Pain 129 (2007) 185–194

PAIN

www.elsevier.com/locate/pain

Helplessness and loss as mediators between pain and depressive symptoms in fibromyalgia

Rand A. Palomino [a,*], Perry M. Nicassio [b], Melanie A. Greenberg [c], Ernesto P. Medina Jr. [d]

[a] *Helix Clinical Research, Inc., La Mesa, 9311 Mesa Vista Ave., La Mesa, CA 91941, USA*
[b] *Norman Cousins Center, 300 UCLA Medical Plaza, Rm. 3131, Los Angeles, CA 90095, USA*
[c] *California School of Professional Psychology at Alliant International University, Daley Hall, 10455 Pomerado Rd., San Diego, CA 92131, USA*
[d] *Beaver Medical Group, 2 West Fern Ave., Redlands, CA 92373, USA*

Received 8 May 2006; received in revised form 8 November 2006; accepted 27 December 2006

Abstract

This study evaluated the contribution of condition-specific helplessness and loss to depression in fibromyalgia (FM). Two models were tested. The first model examined whether loss, measured by the West Haven-Yale Multidimensional Pain Inventory (WHYMPI) Interference Scale, would mediate the relationship between disability and depression. The second model determined whether condition-specific helplessness and loss would mediate the relationship between pain and depression with disability controlled. Eighty patients with confirmed diagnoses of FM were recruited throughout Southern California from general medical clinics, newspaper advertisements, and rheumatology practices. The study design was cross-sectional, using self-report, observational, and interview measures. A composite measure of depression was adopted, consisting of the Center for Epidemiological Studies-Depression Scale and the Hamilton Rating Scale for Depression. Hierarchical multiple regression analyses were conducted using a path analytic framework to examine each model. In Model 1, loss fully mediated the relationship between disability and depression. In Model 2, condition-specific helplessness mediated the relationship between pain and depression, but the contribution of loss was not significant. The findings confirm the importance of helplessness and demonstrate that the cognitive meaning of having FM plays a more central role in predicting depressive symptomatology than illness-related stressors, such as pain or disability.

Keywords: Pain; Depression; Fibromyalgia; Helplessness; Loss; Disability

1. Introduction

Fibromyalgia syndrome (FM) is the second most common condition seen in rheumatology clinics after osteoarthritis (White et al., 1995). The diagnosis of FM is based on the existence of widespread musculoskeletal pain (upper and lower body) of at least 3 months' duration and the detection of painful tenderness in 11 of 18 points on the body along nine bilateral sites (Wolfe et al., 1990). Despite an increase in research efforts within the last few decades, the etiology of FM remains undetermined, and the treatment of this condition has been a challenging and often frustrating experience for medical practitioners and patients alike. Importantly, the national health care costs for FM in the United States have been estimated to be over $20 billion per year (Thorson, 1998).

In addition to the pain and physical impairment associated with this condition, many patients with FM have serious mood disturbance. FM patients (50–70%) report a lifetime history of depression (Triadafilopouls et al.,

* Corresponding author. Tel.: +1 619 337 3718; fax: +1 619 741 3615.
E-mail addresses: rapalomino@cox.net (R.A. Palomino), mgreenberg@alliant.edu (M.A. Greenberg).

0304-3959/$32.00
doi:10.1016/j.pain.2006.12.026

1991; Hudson et al., 1992). The rate of current major depression is also high, with estimates ranging from 14% to 36% (Hudson et al., 1985; Ahles et al., 1991; Burckhardt et al., 1994; Turk et al., 1996; Walker et al., 1997) compared to estimates of 5.2% for healthy men, and 10.2% for healthy women (Weissman et al., 1991) in community samples. Some studies indicate that FM patients report significantly more severe symptoms of depression, compared to RA patients and healthy controls (Wolfe et al., 1984; Uveges et al., 1990; Krag et al., 1994). The high prevalence of depression in FM contributes to the poor quality of life and fatigue reported by many patients (e.g., Burckhardt et al., 1993; Nicassio et al., 1999; Nicassio and Schuman, 2005) and highlights the significance of research that explores the factors associated with mood disturbance in this population.

