THE IMPACT OF CONSTRAINT INDUCED MOVEMENT THERAPY ON QUALITY OF LIFE IN CHILDREN WITH HEMIPLEGIC CEREBRAL PALSY: A SYSTEMATIC REVIEW

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BACKGROUND & PURPOSE

• Hemiplegic cerebral palsy (CP) is a non-progressive neurological disorder resulting in asymmetrical movement impairment in developing children.
• Common deficits reported in children with hemiplegic CP relate to decreased physical function and decreased quality of life (QOL).
• Constraint-induced movement therapy (CIMT) is a technique that restrains movement of the uninvolved extremity. Intensive task-oriented training is then initiated with the involved extremity.
• The functional benefits of CIMT in the treatment of children with hemiplegic CP are well established in the literature.
• Research shows QOL benefits in adult stroke patients after CIMT training. This study investigated if similar benefits are seen in children with hemiplegic CP.
• The purpose of this systematic review was to determine if CIMT had a positive impact on QOL or participation compared to traditional physical therapy for treatment of children with hemiplegic CP.

METHODS

• A systematic review of the literature was conducted. Four relevant databases were searched for peer-reviewed studies from within the last ten years. The quality and conduct of the studies was determined using the American Academy for Cerebral Palsy and Developmental Medicine Methodology.
• INCLUSION CRITERION: Studies included had at least level IV evidence, children with hemiplegic CP, the use of CIMT as a treatment intervention, and pre- and post-treatment measures of QOL or participation.
• SUBJECTS: In the included studies, a total of 119 children with hemiplegic CP, aged 7 months to 16 years, were randomly assigned to a CIMT treatment group or alternative treatment group.

RESULTS

The initial search produced 121 articles, and a total of four studies of moderate strength were found to meet criterion (one level Ib and three level II evidence). Comparison groups used alternative therapeutic interventions, and CIMT was compared to an alternative treatment intervention, and pre- and post-treatment measures of QOL or participation were compared. The functional benefits of CIMT in the treatment of children with hemiplegic CP were found to improve QOL or participation in various settings. Improvements in emotion, physical, and psychological well-being were maintained at the various follow-up periods.

CONCLUSIONS

Although there is a large body of evidence supporting the positive impact of CIMT on functional outcomes, impact on QOL is not routinely assessed. Over 100 studies regarding the functional impact of CIMT were found in the literature, but only four were found to specifically measure the impact on QOL. These studies provide evidence that CIMT not only improves function in children with hemiplegic CP, but also produces a higher QOL which is sustained over time. Positive changes in QOL, however, cannot be assumed because a particular intervention improves function. Rather, researchers must consider more than functional gains and measure QOL specifically when evaluating the impact of physical therapy interventions.

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CLINICAL RELEVANCE

Improvements in QOL cannot be assumed solely based on improved function, but should be measured routinely and specifically in clinical practice.

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