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THE EFFECT OF MAGNETIC THERAPY AND ACTIVE EXERCISE ON BONE MINERAL DENSITY IN ELDERLY WOMEN WITH OSTEOPOROSIS

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ABSTRACT

Purpose: To evaluate the effect of pulsed electro-magnetic therapy and exercise training on bone mineral density (BMD) in elderly women with osteoporosis. **Material and Methods:** A total of 30 elderly women with osteoporosis aged from 60 to 70 years old were randomly divided into two groups: A magnetic group consisting of 15 women who received pulsed electro-magnetic therapy at a frequency of 33 Hz and an intensity of 50 gauss for 50 min per session and an exercise group consisting of 15 women who practiced active exercises that included treadmill walking and selected exercises for

hip and back muscles for 50 min per session. Both interventions were applied for three sessions/week for three months at a physical therapy clinic. Dual-energy X-ray absorptiometry was used to measure the BMD of the neck of the femur and the lumbar spine (L3-L5) before and after intervention. **Results:** Statistical analysis revealed that the BMD of the neck of the femur and the lumbar spine significantly increased in the two groups without a significant difference between them. **Conclusion:** Pulsed electro-magnetic therapy and exercises can increase BMD at the neck of the femur and the lumbar spine in elderly women. Physical therapists could apply pulsed electro-magnetic therapy or exercise training to increase BMD in elderly women.

Keywords: Osteoporosis; Pulsed magnetic field; Treadmill walking; Aerobic exercise.