

## Research

# Parent Perceptions of the Language Development of Toddlers With Developmental Delays Before and After Participation in Parent-Coached Language Interventions

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**Purpose:** This study examined parent perception of early communication development before and after participation in language intervention.

**Method:** Fifty-three parents of toddlers with developmental delays and fewer than 10 spoken words completed the Parent Perception of Language Development, an experimental measure, before and after the children were randomly assigned to a language intervention, 2 of which focused on augmented communication with a speech-generating device, and 1 of which focused exclusively on speech.

**Results:** After intervention, the parents' perceptions of success became more positive. Their perceptions of the severity of the child's language difficulties decreased for

the augmented interventions but increased for the spoken intervention. Child outcome correlated positively with success and negatively with difficulty, but only the correlation between number of spoken words and difficulty was statistically significant.

**Conclusions:** Augmented language intervention may not only help the child communicate but also have a positive impact on parent perception of language development.

**Key Words:** early language intervention, assessment, parents, severe language disorders

When language intervention is begun early in life, families may still be coming to terms with their young child's diagnosis and often seek a variety of interventions (e.g., speech-language therapy, occupational therapy, or physical therapy) to overcome their child's limitations (Seligman-Wine, 2007; Wright, Granger, & Sameroff, 1984). Many language interventions for children with developmental disabilities have focused exclusively on child outcomes without much consideration of the parents' roles and reactions. Head and Abbeduto (2007) suggested that the well-being and experiences of parents should be addressed in addition to child outcomes.

In the current study, we focused on how parents' perception of their child's language development might be affected

by participation in early language intervention and child intervention outcome. This study was especially timely given the recent appreciation of the role parents can play in fostering their child's language development and the growing number of demonstrations indicating that parents can learn complex intervention strategies, including those that include augmentative and alternative communication (AAC), specifically, speech-generating devices (SGDs). There are at least two areas that are important to consider: parents' participation in the language intervention process and parents' perceptions of their children's language skills.

## *Parent Participation in Language Intervention*

Language interventions are often implemented without involving parents, even though the transactional nature of communication suggests that appropriate parent involvement will result in positive child outcomes (Koegel, 2000). A concern about involving parents in language interventions has been that they would not be able to successfully implement the intervention strategies themselves. Kaiser (1993) reported that parent-implemented language intervention is a complex phenomenon that requires a multicomponent intervention approach. This approach must be tailored to the child's

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communication skills by emphasizing aspects that most immediately fit the child's learning style and skills.

Kaiser and her colleagues have demonstrated that parents can indeed successfully learn to deliver milieu-based naturalistic language intervention strategies and generalize these strategies to the home environment, resulting in positive effects on children's language skills and parent-child interactions (Hemmeter & Kaiser, 1994; Kaiser, Hancock, & Nietfeld, 2000; Kaiser & Hemmeter, 1996). Woods and her colleagues (e.g., Kashinath, Woods, & Goldstein, 2006; Woods, Kashinath, & Goldstein, 2004; see also McWilliam, 2000) have examined the integration of parents into language intervention routines that are taught in the natural environment. They found that these routines are successful formats for conducting parent-implemented language interventions. Other investigators have also shown that language intervention approaches that include parents improve children's language skills. Fey et al. (2006) examined the effects of responsivity education paired with prelinguistic milieu teaching for 51 young children with developmental delays and their parents. They found that there was a medium-sized effect on the child's rate of intentional communication over the short term. Pennington, Thomson, James, Martin, and McNally (2009) examined the use of *It Takes Two to Talk—The Hanen Program* (Girolametto, Greenberg, & Manolson, 1986) to teach parents of 11 preschool children with cerebral palsy communication interaction skills. They reported that after training on *It Takes Two to Talk* there were positive communication changes in the mothers and the children. Teaching parents new skills to support their child's language development can improve child developmental outcomes (Kaiser & Hancock, 2003). Family-centered interventions may be most effective when parents are permitted to choose when to learn new skills and are taught strategies that are empirically based, tailored to their child's developmental needs, and implemented in a skillful and individualized manner (Kaiser & Hancock, 2003).

