

Comparison of Family and Therapist Perceptions of Physical and Occupational Therapy Services Provided to Young Children with Cerebral Palsy

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ABSTRACT. The purpose of this study was to determine whether parents and therapists have similar perceptions of therapy services provided to young children with cerebral palsy (CP), reflecting collaboration and provision of family-centered care. Forty-six parents of young children with CP and 40 therapists providing services for those children participated. Parents and therapists independently completed the same Services Questionnaire, indicating their perceptions of the focus and extent of the children's therapy services. For data analysis, answers to survey questions were combined into seven categories of items with a similar focus. The Spearman rho correlations and Wilcoxon signed-rank tests were used to explore relationships and differences between the ratings of parents and therapists. No significant correlations were found for the seven categories. Significant differences between ratings for five of the seven categories were identified, indicating parents and therapists differed in their ratings of the focus of therapy interventions. Based on the findings, suggestions for improvement in the provision of family-centered care are provided.

KEYWORDS. Cerebral palsy, family-centered care, interventions, parent perceptions, physical and occupational therapy

INTRODUCTION

One of the most important components of physical or occupational therapy intervention for young children with cerebral palsy (CP) or other developmental disabilities is to support and nurture the confidence of families in assisting their children to a life that is as independent and participatory as possible. To this end, a family-centered model of intervention has been advocated as best practice

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(Campbell, Chiarello, Wilcox, & Milbourne, 2009; Darrah, Law, & Pollock, 2001; Hanft & Pilkington, 2000; Hannah & Rodger, 2002; Sandall, Hemmeter, Smith, & McLean, 2005). With family-centered intervention, therapists are encouraged to provide services in which they consider the family members as part of the team and collaborate with them, rather than just direct them in activities to improve the children's abilities and participation (Chiarello & Effgen, 2006). Family involvement in the therapy process can optimize a parent's ability to recognize and capitalize on natural learning opportunities to maximize carryover of interventions with the child throughout the day (Hanft & Pilkington, 2000; Jung, 2003). Additionally, family-centered intervention aims to enhance family self-determination and self-advocacy as the family is encouraged to participate in the decision-making process for the child (Dunst, Trivette, Davis, & Cornwell, 1988; Tomasello, Manning, & Dulmus, 2010).

Collaborative intervention planning and implementation may be identified by a mutual understanding of the focus of intervention techniques. One aspect of true collaboration between families and therapists is a shared decision-making process for the planning and implementation of intervention activities (Hannah & Rodger, 2002; Rosenbaum, King, Law, King, & Evans, 1998). Interventions focus on the children's and families' unique strengths, needs, and desired goals for their children, and should encourage families to express their choices and decisions about service provision (Blue-Banning, Summers, Frankland, Nelson, & Beegle, 2004). Ideally, families would participate not only in identifying intervention priorities but also in direct implementing the activities. Families have reported a more positive impression of therapy services when more collaborative models are used (Broggi & Sabatelli, 2010; Ngui & Flores, 2006; Scales, McEwen, & Murray, 2007).

While collaboration is considered best practice, therapists have reported a lack of education and training to effectively implement family-centered practices (Campbell et al., 2009). Studies examining therapy practices in early intervention report that therapists provide a higher percentage of direct intervention to children they serve as opposed to family-centered and family-inclusive intervention (Campbell & Sawyer, 2007; Peterson, Luze, Eshbaugh, Jeon, & Kantz, 2007). This was true even if the intervention was provided in the home environment (Campbell & Sawyer, 2007). A disparity in the equality of the parent-therapist partnership, where the therapist maintains authority and control of service provision, has also been identified as a challenge to implementing collaborative practices (Blue-Banning et al., 2004). Campbell and colleagues (2009) articulate the need for improvements in pre- and post-professional training and preparation for therapists providing early-intervention services.

The purpose of this study was to evaluate parents' and therapists' perceptions of physical and occupational therapy services provided to young children with CP in order to reflect on collaboration and provision of family-centered care. Specific research questions addressed in this study were:

1. What is the relationship between parent and therapist ratings of the focus of physical and occupational therapy services?
2. Is there a difference between parent and therapist ratings of the focus of physical and occupational therapy services?

METHODS

This study was a substudy of the larger multisite study, entitled “Move & PLAY,” which stands for “**M**ovement and **P**articipation in **L**ife **A**ctivities for **Y**oung children” (Bartlett et al., 2010; Chiarello, Palisano, Bartlett, & McCoy, 2011). The purpose of Move & PLAY was to determine the child, family, and service factors that together explain change in gross-motor abilities, self-care, and play of young children with CP across one year.

Participants

A convenience sample of 46 parents of young children with CP was recruited from the Move & PLAY sample to participate in this substudy. Children participating in the Move & PLAY study met the following inclusion criteria: were between 18 and 60 months of age and had a diagnosis of CP or difficulty in movement and associated issues with balance and/or muscle tone. Because funding for this substudy was obtained after recruitment for Move & PLAY had begun, only less than half of the Move & PLAY families could be approached to participate. Parents who agreed to participate in this substudy were asked to identify their primary motor therapist, which could have been a physical or an occupational therapist. These therapists were then recruited to participate in the substudy, leading to the inclusion of 40 physical and occupational therapists across the US. Six of the therapists completed the survey on two children participating in the study.

