

THE EFFECTS OF PARENT-IMPLEMENTED COMMUNICATION INTERVENTION ON TODDLERS WITH RECEPTIVE AND EXPRESSIVE LANGUAGE DELAYS

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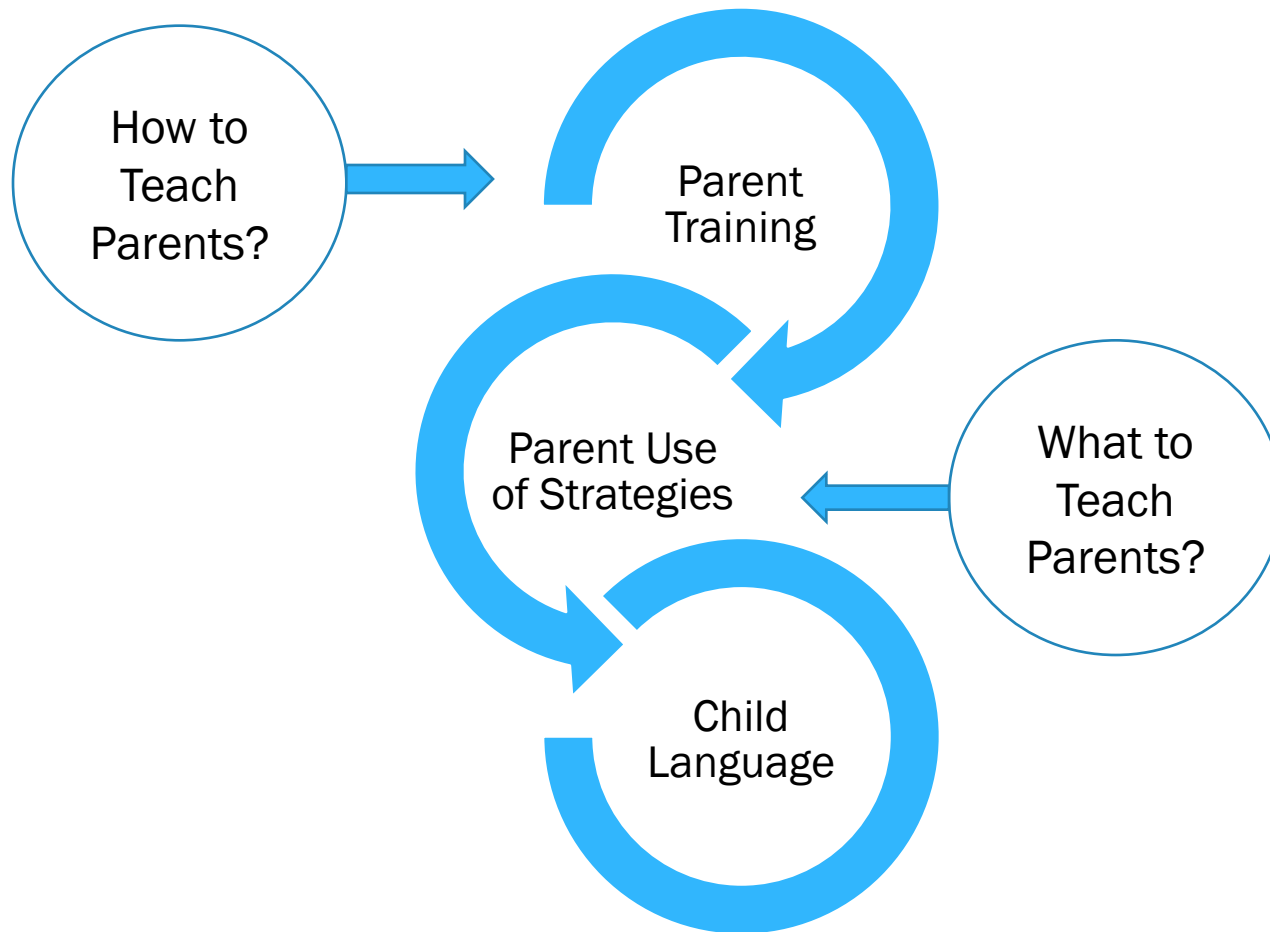
Young Children with Language Impairment

- Language development is one of the strongest predictors of children's long term academic and social outcomes
- Young children with typical cognitive development but significant delays in language at age 2 may be at risk for later development.
 - About 60% of children with receptive delays and normal range cognition have typical language by age 7;
 - Only 25% of children with receptive and expressive delays have typical language outcomes (Law et al., 2000).
- In the absence of universal screening for language development, many pediatricians recommend wait and see rather than early intervention for this population.

