The Egyptian Rheumatologist (2014) **36**, 57–64

Egyptian Society for Joint Diseases and Arthritis

The Egyptian Rheumatologist

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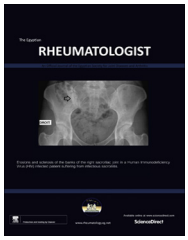

ORIGINAL ARTICLE

Depression and pain in patients with rheumatoid arthritis: Mediating role of illness perception

Fatemeh Rezaei [a,*], Hamid Taher Neshat Doost [a], Hossein Molavi [a], Mohammad Reza Abedi [b], Mansoor Karimifar [c]

[a] *Department of Psychology, Faculty of Educational Science and Psychology, University of Isfahan, Isfahan, Iran*
[b] *Department of Counseling, Faculty of Educational Science and Psychology, University of Isfahan, Isfahan, Iran*
[c] *Department of Rheumatology, Isfahan University of Medical Sciences, Isfahan, Iran*

Received 8 November 2013; accepted 31 December 2013
Available online 8 February 2014

KEYWORDS

Rheumatoid arthritis;
Depression;
Illness perception;
Chronic pain

Abstract *Aim of the work:* Illness perception is considered to be an important contributor in the relationship between physical and psychological factors in rheumatoid arthritis (RA). This study examined the mediational role of illness perceptions in the relationship between depression and pain in RA.

Patients and methods: Illness perception, depression and pain were assessed in 100 adults with RA (72 females and 28 males). Patients were asked to complete 4 questionnaires including socio-demographic data form, depression subscale of Hospital Anxiety and Depression Scale (HADS), Brief Illness Perception Questionnaire (Brief-IPQ) and Rheumatoid Arthritis Pain Scale (RAPS). Using the Baron and Kenny approach and Sobel tests, the mediation of illness perceptions in the relationship between depression and pain symptoms was examined.

Results: Sixty-six RA patients (66%) endorsed a clinically significant level of depression (HADS 12.94 ± 5.39). The mean RAPS was 41.97 ± 23.45 (range = 4–91.93). Depression symptoms were significantly associated with perceived pain ($r = -0.57$, $p < 0.001$). Three illness perceptions significantly mediated the relationship between depression and pain; consequences ($z = 1.39$, $p < 0.05$);

* Corresponding author. Address: Department of Psychology, Faculty of Educational Science and Psychology, University of Isfahan, Postal Code: 81746 Isfahan, Iran. Tel.: +98 913 366 2515.
E-mail addresses: rezaei.f@edu.ui.ac.ir, rezaeipsy@yahoo.com (F. Rezaei).

Peer review under responsibility of Egyptian Society for Joint Diseases and Arthritis.

Production and hosting by Elsevier

 http://dx.doi.org/10.1016/j.ejr.2013.12.007

personal control ($z = 1.47$, $p < 0.05$) and emotional response ($z = 1.51$, $p < 0.05$). Gender and education showed no significant effect on the presented results.

Conclusions: Greater depression symptoms were associated with perceptions that pain negatively affected one's life and emotions and was difficult to control. These negative illness perceptions were, in turn, related to greater pain symptoms. Illness perceptions helped explain the depression-pain link in RA patients. Results suggest that targeting illness perceptions in adults with RA and depression may help reduce pain symptoms.

1. Introduction

Rheumatoid arthritis (RA) is a systemic auto-immune disease that affects between 0.5% and 1% of the adult population worldwide [1]. The diagnosis of RA may cause stress and uncertainty in patients [2]. The bio-psycho-social model of illness highlights the importance of biological, psychological and environmental contributors to the etiology and treatment of all diseases [3]. Although there is a large amount of evidence pointing to the biological factors related to chronic pain such as RA, there is a growing body of evidence of psychological and social factors affecting the course and outcome of pain [4–6].

RA can affect all aspects of one's life, like social relationships, family life, and psychological well-being in addition to physical symptoms [7–9]. It has been shown that RA patients are either quit or change their jobs in a 2-year period with a rate of 33 and 16%, respectively [8]. In addition to these stressors, pain, restriction of activities and physical handicaps are associated with changes in psychological aspect. RA is related with significant psychiatric morbidity. The main psychiatric disorders reported in RA cases are anxiety, depression, or both [9–13].

While the mechanism underlying the relationship between pain and depression remains unknown, the presence of depression disorder has been repeatedly linked to poor health, increased higher levels of pain, impaired mood and functional disability in RA patients [14–16].

It is important to understand how pain and depression are related in RA patients. Understanding mediating factors of the depression-pain relationship in RA patients may help to improve pain symptoms and ultimately health related quality of life. Although examination of potential mediators is essential to fully understand this association, this study focuses on the role of cognitions.

Cognitive appraisal and illness perceptions are considered to be important contributing factors in relationship between physical and psychological factors in chronic pain. Based on the cognitive-behavioral mediation proposed by kerns and Turk [17], cognitive appraisal factors are one possible pathway through which depression symptoms may be related to pain symptoms. Lefebvre and Keefe [18] showed that catastrophic cognitions were related to the recall of both pain intensity and pain variability in RA patients.

The illness perceptions are the organized cognitive representations that patients have about their diseases and influences the way patients cope with their complaints [19,20]. The self-regulation model suggests that the cognitive and emotional aspects of illness perception guide the response to illness and determine the effectiveness of coping strategies [21]. Furthermore, components of illness perception have been recognized: the identity of the illness (i.e. the symptoms), the perceived consequences of the illness, the illness's causation; the illness's likely time line and the potential for control or cure [22]. Thus, further examination of depression, illness perception and pain symptoms could inform psychological treatment methods for depression in RA patients. Therefore, the purpose of this study was to examine the possible mediation role of illness perceptions in the depression-pain symptoms relationship in RA patients. It was hypothesized that RA patients with increased symptoms of depression would perceive their illness to be more negative, and as a result, experience greater pain symptoms.

2. Patients and methods

2.1. Patients

A cross-sectional study was used to examine the depression and determinants of illness perception (8 components) to identify predictors of pain in RA patients. This study was approved by the research ethics board of Isfahan University of Medical Sciences.

The study included 100 RA patients diagnosed according to the revised American College of Rheumatology (ACR) criteria for classification of RA [23]. These patients were recruited from an outpatient rheumatology clinic affiliated with Isfahan University of Medical Sciences during December 2011 – August 2012. Of the initial sample of 115 patients, 15 (13.04%) were excluded because of incomplete data. The final sample consisted of 100 patients, including 72 females with a mean age of 45.46 ± 12.67 years and 28 males with a mean age of 40.68 ± 13.99 years. The mean length of total education was 13.07 ± 2.72 years (range 9–18 years).

Disease duration ranged between 6 months and 26 years with a mean of 5.67 ± 5.74 years. It was computed from the disease onset to the time of the questionnaires administering. Men and women did not differ in age, duration of disease and education. Inclusion criteria were: (1) receiving the diagnosis of RA by a rheumatologist (the last author), (2) age 18–70 years old, (3) being able to write and read and (4) willingness to participate in the study. Patients were excluded if: (1) they had dementia, mental retardation and fibromyalgia syndrome, (2) inability to write or read and (3) did not agree to participate.

For those who fulfilled the inclusion criteria, the aim and the process of the study along with confidentiality of the gathered information were described. If the patient agreed to continue and was orally consent to participate in the study, then they were asked to complete 4 questionnaires including