The children in this study had a mean age of 42.2 ± 13.9 months, and 29 (63%) of the children were boys. The children represented all levels of the Gross Motor Function Classification System (GMFCS) (I = 15, 33%; II = 9, 20%; III = 1, 2%; IV = 7, 15%; V = 14, 30%). Eighty percent of the children were receiving occupational therapy, and 96% were receiving physical therapy. Ninety-six percent of the family respondents were mothers, and parents had a mean age of 33 ± 7.3 years. Since 100% of the respondents were mothers or fathers, participants are referred to as parents throughout the remainder of this article. Therapists had an average of 13.4 years of pediatric experience, and 85% were physical therapists. The parents and therapists were from one of the following four US states: Pennsylvania, Georgia, Oklahoma, and Washington. Table 1 outlines descriptive characteristics of the participants.

Assessment Instrument

The Services Questionnaire was developed by the Move & PLAY research team to gather comprehensive information on five components of services hypothesized to influence child outcome. The five components included: (1) types and intensities of the programs and services that a child receives, (2) availability and access of services, (3) coordination of services, (4) extent to which services are meeting the child's needs, and (5) focus of therapy services. The focus of therapy service section was used in this study. This section contains 13 questions that capture the extent to which physical and/or occupational therapist provide interventions in five areas: focus on body structure and function (relaxation of muscles, balance, physically guiding the child's movements, stretching, strengthening, and endurance activities), activity (transfer training, mobility training, and practice of specific tasks),

TABLE 1. Child, Family, and Therapist Demographics

Child	
Age	42.2 ± 13.9 months
Gender	Boys = 29 (63%), girls = 17 (37%)
Ethnicity	African American or Black = 4 (9%) Asian or Pacific Islander = 1 (2%) Hispanic or Latino = 3 (7%) Native American = 1 (2%) White = 30 (65%) Biracial = 7 (15%)
GMFCS level	I = 15 (33%) II = 9 (20%) III = 1 (2%) IV = 7 (15%) V = 14 (30%)
Occupational therapy services	Yes = 80%, no = 20% Early intervention or school program = 78% Hospital clinic, rehabilitation center, or private therapy = 45% Both the above settings = 20% Average number of visits per month: 4.2 ± 1.8 Average number of minutes per visit: 47.6 ± 14.6
Physical therapy services	Yes = 96%, no = 4% Early intervention or school program = 75% Hospital clinic, rehabilitation center, or private therapy = 61% Both the above settings = 35% Average number of visits per month = 5.8 ± 4.1 Average minutes per visit = 53.0 ± 17.0
Parent	
Age	33 ± 7.3 years
Relationship to the child	Father = 2 (4%), mother = 44 (96%)
Education	Less than high school = 1 (2%) High school or GED = 14 (30%) Community college, technical, or associate's degree = 10 (22%) Bachelor's degree = 12 (26%) Master's degree = 8 (17%) Doctoral degree = 1 (2%)
Therapist	
Age	39.7 ± 9.5 years
Gender	Male = 3 (8%), female = 38 (92%)
OT/PT	Occupational therapist (OT) = 6 (15%) Physical therapist (PT) = 35 (85%)
Highest degree	Bachelor's = 18 (45%) Clinical master's = 11 (28%) Clinical doctorate = 6 (15%) MS or equivalent = 4 (10%) PhD or equivalent = 1 (3%)
Years of pediatric experience	13.4 ± 9.0 years
Setting of practice	Outpatient = 14 (35%) Early intervention = 12 (30%) Private practice = 4 (10%) School = 6 (15%) Home health = 2 (5%) Other = 1 (3%) Unknown = 1 (3%)

environment (home or classroom modifications and assistive device or equipment training), participation in self-care and participation in play. In addition, 14 questions capture the degree to which services were family centered, and one question addresses the family's ability to integrate therapy recommendations into daily routines (see the Appendix for full questionnaire). The classification of the questionnaire items into these categories was determined by consensus of the researchers. Twenty-six of the 28 questionnaire items are scored on the following scale: 0 = Do not know/not sure, 1 = Not at all, 2 = To a small extent, 3 = To a moderate extent, 4 = To a great extent, and 5 = To a very great extent. The remaining two items, part of the family-centered care category, assess the relationship between the therapist and the child and between the therapist and the family and are scored on the following scale: 1 = Very negative, 2 = Negative, 3 = Neutral, 4 = Positive, and 5 = Very positive. An example of items addressing a focus on body structure and function and on activity follows. Directions for parents were: Please rate the extent to which the physical and/or occupational therapists provide these interventions:

Stretching exercises (Body structure/function)

(Moving or positioning your child's limbs to stretch tight muscles)

Mobility training (Activity)

(Movement through the environment via crawling, walking, use of crutches/walker, use of a wheelchair, etc.)

