INTEREST: Jurnal Ilmu Kesehatan
Volume 15, Issue 2, November 2026
https://doi.org/10.37341/interest.v15i2.785

Systematic Review

Exercise Therapy versus Kinesio Taping for Non-Specific Low Back Pain

Abdul Rahim[1*], Andrew Wijaya Saputra[1]

[1] Department of Physiotherapy, Universitas Indonesia, Indonesia 16425.

ABSTRACT

Background *Non-specific low back pain (NSLBP) accounts for the majority of the global disease burden and stands as the leading cause of years lived with disability, necessitating urgent yet optimized rehabilitation strategies. This research aims to systematically discover, summarize, and compare the distinct impacts of structured exercise therapy and KT on pain mitigation and functional recovery in adult NSLBP populations.*

Methods: *Adhering to PRISMA reporting protocols, randomized controlled trials (RCTs) published between 2016 and 2025were systematically retrieved from PubMed and Scopus databases, initially yielding 124 total citations before screening. The selection was anchored on the PICO framework: Individuals diagnosed with NSLBP; structured exercise protocols; Kinesio Taping implementation; and validated pain scale and functional disability indexes.*

Results: *After rigorous screening and exclusion of irrelevant or low-quality papers based on the predefined criteria, a final synthesis of five randomized controlled trials (mean PEDro score 7.2/10) was analyzed. The narrative synthesis demonstrates that exercise therapy and Kinesio Taping serve complementary roles in rehabilitation. Exercise therapy is identified as the gold standard for long-term functional improvement and recurrence prevention. Meanwhile, Kinesio Taping provides significant immediate pain relief and proprioceptive stimulation, which effectively facilitates earlier participation in active exercise programs, particularly during the acute phase.*

Conclusion: *Exercise Therapy and Kinesio Taping are not antagonistic but complementary. Exercise therapy is the gold standard for long-term rehabilitation and prevention of recurrence. Kinesio taping may provide immediate pain relief and proprioceptive stimulation that facilitates early participation in active exercise.*

ARTICLE HISTORY
Received: April 07th, 2026
Accepted: August 03rd, 2026

KEYWORDS
exercise therapy, disability, kinesio taping, low back pain, pain;

CONTACT
Abdul Rahim
✉
abdul.rahim21@ui.ac.id
Department of Physiotherapy, Universitas Indonesia. Jl. H. Amat No.21, Kukusan, Beji, Depok, West Java, Indonesia 16425.

Cite this as: Exercise Therapy versus Kinesio Taping for Non-Specific Low Back Pain. (2026). *Interest: Jurnal Ilmu Kesehatan*, *15*(2), 112-126. https://jurnalinterest.com/index.php/int/article/view/785

INTRODUCTION

Low Back Pain (LBP) has changed from a relatively simple physical injury to a major health issue around the world. It is one of the leading causes of disability and needs rehabilitation (Rheumatology, 2023). This condition is characterized by pain that significantly impairs functional ability and can result in decreased lower back functionality (Pertiwi & Ghufroni, 2024) . Epidemiological estimates from the Global Burden of Disease (GBD) indicated a worldwide low back pain volume of 619 million cases in 2020, with an anticipated trajectory climbing to 843 million by mid-century (Ferreira et al., 2023).

Around 90% of all LBP cases are classified as NSLBP (Frizziero et al., 2021). It is defined as spinal pain not attributable to identifiable pathology. NSLBP correlates with an inactive lifestyle, smoking, obesity and work-related hypertensive stress (Mastuti & Husain, 2023). The suffering of patients with NSLBP runs far beyond physical pain, according to GBD 2021 data it is the number one cause of Years Lived with Disability (YLD) globally (Wang et al., 2025). A range of target-orientated interventions will help low back pain but in clinical scope they are measured and validated using functional disability scales.