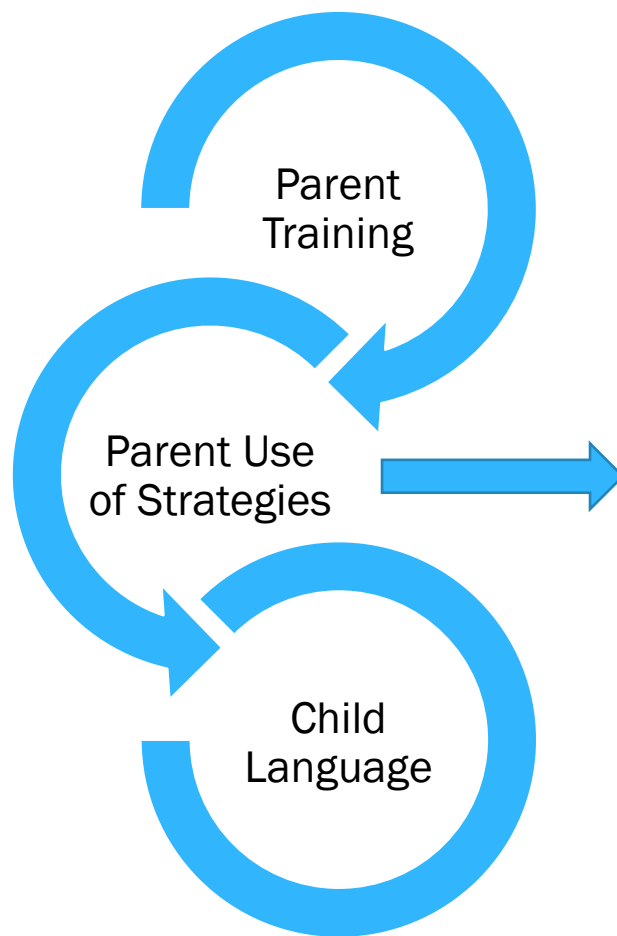
Including Parents in Intervention for Young Children with Language Impairment

- Quantity and quality of linguistic input provided by parents impacts child language development (Hart & Risley, 1995; Smith, Landry, & Swank, 2000; Tamis-LeMonda, Bornstein, & Baumwell, 2001)
- Teaching parents is cost effective (Gibbard, 2004)
- Including parents facilitates generalization to everyday contexts (Kashinath, Woods & Goldstein, 2006)
- Parent-implemented interventions have relatively consistent effects for children with expressive language impairment (Roberts & Kaiser, 2011)
 - Children have on average 53 more words ($g=.38$)

A Cascading Intervention Model



Maximizing Intervention Effects



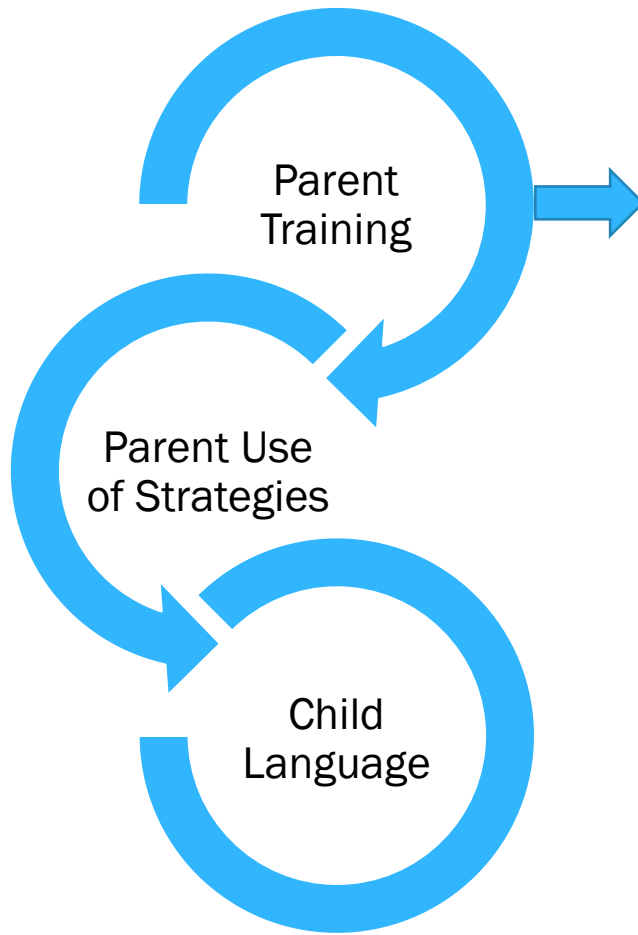
Enhanced Milieu Teaching (EMT) (Child Intervention)

- EMT is a widely studied intervention with consistently positive effects on various language forms and structures (Kaiser & Trent, 2007).
- Gains in language have been observed in children with intellectual disabilities:
 - Across settings (Alpert & Kaiser, 1992; Hancock & Kaiser, 1996; Kaiser, Hancock, & Nietfeld, 2000)
 - Classes of language structures (Goldstein & Moussetis, 1989; Warren, Gazdag, Bambara, & Jones, 1994),
 - Global language development (Hancock & Kaiser, 2002; Kaiser et al., 2000).