Test-retest reliability of this measure was established during the Move & PLAY study with a subsample of 18 parents. Re-administration of the measure occurred, on average, 15 days after the original assessment. The ICCs (2,1) estimating test-retest reliability were: 0.65 for body structure and function, 0.95 for activity, 0.61 for environment, 0.74 for participation in self-care, 0.77 for participation in play, 0.86 for family centeredness, and 0.85 for the family's ability to integrate therapy recommendations into daily routines. Cronbach's alpha coefficient indicated that internal consistency of the Services Questionnaire was: 0.74 for body structure and function, 0.70 for activity, 0.62 for environment, and 0.87 for family centeredness. The remaining three categories contained only one item and therefore do not have internal consistency coefficients reported. Face validity is supported as the items were composed by the Move & PLAY research team, whose average years of experience within pediatric rehabilitation is over 30 years. The questionnaire was also reviewed by two parent consultants with experience in raising children with CP for clarity and parental acceptance. The questionnaire was pilot-tested with six parents of young children with CP, who found the measure to be feasible and acceptable. They provided suggestions to clarify the directions and response options. Differences in the extent of focus based on GMFCS level and age provides evidence of construct validity (Benoche, Chiarello, & Bartlett, 2010).

Procedure

Ethics approval for this study was obtained from Institutional Review Boards in each of the four states participating in the study. Within the larger Move & PLAY, parents completed the Services Questionnaire during a telephone assessment

session in the middle of the year in which their children were followed. Parents were provided a hard copy of the questionnaire for their reference prior to the interviews. Interviewers were trained for data collection by participation in a two-hour teleconference on interview techniques and in two practice interview sessions. During the actual interview, the interviewer read the question to the parent and recorded the parent's answer in the interview booklet. Interviewers reminded parents to focus on the therapists who were routinely seeing their children and not to include activities completed by therapists who may serve the children infrequently. Descriptive characteristics for the family and for the child were collected during the first larger Move & PLAY assessment session based on parent report of general demographics and trained therapist's assessment of the children's GMFCS level.

Because of the complexity involved in obtaining responses from all the therapists who would routinely see the child, for this substudy, only the child's primary motor therapist, as identified by the parent (physical or occupational therapist), was asked to complete the Services Questionnaire. Slight wording modifications were made to adjust the questions to reflect that the therapist was the one responding. As an example, the question "Please rate the extent to which your child's therapist talks with you to obtain information on your family routines" was modified to read, "Please rate the extent to which you talk with the child's family to obtain information on their family routines." To increase participation in this portion of the study, the therapist version of the questionnaire was made available online through Survey Monkey (SurveyMonkey.com, Portland, OR), a survey data collection Web site. Therapists were asked to log into the Web site using a therapist identification number and a child identification number in order to link their results to the family responses. Therapists then responded to the questions indicating their focus of therapy with the particular child in the study and not on their overall therapy practice. Therapists also completed a short, 23-question demographic survey to allow for an accurate description of their characteristics.

Data Analysis

SPSS version 17.0 (SPSS, Chicago, IL) was used for data analysis. Descriptive statistics were used to evaluate demographic information for the children, responding parents, and therapists. For clarity of data analysis, individual items on the Services Questionnaire were analyzed within the seven categories described above. Descriptive statistics, including median, minimum, and maximum scores, were used to present the parent and therapist ratings per questionnaire category. For comparative analysis, the median score for each category was calculated with individual scores of 0 (Do not know/not sure) excluded from the calculation. These median scores were then used for the following statistics. Spearman's rho correlations were used to analyze the relationships between the ratings of parents and those of therapists. Nonparametric Wilcoxon signed-rank tests were used to compare between the parent and the therapist responses for each category. Bonferroni's correction of $\alpha = 0.05$ for the multiple contrasts indicated that a p value greater than .007 was required for significance. Scatter plots of the difference between the parent and the therapist median ratings in relation to the actual ratings of the therapist across

TABLE 2. Descriptive Data on Services Questionnaire Results for Parents and Therapists and Comparison of Therapist and Parent Perceptions of PT/OT Services by Category Using the Wilcoxon Signed-Rank Test

Services Questionnaire categories	Parents' rating median (min/max)	Therapists' rating median (min/max)	Z significance (two-tailed)
Body structure and function (Items 1–6)	4.5 (1.5/5.0)	3.5 (2.0/5.0)	-4.512
Activity (Items 7–9)	5.0 (1.0/5.0)	4.0 (0.0/5.0)	<.001* -2.686 .007*
Environmental or assistive technology modifications (Items 10 and 11)	3.8 (1.0/5.0)	2.5 (0.0/5.0)	-4.044
Self-care (Item 12)	2.5 (1.0/5.0)	1.0 (0.0/5.0)	<.001* -2.809 .005*
Play (Item 13)	4.0 (1.0/5.0)	3.0 (1.0/5.0)	-3.592 <.001*
Principles of family-centered care (Items 15–25, 27–29)	4.3 (2.0/5.0)	4.0 (2.0/5.0)	-1.981
Family's ability to integrate therapy recommendations into their daily routine (Item 26)	4.0 (2.0/5.0)	4.0 (1.0/5.0)	.048 -2.233 .026

*Indicates $p \leq .007$

the rating scale were completed to present the details visually of how much parents' scores differed from those of therapists.

