationship with pain catastrophising and pain acceptance

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### ABSTRACT

**Objective:** To validate a Spanish version of the Injustice Experience Questionnaire (IEQ), a measure of perceived injustice, in a fibromyalgia sample and to examine its relationship with pain catastrophising and pain acceptance. **Methods:** The IEQ was administered along with the Pain Visual Analogue Scale, the Fibromyalgia Impact Questionnaire, the Hospital Anxiety and Depression Scale, the Pain Catastrophizing Scale (PCS) and the Chronic Pain Acceptance Questionnaire (CPAQ) to 250 primary care patients with fibromyalgia.

**Results:** The IEQ had good test–retest reliability (intraclass correlation coefficient = 0.98) and internal consistency (Cronbach's  $\alpha = 0.92$ ). The factor structure obtained was similar to the original validation study. The multiple regression analyses showed that perceived injustice (PI) accounted for significant pain-related outcomes after controlling pain intensity, PCS and CPAQ. Principal component analysis of both the IEQ and the CPAQ taken together showed that the two constructs do not represent opposite extremes of the same dimension.

**Conclusion:** The IEQ is a reliable assessment tool for measuring PI among patients with fibromyalgia. PI seems to be distinct from catastrophising, although the two constructs are very similar. The factor analysis showed that PI and acceptance represent related constructs, and this entails relevant implications for therapy, as acceptance-based interventions would be appropriate.

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### Introduction

Fibromyalgia syndrome is a prevalent musculoskeletal pain disorder affecting 3–5% of the population in Spain [1] characterised by widespread pain and hyperalgesia [2]. The etiology of fibromyalgia is not known, and to date, no treatment has been shown to be completely effective in the long term. In terms of psychological treatments, one of the significant aims consists in identifying specific psychological constructs that mediate the effects of treatment in patient outcomes. There is established literature describing the way that several psychological constructs, such as copying, catastrophising, acceptance and mental

defeat, impact fibromyalgia outcomes [3–10]. However, psychological constructs not directly related to pain may also affect prognosis. Specifically, cognitions about the justness of the patient's situation could be expected to influence and be influenced by chronic pain because pain is not experienced in a vacuum. Instead, pain is experienced in a social context where others can influence pain behaviours [11] and pain experience [12,13], and thus, where justice issues are potentially salient [14].

Recently, in the context of pain and in line with concerns about social context, another psychological construct called perceived injustice (PI) has been proposed [15]. PI, a construct which has been long considered by academics of various backgrounds, is operationally defined as a multidimensional construct comprised of elements that assess the severity of loss, irreparability of loss, blame and sense of unfairness [15]. Little is known about how this construct operates in conjunction with chronic pain. This is a critical gap in knowledge because increased PI is associated with poorer physical recovery [16–19]

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and poorer physical health [20], which may serve to compound an already insufferable condition for those with chronic pain.

The Injustice Experience Questionnaire (IEQ) was developed to measure PI. Although the principal components analysis yielded a two-component solution (blame/unfairness and severity/irreparability), separate subscales were not derived because of the overlap in items comprising the two factors. To our knowledge, there have been only three studies carried out using this questionnaire, and all used patients who had been injured in automobile accidents [15,21,22]. The results showed that high scores on a measure of PI were associated with higher pain severity, depression, catastrophising, fear of movement, self-reported disability, protective pain behaviours, less progress in rehabilitation and lower probability of return to work.

According to everyday clinical experience with these patients, we hypothesise that PI could be a relevant construct in fibromyalgia, as it is in other chronic pain disorders. Mainly, the lack of objective diagnostic criteria provokes situations that patients frequently report as unfair; for instance, they are accused of malingering or sometimes they are attended “inaccurately” by a sceptical physician [23]. In addition, pain catastrophising and pain acceptance have been considered key variables in the outcome and psychological treatment of fibromyalgia [6,7]. There are no studies on the possible overlapping of these psychological constructs that show some conceptual similarities.

Therefore, the aim of the present study is to validate the Injustice Experience Questionnaire and secondly, and related to the validity and reliability of the scale, to examine the relationship of PI with catastrophising and acceptance in fibromyalgia.

