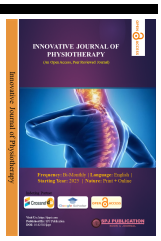
INNOVATIVE JOURNAL OF PHYSIOTHERAPY



Narrative Review

Effectiveness of Manual Therapy Versus Exercise Therapy in Chronic Low Back Pain

[1]Sumit Singh, [2]Akram Khan

[1,2]BPT, Nims College of Physiotherapy & Occupational Therapy

***Corresponding author**
Sumit Singh, BPT
Nims College of Physiotherapy & Occupational Therapy

Email: sspt25@gmail.com

DOI: 10.62502/ijopt/v1i4art1

Received: 15/07/2025
Accepted: 10/09/2025
Published: 20/12/2025

Abstract

Chronic non-specific low back pain is a common and disabling condition that places a significant burden on individuals and healthcare systems worldwide. Manual therapy and exercise therapy are widely used conservative treatment approaches; however, uncertainty remains regarding their relative effectiveness and the value of combining these interventions in routine clinical practice. This narrative review aimed to synthesize current evidence comparing manual therapy and exercise therapy when used as stand-alone treatments and to explore the potential benefits of combined approaches within a person-centred care framework. A comprehensive search of major biomedical databases was undertaken, including PubMed/MEDLINE, Embase, the Cochrane Library, and Web of Science. Randomized controlled trials, systematic reviews, meta-analyses, and relevant clinical practice guidelines involving adults with chronic non-specific low back pain were considered. Evidence was synthesized qualitatively, with attention to pain, disability, functional outcomes, quality of life, and patient satisfaction. The findings indicate that both exercise therapy and manual therapy provide modest but statistically significant improvements in pain and function compared with minimal or usual care. Exercise therapy demonstrated more consistent long-term benefits for disability and functional outcomes, while manual therapy was primarily associated with short-term pain relief. Direct comparisons between the two approaches showed no clear superiority of either intervention. Combined manual therapy and exercise programs resulted in slightly greater short-term pain reduction and higher patient satisfaction, although long-term outcomes were largely driven by continued exercise and self-management. Overall, the evidence supports exercise therapy as the foundation of management for chronic non-specific low back pain, with manual therapy serving as a useful adjunct for short-term symptom relief. A multimodal, person-centred approach that emphasizes active participation and long-term self-management appears most appropriate for optimizing clinical outcomes.

Keywords: Chronic low back pain, Exercise therapy, Manual therapy, Conservative management

INTRODUCTION

Chronic low back pain has quietly become one of the most persistent reasons people struggle to work, care for their families, and engage in the activities that give their lives meaning. It is now recognized as the leading cause of years lived with disability worldwide, affecting hundreds of millions of individuals across all regions and income levels. [1] Recent estimates from global burden of disease analyses indicate that low back pain is responsible for an enormous and still rising share of disability, with projections suggesting that the number of people affected will continue to grow as populations age and exposure to physical and psychosocial risk factors increases. For many people, the pain does not simply "go away"; instead, it persists beyond three months, becomes chronic, and starts to shape daily decisions, employment possibilities, and social participation. [2] The impact of chronic low back pain extends far beyond the physical sensation of pain itself. Individuals frequently report disturbed sleep, fatigue, depressed mood, anxiety, reduced confidence in movement, and strain on personal relationships as they attempt to cope with ongoing symptoms. [3] At a societal level, chronic low back pain contributes to substantial healthcare utilization, lost productivity, and work absenteeism, making it a major economic burden for governments, insurers, and employers. These human and financial costs have prompted international organizations and public health agencies to prioritize low back pain as a key target for prevention and more effective long-term management. [4-5] In routine clinical practice, most people with chronic low back pain are managed with non-pharmacological and non-surgical strategies aimed at reducing pain, enhancing function, and supporting self-management over time. Contemporary clinical practice guidelines emphasize that care should be person-centred, should promote activity rather than rest, and should minimize long-term reliance on medications, especially opioids. Within this framework, exercise therapy has emerged as a cornerstone of conservative care. Multiple systematic reviews and meta-analyses show that structured exercise programs provide better pain relief and functional improvement than

no treatment, usual care, or passive interventions, even though average effect sizes are often modest. Different forms of exercise, including aerobic training, strengthening, motor control or stabilization exercises, and multimodal programs, appear broadly beneficial, with no single modality consistently superior across all outcomes and populations. [6-8]

