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EFFECTIVENESS OF NEUROMUSCULAR TRAINING EXERCISES ON FUNCTIONAL OUTCOMES IN ADULTS WITH KNEE OSTEOARTHRITIS: A RANDOMIZED CONTROLLED TRIAL.

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Background: Knee osteoarthritis causes pain, stiffness, and reduced mobility, affecting quality of life. Conventional physiotherapy focuses mainly on strengthening, but may not address neuromuscular deficits. Neuromuscular training improves joint stability, balance, and coordination.

Purpose: To determine the effectiveness of a structured neuromuscular training exercise program on functional outcomes and pain intensity in individuals with knee osteoarthritis. Also to compare changes in functional mobility between participants receiving neuromuscular training and those receiving conventional physiotherapy exercises.

Methods and Materials: A single-blinded, parallel-group randomized controlled trial was conducted to evaluate the effectiveness of neuromuscular training in individuals with knee osteoarthritis. Eligible participants were randomly allocated to either a neuromuscular training group or a conventional physiotherapy group using a concealed allocation method. The study duration was for six weeks, with supervised exercise sessions conducted according to standardized protocols. Outcome measures included were the WOMAC questionnaire to assess pain, stiffness, and physical function, the Visual Analogue Scale (VAS) for pain intensity, and the Timed Up and Go (TUG) test to evaluate functional mobility. Assessments were performed at baseline and immediately after the intervention period.

Results: The neuromuscular training group showed greater improvement in pain reduction, functional outcomes, and mobility compared to the conventional physiotherapy group after six weeks of intervention.

Conclusion: Neuromuscular training may be an effective treatment approach for reducing pain and enhancing physical function in individuals with knee osteoarthritis. This type of training focuses on improving joint stability, muscle coordination, balance, and movement control, which are often impaired in this population. By targeting both strength and neuromuscular control, it may offer additional functional benefits compared to conventional strengthening exercises alone. As a result, patients will experience improved mobility, greater confidence during daily activities, and an overall better quality of life.

Keywords:

Knee osteoarthritis; Neuromuscular training; Pain; Functional mobility.