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## ORIGINAL ARTICLE

# The effects of osteopathic manipulative treatment on pain and disability in patients with chronic neck pain: A single-blinded randomized controlled trial

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## Abstract

### Background

Neck pain (NP) affects up to 70% of individuals at some point in their lives. Systematic reviews indicate that manual treatments can be moderately effective in the management of chronic, nonspecific NP. However, there is a paucity of studies specifically evaluating the efficacy of osteopathic manipulative treatment (OMT).

### Objective

To evaluate the efficacy of OMT in reducing pain and disability in patients with chronic NP.

## Design

Single-blinded, cross-over, randomized-controlled trial.

## Setting

University-based, osteopathic manipulative medicine outpatient clinic.

## Participants

Ninety-seven participants, 21 to 65 years of age, with chronic, nonspecific NP.

## Interventions

Participants were randomized to two trial arms: immediate OMT intervention or waiting period first. The intervention consisted of three to four OMT sessions over 4 to 6 weeks, after which the participants switched groups.

## Main Outcome Measures

Primary outcome measures were pain intensity (average and current) on the numerical rating scale and Neck Disability Index. Secondary outcomes included Patient-Reported Outcomes Measurement Information System-29 (PROMIS-29) health domains and Fear Avoidance Beliefs Questionnaire. Outcomes obtained prior to the cross-over allocation were evaluated using general linear models and after adjusting for baseline values.

## Results

A total of 38 and 37 participants were available for the analysis in the OMT and waiting period groups,

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respectively. The results showed significantly better primary outcomes in the immediate OMT group for reductions in average pain ( $-1.02$ , 95% confidence interval [CI]  $-1.72$ ,  $-0.32$ ;  $p = .005$ ), current pain ( $-1.02$ , 95% CI  $-1.75$ ,  $-0.30$ ;  $p = .006$ ), disability ( $-5.30\%$ , 95% CI  $-9.2\%$ ,  $-1.3\%$ ;  $p = .010$ ) and improved secondary outcomes (PROMIS) related to sleep ( $-3.25$ , 95% CI  $-6.95$ ,  $-1.54$ ;  $p = .003$ ), fatigue ( $-3.26$ , 95% CI  $-6.04$ ,  $-0.48$ ;  $p = .022$ ), and depression ( $-2.59$ , 95% CI  $-4.73$ ,  $-0.45$ ;  $p = .018$ ). The effect sizes were in the clinically meaningful range between 0.5 and 1 standard deviation. No study-related serious adverse events were reported.

## Conclusions

OMT is relatively safe and effective in reducing pain and disability along with improving sleep, fatigue, and depression in patients with chronic NP immediately following treatment delivered over approximately 4 to 6 weeks.

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