Exercise therapy and Kinesiology Taping (KT) are frequently utilized within rehabilitation protocols for the management of NSLBP. Although exercise therapy incorporating core stabilization, strengthening, and motor control training is widely accepted as the gold standard, its practical implementation in clinical settings is frequently hampered by acute pain exacerbation and poor patient compliance. To address these barriers, KT is often employed as an adjunct modality; it leverages mechanical sensory effects with and sensory effects to directly modulate primary clinical outcomes, specifically by providing short-term pain relief, mitigating functional disability, and enhancing proprioceptive stimulation.

While various literatures exist, a significant gap remains regarding a direct, head-to-head evaluation between structured Exercise Therapy and KT (Ningrum & Setiawan, 2024). This research distinguishes itself from previous studies in three fundamental ways. First, unlike prior reviews that heavily focused on a single isolated intervention, this study directly contrasts active versus passive modalities.

Second, whereas older reviews included outdated trials that do not align with modern physical therapy standards, this study selectively synthesizes high-quality Randomized Controlled Trials (RCTs) exclusively from the last decade to reflect current clinical protocols. Lastly, while existing literature often evaluates these methods as competing treatments (Júnior et al., 2018), this review uniquely explores the clinical synergy of combining active long-term exercises with passive short-term taping strategies. Consequently, this study fills these critical gaps by providing a highly updated, timely synthesis to optimize evidence-based decisions in physical rehabilitation.

A notable void persists within the current body of research. Moreover, there are no recent high-quality systematic reviews that provide a head-to-head comparison of structured Exercise Therapy and KT (Ningrum & Setiawan, 2024). Many of the existing reviews only focused on a single intervention or include old trials that do not reflect modern rehabilitation protocol. Moreover, the possible synergy between Exercise as an active long-term intervention and a passive short-term strategy is still poorly synthesized

(Júnior et al., 2018). Consequently, this research attempts to fill this gap by providing a timely synthesis of Randomized Controlled Trials from the last decade.

The objective of this systematic review is to evaluate, consolidate, and contrast current evidence regarding the clinical management of NSLBP. Specifically, this study evaluates the comparative impacts of exercise therapy versus KT on primary outcomes, focusing on pain severity and functional impairment levels. Crucially, this review seeks to address specific evidence gaps in the literature, particularly the lack of consensus on whether KT yields true mechanical functional restoration or merely transient, placebo-driven sensory analgesia compared to active exercise protocols. By clinical synthesis of these conflicting outcomes, this study aims to enhance clinical decision-making by providing physiotherapists with a definitive, evidence-based framework to determine the optimal timing, sequencing, and integration of passive versus active modalities in physical rehabilitation.

MATERIALS AND METHOD

Study Design and Registration

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards were used in conducting this systematic review (Page *et al*., 2021). Under registration number CRD420261358667, the protocol was prospectively registered in the International Prospective Register of Systematic Reviews (PROSPERO).

Search Strategy

The documentation screening process was directed by a core investigative question: "Which intervention demonstrates a more significant reduction in pain intensity and functional disability: Exercise Therapy, Kinesio Taping, or a combination of both, in patients with non-specific low back pain?" Identification of candidate studies was achieved through a comprehensive search of the Scopus and PubMed platforms, limiting the publication window to 2016–2025 to reflect modern intervention efficacy. To execute the search, Medical Subject Headings (MeSH) and free-text terms were aggregated utilizing Boolean logic, specified by the string: (Exercise OR "Physical therapy") AND (Taping OR "Kinesio tape") AND "Low back pain".

Selection Criteria (PICOS)

Study eligibility was restricted using structured PICOS specification. Under this framework, the review prioritized full-text Randomized Controlled Trials (RCTs) directly analysing therapeutic outcomes of Exercise Therapy and KT for NSLBP management.

