



Determinants of Participation and Play of Young Children with Cerebral Palsy: Results of the Move and PLAY Study



L Chiarello¹, D Bartlett², S McCoy³, R Palisano¹, L Jeffries⁴, A Fiss⁵, P Rosenbaum⁶, B Stoskopf⁶, P Wilkes²

¹Drexel University, ²University of Western Ontario, ³University of Washington, ⁴University of Oklahoma, ⁵Mercer University, ⁶McMaster University

Purpose

The objective of this study was to identify the child, family, and service determinants that together explain participation and playfulness of young children with cerebral palsy (CP). Knowledge of the determinants of participation and playfulness will guide therapists' clinical decision making on the focus of therapy services and selection of effective interventions.

Participants

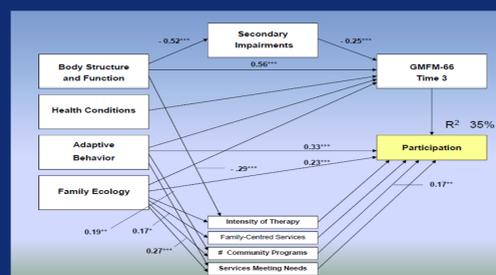
- 429 children with CP
- 18 months – 5 years of age (M=3y2mo, SD=11mo)
- 56% boys
- Representation of the sample across Gross Motor Functional Classification Systems (GMFCS) levels was comparable to population-based studies of children with CP.
- Parents
- 92% mothers
- Multiple sites across the United States and Canada

Methods

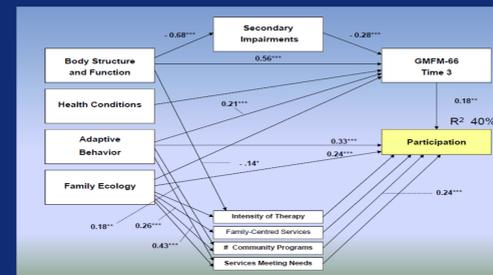
- Observational, prospective study
- Trained and reliable therapists measured:
 - Beginning of study:
 - Child characteristics of primary impairments (balance, distribution of involvement, quality of movement, and spasticity)
 - Child characteristics of secondary impairments (strength, range of motion)
 - End of study (one year later):
 - Gross motor function
 - Playfulness
- Parents completed:
 - Beginning of study
 - Child's health questionnaire
 - Endurance questionnaire (secondary impairment)
 - Early Coping Inventory (adaptive behavior)
 - Middle of study (six months later)
 - Family Environment Scale
 - Family Expectations of Child questionnaire
 - Service questionnaire
 - End of study
 - Child Engagement in Daily Life Measure (frequency of participation, and enjoyment of participation)
- Data analysis: Structural equation modeling

Results

For children in GMFCS levels I & II



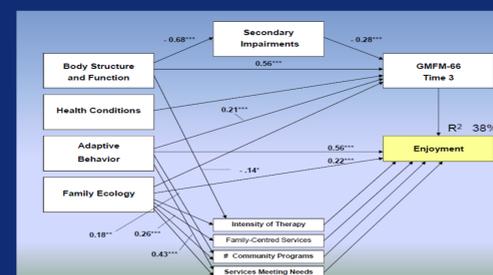
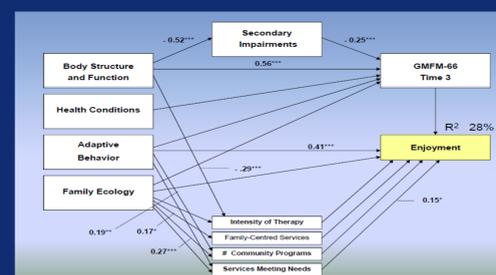
For children in GMFCS levels III, IV, & V



Frequency of Participation

- Acceptable fit statistics: Chi square=59.0, p=0.03; CFI=0.98, TLI=0.96, RMSEA=0.047

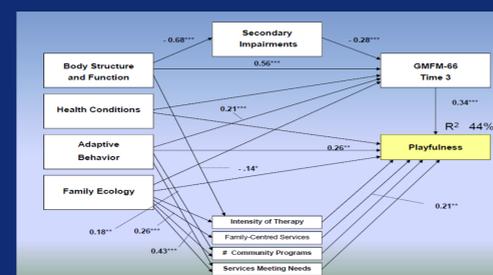
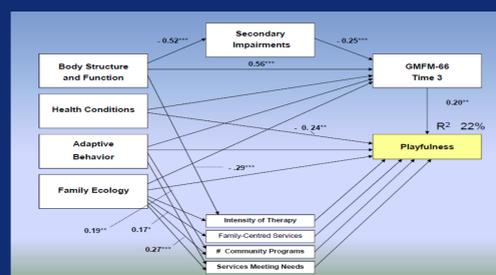
More participation in family & recreation activities was related to more effective adaptive behavior, stronger attributes of families, and greater involvement in community programs for all children. More participation was also related to higher gross motor abilities for children in GMFCS levels III, IV, & V.



Enjoyment of Participation

- Acceptable fit statistics: Chi square=59.0, p=0.03; CFI=0.98, TLI=0.96, RMSEA=0.047

Greater enjoyment from participation was related to more effective adaptive behavior in all children. Greater enjoyment was also related to greater extent service met needs for children in GMFCS levels I & II and to stronger attributes of the family for children in GMFCS levels III, IV, & V.



Playfulness

- Acceptable fit statistics: Chi square=55.0, p=0.04 CFI=0.99, TLI=0.96, RMSEA=0.046

Higher playfulness was related to higher gross motor abilities for all children. Greater playfulness was also related to better health for children in GMFCS levels I & II and to more effective adaptive behavior and to parent's weaker perception of family centeredness of services for children in GMFCS levels III, IV, & V.

Conclusions

Child, family, and service factors together contribute to participation in family & recreation activities for young children with CP. Child factors primarily contribute to children's playfulness. The models accounted for a higher amount of variance in the outcomes for children with lower motor function (GMFCS levels III, IV, & V). Young children with CP may need a range of services to support participation and playfulness. Further research is needed to identify additional factors that may contribute to these outcomes.

Clinical Relevance

To promote children participation and playfulness, therapists are encouraged to:

Foster adaptive behavior

- Self-awareness, adaptability, motivation, persistence, problem-solving, and interactions with people in real-life situations

Promote health

Optimize gross motor abilities

- Enhance balance
- Prevent secondary impairments

Support family's role in nurturing their children

Address family priorities and needs for their children

Assist families in accessing community programs

Additional Members of the Move & PLAY Team: A Wood, A Yocum, L Kang, N Almasri, H Chang, and D Begnoche.



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Contact Details

Lisa A. Chiarello, PT, PhD, PCS
lisa.chiarello@drexel.edu
<http://canchild.ca/ed/ourresearch/moveplay.asp>