Manual therapy techniques remain another widely used intervention in the management of chronic low back pain. This broad category includes spinal manipulation, mobilization, and various soft-tissue or regionally targeted techniques delivered by physiotherapists, chiropractors, osteopaths, and other manual therapy practitioners. These approaches aim to reduce pain, improve segmental mobility, modulate neuromuscular function, and restore more efficient movement patterns. Randomized controlled trials have reported that manual therapy can provide short-term improvements in pain and disability in people with chronic low back pain, sometimes with similar or slightly better effects than other conservative therapies. In everyday practice, manual therapy is often combined with education and exercise rather than used as a stand-alone treatment. Despite the widespread use of both exercise therapy and manual therapy, patients and clinicians still face important questions when making shared decisions about care. Many individuals understandably seek rapid pain relief to regain a sense of normality, while clinicians are also thinking about long-term function, recurrence prevention, safety, cost, and feasibility.

Evidence from comparative trials suggests that exercise therapy is at least as effective as most other conservative interventions overall, but it can require more active engagement and may take time before benefits are fully felt. Manual therapy, on the other hand, may offer quicker short-term relief for some patients, which can be particularly valuable when pain is a major barrier to movement or participation in rehabilitation. However, its effects may be transient if not followed by strategies that build strength, endurance, and confidence in movement. [9-15] Recent clinical trials and reviews have increasingly explored combinations of manual therapy and exercise, reflecting the reality of multidisciplinary practice. This body of work suggests that coupling hands-on techniques with targeted exercises and patient education may produce greater or more sustained benefits than any single modality alone for certain individuals with chronic low back pain. At the same time, methodological limitations, including small sample sizes, difficulties with blinding, and heterogeneity in treatment protocols make it challenging to draw definitive conclusions about superiority between manual therapy, exercise therapy, or their combination across all patient groups.

International guidelines and expert consensus now highlight that optimal management of chronic low back pain should be grounded in a biopsychosocial perspective. This means acknowledging that biological factors (such as tissue sensitivity and deconditioning), psychological factors (such as fear of movement, catastrophizing, and mood), and social factors (such as work demands and family support) all shape how pain is experienced and how treatments work. Exercise and manual therapy are not simply mechanical interventions; they influence beliefs, confidence, and behaviour, and their effectiveness can depend heavily on communication, therapeutic alliance, and patient expectations. [16-18] Within this complex landscape, the comparative effectiveness of manual therapy versus exercise therapy in chronic low back pain remains an important and practical question. Clinicians need to know when to prioritize an exercise-based program, when and how to integrate manual therapy, and which patients are most likely to benefit from specific or combined approaches. Patients, meanwhile, need clear, realistic information about what each option can offer, how long improvements might take, and what their own role will be in the recovery process. [19-20]

AIM AND OBJECTIVE

Aim

The aim of this narrative review is to summarize and interpret the existing evidence on the use of manual therapy and exercise therapy in the management of chronic low back pain, with a focus on their effectiveness in routine clinical practice.

Objectives

- To compare the effects of manual therapy and exercise therapy when used as individual treatment approaches for chronic low back pain.
- To identify the strengths and limitations of each therapy when applied as a stand-alone intervention.
- To examine whether combining manual therapy with exercise offers additional benefits compared with either approach alone.
- To relate current research findings to person-centred, real-world clinical decision-making for individuals with chronic low back pain.

METHODS

Study Design: This study was conducted as a narrative review aimed at providing a clinically relevant and scientifically grounded comparison of manual therapy and exercise therapy in the management of chronic non-specific low back pain (CLBP). In contrast to a systematic review, a flexible and iterative approach was adopted to allow integration of evidence from randomized controlled trials (RCTs), systematic reviews, meta-analyses, and authoritative clinical practice guidelines. The emphasis was on identifying overarching trends, areas of agreement and uncertainty, and translating evidence into real-world clinical decision-making.