Table 1. PICOS Specification

PICOS Component	Inclusion Criteria	Exclusion Criteria
Population (P)	Individuals within the 20–65 age bracket who have been clinically diagnosed with either acute, subacute, or chronic non-specific LBP..	Specific spinal pathologies (e.g., fractures, tumors, spinal stenosis, disc herniation with radiculopathy), pregnancy-related back pain, or post-

PICOS Component	Inclusion Criteria	Exclusion Criteria
		surgical cases.
Intervention (I)	Structured exercise therapy aimed at active rehabilitation, explicitly including:.. . • Core stabilization (targeting deep lumbopelvic muscles) • Strength training (progressive loading of trunk/global muscles) • Flexibility programs (stretching and tissue extensibility) • Motor control exercises (neuromuscular re-education and coordination)	Passive modalities applied in isolation (TENS, US, Laser, thermotherapy, traction) and invasive interventions (surgery, injections, or acupuncture).
Comparator (C)	KT as a standalone treatment, KT compared directly to Exercise, or KT as an adjunct to Exercise.	Other taping methods (rigid athletic tape), comparisons against passive modalities only or studies without any Kinesiotaping involvement.
Outcomes (O)	Objective metrics: • VAS or NRS for pain assessment. • ODI or RMDQ for functional impairment level.	Studies that do not report standardized pain intensity or functional disability-related outcomes.
Study Design (S)	Exclusively Randomized Controlled Trials (RCTs).	Any non-RCT designs encompassing quasi-experiments, cohort and case-control studies, alongside retrospective case series were excluded.

Data Collection and Screening..

The study selection process was executed systematically across four distinct phases based on the PRISMA framework:

Identification: A total of 124 citations were successfully retrieved during the preliminary search, comprising 81 records retrieved from Scopus and 43 records from PubMed.

Screening: After removing 38 duplicate records, a pool of 86 distinct citations were retained for evaluation. An initial preliminary screening based on title and abstract relevance was conducted, consequently disqualifying of 47 irrelevant articles that did not align with the core research question.
Eligibility: A meticulous full-text appraisal was subsequently performed on the 39 surviving papers. After evaluating each manuscript against the PICOS specification, 34 articles were excluded due to incompatible methodology, wrong populations, or inadequate outcome measures.
Included: Ultimately, 5 primary randomized controlled trials (RCTs) met all eligibility requirements and were successfully included in the final narrative synthesis and quality analysis.

Data Extraction and Quality Assessment

The data extraction proceeded systematically with key variables from each study being compiled in a synthesis table. Data obtained from each article includes reference number, article title, author (year), PEDro score, sample-size, measurement instruments, and the main findings of the interventions. In terms of clinical outcomes, data collection focuses on pain intensity and functional disability scores which are recorded the same day and allows comparison of treatment efficacy in a straightforward way. This information is framed to critically analyze the effectiveness of Exercise Therapy versus Kinesiotaping.

Investigators appraised the methodological rigor of the selected studies using the validated Physiotherapy Evidence Database (PEDro) criteria established by Maher *et al.*, *(*2003) to measure the internal validity and statistical reporting of clinical studies to guide clinical decision-making. This assessment evaluated each study based on 11 criteria designed to help readers identify randomized controlled trials (RCTs) (Cashin & Mcauley, 2020). To ensure objectivity and minimize bias during this evaluation, two independent reviewers independently assessed the quality of each included study and extracted the respective data. Any inter-reviewer variations or conflicting interpretations during data extraction and scoring were settled via active deliberation to achieve a consensus. In cases where a mutual agreement remained elusive, a third independent senior investigator was brought in for definitive adjudication. Across the evaluated literature, the pooled methodological quality yielded a mean score of 7,2/10, reflecting an overall high standard of study rigor.

Data Analysis

The synthesis of data will take place via a formal narrative approach which is due to the expected variation in intervention protocols and outcome of reporting does not allow for quantitative meta-analysis. The PRISMA flow diagram depicts the complete study selection process. This provides a transparent overview of the systematic steps taken identification, screening, and final inclusion ensuring the rigor and reproducibility of the review process

Ethical Consideration

Because the current study relies exclusively on the synthesis of prior published research, no primary human cohorts were engaged; consequently, formal ethical oversight was exempted.

