



Service Priorities and Programmes Electronic Presentations

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Integration of Advanced Technology for Home Exercise in Geriatric Rehabilitation

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Introduction

Regular home-based exercise program has been shown to be beneficial in reducing age-related morbidity and promoting physical independence in community-dwelling older adults. However, their level of physical activity and exercise compliance was generally low, which hinders the effectiveness of such programs. With the development of advanced technology, previous researches showed both exercise monitored by activity tracker and video-directed exercise could enhance their motivation and adherence to exercise.

Objectives

To evaluate the combined effect of a 4-week exercise program with physical activity monitoring by an activity tracker and video-directed home exercise for enhancement of physical performance of older adults under Geriatric Day Hospital (GDH) care.

Methodology

A pilot clinical program was conducted in GDH from September to December 2017. Recruited subjects were assigned into 2 groups, an intervention or a conventional training group. Both groups received tailor-made physical training in GDH with home exercise, while the intervention group was asked to follow a video-directed home exercise program daily and their daily activity was monitored by a wearable activity tracker to enhance their exercise motivation and compliance. Outcomes related to physical health and mobility including Modified Functional Ambulation Classification (MFAC), Modified Rivermead Mobility Index (MRMI), and 6-Minute Walk Test (6MWT) were assessed before and after 4 weeks of intervention. The exercise compliance of individuals was recorded by subjects in their exercise logbook respectively. Feedback from individuals of intervention group was collected in form of questionnaire.

Result

9 and 7 subjects were recruited into the intervention group and the conventional training group respectively. All subjects from the intervention group showed

statistically significant improvement ($p < 0.05$) in all physical outcomes after 4 weeks of training including MFAC (from 5.67 ± 6.71 to 6.44 ± 0.53), MRMI (from 35.56 ± 2.74 to 37.44 ± 2.07) and 6MWT (from 193.33 ± 75.54 to 266.89 ± 82.57), while subjects in the conventional training group got significant improvement in MFAC only (from 5.20 ± 1.03 to 5.57 ± 1.27). Both groups had an excellent compliance to the assigned exercise. All subjects in the intervention group agreed that the home program could enhance their exercise motivation and showed good intention to continue the home exercise program afterward. A combined physical monitoring with activity tracker and video-directed exercise program may be effective in enhancing physical health of community elder adults. It may facilitate early discharge and could empower patients to continue rehabilitation at home.