**Article Full Title**

The Effectiveness and Safety of Manual Therapy on Pain and Disability in Older Persons With Chronic Low Back Pain: A Systematic Review

**Author Names**

de Luca, K., Hung Fang, S., Ong, J., Shin, K., Woods, S., Tuchin, P.

**Reviewer Name**

Alexis Woywod, SPT

**Reviewer Affiliations**

Duke University School of Medicine, Doctor of Physical Therapy Division

**Paper Abstract**

Objectives: The aim of this study was to perform a systematic review of the literature of the effectiveness and safety of manual therapy interventions on pain and disability in older persons with chronic low back pain (LBP). Methods: A literature search of 4 electronic databases was performed (PubMed, EMBASE, OVID, and CINAHL). Inclusion criteria included randomized controlled trials of manual therapy interventions on older persons who had chronic LBP. Effectiveness was determined by extracting and examining outcomes for pain and disability, with safety determined by the report of adverse events. The PEDro scale was used for quality assessment of eligible studies. Results: The search identified 405 articles, and 38 full-text articles were assessed. Four studies met the inclusion criteria. All trials were of good methodologic quality and had a low risk of bias. The included studies provided moderate evidence supporting the use of manual therapy to reduce pain levels and alleviate disability. Conclusions: A limited number of studies have investigated the effectiveness and safety of manual therapy in the management of older people with chronic LBP. The current evidence to make firm clinical recommendations is limited. Research with appropriately designed trials to investigate the effectiveness and safety of manual therapy interventions in older persons with chronic LBP is required.

**NIH Risk of Bias Tool**

Quality Assessment of Systematic Reviews and Meta-Analyses

**Is the review based on a focused question that is adequately formulated and described?**

Yes

**Were eligibility criteria for included and excluded studies predefined and specified?**

Yes

**Did the literature search strategy use a comprehensive, systematic approach?**

No

**Were titles, abstracts, and full-text articles dually and independently reviewed for inclusion and exclusion to minimize bias?**

Yes

**Was the quality of each included study rated independently by two or more reviewers using a standard method to appraise its internal validity?**

Yes

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

**Was publication bias assessed?**

Yes

**Was heterogeneity assessed? (This question applies only to meta-analyses.)**

Cannot Determine, Not Reported, Not Applicable

**Key Finding #1**

Based on the four studies included in the review, there was moderate evidence that manual therapy reduced pain and disability in older adults with LBP.

**Key Finding #2**

Three of the four studies reported no intervention-related adverse events.

**Key Finding #3**

Due to lack of adequate data, no clinical recommendations could be made based on this systematic review.

**Key Finding #4**

Lack of data regarding the effectiveness of manual therapy for older adults with chronic LBP is due to the consistent exclusion of older adults from these types of studies.

**Please provide your summary of the paper**

Due to the exclusion of older adults in trials researching manual therapy as treatment for chronic low back pain (LBP), the purpose of this systematic review was to investigate the effect and safety of manual therapy interventions on pain and disability in older adults with chronic LBP. This review screened eligible studies to compile data on self-reported outcomes for pain and disability, as well as reported adverse events. The 4 included randomized controlled trials were all considered low risk for bias and included outcome measures such as Visual Analog Scale, Numeric Pain Rating Scale, Oswestry Disability Index, Short-Form Health Survey-36, Fear-Avoidance and Belief Questionnaire, etc. The review found moderate evidence that manual therapy reduced pain, but saw no statistically significant differences between groups. Small statistical significant differences were found for disability in two of the four studies. Three of the four studies reviewed reported no adverse events and the other study had 250 adverse events, a majority being mild to moderate musculoskeletal soreness, with only 10% being definitively related to the study. Limitations of this study include using only four RCTs in the review, possible selection bias, lack of blinding in some trials, and lack of comparison between treatment interventions.

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

Definite clinical recommendations could not be made from this systematic review due to the limited number of studies and lack of current data. While there was moderate evidence for decreases in pain and disability, these differences were small or not significant. Manual therapy does appear to be safe for older adults with chronic LBP since three of the four studies reported no adverse events related to the intervention. Although, the results of this systematic review should be interpreted with caution and should not be used to guide clinical decision making. Further research about the effectiveness and safety of manual therapy treatments needs to include older adults since many older adults suffer from chronic LBP and manual therapy may be a treatment clinicians utilize.