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Do men and women differ in their response to interdisciplinary chronic pain management?

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Abstract

Women report more pain than men. It also seems that gender may moderate responses to pharmacological agents used to combat pain, suggesting that men and women differ in treatment efficacy. Recent research suggests that gender differences may also exist in response to interdisciplinary pain management interventions. We, therefore, report data from a treatment-outcome program at a UK Pain Management Unit. The sample consisted of 98 chronic pain patients (33 males; 65 females) who completed a series of measures relating to pain and distress at three different time points: immediately prior, on completion, and 3 months following an interdisciplinary pain management intervention. The pain management intervention consisted of a 3- or 4-week residential program that aimed to enhance daily functioning, and which involved physiotherapists, occupational therapists, a nurse, physicians, and clinical psychologists. Analyses revealed that the pain management intervention produced improvements in a range of domains of outcome for both men and women, and that such effects were sustained at 3 months following treatment. However, although both men and women exhibited significant post-treatment reduction in measures of current pain intensity and with one measure of pain-related distress, at 3 months following treatment men showed similar reductions as at post-treatment, whereas for women there were no significant differences from pre-treatment scores. This suggests that gender may play a role in reports of pain and distress following interdisciplinary chronic pain management. However, the current results are different from those previously reported. We discuss potential reasons for such differences.

Keywords: Pain; Gender differences; Treatment; Management

1. Introduction

Gender differences exist with respect to experience and perception of pain (Berkley and Holdcroft, 1999; Fillingim, 2000). Women report more pain, in more bodily areas, with greater frequency and for longer duration when compared to men (Unruh, 1996). Explanations for such gender differences have included differences between men and women's emotional and coping responses to pain. Women not only report greater emotional distress, but may also use more emotion-focused problem solving which may be less beneficial in the long term (Robinson et al., 2000; Tamres et al., 2002).

There are also suggestions that men and women differ in responses to pain interventions. For example, there are gender differences in the adverse effects associated with a range of drugs, including pain-modification agents (Ciccone and Holdcroft, 1999). More recently, evidence has been presented to suggest that males and females differ with respect to the analgesic efficacy of certain drugs (Fillingim, 2002; Fillingim and Gear, 2004; Miaskowski et al., 2000). This has led to the suggestion that some analgesics may need to be administered selectively to men and women.

Men and women may also differ in response to non-pharmacological approaches. Experimental pain induction studies with healthy adults demonstrate that women fail to benefit, as men seem to do, from certain pain coping

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instructions (Keogh and Herdenfeldt, 2002; Keogh et al., 2000). Of greater clinical relevance is the possibility that gender plays a role in predicting outcome following multidisciplinary pain management (Edwards et al., 2000, 2003a,b; Hansen et al., 1993; Jensen et al., 2001; Krogstad et al., 1996; McCracken and Houle, 2000). For example, Krogstad et al. (1996) examined gender responses to treatment (counselling, muscle exercises, stabilization splint) in temporomandibular joint disorder. They found that before treatment women reported greater pain intensity than males, and at 2 years following treatment, women reported less pain whereas males did not. Subsequently, Jensen et al. (2001) compared a behaviourally based rehabilitation intervention with a treatment as usual control. At 18 months follow-up, the treatment was found to have a prolonged beneficial effect on early retirement and health-related quality of life in women, but not men.

Although it is believed that gender differences may exist in responses to rehabilitation interventions, and that differences in emotional responses may underpin these, few studies have directly investigated gender in the context of determining treatment efficacy. The primary objective of this study was to investigate whether gender moderated the effects of an interdisciplinary rehabilitation intervention. We focussed on tracking changes in a range of variables (i.e. pain, distress, disability) before, after and at 3-months following the intervention in a group of chronic pain patients. Based on previous studies (Jensen et al., 2001; Krogstad et al., 1996) we predicted that:

1. women would generally report higher levels of pain and greater emotional distress when compared to men at the first time point;
2. the pain intervention would significantly improve self-reported pain and pain-related behaviours;
3. women would show greater improvements in pain, disability and distress than men.

2. Methods

2.1. Design

A repeated measures mixed-groups design was employed, with the between-groups factor being gender (male vs. female) and the within-groups factor being time of testing (pre- vs. post-intervention vs. 3-month follow-up). The dependent variables were measures of pain, distress and disability.

2.2. Sample

All participants in the current study were chronic pain patients referred to the Royal National Hospital for Rheumatic Diseases in Bath, UK. Patients reported pain for at least 6 months prior to entering the pain management program, and had no known psychiatric conditions that would interfere with the intervention. Because of the nature of referrals at the interdisciplinary pain management unit, patients are diagnostically complex, with a history of multiple diagnoses. The best consensus of medical opinion suggests the patients are most accurately classified as suffering with a 'chronic pain syndrome'.

Of the 143 patients initially recruited, 13 voluntarily discontinued or were discharged from the program early. Of the remaining, 98 participants attended a follow-up appointment at 3 months, during which final data were obtained. Analysis was conducted to examine group differences in terms of core demographics (age, years of education, time of work, pain duration, and medication use) between those who attended and those who failed to attend the follow-up session. No group differences were found. Additionally, chi square analysis failed to reveal any significant differences in frequency of males and females in those who attended follow-up and those who did not. All further analyses were conducted on those participants who attended the follow-up assessment session only.

Of the 98 patients who attended the follow-up session, there were 33 males and 65 females, aged between 20 and 71 years (mean = 44.32; SD = 11.63). The majority of patients described themselves as white (98%), and 13% reported either full- or part-time employment, with the majority (72%) not working because of their pain. Patients also reported being in pain between 16 and 685 months, with the average duration being 146.70 months (SD = 142.90 months).

2.3. Pain intervention

Patients received group-based interdisciplinary treatment in a 3-week residential program, 4-week residential program or 3-week hospital-based format. Patients are assigned to treatment groups by a clinical psychologist based on interview, observation, and psychometric assessment, of their levels of psychological distress and physical disability. Specifically, we assign patients to the hospital-based services if they are not independently self-caring, cannot ambulate 200 yards, and or cannot walk up 8 stairs—based on observation and patient report. We assign patients to 4-week treatment if they show severe physical disability but do not require hospital-based treatment and/or if they show other psychological features or complications that suggest 3 weeks of treatment may be inadequate such as symptoms of depression that are greater than the mild range requiring frequent reassessment, co-morbid psychiatric conditions that may interfere with normal therapeutic process, or interpersonal problems that make group work more challenging. The majority of patients who do not require hospital or 4-week treatment are admitted onto the 3-week course.

Although all patients did not receive exactly the same standardized intervention, as would be expected in a randomized controlled trial, our aim within this study was to examine gender-related effects in a real clinical setting, which arguably has high ecological validity. While patients get treatment of different lengths, they are getting a uniform treatment experience in that the level of treatment is matched with their level of distress and disability. Session content is the same regardless of program length. Specifically, the aim of all treatment formats was to enhance daily functioning, and was informed by acceptance and commitment therapy (ACT) developed by Hayes et al. (1999) and is described elsewhere (McCracken et al., in press). Physiotherapists, occupational therapists, a nurse, physicians, and clinical psychologists conducted the treatment. After the initial phase of