



Effect of Specific Training Programmes on Hip Musculature Peak Torque in Osteoporotic Patients

Mohamed Mostafa M. Essa^{1*}, Salam Mohamed El-hafez²

¹Department of Biomechanics, Faculty of Physical Therapy, Must University, Giza, Egypt;

²Department of Biomechanics, Faculty of Physical Therapy, Cairo University, Giza, Egypt

Abstract : Objectives: The aim of this study was to investigate the effect of core and treadmill training programmes on hip musculature strength in osteoporotic postmenopausal women. **Methods:** Twenty osteoporotic postmenopausal women ageing between 50 to 60 years with BMI between 20.2 to 24.9 kg/m² participated in this study. They were assigned randomly into equal groups. Participants of the group (A) received core training programme, while the group (B) received treadmill training programme lasting three months period. Hip flexors and extensors strength were assessed by Biodex system 3-pro dynamometer multi-joint testing and rehabilitation system, which measure the peak torques. The participants were tested twice; before and after the training programmes. **Results:** The statistical analysis revealed that there was a significant increase of the peak torque of hip extensors in the post-treatment condition compared with the pre-treatment one in both groups ($p < 0.05$). Moreover, there was a significant increase of the hip flexors peak torque in the post-treatment condition compared with the pre-treatment one in group (B) only ($p < 0.05$). However, there were no significant differences in the hip extensors peak torque between both groups ($p > 0.05$). **Conclusions:** It can be concluded that the treadmill training programme is an effective treatment policy to strengthen the hip flexors and extensors in postmenopausal women.

Keywords: Core Training, Treadmill Training, Hip Muscles, Peak Torque, Osteoporosis.