Abstract:

The diploma thesis explores the use biofeedback balls called SunBall® as a possible alternative in hand diagnostics and grip therapy in occupational therapy practice. This thesis includes theoretical knowledge about stroke with emphasis on upper limb from the point of view of occupational therapist. It describes the types of grips and discusses the use of a robotic biofeedback in occupational therapy practice. It includes basic information about SunBall® machine, which is used in the practical part of the thesis. The practical part of the thesis evaluates the benefit of the machine in interventions with patients after stroke in subacute and chronic phase. It also presents its possibilities of use in hand diagnostics. Performing these results objectively was achieved by the use of specific occupational therapy examination and also by standardized method, such as modified Ashworth scale, Jamar dynamometer or goninometric measurement. As the results of this thesis show, there is an apparent positive influence on the upper limb and grip therapy according to the disability of probands. There was no success in finding an appropriate application of the measured modalities of the machine in the area of upper limb and grip diagnostics.

Key words: *stroke, biofeedback, upper limb robotic therapy, SunBall*