RESULTS

Descriptive statistics of the median ratings per service category for the parents and the therapists are presented in Table 2. In general, parents reported body structure/function, activity, play, and family-centered care as the most important foci of intervention (median ≥ 4.0), and self-care was the least important focus of intervention (median = 2.5). Parents also indicated that they were able to integrate therapy recommendations into their daily lives to a great extent (median = 4.0).

Overall, therapists reported activity (median = 4.0) and the inclusion of principles of family-centered care (median = 4.0) as the most important foci of intervention, while self-care (median = 1.0) and environmental or assistive technology modifications (median = 2.5) were the least important foci. Therapists also believed that families were able to integrate therapy recommendations into their daily lives to a great extent (median = 4.0).

Correlations between parent and therapist ratings for all seven categories on the Services Questionnaire ranged from -0.23 to 0.19, and were not significant. Correlation statistics are reported in Table 3.

TABLE 3. Correlation Between Therapist and Parent Perceptions of PT and OT Services by Category Using Spearman's Rho

Category	Body function and structure	Activity	Environmental or assistive technology modifications	Self-care	Play	Principles of family-centered care	Family's ability to integrate therapy recommendations into daily routines
Correlation coefficient	0.01	0.07	0.06	-0.23	-0.03	0.19	0.11
Significance (two-tailed)	0.94	0.66	0.67	0.14	0.86	0.21	0.46

There were significant differences between parent and therapist ratings for categories of body structure and function ($p < .001$), activity ($p = .007$), environmental or assistive technology modifications ($p < .001$), self-care ($p = .005$), and play ($p < .001$). There were no significant differences in parent and therapist ratings of the degree to which services were family centered and in the family's ability to integrate therapy recommendations into daily routines. The Wilcoxon signed-rank results are reported in Table 2.

Specific rating differences ([Parent median score for category – Therapist median score for category] plotted against Therapist median score for category across the rating scale levels) in the reported focus of intervention between parents and therapists across all seven service categories are depicted in Figure 1. Differences in parent scores as compared with therapist scores ranged from five points higher to four points lower within the seven categories of service focus across the rating scale. The majority of category score differences were *within two* points. In most cases, the largest differences between parent and therapist occurred when therapist ratings were at the lower (0 or 1) or higher (4 or 5) ends of the rating scale.

DISCUSSION AND CONCLUSIONS

Based on our study results, parents and therapists had some differences in perceptions of the focus of therapy interventions. While the median scores per category for parents and therapists were close in most instances, the correlations between the ratings demonstrated little relationships. Parents reported a greater emphasis on interventions focused for all five categories that reflected specific types of intervention procedures than was reported by therapists. However, when examining the raw data, parents rated most individual items only slightly higher than the therapists, typically rating within two points higher on each question. The ratings may indicate that parents are not as fully involved in the selection or implementation of therapy activities as necessary in order to have a thorough understanding of what the therapist believes is occurring during therapy sessions. Alternatively, the ratings may suggest that parents overestimated the focus of particular aspects of their child's therapy, wanting to represent therapy favorably, while therapists may have