RESULTS

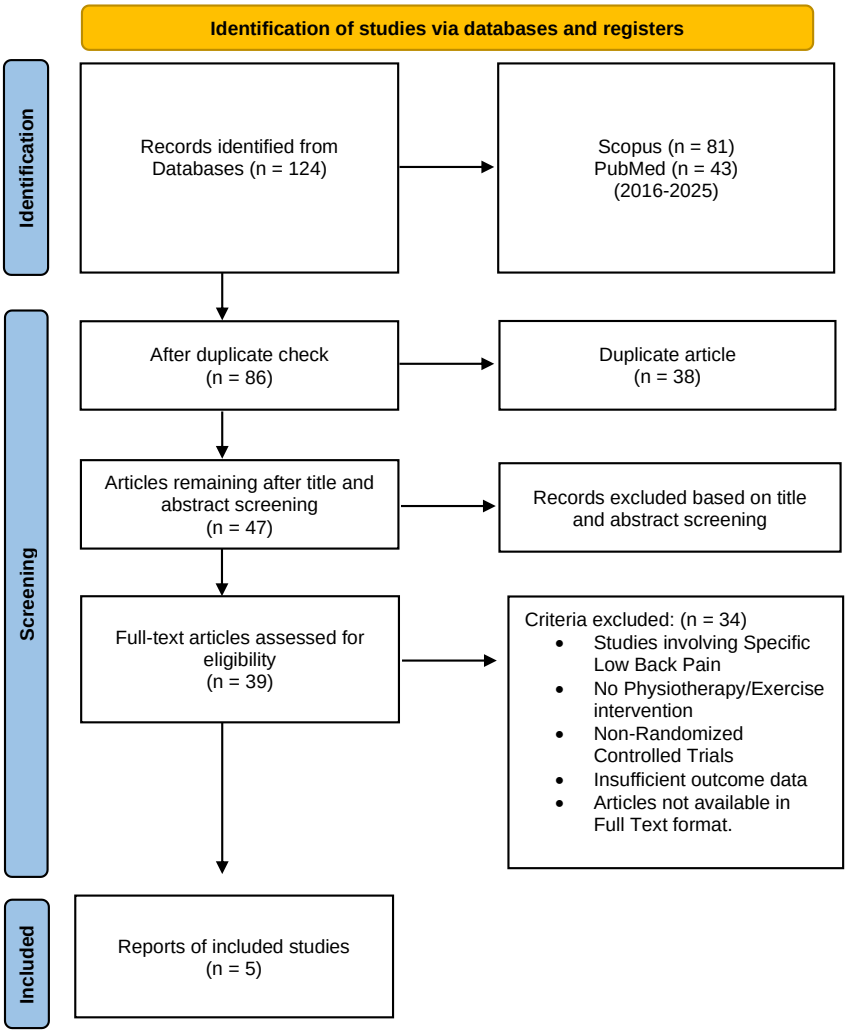

Figure 1. PRISMA Flow Chart

Table 2. Methodological Quality Assessment of Included Studies Using the PEDro Scale.

Criteria PEDro	Bilal et al., (2022)	Alikhajeh et al., (2020)	Aguilar-Ferrándiz et al., (2022)	Mengi et al., (2020)	Ogunniran et al., (2023)
Selection/Inclusion Guidelines	✓	✓	✓	✓	✓
Randomized Participant Assignment	✓	✓	✓	✓	✓
Allocation Concealment Process	✓	x	✓	✓	✓
Baseline Group Homogeneity	✓	✓	✓	✓	✓
Subject Blinding Status	x	x	x	✓	x
Physiotherapist Blinding	x	x	x	x	x
Blinded Outcome Assessors	✓	✓	✓	✓	✓
Sufficiency of Follow-up Period	✓	✓	✓	✓	x
Intention-to-Treat (ITT) Analysis	x	x	✓	✓	x
Inter-group Statistical Analysis	✓	✓	✓	✓	✓
Point and Variability Reporting	✓	✓	✓	✓	✓
Score total	7 / 10	6 / 10	8 / 10	9 / 10	6 / 10
Quality Category	Good	Good	High	High	Good