For children who may use AAC to communicate, parents and other family members often take on more responsibility for AAC interventions because there may be fewer structured routines outside the home in which to place the intervention (Sevcik & Ronski, 2007). Fulfilling this broader role may require different external supports and regular communication between the interventionists and the family to share methods, discuss attitudes, and review the child's progress and continuing needs (Crutcher, 1993). Sharing language intervention strategies with the family can help in generalizing skills to other settings. This may help parents feel more competent and able to successfully interact with their child and bring about positive outcomes on their own (Bernheimer, Gallimore, & Weisner, 1990).

Binger, Kent-Walsh, Berens, DelCampo, and Rivera (2008), for example, used an eight-step cognitive strategy approach to successfully teach three Latino parents to use an AAC modeling approach to support their children's multisymbol message productions. Kent-Walsh, Binger, and Hasham (2010) demonstrated the success of a parent instruction model during storybook reading to teach symbolic communication skills to children who were using AAC. Ronski, Sevcik, Adamson, Cheslock, and Smith (2007) investigated parents' success in implementing language interventions

in a sample of 30 toddlers with a range of developmental disabilities. Treatment implementation ratings from the interventions showed that even with the addition of language strategies that included an SGD, parents were able to successfully implement language interventions consistently at home. Overall, it appears that parents can learn to use AAC intervention strategies to incorporate into daily routines. What is not known is how this experience may affect the parents' perception of their own skills and their child's language development.

### *Parent Perceptions About Language Development*

In the disability literature, the role of parent perceptions has been investigated extensively in recent years. This research is the result of a shift in the perspective of researchers from a pathological view of families to a view that focuses on positive adaptation and effective coping in families (Turnbull & Turnbull, 1993). This shift has resulted in an increased interest in the experiences and perceptions of having a child with a disability. Not all families have negative or stressful perceptions and experiences. Hastings and Taunt (2002) reviewed existing research on positive perceptions and the experience of families with disabilities. Family members reported a range of positive perceptions and experiences that occurred jointly with stressful experiences. In addition, although reporting generally higher levels of stress than families of children without disabilities, they reported similar or higher levels of positive perceptions as compared to families raising children without disabilities. The authors concluded that many families adapt well to the challenges of raising a child with a disability and that these perceptions serve to help families in this process. Hastings, Allen, McDermott, and Still (2002) explored disability-related perceptions and found that positive perceptions held by mothers may function as a mechanism for coping with the stresses and strains of caring for children with disabilities. It seems to follow that parents' perceptions of their children's language skills could play a similar role.

Brady, Skinner, Roberts, and Hennon (2006) used content analysis methodology to examine mothers' perspectives of communication in young children with fragile X syndrome. Using semistructured interviews, the authors asked 55 biological mothers of children with full mutation fragile X about their perceptions of their child's communication abilities, as well as strategies related to communication. They found that mothers' expectations for their child's communication depended on the child's language level. Parents of children who were not speaking focused their expectations on their child attaining any speech or communicative ability, while parents of children who had some speech focused their expectations on improving speech and increasing vocabulary. They also found that challenges related to their child's communication were primarily related to not being able to understand what the child wanted and frustrations surrounding obtaining speech-language services for their child. Although this study focused only on children with fragile X, the authors suggested that this information might be common to families who have children with other developmental disabilities, such as autism or Down syndrome.



