Mohamed Serag Eldein Mostafa et al., Int J Phys Med Rehabil 2019, Volume 7
DOI: 10.4172/2329-9096-C1-019

Effects of locomotor training with a robotic-gait orthosis (lokomat) in spasticity modulation of spastic hemiplegic children

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Studying of robotic-assisted locomotor (lokomat) training in spasticity modulation on cerebral palsied hemiplegic children is a strategy for determining its efficacy in reducing spasticity. The study aims to investigate the efficacy of robotic-assisted locomotor (lokomat) training in spasticity modulation. The design for the study is Pretest-Posttest trial at the Laboratories of EDEN physical therapy center. 30 spastic hemiplegic Cerebral Palsied children (CP) of both genders ranged in age from 7 to 14 years contributed in this study, they were being randomly selected from comprehensive rehabilitation center and assigned into two groups of equal number (each group 15 child). Control group (A) underwent traditional exercise treatment, while Study group (B) underwent lokomat gait training in addition to traditional exercise program. Lokomat training was performed 3 days/week for 4 weeks, with up to 45 minutes of training per session. The kinematics gait analysis (3-D motion) was carried out before and after intervention. It was used as an indicator for improvement and reduction of spasticity through determining values in the ankle joint angle at initial contact, stride length, cadence and speed. There is significant improvement in the study group in comparison to control group. Lokomat gait training is an effective additional tool to physical therapy program in treatment of hemiparetic CP children as it plays an important role in decreasing spasticity and improving patient gait pattern.

Biography

Mohamed Serag Eldein Mostafa Working as Assistant professor on the Faculty of Physical Therapy Department of Physical Therapy for Basic Sciences, Faculty of Physical Therapy, Cairo University, Egypt. He completed Doctoral Degree – Physical Therapy (Effect of obesity on planter pressure and kinematic knee pattern in adult) (Faculty of Physical Therapy 2011). Master's degree – Physical Therapy (The most effective TENS mode on chronic low back dysfunction patients) (Faculty of Physical Therapy Cairo univ. in collaboration with Faculty of Health Sciences Sydney University 2007). B.Sc. –Physical Therapy (Faculty of Physical Therapy 2000).

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