Table 3. Research results in reviewed articles

Country	Authors	Participants (N)	Intervention Group	Intervention Dosage	Instruments	Main Findings
Pakistan	(Bilal et al., 2022b)	56 participants (mean age 44.36 ± 8.73 years).	**Group 1:** Conventional physical therapy (CPT) augmented with KT. **Group 2:** CPT	2 weeks of treatment. KT was applied and changed every 3-4 days	NPRS, ODI	While both cohorts demonstrated meaningful clinical progress, Group 1 achieved a statistically superior reduction in both pain intensity and functional disability levels relative to Group 2

Country	Authors	Participants (N)	Intervention Group	Intervention Dosage	Instruments	Main Findings
				CPT included infrared radiation for 10 min and stretching and strengthening exercises.		
Iran	(Alikhajeh et al., 2020)	36 participants (mean age 50.69 ± 4.18 years).	**Group 1:** Aquatic Exercise (AE) **Group 2:** KT **Group 3:** Non-treatment	6 weeks of treatment. AE group performed exercises 3 times/week (60 min/session). KT was applied every week (changed every 3 days with 1 day off).	VAS, ODI	Although both AE and KT protocols yielded significant functional and analgesic improvements, a more pronounced attenuation of physical limitations and pain was achieved via the aquatic modality.
Spain	(Aguilar-Ferrándiz et al., 2022)	58 participants	**Group 1:** Exercise + KT	The intervention	VAS, ODI, RMDQ,	While both therapeutic strategies successfully

Country	Authors	Participants (N)	Intervention Group	Intervention Dosage	Instruments	Main Findings
		(mean age 43.41 ± 17.62 years).	**Group 2:** Exercise + Electrical Stimulation	spanned a 4-week period with a frequency of 3 sessions weekly, culminating in 12 total visits. The active regimen comprised core and pelvic stabilization, motor control training, alongside targeted strengthening and stretching of the trunk musculature.	TSK 3. Other secondary measures (Fear of movement, anxiety, sleep quality).	mitigated physical disability and pain severity, the comparative data yielded no significant statistical disparity between the two cohorts. However, a minor trend favoring Group 2 was noted in the raw numerical data.
Turkey	(Mengi et al., 2020)	125 participants (mean age 45 years; range	The core intervention across all study groups involved	3 weeks of treatment. PT	VAS, ODI, RMDQ	Significant intra-group improvements in pain and disability were observed in all KT groups including

Country	Authors	Participants (N)	Intervention Group	Intervention Dosage	Instruments	Main Findings
		20–65).	identical physical modalities (Chattanooga heat pack plus TENS) and kinesiotherapy. The groups were designated as follows: Group 1: Physical therapy exercise (PTE). Group 2: PTE + sham KT. Group 3: PTE + space-correction KT technique. Group 4: PTE + fascia-correction KT technique.	modalities 5 days/week; Exercises 2 times/day KT replaced every 3 days.		sham. However, Group 1 showed no significant recovery by Day 51. Despite this, there were no statistically significant between-group differences, likely due to Group 1's significantly longer baseline pain duration.
Nigeria	Ogunniran et al., (2023)	35 patients completed the study (28 males, 7 females) with	**Group A:** KT + Core Stabilization Exercise (CSE).	Total Duration: 8 weeks (2 months). Exercise: 30	NPRS, RMDQ, HADS ISI, TSK, modified	Intra-group analysis revealed substantial post-intervention progress across all measured parameters for every

Country	Authors	Participants (N)	Intervention Group	Intervention Dosage	Instruments	Main Findings
		non-specific chronic low back pain (NSCLBP).	**Group B:** CSE **Group C:** KT	min/session, 2 times/week	Schober test.	cohort. Nevertheless, the combined KT + CSE regimen yielded statistically superior therapeutic effects relative to both monotherapy arms, displaying more pronounced mitigations in pain intensity, functional impairment, kinesiophobia, anxiety, and depression, alongside a greater expansion in lumbar range of motion. Conversely, changes in sleep disturbance metrics did not differ significantly among the three arms at the post-treatment evaluation.