When children use AAC systems, the role of parent perceptions is especially important, as family involvement is crucial to successful outcomes of AAC interventions (Angelo, Jones, & Kokoska, 1995). Historically, parents have often perceived that the use of AAC can hinder speech development (Berry, 1987; Beukelman & Mirenda, 2005; Ronski & Sevcik, 2005), though this perception may be changing as new empirical data are available. Angelo (2000) described the impact of SGD use on 114 parents of 3–12-year-old children with various disabilities using a 76-item survey. She found that in general, parents reported that using the SGD at home was not difficult and was not either burdensome or stigmatizing. Most parents reported that their relationship and communication with their child was better as a result of using the SGD. In addition to improvements in the child's communication, parents reported increased quality of life, independence, and a more promising future for their children. Bailey, Parette, Stoner, Angell, and Carroll (2006) also investigated families' perceptions about the management and use of SGDs in home and school settings using a cross case analysis. Parents of six male junior high and high school children with moderate, severe, or multiple disabilities participated in individual semistructured interviews. All six families reported that SGDs helped to make their children more independent and increased the number of available communication partners and the integration of the child into multiple environments. The parents' reports were not specifically tied to the children's specific communication skills.

Additionally, there is often the perception that incorporating the use of an SGD can place additional demands on families who are already dealing with multiple issues related to parenting a child with significant disabilities. Bailey and colleagues found that parents often felt more stress when they received inadequate instruction on how to use the SGD, had expectations about the immediacy of benefits, and perceived it as the parents' primary responsibility to help the child learn how to use the SGD (Bailey et al., 2006). These findings appeared to result from differences in expectations between family and professionals as well as lack of information and instruction about SGD use (Bailey et al., 2006).

Missing from the literature is an examination of how parents perceive their child's language development and whether that perception changes after participation in an intervention and as a result of child intervention outcome. From the interview studies that have been conducted, it appears that parents have at least two broad areas of concern: their own success in affecting or assisting their children's language development and the severity of their child's language deficits. The purpose of this study was twofold: (a) to examine parent perception of toddler early language development before and after participating in parent-coached early language interventions, two of which included augmented communication with an SGD and one of which focused exclusively on speech; and (b) to relate parent perception to child intervention outcome.

## Method

### *Participants*

A total of 62 parents were invited to have their children participate in a language intervention study; 53 parents (85%)

agreed to have their children participate in the study and completed the parent report measure at both pre- and post-intervention. The parents comprised four men and 49 women who ranged in age from 31 to 45 years ( $M = 37$  years,  $SD = 4.6$ ). Of the 53 parents, 37 were Caucasian, 14 were Black or African American, and two were Asian. Six parents completed high school, two completed their general equivalency diploma, six completed some college, 22 earned their bachelor's degree, and 17 had a graduate or professional degree.

The children of these parents were between the ages of 20 and 40 months (mean chronological age = 30 months). To meet participant selection criteria, a child had to have (a) a significant risk for speech and language impairment, which was operationally defined as not having begun to talk, as indicated by a vocabulary of fewer than 10 intelligible spoken words and a score of less than 12 months on the Expressive Language Scale of the Mullen Scales of Early Learning (Mullen, 1995); (b) at least primitive intentional communication abilities; (c) upper extremity gross motor skills that permitted them to touch the symbols on an SGD; and (d) a primary disability other than delayed speech and language impairment, deafness/hearing impairment, or autism. During the pre-intervention phase of the study, child participants completed an assessment battery that included descriptive, cognitive, communication, and family measures (see Ronski et al., 2010, for additional details of the intervention study).

### *Interventions*

Parents and their children were randomly assigned to one of three interventions: the augmented communication input (AC-I), focusing on augmented language input provided by the adult; the augmented communication output (AC-O), focusing on augmented language production skills; and the spoken communication (SC) interaction, focusing on non-augmented oral communication skills. Table 1 provides a comparison of the three interventions across mode, target vocabulary, strategies, and parent coaching. Of the 53 parents who were the focus of this report, 20, 17, and 16, along with their children, were assigned to the AC-I, AC-O, and SC groups, respectively.

