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A Comparative Study Protocol for Evaluating Instrument-assisted Soft Tissue Mobilisation and Integrated Neuromuscular Inhibition Technique in Managing Hamstring Tightness: A Single-blinded Randomised Controlled Trial

Anchal Thakur, Postgraduate Student, Department of Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala, Haryana, India.
Gurjant Singh, Assistant Professor, Department of Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala, Haryana, India.
Nidhi Sharma, Professor, Department of Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala, Haryana, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Gurjant Singh,

Assistant Professor, Department of Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala, Haryana, India.

E-mail: gurjant.singh@mmumullana.org

ABSTRACT

Introduction: People of all ages and activity levels are susceptible to hamstring tightness. It frequently causes functional impairments and restricted Range of Motion (ROM), exacerbating pain. Limited muscle extensibility is a prevalent issue affecting healthy, able-bodied people and a variety of patient groups. In addition to low back pain and abnormal gait, hamstring problems are frequently associated with movement dysfunction at the back of the spine, pelvic region, and lower extremities.

Aim: To plan a study protocol for instrument-assisted soft tissue mobilisation and the integrated neuromuscular inhibition technique to reduce hamstring tightness while enhancing patient flexibility and quality of life.

Materials and Methods: According to the eligibility criteria, 50 individuals between the ages of 18 to 30 years will be recruited. Participants will be randomly assigned into group 1 and group 2. Group 1 will receive Instrument Assisted Soft Tissue Mobilisation (IASTM) and Group 2 will receive Integrated Neuromuscular Inhibition Technique (INIT). Outcome measures like Numeric Pain Rating Scale, Short Form-36 Questionnaire, Pressure Algometer, and Universal Goniometer will be used to compare patient's pre-post intervention status.

Results: Data will be analysed using the Statistical Package for Social Sciences (SPSS) 26.0 software. To determine whether the data is normal, Shapiro-Wilk test will be used. Depending on the normality of the data, parametric tests (paired t-test for within group analysis and independent t-test for between group analysis or non-parametric tests (Wilcoxon signed rank test for within group analysis and Mann Whitney U test for between group analysis) will be applied.

Expected Outcome: In recent literature, both IASTM as well as INIT were found to be useful in increasing hamstring flexibility and functional mobility with hamstring tightness. But while comparing the both, one may show better effectiveness than the other.

Keywords: Flexibility, Pain, Quality of life, Range of motion