Literature Search Strategy: A comprehensive literature search was performed across major biomedical databases, including PubMed/MEDLINE, Embase, the Cochrane Library, and Web of Science. The electronic search was supplemented by manual screening of reference lists from relevant original studies and review articles to identify additional key publications. Search terms were combined using Boolean operators and included variations of: “chronic low back pain,” “non-specific low back pain,” “exercise therapy,” “physical therapy,” “manual therapy,” “spinal manipulation,” “mobilization,” and “combined therapy.” Only English-language articles published up to 2025 were included. Recent narrative, critical, and umbrella reviews were also

examined to ensure inclusion of influential and foundational studies.

Eligibility Criteria: Studies were considered based on following criteria

- Population: Adults aged ≥18 years with chronic low back pain, generally defined as pain persisting for more than 12 weeks.
- Condition: Non-specific or mechanical low back pain, with or without referred leg pain, excluding cases dominated by serious spinal pathology (e.g., fracture, malignancy, inflammatory disease).
- Interventions: Evaluation of exercise therapy alone, manual therapy alone, or a combination of manual therapy and exercise.
- Outcomes: Primary outcomes of interest included pain intensity, back-specific disability, functional status, and quality of life. Secondary outcomes, where available, included return to work and patient satisfaction.

RESULT

Studies that directly compared exercise therapy with manual therapy generally found very little difference between the two treatments in terms of pain relief and improvement in disability. In most trials, the difference in pain scores between groups was less than 1 point on a 0–10 pain scale, which is below the level usually considered meaningful for patients. Statistically, many of these comparisons showed overlapping results, indicating that both treatments were similarly effective. Some studies showed that people receiving manual therapy experienced quicker pain relief in the first few weeks. In contrast, those participating in exercise programs tended to show more stable improvements in function at medium- and long-term follow-up. However, these differences were generally small, with effect sizes typically below 0.30, suggesting only minor advantages. Overall, the evidence indicates that neither exercise therapy nor manual therapy is clearly better than the other, and the choice of treatment may depend on individual patient needs, preferences, and clinical presentation.

Combined Manual Therapy and Exercise: Research examining the combination of manual therapy with exercise suggests that this approach may offer slightly better short-term pain relief compared with exercise alone. When results were combined across studies, pain reduction favored the combined approach by a small margin, with effect sizes ranging from −0.10 to −0.30, and several analyses showed these differences to be statistically significant ($p < 0.05$). Improvements in disability were less consistent. In many studies, the difference between combined treatment and exercise alone was small, and confidence intervals often overlapped, indicating no clear long-term advantage. At follow-up periods of 6 to 12 months or longer, outcomes for pain and function were largely similar between groups. This suggests that long-term improvement depends mainly on ongoing exercise and self-management, rather than continued hands-on treatment. Patient satisfaction was often higher in combined treatment groups, which may reflect the value of early pain relief and the reassurance provided by hands-on care, even when objective outcome differences were modest.

Outcomes Beyond Pain and Disability: Measures of quality of life showed small but meaningful improvements with exercise-based and combined treatments. These improvements typically fell within a standardized effect size range of 0.20 to 0.40, indicating modest benefits. Manual therapy alone showed less consistent effects on quality of life. Evidence related to return-to-work outcomes was limited and highly variable. Many studies found no statistically significant differences between treatment groups. These outcomes appeared to be strongly influenced by factors such as job demands, psychological health, and workplace support, rather than physical treatment alone.

Link with Clinical Practice Guidelines: The findings from clinical trials and pooled analyses closely match current clinical guidelines. Most guidelines recommend exercise and active self-care as the main treatment for chronic low back pain. Manual therapy is usually advised as a supportive treatment, mainly for short-term pain relief, rather than as a stand-alone option.

