Abstract:
This diploma thesis deals with monitoring the movement of the upper limbs in patients after acquired brain injury using an accelerometer. The diploma thesis is processed from the perspective of occupational therapy. The thesis is divided into the theoretical and practical part. The main objective of the theoretical part is to collect specialist literature about monitoring the movement of the upper limbs by accelerometer in rehabilitation, especially in the occupational therapy. The practical part of the thesis has three objectives. The first objective is to find out whether monitoring of the upper limbs using the accelerometer in patients after acquired brain injury will lead to an objective improvement of the activity of daily living (ADL) in the areas of eating, washing and dressing. The second objective is to find out whether monitoring of the upper limbs using the accelerometer in patients after acquired brain injury will lead to subjective improvement in the same ADLs, and the third objective is to compare whether objective and subjective improvement is related. The practical part was prepared in the form of pilot studies. Quantitative research was used, specifically the type of pre-experiment – One Group Pretest Posttest Design. The study included 14 patients after acquired brain injury. The patients participated in a 4-week in day-care-center with simultaneous monitoring of their upper limbs using an accelerometer. Patients were evaluated using two objective tools - ICF (International Classification of Functioning, Disability and Health) and FIM (Functional Independence Measure) and using the WHODAS 2.0 subjective tool (World Health Organization Disability Assessment Schedule 2.0). At the established level of significance $\alpha = 0.05$, it has been shown that monitoring of the movement of the upper limbs by the accelerometer leads to a statistically significant improvement in subjective perception in the performed ADLs in patients after the acquired brain injury. Changes in objective improvement were not statistically significant. It has not been statistically confirmed that objective improvement and subjective improvement are related.

Key words:
Acquired brain injury, monitoring of the movement, accelerometer, biofeedback, motivation, activity of daily living, occupational therapy