Physical Therapy and Rehabilitation Sciences Department

ACTIVITY & PARTICIPATION OF CHILDREN WITH CEREBRAL PALSY

Understanding Determinants of Motor Abilities, Self-Care, and Play of Young Children with Cerebral Palsy

Movement and Participation in Life Activities of Young Children

(Move & PLAY Study)

Investigators, collaborators, consultants and staff

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Summary / Overview

Cerebral palsy (CP) is the most prevalent childhood neuromuscular condition seen by rehabilitation practitioners; however, the evidence base supporting rehabilitation practice from a holistic perspective is very weak. Much is yet to be learned about the multiple child, family, and environmental factors that contribute to outcomes important to these children and their families. We propose to test a multivariate conceptual model of determinants of basic motor abilities, self-care, and play, that is consistent with systems theory, the theory of human ecology, and a philosophical approach incorporating family-centred care in the context of the framework of the World Health Organization’s Functioning, Disability, and Health, of three functionally distinct groups of young children with CP.

Primary Objectives

1. To identify the child, family, and service determinants that together explain the change in basic motor abilities of young children with CP over a one-year period.
2. To identify the child, family, and service determinants that together explain engagement in self-care and play of young children with CP.

Secondary Objectives

1. to determine the sensitivity-to-change of the measure of participation in self-care and play
2. to determine aspects of intervention that are related to optimal outcomes in terms of change in motor abilities, self-care, and play
3. to refine the measurement model to identify the essential elements for regular use in clinical practice.

Research Plan

We are employing a prospective cohort research design to test our conceptual model of the multiple determinants of change in basic motor abilities, self-care and play of young children with CP. Nine hundred and sixty three children with CP between the ages of 18 months and 4.5 years, stratified by Gross Motor Functional Classification System Level (GMFCS), will be recruited from centres across Canada and the United States, using quota convenience sampling. Each child enrolled in the study will be followed over a period of one year. At the first data collection point, we will collect data on basic motor abilities, self-care, and play, in addition to measures of child adaptive behaviour, primary and secondary impairments, and related health conditions. At the mid-point, we will collect data on family function and services received. Finally, at the end of the year, we will collect data on basic motor abilities, self-care and play for a second time. Data analysis will first involve a thorough descriptive analysis, followed by evaluation of the fit between our proposed model and the data collected in each of three GMFCS level groups using structural equation modeling. Sensitivity to change will be determined, as will the correlation between a range of service factors with outcomes over the period of one year. Confirmatory factor analysis will be used to identify the key indicators.

Impact

Three fundamental goals of early rehabilitation for children with CP are: 1) to optimize motor function within each child’s prognostic potential, 2) to prevent the development of secondary conditions that impact life-long health, and 3) to promote children’s participation in their daily lives. We believe that the results of this study will facilitate accomplishment of these goals by fundamentally changing how rehabilitation services are offered to preschool children with CP across North America. From the results of model testing, significant determinants that are amenable to change will be targets for future intervention, thus contributing to more effective service delivery. In contrast, but equally important, significant determinants that are not amenable to change will assist with realistic goal setting, thus enhancing efficiency of services. The knowledge gained in this proposed research will optimize outcomes important to children and their families, at a critical period in the preschool
years, which will influence their subsequent participation in education, employment, leisure, and social roles.

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Participating Sites

The study is been conducted through a collaboration among: Drexel University, University of Western Ontario, McMaster University / CanChild Centre for Childhood Disability Research, University of Washington, University of Oklahoma Health Sciences Center, and Georgia State University. Numerous children’s hospitals, rehabilitation centers, and early intervention programs have partnered with our research team to assist with subject recruitment and data collection.

Related Link

CanChild Center for Childhood Disability Research http://www.canchild.ca/

Contact Us

For more information, please contact: Audrey Wood, Project Coordinator, ajw69@drexel.edu