

CODE: ABS 005

EFFICACY OF CORE STABILITY TRAINING VERSUS CONVENTIONAL EXERCISES IN MECHANICAL LOW BACK PAIN.

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Background: Mechanical low back pain is a common musculoskeletal condition associated with pain, reduced functional capacity, and decreased quality of life. It often results from poor posture, muscle imbalance, and impaired spinal stability. Core stability training focuses on strengthening deep trunk muscles to improve spinal support, while conventional exercises emphasize general strengthening and flexibility. Comparing these approaches may help identify more effective rehabilitation strategies for long-term recovery and prevention.

Purpose: To compare the effectiveness of core stability training and conventional exercises in reducing pain and improving functional outcomes in individuals with mechanical low back pain.

Methods & Materials: A comparative experimental study was conducted on 60 individuals diagnosed with mechanical low back pain, aged between 20–50 years. Participants were randomly allocated into two groups. Group A (n = 30) received core stability training, while Group B (n = 30) performed conventional exercises including stretching and general strengthening of lumbar muscles. The intervention was carried out for 6 weeks, with 5 sessions per week, each lasting 30–40 minutes, under supervised clinical settings to ensure adherence and proper technique.

Results: In Group A (Core Stability Training), NPRS reduced from 7.2 ± 1.1 to 2.1 ± 0.9 , and ODI reduced from 48.5 ± 6.3 to 18.2 ± 5.4 , showing statistically significant improvement ($p < 0.001$). In Group B (Conventional Exercises), NPRS reduced from 7.0 ± 1.0 to 3.8 ± 1.2 , and ODI reduced from 47.2 ± 5.8 to 28.6 ± 6.1 , also showing statistically significant improvement ($p < 0.001$).

Conclusion: Core stability training is more effective than conventional exercises in reducing pain and improving functional outcomes in individuals with mechanical low back pain. Incorporating core stabilization exercises into rehabilitation programs enhances spinal stability, promotes better recovery, improves functional independence, and may help prevent recurrence of low back pain.

Keywords: Mechanical low back pain, core stability exercises, conventional exercises, functional disability, physiotherapy, rehabilitation.