

ACCRAC AWARD WINNING PAPER

THE CHIROPRACTIC HOSPITAL-BASED INTERVENTIONS RESEARCH OUTCOMES STUDY: CONSISTENCY OF OUTCOMES BETWEEN DOCTORS OF CHIROPRACTIC TREATING PATIENTS WITH ACUTE LOWER BACK PAIN



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ABSTRACT

Objective: The aim of this study was to determine if effectiveness differs between community-based doctors of chiropractic administering standardized evidence-based care that includes high-velocity low-amplitude spinal manipulative therapy (SMT) for acute low back pain (LBP).

Methods: A secondary analysis of randomized controlled trial and observational pilot study data was performed with nonrandom allocation to 4 DCs. Patients included those with Quebec Task Force categories less than or equal to 2 and acute LBP of 2 to 4 weeks' duration. The intervention provided was clinical practice guidelines-based care including high-velocity low-amplitude SMT. Primary outcomes included changes from baseline in modified Roland Disability Questionnaire (RDQ) at 24 weeks. Comparisons of simple main effects at 24 weeks and of marginal main effects in repeated-measures analyses were performed.

Results: Between groups, adjusted point-specific differences in RDQ change were minimally clinically important but not statistically significant at 24 weeks (largest pairwise difference, -3.1 ; 95% confidence interval, -6.3 to 0.1 ; overall $P = .10$). However, in optimal analyses that considered the repeated nature of the measurements for each outcome, significant differences in marginal mean RDQ changes were found between groups (largest pairwise difference, -3.8 ; 95% confidence interval, -4.9 to 2.6 ; overall $P = .03$).

Conclusions: Overall, DCs differed modestly in their effectiveness in improving LBP-specific disability. The point estimates mirrored typically reported effect sizes from recent systematic reviews of SMT; however, confidence limits did not exclude clinically negligible effects. (*J Manipulative Physiol Ther* 2015;38:311-323)

Key Indexing Terms: *Low Back Pain; Acute Pain; Evidence-Based Practice; Chiropractic; Manipulation; Spinal*

Within mainstream health care, the customary management of low back pain (LBP) by primary care medical physicians is often not evidence based. Interestingly, clinical practice guidelines (CPG) for the

treatment of acute mechanical LBP, for example, have been developed independently by multidisciplinary expert panels in 12 countries.¹⁻¹² The recommendations from those guidelines have been further accompanied by rigorous

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systematic reviews of the evidence¹³⁻¹⁵ rather than expert consensus alone,¹ and, to date, they have generally endorsed the use of the following conservative modalities: (1) reassurance about the favorable natural history of acute LBP, (2) early activation, (3) time-limited nonsteroidal anti-inflammatory medication (barring contraindications), and (4) spinal manipulative therapy (SMT).

Despite widespread dissemination of CPG for LBP, compliance with this knowledge in general and with the SMT component in particular has been limited among mainstream health care providers. This is particularly true among family medical physicians,¹⁶⁻¹⁸ whose personal beliefs about effective LBP care are often discordant with what is known from external research evidence.^{19,20} Yet, ironically, family medical physicians account for most office visits for LBP in many North American jurisdictions.²¹

In the province of British Columbia, Canada, family medical physicians represent the most common portal of entry into the health care system for patients with LBP. In an earlier observational study of injured workers, only 6% of attending family physicians recommended guideline-concordant spinal manipulation for acute LBP, whereas 54% recommended guideline discordant passive physiotherapy even after 4 weeks postinjury.¹⁶ In a subsequent randomized controlled trial (RCT), only 17% of family physicians ended up recommending guideline concordant spinal manipulation, even after receiving a copy of CPG for the management of acute LBP as well as letters at 3 stages of the patient's clinical course, specifically urging compliance with the distributed information.¹⁷

As family medical physicians represent the initial contact point for many patients with LBP, they remain a key user group for evidence-based practice guidelines that promote the use of spinal manipulation. However, locally, referring physicians as well as staff physicians and surgeons within our own hospital-based spine clinic have routinely suggested that greater endorsement of doctors of chiropractic (DC) in general and spinal manipulation specifically is hindered by a lack of confidence in the consistency of quality and appropriateness of care between different providers in the community.

Until now, outcome inconsistency has not been regarded as a significant barrier to interdisciplinary referrals. However, guarded attitudes toward chiropractors for other reasons regarding quality of care have been confirmed in formal studies. In a survey of 487 Canadian and American orthopedic surgeons (including surgeons from our own hospital-based spine center), Busse et al²² found that approximately 71% held either a neutral (26%) or negative (45%) view of DCs. Most orthopedic surgeons felt that DCs provided unnecessary treatment (73%), were too aggressive in their marketing (63%), and made patients dependent on short-term relief (52%). In at least 1 other study, a sizeable proportion of Canadian spine surgeons said that they

were reluctant to make a formal referral to a DC for fear of incurring liability in the (albeit remote) event of an adverse outcome.²³

The Chiropractic Hospital-based Interventions Research Outcomes study is a series of research investigations carried out at our center to evaluate the feasibility and effectiveness of chiropractic patient management when integrated into a continuum of care team model involving interrelated medical and surgical disciplines, including neurosurgical and orthopedic surgical spine, medical/nonoperative spine, neurology, and anesthesiology services.²⁴ In an earlier randomized clinical trial,²⁴ we demonstrated that hospital-based guideline-concordant care that included SMT was associated with significantly better functional improvements in comparison with family medicine-directed usual care. Similarly, 1 other research group has documented the tremendous feasibility and patient satisfaction associated with using DCs in a standardized hospital-based spine care pathway.²⁵ These previous studies have highlighted the potential value of integrating evidence-based DCs into the rapidly evolving area of mainstream spine patient care.²⁶ Yet, despite showing the effectiveness of SMT-based treatment at our own center, primary care physicians within our referral network still remain reluctant to work with DCs outside our facility due to concerns about the quality and therefore consistency of outcomes between providers in the greater community.

There is a scarcity of evidence in the literature about the consistency of outcomes between different DCs specifically. However, a previous study of the effects of individual physical therapists on outcomes for neck and LBP showed that 3% to 7% of the total variance in pain-related disability scores could be attributed to differences between practitioners.²⁷ On the other hand, these practitioner effects were less (0%-3%) for patients receiving manual therapy and practically nonexistent (0.3%-0.5%) when the treatment (consisting of combined physical therapy and manual therapy) was applied in a standardized manner.

One of the broader aims of our ongoing research has been to identify and address the modifiable barriers to interdisciplinary cooperation and thereby facilitate greater utilization and integration of evidence-based chiropractic into the mainstream health care system. As one of the barriers to greater medical acceptance and utilization of DCs by partners within our own center (and referral network) is a lack of confidence in the consistency in the quality of care between different practitioners, we sought to determine whether 1 particular aspect of quality, that is, desirable clinical or patient outcomes, was consistent between different DCs who had at least administered a standardized version of SMT. To our knowledge, there are no analytic studies formally evaluating the consistency of or differences in outcomes between individual DCs complying to a standardized approach.

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