DISCUSSION

Chronic non-specific low back pain remains a leading cause of disability worldwide, and its management continues to challenge clinicians due to its multifactorial nature. The findings of this narrative review indicate that both exercise therapy and manual therapy are effective conservative interventions, although the size of their benefits is generally small to moderate. Importantly, the reviewed evidence does not support the clear superiority of one approach over the other when used as a stand-alone treatment. [21,22] Exercise therapy consistently demonstrated benefits in reducing pain and improving functional ability across multiple randomized trials and meta-analyses. Pooled evidence suggests that exercise interventions produce statistically significant improvements compared with minimal or usual care, particularly in the short to medium term. [21,23] However, no single type of exercise has been shown to be superior, and outcomes appear to depend more on patient adherence, progression, and individualization of programs rather than the specific exercise modality used. [24] Sustained improvements in disability are more likely when patients continue exercising beyond the supervised treatment period, highlighting the importance of long-term self-management. [25]

Manual therapy, including spinal manipulation and mobilization, was found to provide meaningful short-term pain relief in many studies. Meta-analytic data indicate small but statistically significant reductions in pain intensity during early follow-up periods. [22,26] These short-term benefits may be clinically valuable, particularly for patients with high pain levels that restrict movement or participation in rehabilitation. However, the evidence for long-term effectiveness of manual therapy as a sole intervention is inconsistent, with many studies reporting diminishing effects over time. [27] Direct comparisons between exercise therapy and manual therapy showed broadly similar outcomes for pain and disability. Between-group differences were usually small and frequently below established thresholds for clinical importance. [22,28] Some trials reported faster early pain reduction with manual

therapy, while exercise therapy was more consistently associated with longer-term improvements in function. Nevertheless, these differences were modest, suggesting that treatment selection should be guided by individual patient characteristics, preferences, and goals rather than assumptions of superiority. [29]

The combination of manual therapy with exercise therapy demonstrated modest additional benefits, particularly for short-term pain relief. Several systematic reviews reported statistically significant but small improvements when manual therapy was added to exercise programs. [30,31] These findings suggest that manual therapy may enhance early symptom control and facilitate engagement with active rehabilitation. However, long-term outcomes for pain and disability were largely similar between combined therapy and exercise-only approaches, reinforcing the view that ongoing exercise and self-management are the primary drivers of sustained improvement. [32]

Outcomes beyond pain and disability, such as quality of life and return to work, were less frequently reported and showed mixed results. Small improvements in quality of life were observed with exercise-based and combined interventions, while manual therapy alone showed less consistent effects. [33] Return-to-work outcomes appeared to be strongly influenced by psychosocial and occupational factors, limiting the ability to attribute changes solely to physical interventions. [34] The findings of this review align closely with contemporary clinical practice guidelines, which consistently recommend exercise and active self-management as first-line treatments for chronic low back pain. [35,36] Manual therapy is generally advised as an adjunct rather than a primary intervention, particularly for short-term symptom relief. This approach reflects a broader biopsychosocial understanding of chronic pain, emphasizing patient engagement, education, and long-term behaviour change. [37-39]

CONCLUSION

This narrative review finds that both exercise therapy and manual therapy offer benefits in the management of chronic non-specific low back pain, particularly in reducing pain and improving physical function. Exercise therapy shows more consistent long-term functional improvements, while manual therapy provides useful short-term symptom relief, particularly when added to exercise. Evidence does not support the clear superiority of one modality over the other when used alone. Integrating manual therapy as an adjunct to exercise, within a person-centred, active care framework, aligns with clinical guidelines and may enhance early treatment engagement and satisfaction, though the sustained benefits are primarily driven by exercise and self-management.

LIMITATION

Several limitations of the current evidence base should be acknowledged. Many trials are limited by small sample sizes, heterogeneity in intervention protocols, and challenges with blinding, which reduce confidence in effect estimates/ [38] As a narrative review, this study did not include formal risk-of-bias assessment or quantitative pooling, which may limit the precision of conclusions. Nonetheless, synthesizing evidence across high-quality reviews and trials provides a clinically meaningful overview of current knowledge.

