Perceived injustice and pain intensity in patients with chronic musculoskeletal pain: cross-sectional study

Injustiça percebida e a intensidade de dor em pacientes com dor musculoesquelética crônica: estudo transversal

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ABSTRACT

BACKGROUND AND OBJECTIVES: To date, there is no information on the perception of injustice in patients with musculoskeletal pain in Brazil. The present study evaluated the perception of injustice in individuals with chronic musculoskeletal pain and its association with pain intensity.
METHODS: Information regarding the participants' identification and experience of injustice was gathered using the Injustice Experience Questionnaire. Pain intensity data was collected through the numerical pain rating scale. The descriptive data analysis was performed. Pearson's correlation test was used to verify the association between pain intensity and perceived injustice. The level of significance adopted was alpha=95%.
RESULTS: The study was composed of 110 patients with chronic musculoskeletal pain being 94 women with a mean age of 62.9±14.9 years. The mean perceived injustice was 19.45±11.68 out of a total of 48 points. The mean pain intensity was 6.39±2.48. The correlation between pain intensity and perceived injustice was r=0.23 [CI (95%) = 0.04 to 0.40; p=0.008]. The correlation between blame and unfairness and pain intensity was r=0.16 (p=0.08). For the severity and irreparability domain the correlation was r=0.28 (p=0.003).
CONCLUSION: Patients with chronic musculoskeletal pain presented low levels of perceived injustice. The total score and the severity and irreparability domain of the perceived injustice instrument showed a weak correlation with pain intensity.
Keywords: Chronic pain, Musculoskeletal pain, Pain measurement.

RESUMO

JUSTIFICATIVA E OBJETIVOS: Até o presente momento, não existem dados sobre a percepção de injustiça em pessoas com dor musculoesquelética no Brasil. O presente estudo avaliou a percepção de injustiça em pessoas com dor musculoesquelética crônica e a sua associação com a intensidade de dor.
MÉTODOS: Foram coletadas informações referentes à identificação e experiência de injustiça utilizando o Questionário de Injustiça Percebida e a intensidade da dor utilizando a escala numérica da dor. Foi realizada a análise descritiva dos dados. O teste de correlação de Pearson foi utilizado para se verificar a correlação entre a intensidade de dor e a injustiça percebida. O nível de significância adotado foi de alfa=95%.
RESULTADOS: Foram incluídos 110 pacientes com dor musculoesquelética crônica, sendo 94 mulheres com média de idade de 62,9±14,9 anos. A média da injustiça percebida foi de 19,45±11,68 de um total de 48 pontos. A intensidade média de dor foi 6,39±2,48. A correlação entre a intensidade de dor e a injustiça percebida foi de r=0,23 [IC (95%) = 0,04 a 0,40; p=0,008]. A correlação entre culpa e injustiça e a intensidade de dor foi de r=0,16 (p=0,08). Para o domínio gravidade e irreparabilidade foi de r=0,28 (p=0,003).
CONCLUSÃO: Os pacientes com dor musculoesquelética crônica apresentam baixos níveis de injustiça percebida. A pontuação total e o domínio de gravidade e irreparabilidade do instrumento de injustiça percebida apresentaram correlação fraca com a intensidade de dor.
Descritores: Dor crônica, Dor musculoesquelética, Medição da dor.

INTRODUCTION

Chronic musculoskeletal pain (CMP) is considered a public health problem responsible for high levels of disability, decreased work productivity and social activities, as well as individual and social costs[1-3]. The experience of pain comes from the combination of multiple factors including physical, cognitive, emotional, behavioral, environmental and social[4-6].

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Chronic pain can cause physical and emotional suffering often associated with perception of injustice or permanent or temporary loss, including loss of employment, financial security, independence and social activities[4,7-9]. Perceptions of injustice can arise when a person is exposed to violations of basic human rights, transgression of status or social position, or challenge to norms of equality[10,11].

Perceived injustice is the experience of suffering involving the severity of pain-related loss, irreparability of loss, sense of injustice, and external attribution of blame[4,5,12], i.e., it comprises the experience of unnecessary suffering as a result of actions of other people and individual assessments of irreparable loss[13].

Perceived injustice may be associated with greater pain severity, feelings of depression, catastrophic thoughts related to pain, fear of movement or fear of pain, disability, avoidance behavior, and greater inability to work[12]. Perceived injustice has been reported in several studies about individuals with chronic pain[14-19] associated with higher pain intensity[5,15,20-24] and being a source of stress and negative feelings[4,25]. Although some studies show that perceived injustice is correlated with intensity of pain, the systematic review[26] identified that this correlation may be very small or even nonexistent in cases of people with CMP or even in cases of traumatic injuries such as cervical whiplash. Other studies show that there may be a greater correlation between perceived injustice and disability. It's important to recognize that perceived injustice should be considered as a complex construct due to the multiplicity of factors involved[27]. Thus, people who interpret their current health situation with perceptions of injustice may experience slower recovery, poor treatment outcomes, and detriments in physical health. To date, there is no information on the perception of injustice in people with musculoskeletal pain in Brazil.

