ABSTRACT

Author: Martin Bruk

Supervisor: PhDr. Markéta Gerlichová, Ph.D.

Title: Walking training by using the Rhythmic auditory stimulation (RAS) technique

Abstract:

Stroke is one of the most common neurological diseases in the elderly population and is often accompanied by gait disorder. Proper rehabilitation is essential for restoring functional mobility and improving the quality of life in these patients. The Rhythmic auditory stimulation (RAS) technique, which falls under neurologic music therapy, can be an effective addition to the rehabilitation process, contributing to the improvement of motor functions and overall health. The main aim of this bachelor thesis was to determine and evaluate the effect of RAS in gait training for post-stroke patients. The thesis combines theoretical and practical approaches. The theoretical part focuses on neurological music therapy, the RAS technique, and gait disorders in patients after stroke. This part also includes a brief analysis of relevant scientific research on the topic. The practical part presents two case studies of post-stroke patients with gait impairments. The therapeutic intervention consisted of walking training on a treadmill with the use of the RAS technique. To evaluate the effectiveness of the therapy, the following tests were used: the Timed Up and Go test, the Berg Balance Scale, and the 6-Minute Walk Test. The results of scientific studies have demonstrated the clinically significant benefit of this method. In the practical part, modest improvements were observed, although not always clinically significant. The most notable change occurred in the Timed Up and Go test. In conclusion, the RAS technique demonstrates potential in gait rehabilitation, particularly in the areas of balance and mobility. However, it is necessary to adjust the therapy individually and adapt the approach to the specific needs of the patient.

Key words: Rhythmic auditory stimulation, RAS, stroke, gait, walking