REFERENCES

1. International Association for the Study of Pain. The Global Burden of Low Back Pain. 2025. https://www.iasp- pain.org/resources/fact-sheets/the-global-burden-of-low- back-pain/
2. GBD 2017 Low Back Pain Collaborators. Global low back pain prevalence and years lived with disability from 1990 to 2017: estimates from the Global Burden of Disease Study 2017. Pain. 2018;159(3):489-96.
3. Institute for Health Metrics and Evaluation. The Lancet: New study shows low back pain is the leading cause of disability around the world. https://www.healthdata.org/
4. Liu Z, et al. Global, regional, and national burden of low back pain: findings from the Global Burden of Disease Study 2021 and projections to 2050. J Orthop Translat. 2025;50:1-12.
5. Wang H, et al. Global, regional, and national burden of low back pain in working-age adults: a GBD 2021 analysis. Front Public Health. 2025;13:1559355.
6. World Health Organization. Low back pain: Key facts 2023. https://www.who.int/news-room/fact-sheets/detail/low-back-pain
7. World Health Organization. WHO releases guidelines on chronic low back pain, 2023. https://www.who.int/news/item/07-12- 2023-who-releases-guidelines-on-chronic-low-back-pain
8. Hayden JA, Ellis J, Ogilvie R, Malmivaara A, van Tulder MW. Exercise therapy for chronic low back pain. Cochrane Database Syst Rev. 2021;9:CD009790.
9. Hayden JA, Ellis J, Ogilvie R, Malmivaara A, van Tulder MW. Exercise for treatment of chronic low back pain. Cochrane Database Syst Rev. 2025;4:CD009790.
10. Longo UG, Loppini M, Berton A, et al. Exercise therapy for chronic low back pain: an updated overview. J Orthop Traumatol. 2021;22(1):1-10.
11. van Tulder MW, Malmivaara A, Esmail R, Koes BW. Exercise therapy for low back pain: a systematic review within the framework of the Cochrane Collaboration Back Review Group. Spine. 2000;25(21):2784-96.
12. Rasmussen-Barr E, Grooten WJA, Hallqvist J, et al. Exercise therapy for chronic low back pain: a review of effectiveness and mechanisms. Am Fam Physician. 2022;106(8):Online.
13. von Trott P, Mannion AF, et al. A randomized, controlled trial of manual therapy and specific adjuvant exercise for chronic low back pain. Spine. 2003;28(6):525-32.
14. Rasmussen-Barr E, Nilsson-Wikmar L, Arvidsson I. Manual therapy and exercise therapy in patients with chronic low back pain: a randomized, controlled trial with 1-year follow-up. Spine. 2003;28(6):525-32.
15. A Randomized, Controlled Trial of Manual Therapy and Specific Adjuvant Exercise for Chronic Low Back Pain. J Manipulative Physiol Ther. 1995;18(9):626-34.
16. Courtney CA, Steffen AD, Fernández-de-Las-Peñas C, Kim D. Regional manual therapy and motor control exercise for chronic low back pain: a randomized, controlled trial. J Man Manip Ther. 2018;26(3):123-33.

17. Qaseem A, Wilt TJ, McLean RM, Forciea MA; Clinical Guidelines Committee of the American College of Physicians. Noninvasive treatments for acute, subacute, and chronic low back pain. Ann Intern Med. 2017;166(7):514-30.

18. Foster NE, Anema JR, Cherkin D, et al. Prevention and treatment of low back pain: evidence, challenges, and promising directions. Lancet. 2018;391(10137):2368-83.

19. Hartvigsen J, Hancock MJ, Kongsted A, et al. What low back pain is and why we need to pay attention. Lancet. 2018;391(10137):2356-67.

20. Oliveira CB, Maher CG, Pinto RZ, et al. Clinical practice guidelines for the management of nonspecific low back pain in primary care: an updated overview. Eur Spine J. 2018;27(11):2791-803.