As described in Ronski et al. (2010), the three interventions differed in terms of specific mode of delivery though they shared a number of common features. Each intervention was designed to be 24 sessions in length, with 18 sessions occurring in the laboratory setting and the final six sessions taking place in the child's home. Each session was 30 min in length and consisted of three 10-min blocks of play, book reading, and a snack, in that specific order. A set of targeted vocabulary was individually chosen for each child by the parent in collaboration with the project's speech-language pathologist. The goal of all three interventions was child vocabulary use with the parent and was structured as follows: Parents received an intervention protocol manual with weekly materials that included goals for the parent, interventionist, and child. In the first eight sessions, the parent and the speech-language pathologist observed the interventionist implement the intervention with the child. During the observations, the speech-language pathologist highlighted strategies that the interventionist was implementing with the child and answered



**TABLE 1. Components of the three interventions.**

Component	AC-I	AC-O	SC
Mode	I/P uses SGD to provide communication input to child.	Child uses SGD to communicate.	I/P and child use speech to communicate.
Target vocabulary	Individualized target vocabulary of visual-graphic symbols + spoken words with use of ALL target vocabulary during each session. I/P has a card with all target vocabulary listed.	Individualized target vocabulary of visual-graphic symbols + spoken words with use of ALL target vocabulary during each session. I/P has a card with all target vocabulary listed.	Individualized target vocabulary of spoken words with use of ALL target vocabulary during each session. I/P has a card with all target vocabulary listed.
I/P implementation	I/P provides vocabulary models to child using the device; symbols are positioned in the environment to mark referents; I/P reinforces the child's productive communications.	I/P provides verbal and/or hand-over-hand prompts so that the child produces communication using the SGD.	I/P provides verbal prompts so that the child produces spoken words.
Parent coaching	I provides coaching for P.	I provides coaching for P.	I provides coaching for P.
Sample interaction	Adult (A) and Child (C: Emily) are having snack.  A: Mmm. A: Now what do you want? A: COOKIE or CRACKER. C vocalizes unintelligibly and holds out hand. A: Cookie or cracker? C: CRACKER. A: Good. You want a cracker. A: Okay. (A gives the cracker to Emily.)	Adult (A) and Child (C: Johnny) are playing with blocks.  A: Look Johnny. A: Tell mama build. C: PLAY. A: Yep, we're playin'. A: Tell mama build. (A taps on SGD.) A: Tell me build. C: BUILD. (A provides hand-over-hand assistance.) A: Alright.	Adult (A) and Child (C: Lem) are playing.  A: Let's play with the truck. A: Look. (A points to mouth.) A: Look. A: /t/ /t/ C vocalizes unintelligibly. A: Truck. C vocalizes unintelligibly. A: Right? A: Look at my face.

*Note.* AC-I = augmented communication input; AC-O = augmented communication output; SC = spoken communication; I = interventionist; P = parent; SGD = speech-generating device. Words in caps indicate SGD use. Interventionist treatment implementation manual available from the authors upon request. Adapted from "Randomized comparison of augmented and nonaugmented language interventions for toddlers with developmental delays and their parents," by M. A. Ronski, R. A. Sevcik, L. B. Adamson, M. Cheslock, A. Smith, & R. M. Barker, 2010, *Journal of Speech, Language, and Hearing Research*, 53, p. 355. Copyright 2010 by the American Speech-Language-Hearing Association.

the parent's questions about the interaction. Beginning in the ninth session, the parent joined the session for the last 10 min (the snack) and received ongoing coaching by the interventionist to implement the intervention protocol. Beginning in the 15th session, the parent led the entire 30-min session. The last six sessions were parent-led and conducted at home.

### **Parent Perception of Language Development (PPOLD)**

To examine parents' perceptions of their children's language development, we created the PPOLD (Ronski, Adamson, Cheslock, & Sevcik, 2000). Items for the measure were developed based on the authors' experience interacting with parents in an exploratory language intervention study (Ronski & Sevcik, 1996) and included such topics as the child's language development, the child's use of language, influences on the child's language development, and stresses related to the child's language development. During a focus group, items were presented to 10 undergraduate communication majors enrolled in a language development class. Students reviewed the items for reading level, sense, and presentation, and made comments regarding what they thought each question meant. The final 20 items, edited per the students' feedback and ordered per an exploratory factor analysis described in the next paragraph, are shown in Table 2. Parents were asked to respond on a 5-point scale (1 = *strongly disagree*,

5 = *strongly agree*) to each of the items and to complete the questionnaire both before and after the parent and child participated in the intervention to which they were randomly assigned.