The objective of the present study was to evaluate the perceived injustice in individuals with CMP and verify its correlation with intensity of pain.

METHODS

Cross-sectional observational study, following the recommendations of Strengthening the Reporting of Observational Studies in Epidemiology[28], carried out at the physiotherapy outpatient clinics of the Federal Institute of Rio de Janeiro Education Clinic and at the Gaffrée and Guinle Hospital. Patients at least 18 years old who presented CMP, i.e., musculoskeletal pain, lasting more than three months[29] and who were under physiotherapeutic treatment were included by convenience. Patients with visceral, neuropathic or oncologic pain, acute disease and infection, metabolic or autoimmune diseases, with significant cognitive deficits, and those undergoing orthopedic surgery were excluded due to the fact that the perception of injustice could be related to the surgical procedure and not from the experience of pain itself.

Information regarding the identification of the participant was collected, followed by the application of the Injustice Experience Questionnaire (IEQ-Port/BR). To evaluate the perception of injustice, the IEQ[4] instrument was developed, translated and validated for Brazil resulting in the IEQ-Port/BR[12] version, which is composed of 12 items related to feelings and thoughts about the perception of injustice that a person may have when thinking about his/her health condition. For each of the questions, the interviewee answers on a Likert scale with five indicated options ranging from zero to 4, where zero represents never, 1 - rarely, 2 - sometimes, 3 - frequently, and 4 - all the time. The total score of the questionnaire refers to the sum of all 12 items, and the higher the score, the greater the perception of injustice by the patient. The questionnaire has an average completion time of two to five minutes. The questionnaire comprises two subscales in which feelings of blame and unfairness are composed by the sum of items 3, 7, 9, 10, 11 and 12. As for the severity and irreparability of loss, they are composed by the sum of items 1, 2, 4, 5, 6 and 8[30]. The intensity of pain was evaluated by the Numerical Pain Rating Scale (NPRS), which consists of a 10cm ruler with a score from zero to 10 in which the participants classify their pain, being zero the absence of pain and 10 the worst pain possible. This instrument presents adequate clinimetric properties for the measurement of pain intensity[31]. The location of pain was noted by a map of the body, in which the participant located the areas of pain in the anterior and posterior views.

The protocol was submitted and approved by the Research Ethics Committee of the Federal Institute of Rio de Janeiro (CAAE: 53993516.8.0000.5268), in accordance with resolution 466/12 of the National Health Council, respecting all ethical precepts. All participants were informed about the research procedures and signed the Free and Informed Consent Term (FICT).

Statistical analysis

The data obtained was tabulated in a Microsoft Office Excel spreadsheet, version 2013 for Windows and analyzed in SPSS (Statistical Package for Social Sciences, SPSS Inc, Chicago, USA), version 20 for Microsoft Windows 8. Data distribution was performed by visual inspection of histograms, Q-Q plots and the Shapiro-Wilk test. The descriptive analysis was performed presenting absolute and relative frequency data of categorical variables and analysis of central tendency (mean) and dispersion (standard deviation, minimum and maximum) of continuous variables. The correlation between pain intensity and perceived injustice was performed using Pearson's correlation test between the variables of blame and unfairness, severity and irreparability, and the visual analog scale (VAS). The significance level adopted was 95%.

RESULTS

A total of 110 patients with CMP participated in the study, 94 (85%) women and 16 (14%) men with mean age of 62.9±14.9 years; xmin=17 to xmax=92. Regarding the level of schooling, 44% (n=49) reported no formal education. The family income declared by 58% (n=64) was one to three minimum wages.

The pain location with highest incidence was the lower limbs (70%), followed by the low back (48%), upper limbs (41%), cervical region (17%), and thoracic region (12%). The evaluation of perceived injustice by the IEQ-Port/BR presented a mean score of 19.4±11.68 out of 48 points. The mean score for the

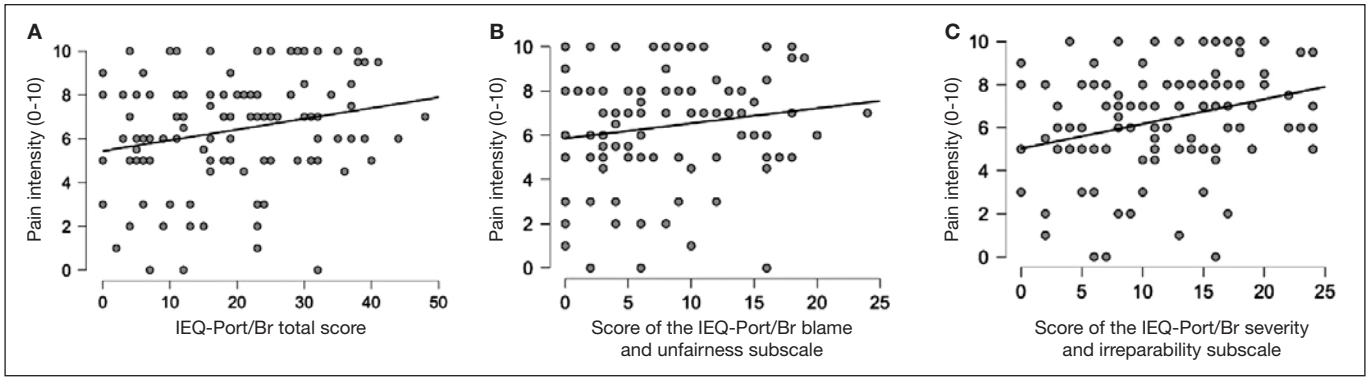

Figure 1. Correlation between pain intensity and the total score of the perceived injustice questionnaire (IEQ-Port/Br) (A), the score for the blame and unfairness subscale (B), and the severity and irreparability subscale (C).