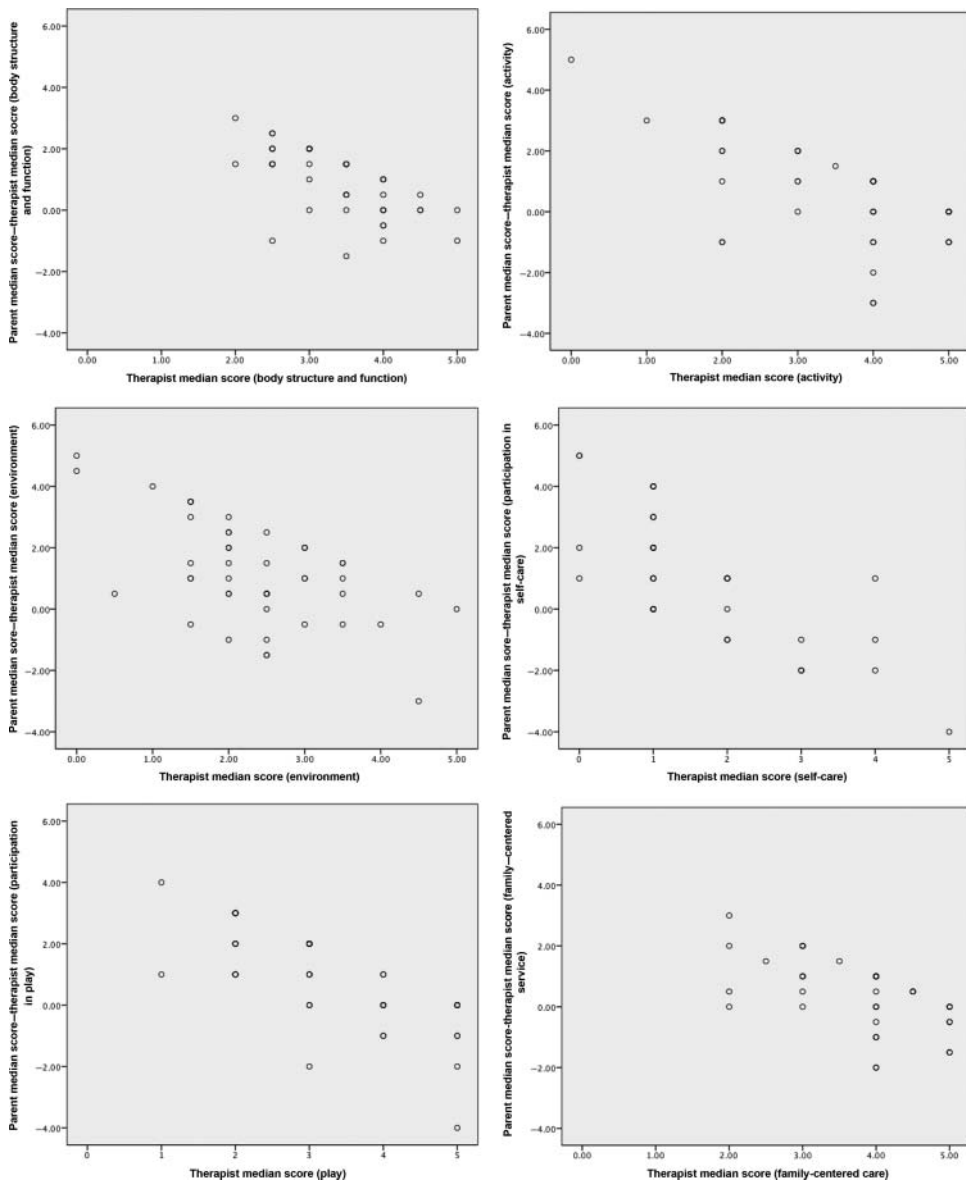


FIGURE 1. Distribution of differences between parent and therapist median scores on seven categories of services across the rating scale. Differences between the parent and therapist median scores for each service category are plotted against the therapist median scores (assumed to better reflect the focus of the services provided) across the rating scale. Each circle represents at least one parent–therapist dyad, with darker circles representing more than one. When circles lie on the 0 line, there is no difference between parent and therapist median scores. Parent scores are higher than therapist scores when circles lie on positive scale points, and vice versa when on negative scale points. (Continued)

responded using a more analytical perspective. Further research will be needed to determine the reason for these findings.

Interventions focusing on activity were identified by both parents and therapists as one of the highest rated foci of intervention. These findings are consistent with

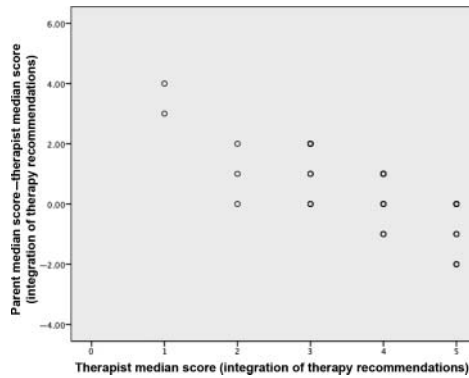


FIGURE 1. (Continued).

previous research by Darrah and colleagues (2008), who presented 54 pediatric therapists with two scenarios about children with CP and asked them to identify their main goal for treatment. Of those identified, 61% of therapist goals addressed the activity level.

Both parents and therapists reported that the general principles of family-centered care were occurring to a great extent. These principles included items such as: ‘talking with the family to obtain information on the family routines,’ ‘involving the child and family in deciding what activities to do,’ and ‘working together with the therapist or family and the child in activities during the therapy visits.’ Given that therapists and parents report use of these family-centered strategies, it is difficult to explain the discrepancy between parent and therapist responses for the specific intervention categories. These results, however, support previous reports that have highlighted challenges in implementing family-centered care (Blue-Banning et al., 2004; Bruce et al., 2002). In addition, Nijhuis and colleagues (2007) have reported differences in the perceived value of specific family-centered care behaviors between families and rehabilitation professionals, and noted that rehabilitation professionals were not always providing interventions that families considered important. Education at the professional and post-professional levels should be encouraged to address with therapists how to facilitate communication with families. It is important for therapists to receive mentoring and training to implement strategies on collaboration with families when establishing priorities and communication with families regarding an understanding of the types of therapeutic activities.

The lack of agreement in scores may indicate sufficient communication is not occurring to provide families with a thorough understanding of therapy focus. Seventy-eight percent of children reported receiving occupational therapy in early-intervention and school environments, and 75% of children were reported as receiving physical therapy in early-intervention and school environments. However, since 50% of the children participating in this study were over 36 months of age, one can assume that many of the children are receiving therapy services in a preschool or school as opposed to the home. Parents may not be present for therapy sessions in the school, making it essential for therapists to develop alternative methods for communicating the focus and intent of therapy with the family. Strategies that

therapists could use to involve parents include inviting parents to attend some of the sessions at the school; sending photographs, videos, or written notes of therapy activities home with the child; and e-mailing parents after therapy sessions. The therapist could elicit information from parents to involve them in their child's care and ensure awareness and agreement with the goals and focus of therapy. Only 15% of therapists completing this survey identified the school as their primary practice setting. Parents may have tended to more often identify outpatient or private therapists to complete this study for children who were school age, or this may suggest that some of the school-based therapists practiced in more than one rehabilitation setting.

