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The Role of Sex/Gender in the Experience of Pain: Resilience, Fear, and Acceptance as Central Variables in the Adjustment of Men and Women With Chronic Pain

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Abstract: **The aim of the present study was to analyze differences between men and women in the experience of chronic pain. Resilience, fear-avoidance of pain, and pain acceptance were included in a hypothetical model as variables involved in chronic pain adjustment. A sample of 400 chronic spinal pain patients (190 men and 210 women) attending primary care units participated in the study. Student's t-test analyses showed that the women's scores were significantly higher than men's scores on pain intensity, pain anxiety, and current functioning. A LISREL multisample analysis of the theoretical model across genders was conducted. As expected, statistically significant associations were found between resilience and confrontation in both samples. Thus, resilient people will probably develop accepting behavior when faced with chronic pain. Confrontation yielded 3 statistically significant path coefficients: to pain intensity, functional status, and negative mood. Statistically significant associations were found between fear-avoidance and negative mood in both samples, but no association was found between fear-avoidance and functional status in either sample. Finally, fear-avoidance was associated with pain intensity in the sample of men alone. Despite this difference, the results suggest that the theoretical model had an adequate fit across both groups.**

Perspective: ***In the context of fear-avoidance models, this article analyzed differences between men and women with spinal pain in relation to the pain experience. The fear-avoidance model appeared to be a good theoretical reference model in both men and women.***

Key words: *Gender, sex, chronic pain, fear-avoidance, adjustment.*

The growing interest in sex, gender, and pain has been expressed in several review articles.[1,5,6,8,22,31,33,51,102] Clinical research suggests that there are important gender differences in susceptibility to pain-related diseases, analgesic effectiveness, and recovery from anesthesia.[6,14,35,67] Furthermore, experimental pain-induction studies show that women consistently exhibit lower thresholds and tolerance to a wide range of noxious stimuli than men,[1,34,47,88] whereas epidemiologic studies indicate that women report more pain experiences and more negative responses to pain than men.[7,43,56,96] Numerous explanations have been proposed to account for these differences.[31,96] Although most explanations concentrate on biological mechanisms, it is now clear that social and psychological factors are also important.[8,9,32,36,53,66,87,96] Therefore, a biopsychosocial approach may be useful when considering sex-related differences in pain.[31,52] Fear-avoidance models provide a theoretical explanation for the relationship between the variables involved in the experience of pain and chronic pain disability.[98] As Waddell et al[99] predicted, catastrophic thinking is a precursor of pain-related fear. Fear is characterized by escape and avoidance behaviors, and the avoidance of daily activities results in functional disability. In addition, avoidance also involves withdrawal from essential reinforcers, thus increasing depression. From a cognitive-behavioral perspective, fearful patients will attend more to possible signals of threat

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(hypervigilance) and will be less able to shift attention away from pain-related information. This will occur at the expense of other tasks, including actively coping with the problems of daily life.[98] This model has become increasingly popular and a large body of evidence has supported its assumptions.[39,55] However, this theoretical proposal pays little attention to the influence of psychosocial variables prior to the pain experience that could be considered as positive resources and a source of individual differences. Several empirical studies have shown that personal characteristics act as differential variables that determine how chronic pain patients experience pain and how they adjust to it.[2,26,28,77-80] Although research has traditionally focused on vulnerability factors, more recent studies have acknowledged the influence of resilience resources that may decrease sensitivity to acute pain[37,91] and increase adaptation to chronic pain.[30,38,69,103] In fact, in their theoretical review of the fear-avoidance model, Crombez et al[20] stated that what is missing in the fear-avoidance approach is how individuals try to function despite pain, or how they attempt to recover. Therefore, they proposed taking into account the positive paths in this theoretical approach. Resilience could explain individual differences in pain acceptance when conceptualized as a relatively stable personal trait characterized by the ability to adapt to adversity.[21,75,89] Thus, several studies have found that part of the effect of resilience on adjustment to chronic pain is due to the mediating role of pain acceptance.[26,79,89] Acceptance is emerging as a valuable concept in contemporary theories of how patients adapt to chronic pain.[26,58]

