

# Summary

## **The assessment of the impact of regular physical activity on functional status and the quality of life of older people under institutional care**

### **Introduction:**

In recent years, the number of older people in the Polish society has increased significantly. Incapacity, addiction to other people's help, the problem of dementia and the need to provide the sick with institutional care that increase with age represent a challenge for the protection of the health and social policy in Poland. To ensure adequate medical care and comprehensive assistance that would compensate for the deficits in the daily functioning we are looking for a cost-effective and easy-to-implement and realize support programmes for the elderly.

### **Objective:**

The aim of the study was to assess the impact of regular physical activity on functional status and the quality of life of older people under institutional care.

### **Material and method:**

The study included 144 people living in randomly selected nursing homes in Podkarpackie, Małopolskie and Nowosądeckie provinces. Inclusion criteria studies are as follows: the age of the subjects from 65 to 85 years, the absence of dementia medium and heavy level, the lack of severe depression and spending a minimum of 4 hours a day in a sitting position. After initial qualification people tested were randomly allocated to four subgroups, 36 people in each. Subgroup were marked with successive letters of the alphabet: A, B, C and D. In the subgroup A basic general mobility exercises were conducted without the part consisting of motivation, in the subgroup B-basic general mobility exercises along with the part consisting of motivation, in the subgroup C-functional activity of training without the part consisting of motivation and subgroup D-functional activity training along with the part of consisting of motivation. Before the random selection to subgroups in all subjects an examination was carried out. After the end of the exercise program examination II was done. After 12 weeks of the end of the exercise examination III was performed.

In the test subgroups a questionnaire survey was used to evaluate the sociodemographic data and collect information on selected characteristics of somatic subjects. Other scales and tools used in the study are as follows: Mini-Mental State

Examination, Geriatric Depression Scale (GDS), Activities of Daily Living, Instrumental Activities of Daily Living (ADL-IADL), Quality of life assessment questionnaire SF-36, Timed Up and Go (TUG), Timed 10-Meter Walk Test (10MWT), Chair Stand, Hand dynamometer, Berg Balance Scale and CQ-stab stabilometric platform.

**Results:**

After 12-week exercise program all the surveyed subgroups demonstrated statistically significant functional improvement, as well as the improvement of stability of the body posture in the plane of the anteroposterior and of the quality of life in terms of domains: the total physical and mental health. There have been statistically significant differences in improving functional capacity between test subgroups. Subgroup D showed the largest change in gait speed, balance and grip strength of the hand of the right and left in relation to the subgroup A. The force of the lower limbs has shown more improvement in the subgroup D than A and B. There has not been a statistically significant difference in the effectiveness of individual exercise programs in terms of balance and functionality (TUG) between treatment groups.

After the 12-week observation from the end of the exercise program statistically significant differences in the functional test results between the test subgroups have been shown. Functional efficiency and speed of walking have remained at the level of results of the second examination in the subgroup D. The strength of lower limbs has demonstrated the largest improvement in the subgroup D. Balance expressed in the scale of Berg has the smallest reduction in the subgroup D. Right hand grip strength significantly increased in the subgroup D compared to the subgroup A. No statistically significant difference in terms of the strength of the hand grip left between the result of the third test and test result of the second has been shown.

**Conclusions:**

1. Systematically undertaken physical activity, regardless of the applied program of exercise, has contributed to improving:

- functional status and quality of life;
- speed of gait, balance and reducing the fall risk, muscle strength of lower limbs, grip strength of the right and left, and postural stability in the sagittal plane;

- total physical and mental health of older people under institutional care.
2. The greatest improvement in functional status and quality of life after a 12-week programme of exercise has been found in the subgroup of the functional activity connected with the part consisting of motivation.
  3. Improvement of functional status and quality of life remained in a period of 3 months from the end of the exercise program in the subgroup with the functional activity connected with the part consisting of motivation.

Key words: elderly, exercise, nursing home, motor activity