A positive finding of this study was that both parents and therapists believed that families were able to include therapy recommendations into their daily routines to a great extent. This finding is consistent with the results of a study by Novak (2011), who found that parents reported using home programs to support and enhance their child's progress with therapy. Parents also reported recognizing the value of forming positive perceptions of home programs developed in collaboration with their therapist (Novak, 2011). Therapists are encouraged to continue to involve parents in the development of activities that can be included in family routines.

Based on parent report, many of the children were being seen by more than one therapist, and some were seeing occupational therapists and physical therapists in more than one setting. Results may have been impacted by having only the child's primary therapist complete the survey for comparison. Parents may have been reflecting on therapy delivered by multiple therapists while therapists were focusing on their own therapy delivery. For example, using the premise that occupational therapists have a large focus on promoting self-care skills in children (Case-Smith & O'Brien, 2010), the larger discrepancy between ratings identified with self-care skills may have been impacted by the high number of physical therapists completing the survey. Overall, parents reported that therapists focused on self-care skills to a moderate extent, while therapists reported that they did not focus on self-care. This relationship might change if a higher percentage of occupational therapists had responded. Notably, both groups rated self-care activities as a less important focus of intervention than all of the other categories of intervention. Since half of the children participating were younger than three years of age and would qualify to receive early-intervention services, the natural environments- and routines-based services emphasis on early intervention lends itself to the inclusion of self-care activities. Due to the younger age of the children, however, therapists may not have reported self-care intervention based on the lower expectations for independent self-care activities in this age group. Future research should consider this issue.

The Services Questionnaire demonstrates adequate reliability and validity for assessing the perceived extent of focus of intervention activities. In addition, this questionnaire includes items that address specific behaviors that therapists employ to reflect family-centered care, whereas many other measures examine more general aspects of family-centered care. For example, one item addressing family-centered care on the Services Questionnaire reads: "To what extent does your therapist provide therapy in community settings, such as the park, store, playground, restaurant, or community center." A comparative item on the Measure of Processes of Care for Service Providers (MPOC), a measure that assesses the

extent to which pediatric service providers implement family-centered care (Woodside, Rosenbaum, King, & King, 1998), reads: “In the past year, to what extent did you give you information about the types of services offered at the Centre or in your community.”

However, limitations of its use in this study should be considered. Due to a larger number of individual items being queried, the authors decided to examine items based on the seven item categories to decrease the number of analyses and thus decrease the risk of Type 1 error. Condensing items into categories does decrease the descriptive detail of which specific intervention activities or family-centered care behaviors are perceived most similarly or most differently. Additionally, parents and therapists were asked to think about the therapy services provided to the child over the past year. This extended time frame may have impacted the results of the survey as foci of intervention may have changed over the course of a year and recall of intervention activities may have been more challenging across the entire year.

The therapists’ report of their focus on the environment was rated notably lower than parents’ perceptions. One explanation for this finding is that therapists may be considering more technical (or high-tech) assistive technologies, while parents may be acknowledging more general environmental supports. The importance of task adaptations/accommodations and environmental modifications to ensure accessibility and participation warrant further study.

While the generalization of this study is increased by the geographical diversity of the sample, it is limited by the smaller sample size. In addition, respondents for this project consisted of a convenience sample of parents that was invested in therapy and participating in a research project and may not be representative of all parents of children with CP. The researchers also acknowledge that responses in this project are based on parent and therapist perceptions, and it is not known to what extent they represent what actually occurs in therapy sessions.

This study provides beginning information on parent and therapist perceptions of the focus of therapy interventions. Further research using a mixed-methods research approach is needed to allow more detailed comparisons of parent and therapist perceptions. A qualitative component to this research would allow an understanding of the meanings behind the ratings to enable interpretation of how the perceptions are different. This rich information would be useful to facilitate parent–therapist partnerships. Compiling information from various practice settings, such as early-intervention, school-based, private practice and hospital-based settings, would allow comparison of collaborative practices within different models of service provision. Comparing responses by state or region of the country may also highlight differences in practice patterns throughout the US or could be broadened to compare rehabilitation service delivery models between the US and other countries. Parent and therapist perceptions of the focus of therapy should also be compared by the discipline, including physical therapy, occupational therapy, and speech language pathology. These additional comparisons may emphasize where training may be increased/improved for therapists in order to lead to more collaborative intervention practices.

The findings of this study suggest that parents and therapists did not uniformly agree on what the focus of physical and occupational therapy services was for the young children with CP. However, it is important to note that there were some

similarities in the responses. Therapists are encouraged to coordinate and communicate the focus of therapy interventions with the parents they serve. It is suggested that additional effort by therapists or perhaps increased frequent communication on focus of therapy and discussion of when to change focus may be needed for improving families' understanding of therapy programs. Future research using greater numbers of families across various practice settings is recommended in order to better inform physical and occupational therapy professional development.