Cronbach alphas before and after intervention for all 20 items were .57 and .50, respectively, which supported our notion that the 20 items did not form a unitary measure. Exploratory factor analyses suggested that two factors underlay these items. The first factor, labeled Success in Table 2, included items reflecting the parents' perceptions about how well they were affecting their children's language development. The second factor, labeled Difficulty in Table 2, generally reflected the parents' views about the severity of the children's language deficits. An additional four items did not load on either factor. Given these results, subsequent analyses considered not just the individual items but two factor scores, formed by averaging the Success and Difficulty items indicated in Table 2. As would be expected, the two factors were reliable; internal consistency alphas for pre- and post-intervention data were .86 and .91 for Success and .71 and .79 for Difficulty, respectively.

### **Child Outcome Measure**

The primary measure used to assess the outcome of the interventions for the children was the number of augmented



**TABLE 2. Parent Perception of Language Development (PPOLD): Item statistics.**

Item	Item no.	<i>M</i> pre	<i>M</i> post	<i>t</i>	<i>p</i>
Factor 1: Success					
Therapy has helped my child communicate.	4	4.02	4.34	1.99	.052
My child's language development has progressed well during the last 3 months.	5	3.25	4.00	3.93	<.001
My child and I have developed ways to communicate that I find satisfying.	7	3.02	3.51	3.53	.001
Being in structured programs has helped my child communicate.	9	3.60	3.98	2.69	.010
My child has made great strides in understanding what other people are trying to communicate.	10	3.60	4.02	2.13	.038
I am increasingly confident that I can help my child develop ways of communicating.	11	4.13	4.23	0.67	.51
My child has made great strides in expressing his/her needs and wants.	13	3.36	3.96	3.04	.004
My child seems eager to communicate with me.	14	4.00	4.38	2.36	.022
My efforts working on communication with my child seem to be paying off.	16	3.53	4.13	4.37	<.001
My child is trying very hard to learn language.	18	3.79	3.98	1.28	.21
Factor 2: Difficulty					
It is often difficult to find the time to make special efforts to help my child learn to communicate.	1	2.63	2.35	−1.94	.058
Helping my child learn to communicate is more work than I thought it would be.	2	3.57	3.40	−0.80	.43
Therapy related to communication development puts an added stress on our family.	3	2.46	2.46	−0.00	1.00
My child still has a long way to go before he/she communicates as well as other children his/her age.	6	4.42	4.38	−0.24	.81
My child misbehaves because he/she does not have a way to tell me what he/she wants.	8	3.21	3.09	−0.78	.44
My child's expressive language skills hamper his/her ability to communicate needs and wants.	15	3.74	3.91	1.29	.20
Not included in either factor					
I want my child to talk more than he/she currently does.	12	4.77	4.70	−0.65	.52
When it comes to language development, my child is a late bloomer who will eventually acquire adequate skills.	17	3.88	3.71	−1.09	.28
Computer technology has provided my child with help to communicate.	19	2.85	3.38	3.04	.004
My child's language development is about where I expect it to be given his/her level of motor and cognitive development.	20	2.30	2.57	1.85	.070

*Note.* *N* = 53 for most means (but 52 for Items 1, 3, 7, 9, and 10 due to missing data pre- or postintervention); pre = preintervention; post = postintervention. Factor 1 consists of items with loadings at least .40 at one time and at least .30 at the other; likewise for Factor 2.

and spoken words the child used (Ronski et al., 2010). For this assessment, we used the number of target augmented and spoken words the child used during the final (or 24th) 30-min session in the child's home. Target augmented word use was defined as touching a visual-graphic symbol representing a target vocabulary on an SGD that produced a digitized equivalent of the English word. Target spoken word use was defined as the production of a combination of sounds that was consistently used by the child and interpreted by the listener as a target word. From transcripts of the intervention session reliably created using the Systematic Analysis of Language Transcripts (Miller & Chapman, 1985), transcribers reliably coded each transcript for target augmented and spoken word use by the child. The transcriber was given a list of the target vocabulary for each specific child. Only spontaneous (nonimitative or non-prompted) augmented and spoken word use was included in the analyses.

