

Title of Intervention: Sun-style Tai Chi Exercise

Intervention Strategies: Group Education

Purpose of the Intervention: To improve physical fitness and decrease falls in older adults

Population: Individual aged 60 years or older

Setting: Facility for older adults in Korea; community-based

Partners: None mentioned

Intervention Description:

- Group Education: The Tai Chi exercise program was provided to residents of the facility assigned as the experimental group three times per week for 12 weeks. The group came to the auditorium at the facility each morning and performed the intervention program. A certified Tai Chi exercise leader taught the 12 forms of Sun-style Tai Chi exercise to the group throughout the exercise period. The Tai Chi exercise forms were designed specifically for individuals with arthritis and consisted of slow and continuous movements with a great deal of moving forward and backward. The cycle of 12 movements was repeated for 20 minutes while listening to traditional instrumental music in order to maintain slow and continuous movements, as well as to provide a soothing effect. The exercise session was always completed with a cooling-down exercise involving the stretching of arm and leg muscles and breathing exercises.

Theory: Not mentioned

Resources Required:

- Staff/Volunteers: Trained Tai Chi exercise leader, research assistants
- Training: Not mentioned
- Technology: Not mentioned
- Space: Room to conduct group education
- Budget: Not mentioned
- Intervention: Music, cd or tape player
- Evaluation: Stopwatch, measuring tape, fall reports, perceived confidence scale

Evaluation:

- Design: Quasi-experimental with a non-equivalent control group
- Methods and Measures: Measurements of all outcome variables were taken before and after the 12 week Tai Chi exercise program.
 - Knee and ankle muscle strength were measured using a manual muscle tester. Each person sat on a tall chair that ensured that the foot was not touching the floor, and was asked to raise the limb to specified heights against maximal resistance provided by the research assistants. Both extension and flexion of knees and ankles were measured.
 - Balance was assessed by how long (in seconds) the person could stand on one foot either with eyes closed or eyes opened.
 - Flexibility was measured by the distance (in centimeters) between the hands and the feet after asking the participant to bend forward at the waist and stretch both hands toward the feet without bending the knees.
 - Mobility was measured by the time taken (in seconds) to walk 6 meters on a marked floor.
 - A fall episode was defined as a sudden and unintentional change in position from an upright posture - with or without loss of consciousness- that caused the person to land on the ground. Participants were asked to report any fall episode during the previous year, and weekly fall episodes were closely monitored during the study period.
 - Fall avoidance efficacy was assessed using a scale based on the perceived confidence that the person would be able to avoid falling, with 1 indicating not confident at all and 10 indicating very confident of avoiding falling.

Outcomes:

- Short Term Impact: At post-test, the intervention group showed significant improved muscle strength in knee and ankle flexors and extensors and improved flexibility and mobility compared with the control group. The intervention group reported significantly more confidence in fall avoidance than did the control group.
- Long Term Impact: There was no significant group difference in fall episodes.

Maintenance: Not mentioned

Lessons Learned: Older adults with multiple risk factors for falling can reduce their fall incidence by enhancing their confidence to avoid falling, muscle strength of lower extremities, mobility and balance. A fall prevention program with multiple risk factor approaches should be incorporated into nursing interventions for older adults to optimize their functional independence and quality of life.

Citation(s):

Choi JH, Moon JS, Song R. Effects of Sun-style Tai Chi exercise on physical fitness and fall prevention in fall-prone older adults. *J Adv Nurs*. Jul 2005;51(2):150-157