

## The effect of a 5-week group-based exercise program on strength, balance, mobility, and gait in the older adult population: A pilot study

Carol A Maritz, Chopra S, Dougherty C, Johnston M, Curran G and Maritz C A  
University of the Sciences, USA

**Background:** Falls are also the fifth leading cause of death among adults aged 65 years and older. Lower extremity weakness and decreased balance are two important risk factors associated with falls in the older population. Current research suggests that in order to produce effective outcomes, an exercise program for older adults needs to be at least 10 weeks in length.

**Methods:** 18 of 23 participants over the age of 60 years (17 female, 1 male; mean age 74 years) completed this pre-test-post-test design. The participants tested on the following outcome measures: 30-second Chair Stand test for lower extremity strength, Four Square Step test (FSST) for dynamic balance, timed up and go (TUG) test for mobility, Activity-Specific Balance Confidence Scale (ABC) for balance confidence and GAITRite® for forward and backward walking velocity. Participants attended a 45-minute group-based exercise program twice a week for 5 weeks at a local church. The program included a 5-minute warm up, 10 minutes of stretching, 20 minutes of strengthening for both upper and lower extremities with

resistance as well as core work, 5 minutes of balance training and 5 minutes of cool down exercises.

**Results:** A significant difference was found in the pre- and post-test measures of backward gait velocity ( $p=.034$ ), forward gait velocity ( $p=.016$ ), 30-second Chair Stand Test ( $p=.001$ ), TUG ( $p=.022$ ), and the FSST ( $p=.001$ ). Although there were no statistically significant differences found in the ABC scale, the overall scores increased.

**Conclusion:** This 5-week group-based exercise program was effective at improving forward and backward gait velocity as well as decreasing the clinical risk for falls in older adults. It is recommended that elements of this program be incorporated into physical therapy practice. Additionally, upon conclusion of physical therapy treatment, older adults should be encouraged to participate in community-based group exercise programs to maintain overall health and wellness and prevent future falls.

### Biography

Carol A Maritz has received her certificate in Physical Therapy from Hahnemann University in Philadelphia in 1981 and her Master's degree in Gerontology in 1988 from Saint Joseph's University. In 2004, she has received her Doctorate in higher education from Nova Southeastern University. She has practiced in the following settings: acute, skilled nursing, outpatient and home care with a focus on the geriatric patient. She has started her academic career as a Physical Therapy Faculty Member at Hahnemann University in 1995 and is currently a Professor of Physical Therapy and Associate Dean at University of the Sciences. Her research focuses on the use of exercise to prevent falls in the older population. She has presented and published her research both nationally and internationally.

c.maritz@uscience.edu

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