A Preliminary Study of Chiropractors' Beliefs About Biomedical and Biopsychosocial Pain: A Survey of University of Western States Alumni

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Abstract

Objective: The purpose of this preliminary study was to investigate differences between doctors of chiropractic with respect to their preference for the biomedical or biopsychosocial attitude and belief models.

Methods: Alumni of the University of Western States doctor of chiropractic program were asked to complete an online survey that included the Pain Attitudes and Beliefs Scale for Physiotherapists. This scale yields a biomedical score (10-60 scale) and a biopsychosocial score (9-54 scale). These scores are reported for 5 participant characteristics: sex, country of residence (USA vs other), chiropractic program completed (University of Western States vs other), decade of graduation, and years in practice. Secondarily, multiple linear regression was performed to evaluate the independent effects of participant characteristics on the 2 Pain Attitudes and Beliefs Scale for Physiotherapists scales.

Results: Of 3877 surveys, 233 were included in the analysis (response rate = 4.7%-7.4%). The mean biomedical scale score was 33.9 (standard deviation = 6.5), and the mean biopsychosocial scale score was 32.4 (standard deviation = 4.1). There was little variation in scores across the 5 participant characteristics ($P > .05$). Cronbach's α for the biomedical scale reached an acceptable level of internal consistency (0.74). In contrast, Cronbach's α for the biopsychosocial scale was 0.40.

Conclusion: This preliminary study found that in a sample of chiropractic program alumni of the University of Western States, there were no differences with respect to preference for the biomedical or biopsychosocial attitude and belief models. A better understanding requires a larger study comparing attitudes/beliefs with behavior in practice. (J Chiropr Med 2017;xx:1-6)

Key Indexing Terms: *Pain; Chiropractic; Attitude; Culture*

Introduction

The biopsychosocial explanation of pain suggests that the pain experience is complex and is related to many biological, psychological, and social factors. It is one of the most widely accepted models for understanding and treating chronic pain.[1] Because pain is driven by these factors, it is important to consider aspects of the doctor-patient encounter that might affect patient outcomes both positively and negatively. For example, it has been found that patient perception of the doctor-patient interaction can have positive effects comparable to those of spinal manipulation on low back pain.[2] It is also important to consider that attitudes and beliefs about pain held by the practitioner are strongly associated with the attitudes and beliefs about pain held by the patient.[3] These attitudes and beliefs can influence negative patient outcomes by helping instill detrimental pain behaviors such as pain hypervigilance, pain avoidance, activity restriction, and reliance on passive treatments for pain relief; all such behaviors may contribute to the ongoing chronic pain cycle.[4-7] There is moderate evidence that practitioners with a biomedical orientation (tissue damage causes pain) or elevated fear avoidance beliefs are more likely to advise patients to limit work and physical activities, and are less likely to adhere to treatment guidelines.[3] Simply seeking care from a physical therapist with such beliefs can contribute to prolonged sick leave and delayed return to work.[8]

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Most research on the relationship between manual therapist and psychosocial factors influencing patient outcomes has been conducted with physical therapists. Given that the professions of chiropractic and physical therapy share similar treatment approaches, it is important to conduct this research on chiropractors as well. Doctors of chiropractic (DCs) have been reported to follow biopsychosocial guidelines when managing patients in pain.[9] However, there have been no studies evaluating the association of behaviors with pain beliefs. Only 1 Australian study has evaluated pain beliefs in the chiropractic population.[10]

The purpose of this study was to collect preliminary data and inform the design of a future study on pain attitudes and beliefs of DCs in the United States. The long-term goal is to shed light on the association between beliefs and behaviors and their effects on clinical outcomes. For the current study, we also tested the hypotheses that there are independent effects of sex, country of residence, chiropractic program completed, and decade of graduation on biomedical and biopsychosocial beliefs.

Methods

University of Western States (UWS) graduates were asked to complete an online survey that included a version of the Pain Attitudes and Beliefs Scale for Physiotherapists (PABS-PT) in addition to demographic information. Data were collected over a 3-month period in the fall of 2015 and the spring of 2016. Ethical approval was obtained from the UWS institutional review board (No. 0000851). All surveys were completed anonymously, and consent was implied by completing the survey.

Pain Attitudes and Beliefs Scale for Physiotherapists

Two versions of the PABS-PT were used in this study. The long version included all original 31 items developed by Ostelo et al,[11] as well as 5 items added by Houben et al[7] and 14 demographic questions (50-question survey). After a lower than anticipated response rate, questions were removed from the survey. The new survey included the 19-item revised PABS-PT of Houben et al[7] (Fig 1) and only 6 demographic questions (25-question survey). The survey was administered through FreeOnlineSurveys.com. Only the questions from the shortened survey were included in the analysis.

The 19-item PABS-PT survey is a 2-factor survey and has been reported to have internal validity and responsiveness.[7] The Biomedical Scale contains 10 items, which are scored on a 6-point Likert scale (1 = "totally disagree" to 6 = "totally agree") and summed to produce a score between 10 and 60 points. The Biopsychosocial Scale consists of 9 items and is summed to produce a score between 9 and 54. A high score on the Biomedical Scale indicates a belief in the relationship between pain and tissue damage. A high score on the Biopsychosocial Scale indicates a belief in the influence of psychological, social, and behavioral factors.

PABS questions: biomedical and biopsychosocial scales

Biomedical	Biopsychosocial
• Pain is a nociceptive stimulus, indicating tissue damage	• Mental stress can cause back pain even in the absence of tissue damage
• Patients with back pain should preferably practice only pain free movements	• The cause of back pain in unknown
• Back pain indicates the presence of organic injury	• A patient suffering from severe back pain will benefit from physical exercise
• If back pain increases in severity, I immediately adjust the intensity of my treatment accordingly	• Functional limitations associated with back pain are the result of psychosocial factors
• Pain reduction is a precondition for the restoration of normal functioning	• Therapy may have been successful even if pain remains
• If therapy does not result in a reduction in [illegible] there is a high risk of severe restrictions in the long term	• There is no effective treatment to eliminate back pain
• Increased pain indicates new tissue damage or the spread of existing damage	• Even if the pain has worsened, the intensity of the next treatment can be increased
• If patients complain of pain during exercise, I worry that damage is being caused	• Exercises that may be back straining should not be avoided during the treatment
• The severity of tissue damage determines the level of pain	• Learning to cope with stress promotes recovery from back pain
• In the long run, patients with back pain have a higher risk of developing spinal impairments	

Fig 1. *Questions from PABS-PT: Biomedical and Biopsychosocial Scales.* PABS, *Pain Attitudes and Beliefs Scale*; PABS-PT, *Pain Attitudes and Beliefs Scale for Physiotherapists*.

Recruitment

Recruitment (Fig 2) was focused on the chiropractic alumni of 1 school, UWS, because of funding limitations and the preliminary nature of the study. Links to the surveys were published in the alumni newsletter, sent out digitally once each quarter and via print semiannually. The alumni office followed up by sending up to 2 reminder e-mails to those who had yet to open the survey link.

Survey links were also provided through a post on the Chiropractic Physicians of Oregon Listserv discussion group and from the CHP Group, a local preferred provider organization. Additionally, electronic devices were available for attendees at the UWS Homecoming Symposium.

Statistical Methods

Descriptive statistics (means and standard deviations) are reported for participant characteristics and tabulated for the