In summary, numerous recent review articles[8,22,31,33,51,52,56] have expressed growing interest in the differences between men and women in several pain-related variables. In general, these studies found evidence suggesting that men and women experience pain in different ways. Therefore, the aim of the present study was to analyze differences between men and women in relation to the experience of chronic pain. Resilience has been included in a hypothetical model (Fig 1) as a diathesis variable that could explain individual differences in adjustment among chronic pain patients. The role of fear-avoidance of pain and pain acceptance in predicting adjustment to chronic pain was analyzed in relation to depression, anxiety, functional status, and reported pain intensity. The suitability of the hypothetical model of men and women with chronic spinal pain was also analyzed.

Methods

Participants

The participants consisted of a consecutive sample of 415 patients with chronic spinal pain who attended 4 primary care units. All the participants were white. Table 1 shows the participants' characteristics.

Men and women were compared using a t-test for the continuous variable (age) and χ^2 analyses for categorical variables (marital status, education, work status, and the primary site of reported pain). There were no significant differences between the 2 groups in these variables.

The recruitment process was conducted from October 2008 to October 2011. Individuals were considered eligible for inclusion if they fulfilled the following criteria: they were experiencing spinal pain at the moment of their participation in the study; they had been experiencing it for at least the last 3 months; they had not been diagnosed or were not being treated for a malignancy, terminal illness, or psychiatric disorder; they had not applied for a disability allowance or pension; and they were able to understand the Spanish language. The doctors who participated in the study reviewed the patients' clinical history, and if the patients

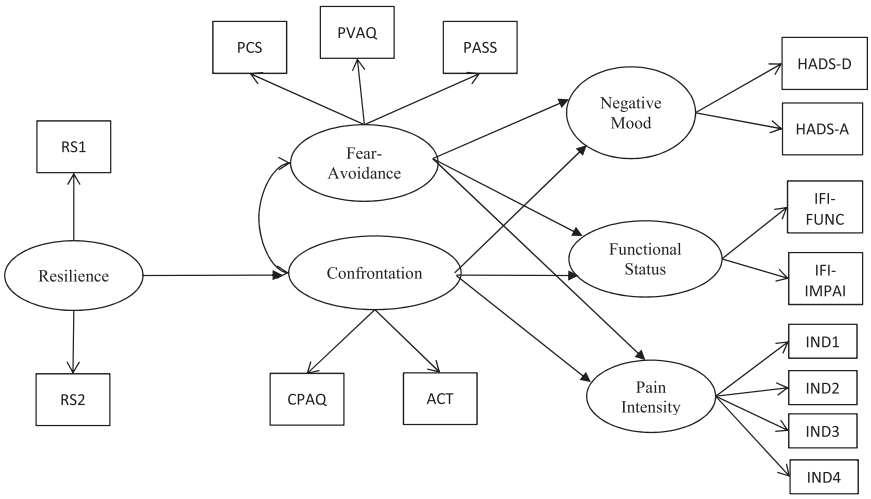

Figure 1. Hypothetical model. Latent variables are represented by circles and observed variables by squares. Covariation is presented as a curved arrow. Abbreviations: RS1, personal competence subscale, Resilience Scale; RS2, acceptance of self and life subscale, Resilience Scale; PCS, Pain Catastrophizing Scale; PVAQ, Pain Vigilance and Awareness Questionnaire; PASS, Pain Anxiety Symptoms Scale; ACT, active coping subscale, The Vanderbilt Pain Management Inventory; CPAQ, Chronic Pain Acceptance Questionnaire; IND1, IND2, IND3, IND4, the 4 questions of Composed Pain intensity index; IFI-I, impairment subscale, Impairment and Functioning Inventory; IFI-F, functioning subscale, Impairment and Functioning Inventory; HADS-A, anxiety subscale, Hospital Anxiety and Depression Scale; HADS-D, depression subscale, Hospital Anxiety and Depression Scale.