## Results

Means for individual pre- and postintervention PPOLD items, organized by factor assignment, are given in Table 2. All items assigned to the Success factor increased from pre- to postintervention, seven of 10 significantly so. One of the four unassigned items ("Computer technology has provided my child with help to communicate") likewise increased significantly from pre- to postintervention. Items assigned to the Difficulty factor tended to decrease from pre- to postintervention, but only one decrease was marginally significant ( $p < .058$ ).

Success and Difficulty factor scores were negatively associated:  $r = -.37$  and  $-.63$  pre- and postintervention,  $p = .005$  and  $p < .001$ , respectively. Difficulty was strongly stable and Success weakly stable from pre- to postintervention:  $r = .77$  and  $.27$ ,  $p < .001$  and  $p = .052$ , respectively. As noted earlier, factors scores were computed, using unit weighting as the mean of the items per Cohen and Cohen (1983).



A Group  $\times$  Pre-post mixed-design analysis of variance was used to examine the effects of group and pre-postintervention on the Success and Difficulty factors (see Table 3). For both Success and Difficulty, group means did not vary significantly; for Success, the pre-post main effect was significant, and for Difficulty, the Group  $\times$  Pre-post interaction was significant. Specifically, with regard to Success (parents feeling more positive about their ability to successfully interact with their child), means were higher at postintervention than at preintervention. With regard to Difficulty (parents feeling that their child's communication presented difficulties), means for the two augmented groups (AC-I and AC-O) were lower at postintervention than at preintervention, while for the SC group the means were higher at post- than at preintervention. In our sample of 52, the Group  $\times$  Pre-post interaction for Difficulty was statistically significant, but follow-up tests for each group, with their decreased sample size (and therefore power), were only marginally significant. Specifically, results for paired-samples  $t$  tests for the AC-I, AC-O, and SC groups were, in order:  $t(19) = -1.90, p = .072$ ;  $t(16) = -1.63, p = .12$ ; and  $t(15) = 1.60, p = .13$ .

Because of its conceptual importance, the one unassigned item (computer technology has helped) that increased significantly from pre- to postintervention was analyzed with the same mixed design (see Table 3). Both group and pre-post main effects were significant, but not their interaction. Means were higher post- than preintervention. Overall, the AC-O group mean was the highest and AC-I group mean the lowest; they differed from each but not from the SC group mean (per a Tukey post hoc test,  $p < .05$ ).

As reported in Ronski et al. (2010), all children but one in the AC-I group and all children in the AC-O group used at least one spontaneous *augmented word*. For the 37 children in the two augmented groups, the number of augmented words used correlated .19 with success and  $-.29$  with difficulty,  $p = .25$  and  $.08$ , respectively. A roughly similar pattern was noted among the smaller number of children who used at least one spontaneous *spoken word* at the end of intervention. For these 21 children (five, nine, and seven children in the AC-I, AC-O, and SC groups, respectively), the number of words used correlated .40 with success and  $-.47$  with difficulty,  $p = .07$  and  $.03$ , respectively. Although positive with success and negative with difficulty, these correlations were weak or moderate, and given the small numbers of

participants, only one (spoken words with difficulty) was statistically significant.

