Effects of ICT-Based Multicomponent Program on Body Composition and Cognitive Function in Older Adults: A Randomized Controlled Clinical Study

Duri Kim | Jae Hyeok Chang | Seunghwan Song | Young Jin Tak | Up Huh | Jeong Su Cho | Min-ji Sung | Minwoo Jang | Jong-Hwan Park

Abstract

Background: Information and communication technology (ICT)-based training devices for older adults’ care related to dementia are being developed to enhance older adults’ cognitive functions. Older adults who require bicycle training devices can improve muscle strength and balance of lower limbs by continuously contracting and relaxing lower-limb muscles and improving cognitive function to prevent dementia. This study was conducted to investigate the effects of an ICT-based multicomponent program on body composition and cognitive function in older adults.

Method: In a randomized controlled intervention test on 20 people over the age of 60 (exercise group: n = 10; control: n = 10), the multicomponent program was applied to the exercise group twice per week, once per day for 12 weeks, at 30 min per session, whereas the control group was advised to maintain their usual daily activities.

Result: Comparing body composition changes and cognitive function changes before and after intervention exhibited statistically significant differences in skeletal muscle mass (P = 0.01) and modified Alzheimer’s disease assessment scale–cognitive score (P = 0.01) between the two groups.

Conclusion: It can be difficult to be engaged in a simple repetitive exercise program. Therefore, to meet older adults’ interests and expectations, a customized ICT-based multicomponent program, which can improve body composition and cognitive function in older adults and is believed to help prevent dementia, is recommended.