**Article Full Title**

Directed vertebral manipulation is not better than generic vertebral manipulation in patients with chronic low back pain: a randomized trial

**Author Names**

Fernando de Oliveira, Ronaldo, Pena Costa, Leonardo, Nascimento, Leonardo, Rissato, Livia

**Reviewer Name**

Erik Furseth SPT

**Reviewer Affiliations**

Duke University School of Medicine, Doctor of Physical Therapy Division

**Paper Abstract**

Question: In people with chronic low back pain, what is the average effect of directing manipulation at the most painful lumbar level compared with generic manipulation of the spine? Design: Randomised controlled trial with concealed allocation, a blinded assessor and intention-to-treat analysis. Participants: 148 people with non-specific chronic low back pain with a minimum level of pain intensity of 3 points (measured from 0 to 10 on the Pain Numerical Rating Scale). Interventions: All participants received 10 spinal manipulation sessions over a 4-week period. The experimental group received treatment to the most painful segment of the lower back. The control group received treatment to the thoracic spine. Outcome measures: The primary outcome was pain intensity, measured at the end of the intervention (Week 4). Secondary outcomes were: pain intensity at Weeks 12 and 26; pressure pain threshold at Week 4; and global perceived change since onset and disability, both measured at Weeks 4, 12 and 26. Results: Each group was randomly allocated 74 participants. Data were collected at all time points for 71 participants (96%) in the experimental group and 72 (97%) in the control group. There were no clinically important between-group differences for pain intensity, disability or global perceived effect at any time point. The estimate of the effect of directing manipulation at the most painful lumbar level, as compared with generic manipulation, on pain intensity was too small to be considered clinically important: MD 0 (95% CI 20.9 to 0.9) at Week 4 and 20.1 (95% CI 21.0 to 0.8) at Week 26. Conclusion: No clinically important differences were observed between directed manipulation and generic manipulation in people with chronic low back pain.

**NIH Risk of Bias Tool**

Quality Assessment of Controlled Intervention Studies

**Was the study described as randomized, a randomized trial, a randomized clinical trial, or an RCT**

Yes

**Was the method of randomization adequate (i.e., use of randomly generated assignment)?**

Yes

**Was the treatment allocation concealed (so that assignments could not be predicted)?**

Yes

**Were study participants and providers blinded to treatment group assignment?**

No

**Were the people assessing the outcomes blinded to the participants' group assignments?**

Yes

**Were the groups similar at baseline on important characteristics that could affect outcomes (e.g., demographics, risk factors, co-morbid conditions)?**

Yes

**Was the overall drop-out rate from the study at endpoint 20% or lower of the number allocated to treatment?**

Cannot Determine, Not Reported, or Not Applicable

**Was the differential drop-out rate (between treatment groups) at endpoint 15 percentage points or lower?**

Cannot Determine, Not Reported, or Not Applicable

**Was there high adherence to the intervention protocols for each treatment group?**

Yes

**Were other interventions avoided or similar in the groups (e.g., similar background treatments)?**

No

**Were outcomes assessed using valid and reliable measures, implemented consistently across all study participants?**

Yes

**Did the authors report that the sample size was sufficiently large to be able to detect a difference in the main outcome between groups with at least 80% power?**

Yes

**Were outcomes reported or subgroups analyzed prespecified (i.e., identified before analyses were conducted)?**

Yes

**Were all randomized participants analyzed in the group to which they were originally assigned, i.e., did they use an intention-to-treat analysis?**

Yes

**Were the included studies listed along with important characteristics and results of each study?**

Yes

**Key Finding #1**

The use of spinal manipulation is effective at reducing pain intensity in those with lumbar back pain.

**Key Finding #2**

There appears to be no difference in pain modulation difference between a patient receiving a thoracic spinal manipulation or a lumbar spinal manipulation in patients with chronic low back pain.

**Please provide your summary of the paper**

In this study, the researchers sought to determine if a general vertebral manipulation had the same effect on patient low back pain as a directed manipulation to the specific segment that is feeling pain. Using 148 participants, the researchers assigned 74 of them into 2 groups, an experimental group and a controlled group. The control group received a spinal manipulation to the thoracic spine and the experimental group received the spinal manipulation to the joint that hurt the most. Both groups experienced pain relief after 10 sessions over the course of 4 weeks.

**Please provide your clinical interpretation of this paper. Include how this study may impact clinical practice and how the results can be implemented.**

Based on these findings, it seems that it could be more of a placebo effect when getting joint manipulations. If the patient feels like they are getting something, they may feel like they are getting better. It could also be that increasing mobility at a more distal joint could aid in increasing range of motion of the spine as a whole. Since each segment has limited movement, an issue with one joint could cause limitations further up the chain. What makes this study important is it shows that there may not be a great need to learn multiple spinal manipulations for different patients. If a patient is too irritated to perform a spinal manipulation to their lumbar region, it would be just as beneficial to perform a thoracic manipulation to help relieve their pain. This would also be true for patients that may not be mobile enough to get into a certain position or have injuries/body issues that might not let them lie or twist a specific way.