

Playfulness of Young Children with Cerebral Palsy

Lisa Chiarello, PT, PhD, PCS , Hui-Ju Chang, PT, MS , Move and PLAY Study Team

Purpose / Hypothesis: Play is important for children's development and reflects participation in daily life. The purpose of this study was to understand the playfulness of young children with cerebral palsy and to determine if playfulness differs based on children's gender, age, and motor function.

Number of Subjects: Three hundred and ninety-three parents (87% mothers) and their young children with cerebral palsy (56% boys) participated in the study across the United States and Canada. The children were grouped by gender, age (17-30 months, 31-42 months, and 43-59 months), and Gross Motor Functional Classification System levels (GMFCS, I, II and III, IV and V).

Materials / Methods: The Test of Playfulness is a valid and reliable observational assessment to measure the process and playfulness of children's play with their caregivers. The measure consists of 31 items rated on a 4-point ordinal scale that reflects extent, intensity or skillfulness of specific behaviors. The items include observations related to enjoyment, engagement, responsiveness, provision of appropriate cues, and locus of control. The measure score, obtained through Rasch analysis, represents the relative playfulness of the child with an average score equaling 0.0. Higher scores indicate the child is more playful. Trained assessors observed and scored the children's playfulness during a 10-20 minute play session with their parent as part of a larger study on understanding determinants of motor abilities, self care and play. Three-way ANOVA was conducted to examine differences based on gender, age, and motor function with an alpha level of .05. Post-hoc simple effects and multiple comparisons were conducted with an alpha level of .01.

Results: On average the children's playfulness score was .17 ($sd=1.05$). Children's playfulness did not differ by gender. A significant interaction was found between age and motor function ($p<.05$). In GMFCS level I, children older than 42 months were more playful than children younger than 31 months ($p=.001$). For all age groups, children in GMFCS level I were more playful than children in GMFCS levels IV/V ($p<.001$). For children younger than 43 months, those in GMFCS levels II/III were more playful than children in GMFCS levels IV/V ($p<.001$). For children older than 42 months, children in GMFCS level I were more playful than children in GMFCS levels II/III ($p<.01$).

Conclusions: On average young children with cerebral palsy are playful. For children with high motor function, playfulness develops as children mature in age. Children with more significant motor function are less playful than children with higher motor function.

Clinical Relevance: Children's strengths in playfulness can be capitalized on during physical therapy to promote activity and participation. For children with more significant motor limitations, therapists are encouraged to support children's playfulness and provide environmental and task adaptations.