Abstract:

Introduction: Multiple sclerosis is a chronic autoimmune neurodegenerative affection of the central nervous system with various neurological symptoms. Disability of upper extremities with other symptoms leads to impaired ability to work and ADL-activities of daily living. The purpose of the pilot study was to evaluate the effect of hand training with the Hand Tutor® rehabilitation system.

Methods: The study involved 9 probands, completed 6 probands (2 females and 4 males) at an average age of 36 (SD 4), with a mean disease duration of 13 years (SD 4). Patients received a series of 10 Hand Tutor® therapies, 1-2 times a week. The effect of the therapy was evaluated using the Nine Hole Peg Test (9HPT), the Modified Frenchay Scale and the subjective evaluation of the probands.

Results: Before the therapies, the average performance in the 9HPT test was 85 seconds and 83 points in the Modified Frenchay scale. After the therapies, the average 9HPT performance was 67 seconds and 86 points in the Modified Frenchay scale. According to the subjective evaluation of probands, the therapy had a positive effect on the tremor of the upper limb and on the use of the upper limb in the ADL.

Conclusion: Therapy with a special rehabilitation system provides patients with MS with more intensive hand training using therapeutic games. The positive effect of therapy has been demonstrated in clinical test, 9HPT and Modified Frenchay scale. Positive results were also demonstrated by subjective patient evaluation.