2. Cognitions in fibromyalgia

Research on illness cognition has illustrated some important mechanisms that may explain depressive mood in FM. While pain and disability may contribute some variability to depression in FM, patients' beliefs about the controllability of FM may also play critical roles. Two aspects of illness cognition are relevant to understanding the psychological adaptation of patients with chronic pain conditions. The first concerns the cognitive processes of patients (Ingram and Kendall, 1986; Clark et al., 1999). For example, cognitive processes, such as condition-specific cognitive distortions and catastrophizing, have been shown to contribute to increased distress and to mediate the relationship between pain and depression in patients with rheumatoid arthritis (Smith et al., 1990) and low back pain (Lefebvre, 1981; Maxwell et al., 1997).

The second aspect of illness cognition refers to the subjective meanings ascribed by patients to chronic pain, including its impact on functioning and its effect on patients' self-definitions and future expectations. Theorists refer to this as schema content (Clark et al., 1999). While schema content may vary across many different dimensions, one meaning that has been shown to mediate between disease severity and depressive symptoms in chronic pain conditions, including FM, is a sense of helplessness to control the condition (Nicassio et al., 1985, 1995, 1999; Smith et al., 1990). Previous research has demonstrated the importance of the helplessness construct in FM. For example, Nicassio et al. (1995) found that helplessness partially mediated the effects of pain on passive coping and depression. In a later paper, Nicassio and colleagues (Nicassio et al., 1999) reported that condition/pain helplessness partially mediated the effects of both pain and disability on depressive symptoms. Pain and disability still contributed independent variance to depressive symptoms, however, after taking into account the effects of helplessness, suggesting that other partial mediators may exist.

Another meaning that may serve as a potential mediator between illness symptomatology and depression is loss. In studies of rheumatoid arthritis patients (Katz and Yellin, 1994, 1995, 2001), perceived impairment in the performance of life activities has been positively associated with the development of depressive symptoms, particularly when losses are reported in the area of recreational and social activities. Studies in pain conditions other than FM have examined the constructs of helplessness and loss simultaneously in mediational models (Rudy et al., 1988; Maxwell et al., 1997). The construct of loss in these investigations was assessed by examining declines in functioning in four broad areas of the patients' lives, including employment, household, social and recreational aspects. These studies demonstrated that loss, as measured by a reduction in instrumental activities, termed "interference", and helplessness, served as independent mediators between pain and depression in chronic low back pain patients (Maxwell et al., 1997), and in patients with varied chronic pain conditions, other than FM (Rudy et al., 1988). Previous research has not addressed the contribution of loss to depression in FM, although its mediating effects in other chronic pain populations suggest its potential mediational role in this syndrome.

3. Study objectives

The purpose of this study was to evaluate the constructs of loss and helplessness as mediators of the impact of FM pain and disability on depression. Two models were tested. The first model examined whether loss, operationalized as interference, mediated the relationship between disability and depression in FM. Unlike helplessness, which had previously been studied and defined as a partial mediator between both pain and disability and depressive symptoms in FM (Nicassio et al., 1999), loss had not been examined as a mediator in FM. The purpose of Model 1 was to explore the types of loss that may be most salient to the development and maintenance of depressive symptomatology in these patients. The work of Katz and Yellin (1994, 1995, 2001) has demonstrated that losses in key areas of functioning were highly impactful on depression in RA patients. Based on these results, the authors of this study predicted that perceived loss of basic physical functioning (i.e., walking, climbing stairs or bathing oneself) would contribute to depression, however, the loss of more complex role functions that help to define personal identity, meaning in life, and connections with others would be more salient and impactful. It was hypothesized that the positive relationship between disability and depression would be explained by the degree to which patients experienced interference in these more