

DO PHYSICAL THERAPY INTERVENTIONS THAT TARGET POSTURAL CONTROL INFLUENCE FUNCTION AND PARTICIPATION OUTCOMES IN CHILDREN WITH CEREBRAL PALSY? SYSTEMATIC REVIEW

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Background: The current study was undertaken within the context of a Master's Degree dissertation. This study was very significant, as there appeared to be a gap in literature that focused on the present topic.

Purpose: The purpose of the study was to present a systematic review of interventions that target postural control and report the influence of such interventions in function and participation outcomes for children with Cerebral Palsy (CP). Further, it was the study's aim to understand if outcomes following such interventions, regarding function and/or participation, were reported on – descriptive analysis – and/or measured – with specific instruments.

Methods: Following the PRISMA statement, a journal database search was conducted – PubMed, PEDro, Scielo, Scopus and Web of Science and ERIC –, using the terms “cerebral palsy”, “postural control”, “function” and “participation”. Inclusion criteria was: studies 1) from 2010-2020, 2) where participants were children with CP, 3) of level 2-4 of Oxford Evidence, 4) that reported the effectiveness of Physical Therapy interventions, 5) full final versions, 6) in English or Portuguese.

Results: 888 studies were screened and sixteen met the inclusion criteria. Studies were rated using the Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence for treatment benefits, followed by an assessment using the American Academy for Cerebral Palsy and Developmental Medicine assessment tool. Eight types of interventions were identified in those studies, namely: gait training, hippotherapy, balance training, assistive devices, stochastic vibration, environmental changes, perceptual-motor intervention and NDT. Different instruments and assessment tools were also identified in these studies, ranging from tools to assess function – examples: GMFM, MACS, WeeFIM, TUG test and PEDI –, to tools to assess postural control or related concepts such as balance and gait – examples: SPCM, SATCo, gait analysis, Berg Balance Scale and Biodex Balance System –, as well as tools to assess other variables, such as spasticity and pleasantness.

Conclusion(s): Management of postural control dysfunction, with view to function, may include the use of balance training using the Biodex® Balance System, backward gait training and the use of postural insoles for children with CP levels I-II of the GMFCS. For GMFCS levels III-V, interventions such as perceptual-motor therapy and hippotherapy simulator show promise. As for the management of postural control dysfunction, with view to function and participation or just participation, it is not possible to suggest any intervention based on present results.

Implications: This study has provided insight on interventions that target postural control that seem to influence function in children with CP. These findings may help physical therapists in decision-making regarding intervention management for children with CP.

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Topic: Paediatrics: cerebral palsy

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