

# Characterization of Physical and Occupational Therapy Services for Children with Cerebral Palsy

Robert Palisano, Sarah Westcott McCoy, Doreen Bartlett, and Lisa Chiarello



## AIMS

To characterize the number of sessions and focus of physical therapy (PT) and occupational therapy (OT) for children with cerebral palsy (CP) and parent perceptions of therapy services.

## BACKGROUND

The amount and focus of therapy services for children with CP are complex issues.

Motor function, age, and family needs for the child are considerations for decision making.

## METHODS

### Participants

692 children with CP, 1.5 to 12 years, and their parents residing in 4 regions of the USA and 6 regions of Canada.

Children were grouped by:

**Age** (<59 months; ≥60 months)

**Gross Motor Function (GMFCS)** level: I, II/III, IV/V

**Manual Ability (MACS)** level: I, II/III, IV/V

### Procedures

GMFCS and MACS classifications were made through consensus of the parent and therapist.

Parents completed a **services questionnaire**:

- Number of physical therapy and occupational therapy sessions in past 12 months

- 8 items on the focus of therapy

- primary and secondary impairments
- activities and participation
- assistive technology/environment modifications
- child self-awareness/motivation
- child health & well-being

- 12 items on family-centered practices

Examples:

- Obtain information on family routines
- Recommendations for child's daily routines
- Assist in finding community resources
- Involve child and family in deciding focus of therapy visits

- 4 items on the extent services met child needs for:

- Motor abilities
- Self-care
- Participation in play, leisure, recreation
- Overall health

Rating Scale: 5 response options

- 1 = Not at all
- 2 = To a small extent
- 3 = To a moderate extent
- 4 = To a great extent
- 5 = To a very great extent

Parents provided a single rating of the focus of physical and occupational therapy in the past 12 months and the extent to which services met their children's needs.

### Data Analysis

- Two-way ANOVAs - effect of age and GMFCS/MACS level on number of PT/OT sessions in the past 12 months

- Multiple comparisons using the Least Significant Difference test

- One-way ANOVAs - effect of GMFCS level on the focus of therapy interventions



## RESULTS

### Number of PT Sessions by Age and GMFCS Level

Level	Children with CP < 59 months			Children with CP ≥ 60 months		
	N	Mean	SD	N	Mean	SD
I	97	24.5	24.3	125	20.8	34.6
II/III	82	42.3	42.3	152	38.6	44.6
IV/V	94	51.3	45.8	141	57.7	55.5

#### Two-way ANOVA

No Age X GMFCS  $F=1.56, p=.21$

No Age effect  $F=0.25, p=.62$

**GMFCS effect  $F=30.8, p<.001$**

#### Multiple Comparisons:

Children in GMFCS levels IV/V received the most sessions ( $p<.001$ )

Children in GMFCS level I received the fewest sessions ( $p<.001$ )

### Number of OT Sessions by Age and MACS Level

Level	Children with CP < 59 months			Children with CP ≥ 60 months		
	N	Mean	SD	N	Mean	SD
I	45	12.3	17.4	69	12.3	20.2
II/III	107	32.4	34.1	192	38.8	33.7
IV/V	51	40.8	47.1	91	43.6	42.0

#### Two-way ANOVA

No Age X MACS interaction  $F=0.40, p=.67$

No Age effect  $F=0.01, p=.94$

**MACS effect  $F=22.6, p<.001$**

#### Multiple Comparisons:

Children in MACS levels IV/V received the most sessions ( $p<.001$ )

Children in MACS level I received the fewest sessions ( $p<.001$ )

## Focus of Therapy

Therapy for children in GMFCS level I focused more on activities as compared to children in levels II/III.

Therapy for children in GMFCS levels IV/V focused more on: a) primary impairments, b) assistive Technology/environmental modifications, and c) structured play, recreation, and leisure.

There were no differences in focus on secondary impairments, self-care, self-awareness/motivation, or health and well-being based on GMFCS levels.

## Family Centered Practices

Therapists engaged in 8 of 12 family-centered practices a **moderate to great extent** ( $M=3.2-3.9$ ).

Therapists interacted effectively with the children a **great to very great extent** ( $M=4.6$ ).

Therapists, to a **small to moderate extent**:

- Assisted the family in finding community resources ( $M=2.9$ )
- Used the child's toys and natural environment ( $M=2.7$ )
- Provided therapy in community settings ( $M=1.7$ )

## Extent Children's Needs Met

Parents rated that needs related to their children's: Motor abilities ( $M=3.8$ ), Self-care ( $M=3.2$ ), Participation ( $M=3.4$ ), and Overall health ( $M=3.8$ ) were met a **moderate to great extent**.

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## CONCLUSIONS

Children with greater limitations in gross motor function and manual ability received more PT and OT sessions.

Children less than 5 years and children 5 years and older did not differ in number of PT or OT sessions received.

Wide variation in the number of sessions suggests that factors other than age, and in addition to gross motor function/manual ability influence decisions on amount of PT/OT.

The focus of therapy differed to some extent based on children's GMFCS levels.

Overall, parents reported that therapists engaged in family-centered practices and therapy services met needs for their children.

Therapists are encouraged to consider community resources, and the child's environment, and should collaborate with families to make decisions about the amount and focus of therapy services.

