

Summary

Title: The assessment of the impact of two different 12-week exercise programs on functional status and quality of life of elderly people on wheelchairs living in nursing homes

Introduction: An increasing number of people over 65 years old is a crucial issue when considering current demographic structure of Polish society. The need of developing new social, economic and health solutions for seniors derives from their growing disability and dependence on others aid. It is necessary to develop preventive strategies aimed at comprehensive support for people with a low level of functional efficiency.

Objective: Assessment of the impact of 3-month general mobility exercises or exercises with elements of utensils-supported dance movement therapy on functional fitness and quality of life of elderly people using wheelchairs, living in social welfare homes.

Material and method: The study included elderly people from 65 to 85 years old using wheelchairs and living in nursing homes in Rzeszów and the surrounding area. The following criteria were used to include people in the study: inhabitancy in nursing home for at least 3 months, no occurrence of dementia of medium and severe degree, no severe depression. Exclusion criteria: unstable internal diseases, movement blocking paresis and/or pain. After the initial qualification, the surveyed persons were randomly assigned to three groups, 50 persons each. The group I performed general rehabilitation exercises, the group II performed activity training with elements of dance therapy supported by gymnastic utensils. Group III – control group with deferred intervention. Before random allocation to groups, all subjects took a part in baseline examination. After 12 weeks of physical exercises, second study was carried out. To evaluate socio-demographic data in all groups, a questionnaire was used to collect information on selected somatic features of the examined persons. Other scales and tools used in the elaboration are: Mini Mental State Examination, Geriatric Depression Assessment Scale (GDS-15), Quality of Life Assessment Questionnaire (SF-36), Activities of Daily Living (ADL according to Katz and Barthel scale), Berg Scale, JAMAR plus – manual dynamometer, Box and Block test, upper and lower body flexibility assessment, peak flow meter (PEF, FEV1).

Results: At the end of the 12-week exercise program, groups showed a statistically significant improvement in ADL according to the Barthel scale, Berg scale, upper and lower body flexibility on the right and left side, grip strength of both hands, manual fitness of the upper limb and PEF index. Statistically significant improvement of the degree of satisfaction with physical exercises and satisfaction with everyday life in nursing home as well as of emotional state was found in both groups of participants. Groups I and II showed a statistically significant improvement in the quality of life measured with the SF-36 scale. The control group showed a statistically significant deterioration in the GDS-15 scale, Berg scale, flexibility of the lower body and upper body on the left side, grip strength, manual fitness of the dominant limb and PEF. There were statistically significant differences in the improvement of functional efficiency between the studied groups. In the group II there was a statistically significant improvement in static and dynamic balance in relation to groups I and III. The improvement of ADL according to Barthel scale was significantly greater in comparison to group III. In the assessment of upper and lower body elasticity, hand grip strength, lung function, manual fitness of the upper limb, statistically significant difference was identified in groups I and II, in comparison to group III. The results showed that in such domains of quality of life as: pain, vitality, social activity and the importance of mental limitations, significant statistical improvement occurred in group I, in relation to groups II and III, and also statistically significant improvement occurred in group II in relation to group III. On the other hand, in domains of quality of life such as the importance of physical limitations, mental health, general physical health and general mental health, statistically significant improvements occurred in groups I and II in comparison to group III.

Conclusions: After 12 weeks of general mobility exercises and exercises with elements of dance therapy with utensils, an improvement in functional fitness and quality of life of elderly people using a wheelchair was demonstrated. In the studied groups, after a 12-week period of physical exercises, a greater improvement in functional condition was proved in the group with a program containing elements of dance therapy with utensils, while a better quality of life was demonstrated in the group with a general mobility exercise program. Proposed group exercise programs are convenient and effective method of training to improve functional performance and quality of life of seniors with reduced mobility.

Keywords: elderly, nursing home, wheelchairs, physical activities, dance movement therapy