DISCUSSION

The objective of this systematic review is to evaluate the clinical effectiveness of KT and Exercise Therapy for pain reduction and functional improvement in individuals with NSLBP. Notably, internal validity across the analyzed trials was frequently limited by challenges in satisfying Criterion 5 and Criterion 6. In physical therapy research requiring procedures like Exercise Therapy and KT, where blinding is typically impractical, these constraints are common. In spite of this, every study that was assessed offered solid information for Criteria 10 and Criterion 11, guaranteeing that the information was still appropriate for an excellent qualitative synthesis. The average PEDro score was 7.2/10, indicating that all articles reviewed contained substantial scientific evidence supporting this intervention.

The efficacy of KT seems to heavily depend upon the condition phase and comparator intervention. According to Bilal et al (2022). In acute cases KT serves as an effective supplement to standard care being able to provide immediate sensory input. The Gate Control Theory offers an explanation for this. The tape provides tactile stimulation, which inhibits pain signals and allows for earlier mobilization. On the other hand, long-term neuroplastic and muscle adaptations in chronic situations are thought to be more successful with an active means of treatment such as Aquatic Exercise than a passive one like KT (Alikhajeh et al., 2020).

Aguilar-Ferrándiz et al., (2022) and (Mengi et al., 2020) in patients with a chronic condition agree that exercise program is the most essential intervention in which to see improvement. The research conducted by Aguilar-Ferrándiz et al., (2022) concluded that KT in association with exercise is as effective as TENS in association with exercise. Meanwhile, (Mengi et al., 2020) noted that the group that received additional KT showed improvement but revealed no distinctive differences between the various techniques that were applied (including sham taping). It further supports the hypothesis that the advantages of KT with exercise are primarily about ensuring comfort to help patients perform the exercises more effectively.

Furthermore, when exploring chronic NSLBP management, active physical strategies consistently demonstrate a more profound impact on long-term functional recovery compared to passive modalities alone. Alikhajeh et al., (2020) demonstrated that while both a 6-week program of aquatic exercise and standalone KT achieved significant intra-group improvements, the active aquatic exercise group achieved superior efficacy in mitigating long-term pain and optimizing the functional index (ODI scores). This disparity highlights a critical physiological limitation of KT when used as an isolated or primary treatment; it lacks the capacity to induce the essential neuroplastic, structural, and muscular adaptations such as deep core muscle stabilization and motor control restoration that are vital to shifting a chronic patient out of a recurrent pain cycle.

In addition to physiological adaptations, the integration of these modalities in chronic settings heavily influences patient compliance and psychological readiness. While progressive exercise serves as the foundational curative mechanism, its clinical execution is frequently hindered by kinesiophobia or acute pain exacerbation during movement. In this context, the localized sensory stimulation provided by KT acts as a psychological and physical bridge, offering enough symptomatic reassurance to enhance a patient's confidence. Therefore, rather than viewing them as competing interventions, the literature suggests the genuine clinical utility of adding KT to active exercise

regimens in chronic phases lies in utilizing the tape's immediate comforting effects to secure higher adherence to the more demanding active exercise protocols.

In contrast to the concept of a rehabilitation ceiling effect, a robust randomized controlled trial by Ogunniran et al., (2023) demonstrated that KT does provide significant additive clinical benefits when integrated with a core stabilization exercise (CSE) protocol. Their findings revealed that while standalone CSE or KT achieved positive within-group outcomes, the combined KT+CSE approach yielded markedly superior efficacy in reducing pain intensity, mitigating kinesiophobia, and restoring lumbar ROM after an 8-week intervention. Mechanistically, this synergistic effect can be attributed to the continuous tactile and proprioceptive stimulation of the lumbar paravertebral muscles provided by the "I" strip taping method. This localized sensory input facilitates neural responses that minimize mechanical irritation during trunk mobilization, which subsequently alters the patient's perception of pain and disability. By reducing movement-associated anxiety (kinesiophobia) and improving postural assurance, this combination therapy actively creates a physiological gateway for patients to engage in deeper motor control training and local muscle activation such as the lumbar multifidus and transversus abdominis thereby breaking the recurrent chronic pain cycle more effectively than optimal exercise alone.

