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Effectiveness of Physical Therapy Along with PEMF Therapy on Disability, Function and Balance in Knee Osteoarthritis Patients

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ABSTRACT

Introduction: Osteoarthritis (OA) is a degenerative joint disease affecting synovial joints, particularly the knee, leading to pain, stiffness, and functional limitations. It impairs mobility, balance, and quality of life, increasing the risk of falls. While physical therapy is a standard approach for OA management, Pulsed Electromagnetic Field (PEMF) therapy has shown potential in reducing pain, inflammation, and improving joint function.

Objective: The objective of this study was to evaluate the combined effect of physical therapy and PEMF therapy on disability, functional performance, and balance in knee OA patients.

Methodology: This experimental study included 30 knee OA patients (aged 40-75 years), randomly assigned to two groups. Group 1 (n=15) received physical exercises and hot pack treatment, while Group 2 (n=15) received the same treatment plus PEMF therapy. Both groups underwent a 4-week intervention (five sessions per week, 55 minutes each). Pain, functional ability, and balance were assessed using the WOMAC Scale, Lysholm Scale, and Tandem Stance Test.

Result: Group1 has base value for womac scale, lysholm scale and tandem stance test (20±2.60,64.06±9.98 ,21.5±3.85)as compared to after the 4 week protocol post treatment values are for respective groups (16.98±4.02, 82.26±10.76,24.2±3.38) & Group 2 has base value (29.06±4.71,66.86±4.88,20.6±3.5) and the result are (15.46±4.77,79.46±7.52, 25.8±3.04) thus it indicates the treatment has shown the improvement.

Both groups showed significant improvements ($p < 0.05$) in all measured outcomes, with Group 2 demonstrating greater enhancements. WOMAC scores significantly decreased, and Lysholm scores increased, indicating reduced pain and improved function. The Tandem Stance test also improved significantly, highlighting better balance in Group 2.

Conclusion: Integrating PEMF therapy with physical therapy enhances pain reduction, functional recovery, and balance in knee OA patients. Future studies with larger samples and longer follow-ups are recommended.

Keywords: Osteoarthritis, Knee OA, Physical Therapy Modalities, Electromagnetic Fields (or Magnetic Field Therapy), Motor Activity (or Physical Functional Performance), Postural Balance, Pain Management

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