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REFERENCES

- Bartlett, D.J., Chiarello, L.A., McCoy, S.W., Palisano, R., Rosenbaum, P., Jeffries, L., et al. (2010). The Move & PLAY study: An example of comprehensive rehabilitation outcomes research. *Physical Therapy*, *90*(11), 1660–1676.
- Benoche, D., Chiarello, L., & Bartlett, D.J. (2010). Focus and intensity of physical and occupational therapy in young children with cerebral palsy. *Developmental Medicine and Child Neurology*, *52*(Suppl 5): 56.
- Blue-Banning, M., Summers, J.A., Frankland, H.C., Nelson, L.L., & Beegle, G. (2004). Dimensions of family and professional partnerships: Constructive guidelines for collaboration. *Exceptional Children*, *70*(2), 167–184.
- Broggi, M.B., & Sabatelli, R. (2010). Parental perceptions of the parent-therapist relationship: Effects on outcomes of early intervention. *Physical and Occupational Therapy in Pediatrics*, *30*(3), 234–247.
- Bruce, B., Letourneau, N., Ritchie, J., Larocque, S., Dennis, C., & Elliott, M.R. (2002). A multisite study of health professionals' perceptions and practices of family-centered care. *Journal of Family Nursing*, *8*(4), 408–429.
- Campbell, P.H., Chiarello, L., Wilcox, M.J., & Milbourne, S. (2009). Preparing therapists as effective practitioners in early intervention. *Infants and Young Children*, *22*(1), 21–31.

- Campbell, P.H., & Sawyer, L.B. (2007). Supporting learning opportunities in natural settings through participation-based services. *Journal of Early Intervention, 29*, 287–305.
- Case-Smith, J., & O'Brien, J.C. (Eds.). (2010). *Occupational therapy for children* (6th ed.). St. Louis, MO: Mosby.
- Chiarello, L.A., & Effgen, S.K. (2006). Updated competencies for physical therapists working in early intervention. *Pediatric Physical Therapy, 18*(2), 148–158.
- Chiarello, L.A., Palisano, R.J., Bartlett, D.J., & McCoy, S.W. (2011). A multivariate model of determinants of change in gross-motor abilities and engagement in self-care and play of young children with cerebral palsy. *Physical & Occupational Therapy in Pediatrics, 31*(2):150–168.
- Darrah, J., Law, M., & Pollock, N. (2001). Family-centered functional therapy – A choice for children with motor dysfunction. *Infants and Young Children, 13*, 79–87.
- Darrah, J., Wiart, L., & Magill-Evans, J. (2008). Do therapists' goals and interventions for children with cerebral palsy reflect principles in contemporary literature? *Pediatric Physical Therapy, 20*(4), 334–339.
- Dunst, C.J., Trivette, C.M., Davis, M., & Cornwell, J. (1988). Enabling and empowering families of children with health impairments. *Children's Health Care, 17*(2), 71–81.
- Hanft, B.E., & Pilkington, K.O. (2000). Therapy in natural environments: The means or end goal for early intervention? *Infants and Young Children, 12*(4), 1–13.
- Hannah, K., & Rodger, S. (2002). Towards family-centred practice in paediatric occupational therapy: a review of the literature on parent-therapist collaboration. *Australian Occupational Therapy Journal, 49*, 14–24.
- Jung, L.A. (2003). More is better: Maximizing natural learning opportunities. *Young Exceptional Children, 6*(3), 21–26.
- Nijhuis, B.J.G., Reinders-Messelink, H.A., de Blecourt, A.C.E., Hitters, W.M.G.C., Groothoff, J.W., Nakken, H., & Postema, K. (2007). Family-centered care in family-specific teams. *Clinical Rehabilitation, 21*, 660–671.
- Ngui, E.M., & Flores, G. (2006). Satisfaction with Care and Ease of Using Health Care Services among Parents of Children with Special Health Care Needs: The Roles of Race/Ethnicity, Insurance, Language, and Adequacy of Family-centered Care. *Pediatrics, 117*, 1184–1196.
- Novak, I. (2011). Parental experience of implementing effective home programs. *Physical & Occupational Therapy in Pediatrics, 31*, 198–213.
- Peterson, C.A., Luze, G.J., Eshbaugh, E.M., Jeon, H.J., & Kantz, K.R. (2007). Enhancing parent child interactions through home visiting: Promising practice or unfulfilled promise. *Journal of Early Intervention, 29*, 119–140.
- Rosenbaum, P., King, S., Law, M., King, G., & Evans, J. (1998). Family-centered service: A conceptual framework and research review. *Physical and Occupational Therapy in Pediatrics, 18*, 1–20.
- Sandall, S., Hemmeter, M.L., Smith, B., & McLean, M. (2005). *DEC recommended practices in early intervention/early childhood special education* (2nd ed.). Longmont, CO: Sopris West.
- Scales, L., McEwen, I., & Murray, C. (2007). Parents' perceived benefits of physical therapists' direction intervention compared with parental instruction in early intervention. *Pediatric Physical Therapy, 19*, 196–202.
- Tomasello, N.M., Manning, A.R., & Dulmus, C.N. (2010). Family-centered early intervention for infants and toddlers with disabilities. *Journal of Family Social Work, 13*, 163–172.
- Woodside, J., Rosenbaum, P., King, S., & King, G. (1998). The Measure of Processes of Care for Service Providers (MPOC-SP). *CanChild Centre for Childhood Disability Research, McMaster University, Hamilton, Ontario, Canada*. Available from <http://www.canchild.ca/en/measures/mpocsp.asp>.

