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## **EFFECTIVENESS OF MOBILIZATION WITH MOVEMENT IN IMPROVING PAIN AND FUNCTIONAL MOBILITY AMONG PATIENTS WITH KNEE OSTEOARTHRITIS: A RANDOMIZED CONTROLLED TRIAL.**

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**Background:** Knee osteoarthritis was a common degenerative musculoskeletal condition characterized by chronic pain, reduced joint range of motion, stiffness, and functional limitations, significantly affecting activities of daily living and quality of life. Conventional physiotherapy interventions, including strengthening and range of motion exercises, were commonly used and showed beneficial effects; however, they had certain limitations in restoring optimal joint function and movement patterns. Mobilization with Movement (MWM), a manual therapy technique, was used to improve joint mechanics, correct positional faults, and reduce pain. Despite its clinical use, limited evidence existed regarding its effectiveness in improving functional lower-limb strength and overall outcomes in individuals with knee osteoarthritis.

**Purpose:** to determine the effectiveness of Mobilization with Movement on reducing pain, knee range of motion and functional lower-limb strength among patients with knee osteoarthritis.

**Methods and Materials:** A single-blinded, parallel-group randomized controlled trial will be conducted. Participants will be randomly allocated (1:1) to either a Mobilization with Movement (MWM) group or a conventional physiotherapy group. The MWM group will receive heat therapy, MWM, structured strengthening and functional exercises, and patient education, while the control group will receive the same program without MWM. Pain (VAS), knee range of motion, and lower-limb functional strength (30-second Chair Stand Test) will be assessed at baseline and after 6 weeks.

**Results:** Participants receiving MWM are expected to show greater improvements in pain reduction, knee range of motion, and functional lower-limb strength compared with conventional physiotherapy alone.

**Conclusion:** This study may provide evidence supporting the use of MWM as an adjunct intervention in physiotherapy management of knee osteoarthritis. This study may provide evidence supporting the integration of Mulligan Mobilization with Movement (MWM) as an adjunct intervention in physiotherapy management of knee osteoarthritis and highlight the importance of objective functional outcome measures.

**Keywords:** Knee osteoarthritis, Mobilization with movement, Pain, Knee ROM, Functional strength.