subscales of blame and unfairness was 7.8±6.02 and for severity and irreparability was 11.9±6.15. The pain intensity reported by the participants was 6.4±2.48 (Table 1).

Table 1. Characteristics of pain and perceived injustice (n=110)

Characteristics	Total
Pain location, n (%)	
Thoracic spine	14 (13)
Cervical spine	19 (17)
Upper limbs	45 (41)
Lumbar spine	53 (48)
Lower limbs	77 (70)
Pain intensity, mean±SD (0-10)	6.4 (2.48)
Perceived injustice, SD	
Blame and unfairness (0-24)	7.8 (6.02)
Severity and irreparability (0-24)	11.9 (6.15)
Total (0-48)	19.4 (11.68)

The correlation analysis between pain intensity and total score for perceived injustice was r=0.23 [CI (95%) = 0.04 to 0.40; p=0.008]. As for the IEQ-Port/BR domains, the correlation between blame and unfairness and pain intensity was r=0.16 [CI (95%) = -0.02 to 0.34; p=0.08) and for severity and irreparability r=0.28 [CI (95%) = 0.10 to 0.44; p=0.003). Figure 1 shows the correlations between pain intensity, the IEQ-Port/Br score and the subscales.

DISCUSSION

The present study identified that patients with CMP presented an average of 19.4 points in the IEQ-Port/BR. It's interesting to point out that although this study did not include patients with musculoskeletal pain resulting from accidents, the score obtained in the total value and in the subscales of the IEQ-Port/Br was similar to that obtained in the study for the development of the scale composed of people with musculoskeletal pain resulting from work injuries or car accidents[4].

As for the subscales, the mean score for blame and unfairness was 7.8 (0/24) and for severity and irreparability was 11.9 (0/24). Thus, it's relevant to consider that the severity and irreparability perceived by patients may be related not only to physical losses, but to a more complex construct that may involve the perception of losses in several aspects of life[10,11].

The present study found a weak correlation between pain intensity and perceived injustice. This finding is in accordance with the literature that highlights the correlation between perceived injustice, pain intensity, and other variables such as disability and psychological distress in studies that included individuals with cervical whiplash injuries[32], fibromyalgia[12], rheumatoid arthritis[25], CMP[4,33], and traumatic injuries[5]. The systematic review[26], which included 31 studies with the objective of analyzing the association between perceived injustice and pain-related outcomes such as pain intensity and disability, identified that there is moderate evidence that perceived injustice is associated with increased pain intensity.

Although the present study identified scores below the cutoff point (30 points) established for perceived injustice[4], these values should be interpreted with caution when it comes to generalizations. First, the sample was composed of people with a mean age above 60 years old, with low education, and income of up to three minimum wages. Therefore, it's possible that the values of perceived injustice may be different in samples of younger individuals in a productive age group. Secondly, another point that may have an influence on the results is education. It's possible that in individuals with higher levels of education the values for perceived injustice may be different. Furthermore, the results could be different in a sample with musculoskeletal pain related to trauma or even post-surgery. This aspect has been highlighted in other studies showing significant associations between perceived injustice and injury-related variables, specifically in participants who were victims of violent crimes[34].

Moreover, a study on people undergoing total knee arthroplasty identified that high perceived injustice scores at the pre-surgical moment were able to predict persistence of pain after one year of total knee arthroplasty (beta=0.29, p<0.05)[34]. Finally, the study's sample can be considered small for the number of people with musculoskeletal pain in the country.

The validation of the IEQ into Brazilian Portuguese was carried out by the present group of authors and, until the present moment, there was no data on the perception of injustice in people with CMP in Brazil. This study stands out for having evaluated

one more variable that may have an influence on the experience of pain. Nevertheless, it's important that further studies investigate the correlation between other pain-related variables, such as disability in daily activities and work, catastrophic thoughts, pain and movement-related fear, anxiety and depression symptoms, as well as identify the predictive value of perceived injustice for disability and pain intensity at different follow-up times.

CONCLUSION

Patients with CMP have low levels of perceived injustice. The total score and the domain of loss severity and irreparability of the perceived injustice instrument did not present a strong correlation with pain intensity.

AUTHORS' CONTRIBUTIONS

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Writing - Review and Editing
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Writing - Preparation of the original, Writing - Review and Editing
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Data collection
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Statistical analysis, Supervision
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Writing - Review and Editing, Supervision
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