Clinically, KT should be utilized as an adjunct facilitator during the early stages of NSLBP to modulate pain rapidly, rather than as a standalone intervention. Methodologically, this review is strongly underpinned by a strict 2016–2025 timeline ensuring contemporary relevance, a rigid multi-stage PRISMA screening that distilled 124 initial records into 5 high-quality randomized controlled trials, and the use of the PEDro scale to objectively guarantee low risk of bias. Furthermore, focusing exclusively on gold-standard metrics eliminates outcome heterogeneity. However, the review is limited by a small final sample size and high heterogeneity among exercise parameters, which confounds the isolation of an exact exercise dosage that renders KT redundant. Therefore, future research must utilize standardized, homogenous exercise protocols to isolate KT's synergistic effects while evaluating its long-term cost-effectiveness and patient compliance within rehabilitation programs.

CONCLUSION

According to a systematic review, though both the interventions seem to have positive effects on NSLBP, exercise therapy is the gold standard and superior as it has long-term functional benefits. The use of KT does not show greater efficiency when used by itself, but it is an excellent adjunct to help intervention in the acute phase, as it produces immediate sensory relief and allows active movement. It appears that there is a ceiling effect whereby further addition of KT leads to no significant marginal gain if a high intensity exercise and manual therapy is already in place.

It is recommended that clinicians use active exercise protocols as priority and use KT mainly as a facilitative agent in the early stage of rehabilitation or in individuals who are fearful of active movement due to pain, to help promote compliance. Future investigations should examine the cost-effectiveness of this approach in various clinical settings.

REFERENCES

Aguilar-Ferrándiz, M. E., Matarán-Peñarrocha, G. A., Tapia-Haro, R. M., Castellote-Caballero, Y., Martí-García, C., Castro-Sánchez, A. M., & Chronic.

(2022). Effects of a supervised exercise program in addition to electrical stimulation or kinesio taping in low back pain : a randomized controlled trial. *Scientific Reports*, 1–11. https://doi.org/10.1038/s41598-022-14154-5Alikhajeh, Y., Barabadi, E., & Rahimi, G. R. M. (2020). *A Comparison of 6 Weeks of Aquatic Exercise and Kinesio Taping in Patients With Chronic Nonspeci fi c Low Back Pain*. 1–6. https://doi.org/https://doi.org/10.1123/jsr.2019-0185

Bilal, H., Darain, H., Bibi, A., & Khan, S. (2022a). Efficacy of Kinesio Tapping Along With Conventional Physical Therapy and Conventional Physical Therapy Alone for the Treatment of Acute Low Back Pain: a Randomized Controlled Trial. *Khyber Medical University Journal*, *14*(2), 91–97. https://doi.org/10.35845/kmuj.2022.21879

Bilal, H., Darain, H., Bibi, A., & Khan, S. (2022b). EFFICACY OF KINESIO TAPPING ALONG WITH CONVENTIONAL PHYSICAL THERAPY AND CONVENTIONAL PHYSICAL THERAPY ALONE FOR THE TREATMENT OF ACUTE LOW BACK PAIN: A RANDOMIZED CONTROLLED TRIAL. *Khyber Medical University Journal*, *14*(2), 91–97. https://doi.org/10.35845/kmuj.2022.21879

Cashin, A. G., & Mcauley, J. H. (2020). Clinimetrics : Physiotherapy Evidence Database (PEDro) Scale. *Journal of Physiotherapy*, *66*(1), 59. https://doi.org/10.1016/j.jphys.2019.08.005

