

Effect of Rhythmic Auditory Stimulation On Gait In Patients With Stroke/ Mohamed Ahmed Fouad Ibrahim. Supervisors: **Prof. Dr. Gehan Mousa Ahmed**, Department of Physical Therapy for Neuromuscular Disorder and its Surgery, Cairo University; **Prof. Dr. Ebtessam Mohamed Fahmy**, Department of Neurology, Faculty of Medicine, Cairo University; **Dr. Ayman Anwar Nassief**, Department of Physical Therapy for Neuromuscular Disorder and its Surgery, Cairo university; Master Thesis. 2014.

Abstract

Background: Stroke is the most leading cause to functional disability and gait problems. **Objectives:** The purpose of this study was to determine the effect of rhythmic auditory stimulation combined with treadmill training on selected gait kinematics in stroke patients. **Methods:** Thirty male stroke patients participated in this study. The patients were assigned randomly into two equal groups, (study and control). Patients in the study group received treadmill training combined with rhythmic auditory stimulation in addition to selected physical therapy program for hemiparetic patients. Patients in the control group received treadmill training in addition to the same selected physical therapy program including: strengthening, stretching, weight bearing, balance exercises and gait training. Biodex gait trainer 2 TM was used to assess selected gait kinematics (step length, step cycle, walking speed, time on each foot and ambulation index) before and after six weeks training period (end of treatment) for both groups. **Results:** There was a statistical significant increase in walking speed, step cycle, step length, percent of time on each foot and ambulation index in both groups post treatment. The improvement in gait parameters post treatment was significantly higher in the study group compared to the control. **Conclusion:** Rhythmic auditory stimulation combined with treadmill training is effective in improving selected gait kinematics in stroke patients when added to the selected physical therapy program.

Key words: Stroke, Rhythmic Auditory Stimulation, Treadmill Training.