## Discussion

After participating in 3 months of parent-coached language intervention, the parents' perceptions of success about how their children were communicating became more positive, although the change did not reach a conventional level of significance. Their perceptions of the severity of the child's language difficulties decreased for the two augmented interventions, more so for AC-I than AC-O, but increased for SC, the spoken language intervention. Parents whose children used an SGD as part of the intervention perceived that their children's language difficulties became less severe after the 24-session intervention. Parents in the AC-O group also perceived that computer technology influenced their children's language gains. On the other hand, parents in the intervention focusing on spoken language (SC) perceived that their children's communication difficulties were more severe at the end of the intervention.

These findings suggest that parents of children who had spontaneous spoken words at the end of the intervention perceived their children as having less difficulty with language than those parents whose children had no spoken words. These findings may indicate that giving children with significant language difficulties access to an SGD not only improves vocabulary outcomes for children but may have positive effects for parents as well. Ronski and colleagues (2010) reported in their larger study that children in both augmented interventions exhibited greater use of their target vocabulary (in both spoken and augmented words) than children in the spoken group.

Giving children a modality to communicate other than speech may decrease the pressure that parents feel in being unable to successfully communicate with their children, which in turn may change their perceptions about the severity of their children's language and communication difficulties. This is consistent with findings from recent literature indicating that parents feel generally positive about the use of SGDs and the opportunities that their use brings to children with significant language difficulties (Angelo, 2000; Bailey et al., 2006).

The present study involved a parent-coached component where parents worked closely with the speech-language

**TABLE 3. PPOLD: Factor score means.**

Factor or item	Group						$\eta_p^2$		
	AC-I		AC-O		SC		Group	Pre-post	Group $\times$ Pre-post
	Pre	Post	Pre	Post	Pre	Post			
Success	3.63	4.02	3.63	4.31	3.64	3.83	.03	.21**	.05
Difficulty	3.40	3.23	3.25	3.01	3.35	3.55	.03	.03	.13*
Technology has helped	2.65	2.98	3.00	4.06	2.94	3.19	.17*	.16**	.08

*Note.*  $N = 53$  (20, 17, and 16 for AC-I, AC-O, and SC, respectively). Partial eta squared ( $\eta_p^2$ ) is per a Group  $\times$  Pre-post mixed-design analysis of variance.

\* $p < .05$ . \*\* $p < .01$ .



pathologist and interventionist in a collaborative effort to help bring about more positive communicative interactions with their children. This is especially important as it relates to interventions with children who have severe communication difficulties. Helping parents find more successful ways to interact with their children permits them to feel more capable in their interactions with their children and decrease their perceptions of their children's communication difficulties. This supports research demonstrating that involving parents directly in language intervention can result in positive changes in parent-child interaction strategies, quality of the parent-child relationship, and parent satisfaction with language interventions (Kaiser, Hancock, & Hester, 1998; Kaiser & Hemmeter, 1996). Future research should compare the perceptions of parents who participate in parent-coached interventions with those parents whose children receive more traditional language interventions in which the parent does not directly participate (Smith, Ronski, Sevcik, Adamson, & Bakeman, in press).

A limitation to this study involves the composition of the sample. First, this was a sample of very young children with developmental delays. It is not known how parents of older children with developmental delays or other communication disorders may perceive their child's language development. Second, although this sample was ethnically diverse, as 39% of the families identified themselves as minority, these parents were highly educated overall. For this study, families had to initiate contact with the project and commit to bringing their child to intervention sessions twice a week for 9 weeks until the sessions moved to the home (Ronski et al., 2010). Although child care, parking, and transportation costs were provided as needed, the commitment required for participation may have been too much for families from a lower socioeconomic background. In that sense, it is unknown how families from lower socioeconomic backgrounds may perceive the language development of their child with a disability. Third, the sample size, while large for this population of children, was relatively modest and thus may not have detected differences. Replication of our findings with a larger sample of children will be important.

In conclusion, parent perception of language development may provide useful information about how parents perceive their child's language development and the relationship of their perceptions to child outcome. This type of parental information may be useful for clinicians as they plan and deliver intervention services to young children with severe communication disorders in the context of the family. Augmented language intervention may not only help the child communicate but also positively affect parent perception of language development.

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