

## CONFERENCE ABSTRACT

# The effect of different exercise programs on bone mineral density and physical function in women with osteoporosis: A randomized controlled trial

Ardiana Murtezani\*

*University Clinical Center of Kosovo, Kosovo*

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## Abstract

Osteoporosis is a multifactorial progressive skeletal disorder characterized by reduced bone mass. Exercise is widely recommended to reduce osteoporosis falls and related fragility fractures. The purpose of this study was to investigate the effects of land exercise (LE) and aquatic exercise (AE) on physical function and bone mineral density (BMD). Methods: Fifty-eight postmenopausal women aged 50-70 years diagnosed with osteoporosis according to BMD measures enrolled in this study. The subjects were randomly assigned to either the intervention group (LE group) or the control group (AE group). Physical function and BMD were assessed in all subjects in both groups before and after 10 months of intervention. The muscle strength flexibility balance gait time and pain were measured to assess physical function. Bone mineral density at the lumbar spine was measured by dual energy X-ray absorptiometry (DEXA). Results: There were no significant differences between the two groups in the baseline anthropometric data. The two groups were similar with respect to age weight height and body mass index ( $p>0.05$ ). After the exercise program muscle strength flexibility gait time pain and bone density ( $p<0.001$ ) significantly improved with LE compared to AE. There was no significant difference between the two groups in balance at the 10-month follow-up. Conclusion: Significant improvements in physical function and BMD suggest that LE is a possible alternative for postmenopausal women with OP. Clinical rehabilitation impact: In the current available literature there is insufficient data regarding combined regimens additionally conclusions from our research can inspire further studies in order to promote land and water based exercise.

\*Corresponding Author,  
Email: [ardianaa@yahoo.com](mailto:ardianaa@yahoo.com)