Ferreira, M. L., De Luca, K., Haile, L. M., Steinmetz, J. D., Culbreth, G. T., Cross, M., Kopec, J. A., Ferreira, P. H., Blyth, F. M., Buchbinder, R., Hartvigsen, J., Wu, A. M., Safiri, S., Woolf, A. D., Collins, G. S., Ong, K. L., Vollset, S. E., Smith, A. E., Cruz, J. A., … March, L. M. (2023). Global, regional, and national burden of low back pain, 1990–2020, its attributable risk factors, and projections to 2050: a systematic analysis of the Global Burden of Disease Study 2021. *The Lancet Rheumatology*, *5*(6), e316–e329. https://doi.org/10.1016/S2665-9913(23)00098-X

Frizziero, A., Pellizzon, G., Vittadini, F., Bigliardi, D., & Costantino, C. (2021). Efficacy of core stability in non-specific chronic low back pain. *Journal of Functional Morphology and Kinesiology*, *6*(2). https://doi.org/10.3390/jfmk6020037

Júnior, M. A. D. L., Almeida, M. O. De, Santos, R. S., Civile, V. T., & Costa, L. O. P. (2018). Effectiveness of Kinesio Taping® in patients with chronic non-specific low back pain: a systematic review with meta-analysis. *Spine*. https://doi.org/10.1097/BRS.0000000000002756

Maher, C. G., Sherrington, C., Herbert, R. D., Moseley, A. M., & Elkins, M. (2003). *Reliability of the PEDro Scale for Rating Quality of Randomized*. *83*(8), 713–721. https://doi.org/https://doi.org/10.1093/ptj/83.8.713

Mastuti, K. A., & Husain, F. (2023). Gambaran Kejadian Low Back Pain pada Karyawan CV. Pacific Garment. *Jurnal Ilmu Kesehatan Mandira Cendikia*, *2*(8),

297–305.

Mengi, A., Özdolap, Ş., Köksal, T., Köktürk, F., & Sarıkaya, S. (2020). Comparison of effectiveness of different kinesiological taping techniques in patients with chronic low back pain: A double-blind, randomized-controlled study. *Turkish Journal of Physical Medicine and Rehabilitation*, *66*(3), 252–261. https://doi.org/10.5606/tftrd.2020.3712

Ningrum, W. A. S., & Setiawan, E. (2024). The Effectiveness of Kinesio Taping in Reducing Pain for Chronic Low Back Pain : A Systematic Review. *Jurnal Saintika Medika*, *20*(1), 70–101. https://doi.org/https://doi.org/10.22219/sm.Vol20.SMUMM1.37233.

Ogunniran, I. A., Akodu, A. K., & Odebiyi, D. O. (2023). Effects of kinesiology taping and core stability exercise on clinical variables in patients with non-specific chronic low back pain: A randomized controlled trial. *Journal of Bodywork and Movement Therapies*, *33*, 20–27. https://doi.org/10.1016/j.jbmt.2022.09.013

Page, M. J., Mckenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-wilson, E., Mcdonald, S., … Moher, D. (2021). *The PRISMA 2020 statement : an updated guideline for reporting systematic reviews*. 1–11. https://doi.org/https://doi.org/10.1186/s13643-021-01626-4

Pertiwi, J. K., & Ghufroni, A. (2024). The Effect of Ultrasound and Core Stability Exercise on Increasing Lower Back Functionality in Adolescents. *Interest : Jurnal Ilmu Kesehatan*, *13*(1 SE-Articles), 90–97. https://doi.org/10.37341/interest.v13i1.589

Wang, F., Yang, Y., Xu, J., Zhao, M., & Ma, H. (2025). The shifting global landscape of low Back pain attributable to high body mass index : Burden , growth , and inequalities. *Preventive Medicine Reports*, *53*(February), 103031. https://doi.org/10.1016/j.pmedr.2025.103031