## Method

### Participants

The sample size was calculated according to the recommended 10:1 ratio of number of subjects to number of test items [24], so about  $N=250$  patients were necessary. The sample comprised consecutive patients with fibromyalgia recruited from primary care settings by their general practitioners at the city of Zaragoza, Spain, from January to November 2010. To be included in the study, patients had to fulfil the American College of Rheumatology criteria for primary fibromyalgia [2] according to a diagnosis made by a Spanish National Health Service rheumatologist and sign an informed consent. The exclusion criteria were medical or psychiatric disorders that would impede the patient from accurately answering the questionnaire, diagnosis of a concomitant Chronic Fatigue Syndrome, to be involved in any compensation claims, and poor knowledge of the Spanish language. The study questionnaires and protocol were approved by the Ethical Committee of the regional health authority, and the patients signed a consent form indicating their willingness to participate.

After consenting to the study, recruited patients were given a battery of questionnaires, which they completed during the visit in which they were assessed at the hospital. These included a pain form for demographic and pain-related variables, including the translated Spanish version of the IEQ to be validated, a Pain Visual Analogue Scale (PVAS) for pain intensity and the validated Spanish versions of the Fibromyalgia Impact Questionnaire (FIQ), the Hospital Anxiety and Depression Scale (HADS), the Pain Catastrophizing Score (PCS) and the Chronic Pain Acceptance Questionnaire (CPAQ).

### Measures

#### Demographic and pain-related variables

Each participant was interviewed and asked to provide information about a number of demographic and pain-related variables including circumstances of pain onset, duration of pain, medications and other medical treatments.

#### The Injustice Experiences Questionnaire (IEQ)

The IEQ was used to assess perceptions of injustice [15]. This questionnaire is a 12-item scale that asks respondents to indicate the frequency with which they have different unfairness-related thoughts about their illness. Each question was answered using a 5-point scale with the endpoints (0) *never* and (4) *all the time*. On this scale, perceived injustice is considered to be an appraisal cognition that comprises elements assessing the severity of loss consequent to injury (“Most people don’t understand how severe my condition is”), blame (“I am suffering because of someone else’s negligence”), sense of unfairness (“It all seems so unfair”), and irreparability of loss (“My life will never be the same”). Previous research has suggested that the IEQ yields two correlated factors that have been labelled severity/irreparability of loss and blame/unfairness. The IEQ has been shown to be internally reliable, and it predicts prolonged disability following musculoskeletal injury. Finally, although IEQ scores are normally distributed, it has been useful to consider a total IEQ score of 30 as a “cut-off” for clinically-relevant levels of perceived injustice.

#### Pain Visual Analogue Scale (PVAS)

The PVAS was designed to allow a subjective assessment of pain. It consists of a 10-cm-long straight line with endpoints representing the limits of pain intensity (“no pain” to “maximum pain ever experienced”). Patients estimated the pain intensity they experienced on the day they completed the questionnaire between 0 and 100. Previous studies have demonstrated that the PVAS has adequate psychometric properties [25].

#### Fibromyalgia Impact Questionnaire (FIQ)

The (FIQ) is a 10-item self-report questionnaire developed to measure the health status and global functioning in fibromyalgia patients [26]. The first item focuses on patients’ ability to perform physical activities. The next two items ask patients to circle the number of days in the past week they felt good and how often they missed work. The remaining seven items concern the ability to work, pain, fatigue, morning tiredness, stiffness, anxiety, and depression and are measured with a visual analogue scale. The translated and validated Spanish version of this instrument was used [27].

#### Hospital Anxiety and Depression Scale (HADS)

The HADS [28] is a self-report scale designed to screen for the presence of depression and anxiety disorders in medically ill patients. It comprises 14 items that are rated on a 4-point Likert-type scale, and it is appropriate for use in community and hospital settings. Two subscales assess depression and anxiety independently (HADS-Dep and HADS-Anx, respectively). This scale has been validated in a Spanish sample [29]. The HADS was selected for use in the present study because it is considered to be one of the best questionnaires for assessing depression and anxiety in patients with pain disorders.

#### Pain Catastrophizing Scale (PCS)

The PCS is a 13-item scale designed to assess the catastrophising cognitions of individuals by asking them to reflect on thoughts or feelings associated with current painful experiences [30]. The PCS can be subdivided into three subscales: rumination, magnification and helplessness. Its validity and reliability have been previously reported. Our group was responsible for validating the Spanish version of this questionnaire [4]. There is no established “cut-off” point because pain catastrophising is considered to be a personality trait that is distributed in a continuous way in the general population.

#### Chronic Pain Acceptance Questionnaire (CPAQ)

The CPAQ was originally a 34-item measure of acceptance of pain. All items of the CPAQ are rated on a 0 (never true) to 6 (always true) scale. Based on recent analyses, the CPAQ has been shortened to 20 items and now yields scores for two subscales derived from factor

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