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The effect of an elastic-band resistance training exercise on lower limb muscle endurance among older adults

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Background: Good training of lower limb muscle endurance can prevent and postpone the occurrence of fall, reduce the risk of mortality, and increase the ability of independence and autonomy in daily-life activity among older adults.

Objectives: The study aimed to test the effect of an elastic-band resistance training exercise on lower limb muscle endurance among older adults.

Methods: The study adopted a two-group pretest-posttest quasi-experimental design. A convenience sample of community-dwelling older adults aged 65 and over in Beitou District of Taipei City, Taiwan was recruited. The 200 participants were assigned into the experimental and wait-list control group based on their own will. The baseline data of BMI, waistline, and body fat ratio were measured. The intervention of an elastic-band resistance training exercise was conducted at least one time per day at 60 minutes per practice session for one week. The 30-second chair stand test was evaluated at baseline and at the end of the study.

Results: Controlling for the covariates significantly different in the baseline between two groups, the 30-second chair stand test of participants in the experimental group significantly increased 2.31 times than that of the participants in the control group at the end of the intervention ($p < 0.001$).

Conclusions: It is recommended that elastic-band resistance training exercise be promoted in the community to improve lower limb muscle endurance in older adults.

Keywords: Older adults, resistance training, lower limb muscle endurance.

Biography

Huey-Shyan Lin is an associate professor of department of Health-Business Administration, school of nursing at Fooyin University in Taiwan. She received the Ph. D. in health services policy and management from University of South Carolina, USA. She now serves a consultant of Research and Development, Department of Health, Kaohsiung City Government, and research consultants of several hospitals, Taiwan, R.O.C. She also possesses a good publication record in nurse depression, stress management, health promotion, instrument development, and clinical medicine. Her biography was included in Who's Who in the World 2014-2016, and Who's Who in Science and Engineering® 2016-2017.

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