Appendix: Focus of Therapy Services Questionnaire for Parents

Think of ___'s physical and occupational therapy sessions DURING THE PAST YEAR. Think about the therapists who ROUTINELY see your child. Please rate the extent to which the physical and/or occupational therapists provide these interventions:

RESPONSES:

- (5) To a very great extent
 (4) To a great extent
 (3) To a moderate extent
 (2) To a small extent
 (1) Not at all
 (0) Do not know/not sure

1. Relaxation of muscles (gently moving, rocking, massaging, etc.).
 5 4 3 2 1 0
2. Balance activities (practice with your child holding different positions, responding to a bump or tilt, or reaching and regaining balance, etc.).
 5 4 3 2 1 0
3. Physically guiding your child's way of moving during any motor activities (therapist's hands on your child to guide movements).
 5 4 3 2 1 0
4. Stretching exercises (moving or positioning your child's limbs to stretch tight muscles).
 5 4 3 2 1 0
5. Strengthening exercises (muscle activity against a resistance such as lifting heavy toys, riding a tricycle with weights, use of ankle or wrist weights, etc.).
 5 4 3 2 1 0
6. Endurance exercises (activities which require movement for a sustained period of time such as long walks, bike rides, active games).
 5 4 3 2 1 0
7. Transfer training (moving from one position to another, transferring from one surface to another).
 5 4 3 2 1 0
8. Mobility training (movement through the environment via crawling, walking, use of crutches/walker, use of a wheelchair, etc.).
 5 4 3 2 1 0
9. Practice of specific tasks (such as opening a door, putting toys away, doing some motor activity of your or your child's choice, etc.).
 5 4 3 2 1 0
10. Assistive devices and/or equipment training (measuring, fitting, adjusting, and use of braces, switch activation of toys, special chairs, standers, bathroom devices, etc.).
 5 4 3 2 1 0
11. Adaptations/modifications for the home, classroom, or child care setting (size and location of furniture, ramps, use of visual and auditory cues, etc.).
 5 4 3 2 1 0
12. Self-care routines (dressing, bathing, feeding, hygiene).
 5 4 3 2 1 0
13. Structured play activities (focus on play and interaction with toys and people).
 5 4 3 2 1 0

14. Please share with us other types of specific interventions that your child participates in, or the therapist does, that we have not listed.

5□ 4□ 3□ 2□ 1□ 0□

Please rate the extent to which _____'s THERAPIST DO THE FOLLOWING ACTIVITIES:

15. Talk with you to obtain information on your family routines (what you like to do and what works well for you).

5□ 4□ 3□ 2□ 1□ 0□

16. Involve the child and family in deciding what activities to do or what will be the focus of your child's therapy visits.

5□ 4□ 3□ 2□ 1□ 0□

17. Have discussions with your family to share information, resources, and suggestions, including asking you for your input.

5□ 4□ 3□ 2□ 1□ 0□

18. Supply information about resources for you and your child in various different ways, such as books, worksheets, pictures, videotapes, websites, etc.

5□ 4□ 3□ 2□ 1□ 0□

19. Assist you in finding and setting up community resources to meet your child and family needs.

5□ 4□ 3□ 2□ 1□ 0□

20. Provide you with plans and recommendations about activities that you can use during your daily routines to support your child and family.

5□ 4□ 3□ 2□ 1□ 0□

21. Participate in visits with other team members to coordinate plans to support your child and family.

5□ 4□ 3□ 2□ 1□ 0□

22. Plan therapy that fits into your child's daily routines and activities to support your child's function and participation in the home, school, and community.

5□ 4□ 3□ 2□ 1□ 0□

23. Use your child's own toys and household/child-care/school items during therapy activities.

5□ 4□ 3□ 2□ 1□ 0□

24. Provide therapy in community settings such as the park, store, playground, restaurant, or community center.

5□ 4□ 3□ 2□ 1□ 0□

25. Interact with your child at his/her level and involve him/her in activities during therapy visits.

5□ 4□ 3□ 2□ 1□ 0□

You have been telling me a lot of things about your child's therapists, but now I want you to **THINK ABOUT YOURSELF AND YOUR CHILD'S THERAPY**. You can use the same responses as above.

26. To what extent are **YOU** able to **INCLUDE THERAPY RECOMMENDATIONS** into your child's daily routines and activities?

5□ 4□ 3□ 2□ 1□ 0□

RESPONSES:
(5) Very positive
(4) Positive
(3) Neutral
(2) Negative
(1) Very negative

27. To what extent do YOU WORK TOGETHER with the therapist and your child in activities during therapy visits?

5 4 3 2 1 0

28. Please rate YOUR CHILD'S relationship with the therapist.

5 4 3 2 1 0

29. Please rate YOUR relationship with your child's therapist.

5 4 3 2 1 0