



The effect of a course of neuromuscular training on muscular endurance in children with hypotonic cerebral palsy

Poster Presentation

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Abstract

Introduction: Children with cerebral palsy (CP) often have mobility impairments compared to their growing peers, and muscle weakness has been suggested as a contributing factor. The aim of this study was to investigate the effect of a course of neuromuscular training on muscle endurance in children with hypotonic cerebral palsy.

Methods: This quasi-experimental study was conducted for 8 weeks with a pretest-posttest design with a control group. A total of 30 eligible children entered the study with the informed consent of their parents and were randomly divided into two groups of exercise training (n=15) and the control group (n=15). The variables studied in the research, including functional delivery (FRT), TUG test, 10-meter walking test, and muscle endurance, will be measured and examined during two pre-test and post-test stages. The stretching and sitting test were used to assess muscle endurance. The training protocol used in the present study was neuromuscular exercises that were performed for 8 weeks and 3 sessions per week with a duration of 45 to 50 minutes. Neuromuscular training was a combination of resistance training, flexibility, central stability, balance, agility, and plyometric. After ensuring the normality of data distribution through the Shapiro-Wilk test, two statistical tests of analysis of covariance (ANOVA) and paired t-test were used to analyze the data. Intergroup changes were performed simultaneously with the control of pre-test results using ANCOVA, and also intra-group changes in pre-test and post-test were performed through paired t-test. Statistical calculations were performed at the significance level of 0.05 using SPSS software version 23.

Results: The results of the present study showed that performing a course of neuromuscular exercises has a significant effect on muscle endurance in children with cerebral palsy.

Conclusion: If appropriate resistance training techniques are used with the necessary safety, it can be safe and effective for children and adults.

Keywords

Neuromuscular training; endurance; CP

Reference:

1. Abdolvahab, M., et al. (2010). "Effects of Progressive Resistive Exercise on isometric strength of shoulder extensor and abductor muscles in adult hemiplegic." *Journal of Modern Rehabilitation* 3(3): 62-66.
2. Amy K. Hegarty, Max J. Kurz, Wayne Stuberger & Anne K. Silverman. Strength Training Effects on Muscle Forces and Contributions to Whole-Body Movement in Cerebral Palsy. *Journal of Motor Behavior*, Vol. 0, No. 0, 2018.

