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Postural dysfunctions correlate with disability in everyday activities among individuals with cerebral palsy (CP) and limit their repertoire of successful experience in daily living. Anticipatory postural adjustments (APAs) determine the nature and success of an intended movement. Without a safe and efficient postural base created by APAs, smooth and accurate focal movements cannot be taken place. The ability to generate APAs is not innate. Activity experience and learning are essential for their emergence. Conductive Education (CE) is an activity-focused intervention with maximised daily routine participation that may have laid a good foundation for APA development. An understanding of the relationship between activity level and the existence and strength of APAs among adults with spastic CP may shed light on the feasibility of employing such parameters in examining the roles of CE on enhancing this critical postural strategy in CP.

Questions

Is there any difference in the anticipatory kinetic parameters generated from the Centre of Pressure (COP) between middle-aged adults with bilateral spastic CP functioning at two different activity levels?

Objectives

The objectives of this study were to investigate the extent of APA reliance among the target participants during performing unilateral and bilateral reaching tasks in standing and to examine the relationship between their activity level and the anticipatory COP parameters.

Methods

Forces and moments under the participants' feet during the reaching tasks were monitored by a force platform. An accelerometer was attached to the reaching arm to signify the initiation and completion of the reaching tasks. Both data were synchronised through a motion analysis system and sampled at 2,000Hz. Two convenient samples of the targeted participants, aged between 30 and 45 years, at Gross Motor Function Classification System (GMFCS) Levels II (higher activity level) and III (lower activity level) will be recruited.

Results

A pilot study on each group was conducted and 10 anticipatory COP parameters were generated from the plots of the averaged antero-posterior and medio-lateral COP displacements (both tasks) as well as axial torque (unilateral task only) against time. Differences in the anticipatory COP parameters between the targeted participants at GMFCS Levels II and III will be compared by t-test with significant level set at 0.05.

Conclusions

Today's CE, originated from movement therapy, is primarily an educational model in which motor enhancement is a by-product. The latter, however, offers a widening potential repertoire for experiencing successes which is an integral part of upbringing. Previous studies on CE failed to

employ a valid and sensitive tool to evaluate its roles in motor learning. This study may demonstrate the potential use of anticipatory COP parameters in evaluating the unique contribution of the activity-focused and participation-based intervention of CE in enhancing motor performance.



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