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A Physiotherapy Exercise Program to Improve the Mobility of Patients with Cognitive Impairment

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Introduction

Mobility and balance impairments are common in the elderly with cognitive impairment. This may affect the stability during walking and increase the risk of fall in the elderly. Dementia is a significant risk factor for falls. Injurious fall does not only impose a substantial burden on our health care system, but also have negative impacts to the elderly both physically and psychologically. Studies had demonstrated that different types of exercises including individual and group based exercise are beneficial to patients with cognitive impairment in term of walking speed, balance and quality of life. Therefore, it is important to include an exercise program in the rehabilitation for the cognitive impaired patients to improve their mobility.

Objectives

To evaluate the effect of a physiotherapy exercise program on the mobility performance in patients with cognitive impairment

Methodology

Patients with cognitive impairment referred to Geriatric Day Hospital (GDH) of Pok Oi Hospital for cognitive training were included in the study. A multi-component exercise program was introduced to the patients and was commenced at their first session in GDH. The exercise program comprised of group based stretching exercises, aerobic exercises, strength and balance training. The exercise program would be completed when the patients were discharged from GDH. Patient who requested an early discharge from GDH training or defaulted GDH follow-up were excluded from the study. Elderly mobility scale, functional reach, time up and go test, 30-second chair stand test and gait speed were assessed at baseline and at the end of the program. The Wilcoxon signed-rank test was used during statistical analysis in IBM SPSS Statistics 22.

Result

A total of 67 patients (34 males and 33 females) had completed the exercise program from March 2015 to November 2017. The mean age of patients was 78.5±8.3. On

average, each patient had attended 10.4±4.4 sessions of training in 9.3 weeks. There was an improvement in mobility performance in terms of elderly mobility scale, functional reach, time up and go test and 30-second chair stand test, which are all statistically significant. Patient had a higher score (18.3±3.4) in elderly mobility scale when compared to baseline (18.0±3.4) after the program ($p = 0.014$). They required less time (15.1±6.2s) than before (16.6±7.0s) to complete time up and go test ($p = 0.001$). Functional reach improved form 21.5±6.6cm to 24.0±6.9cm ($p < 0.001$). The number of repetitions completed in the 30-second chair stand test increased from 9.1±2.8 times to 10.1±2.9 times ($p = 0.001$). The gait speed was similar before (0.75±0.25m/s) and after (0.77±0.29m/s) the program ($p = 0.067$). A multi-component physiotherapy exercise program is effective in improving the mobility in patients with cognitive impairment. Therefore, exercise training is a crucial component and should be included in the rehabilitation program for the patients with cognitive impairment. Further studies are also suggested to investigate the long-term effect of the exercise program.