21. Hayden JA, Ellis J, Ogilvie R, Malmivaara A, van Tulder MW. Exercise therapy for chronic low back pain. Cochrane Database Syst Rev. 2021;9:CD009790. doi:10.1002/14651858. CD009790.pub2

22. González-Gómez L, Moral-Muñoz JA, Rosales-Tristáncho A, et al. Exercise therapy versus manual therapy for chronic low back pain: A systematic review with meta-analysis. Eur J Pain. 2025;29(8):e70090. doi:10.1002/ejp.70090

23. Qaseem A, Wilt TJ, McLean RM, Forciea MA. Noninvasive treatments for acute, subacute, and chronic low back pain. Ann Intern Med. 2017;166(7):514–530. doi:10.7326/M16-2367

24. Saragiotto BT, Maher CG, Yamato TP, et al. Motor control exercise for chronic non-specific low back pain. Cochrane Database Syst Rev. 2016;1:CD012004. doi:10.1002/14651858.CD012004

25. Searle A, Spink M, Ho A, Chuter V. Exercise interventions for chronic low back pain. Clin Rehabil. 2015;29(12):1155–1167. doi:10.1177/0269215515570379

26. Rubinstein SM, Terwee CB, Assendelft WJJ, de Boer MR, van Tulder MW. Spinal manipulative therapy for chronic low back pain. Spine. 2013;38(3):E158–E177. doi:10.1097/BRS.0b013e31827b1a8

27. Coulter ID, Crawford C, Hurwitz EL, et al. Manipulation and mobilization for treating chronic low back pain. Spine J. 2018;18(5):866–879. doi:10.1016/j.spinee. 2018.01.013

28. Chou R, Deyo R, Friedly J, et al. Nonpharmacologic therapies for low back pain. Ann Intern Med. 2017;166(7):493–505. doi:10.7326/M16-2459

29. Foster NE, Anema JR, Cherkin D, et al. Prevention and treatment of low back pain. Lancet. 2018;391(10137):2368–2383. doi:10.1016/S0140-6736(18)30489-6

30. Bialosky JE, Bishop MD, Price DD, Robinson ME, George SZ. The mechanisms of manual therapy in pain treatment. J Orthop Sports Phys Ther. 2009;39(5):364–372. doi:10.2519/jospt.2009.0107

31. Franco KM, Franco YS, Oliveira NB, et al. Is manual therapy effective for chronic low back pain? Phys Ther. 2020;100(7):1223–1234. doi:10.1093/ptj/pzaa058

32. Hayden JA, van Tulder MW, Malmivaara A, Koes BW. Exercise therapy for treatment of non-specific low back pain. Best Pract Res Clin Rheumatol. 2005;19(4):537–555. doi:10.1016/j.berh.2005.03.004

33. Kamper SJ, Apeldoorn AT, Chiarotto A, et al. Multidisciplinary biopsychosocial rehabilitation for chronic low back pain. Cochrane Database Syst Rev. 2015;9:CD000963.doi:10.1002/14651858.CD000963.pub3

34. Waddell G, Burton AK. Occupational health guidelines for the management of low back pain. Occup Med. 2001;51(2):124–135. doi:10.1093/occmed/51.2.124

35. NICE. Low back pain and sciatica in over 16s: assessment and management. NICE Guideline NG59. 2020.

36. Oliveira CB, Maher CG, Pinto RZ, et al. Clinical practice guidelines for the management of non-specific low back pain. Eur Spine J. 2018;27(11):2791–2803. doi:10.1007/s00586-018-5673-2

37. Vlaeyen JWS, Linton SJ. Fear-avoidance and its consequences in chronic musculoskeletal pain. Pain. 2000;85(3):317–332. doi:10.1016/S0304-3959(99)00242-0

38. Higgins JPT, Thomas J, Chandler J, et al. Cochrane Handbook for Systematic Reviews of Interventions. 2nd ed. Wiley; 2019.

39. Greenhalgh T, Thorne S, Malterud K. Time to challenge the spurious hierarchy of evidence. BMJ. 2014;348:g3725. doi:10.1136/bmj.g3725

How to site this article: Singh S, Khan A. Effectiveness of manual therapy versus exercise therapy in chronic low back pain. Innov. J. Physiother. 2025;1(4):1-5. doi: 10.62502/ijopt/v1i4art1