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The effect of chair exercise on community-dwelling elder adults in Japan: a pilot study.

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Introduction: Exercise is one of the most promising interventions to prevent falls. Recently, we developed a chair exercise program to improve the function of the lower extremities of community-dwelling elder adults, in which elder adults performed lower-extremity exercises using an elastic resistance band while sitting on a chair.

Objectives: The aim of this study was to investigate the effect of our chair exercise program on community-dwelling elder adults.

Methods: Participants were recruited from elder adults (aged 66-92 years, mean=77±5) who were certified as "Support needed (level 1 or 2)" or "Care needed (level 1 or 2)" and were divided into 2 groups (experimental group and control group). The chair exercise session (60 min per session) was carried out once a week for 6 months in the experimental group (n=28). The exercise consisted of hip-flexion, hip-extension, hip-abduction, hip-medial rotation, hip-lateral rotation, knee-extension, knee-flexion, ankle plantar and dorsiflexion, and trunk extension using a Thera-Band for resistance. In the control group (n=11), participants maintained the usual lifestyles. Physical activities and activities of daily living were measured at baseline before the intervention and 2, 4 and 6 months after the start of the intervention. These measures included Timed up and go (TUG), Functional reach (FR), walking speed, one-leg standing time with eyes open, Functional independence measure (FIM) and Instrumental activities of daily living (IADL).

Results: The experimental group showed a decrease in TUG time (p=0.02), an increase in walking speed (p=0.03) and an increase in FR range (p=0.03) compared to the control group.

Conclusion: The chair lower-extremity exercise sitting on a chair may be used as an effective and safe intervention to improve the physical abilities of the community-dwelling elder adults.