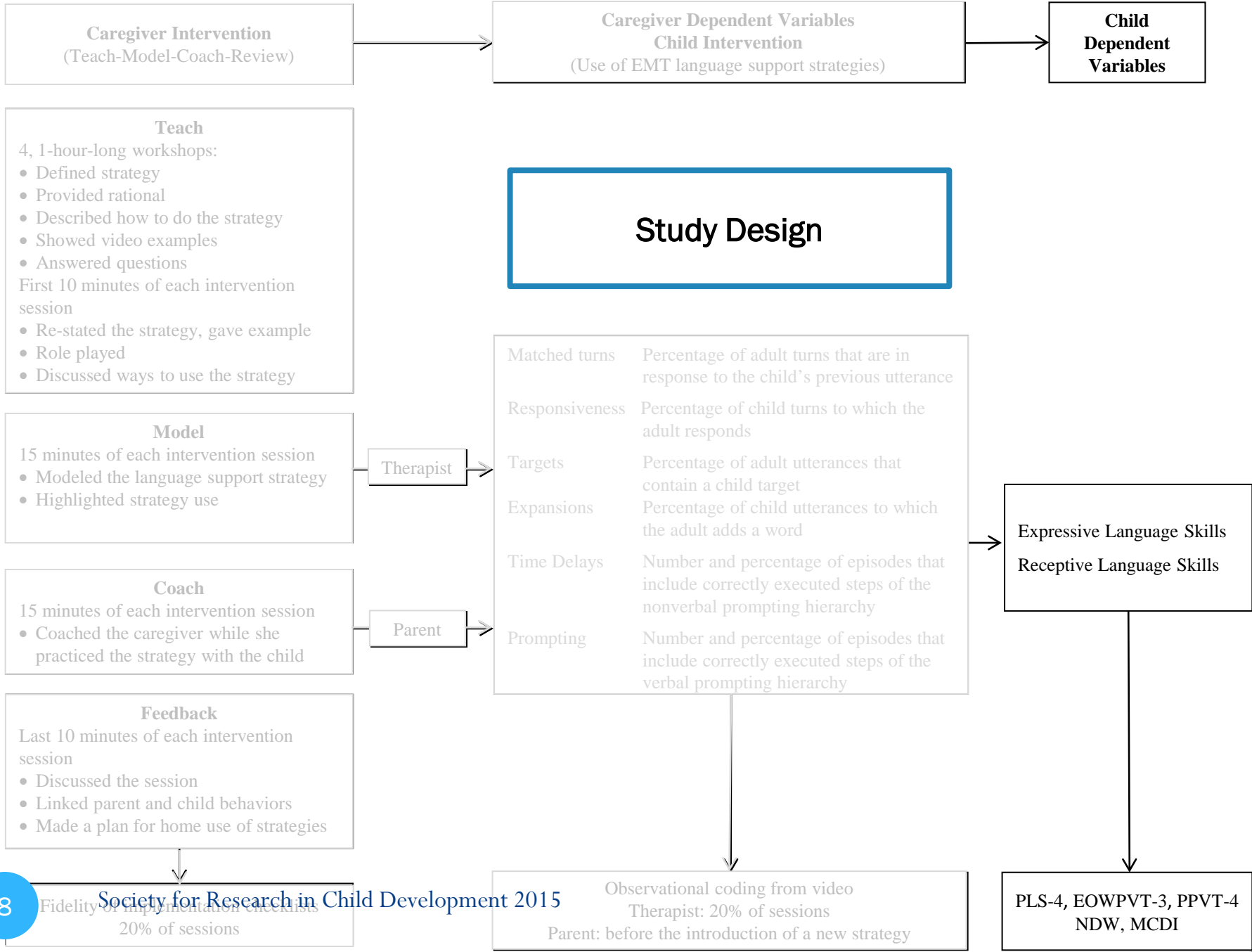
EMT Principles and Strategies

- 1. Promote adult-child communication *now***
 - Notice and respond
 - Follow the child's lead
- 2. Increase child engagement with objects and activities**
 - Child preferred activities
 - Join the child in play and activity
 - Teach play and participation
 - Teach across play and routines
- 3. Expand the social basis of communicative interactions**
 - Arrange environment to increase engagement
 - Teach joint attention strategies
 - Balance turns (mirror and map)
 - Increase person engagement
- 4. Teach child communication target forms to advance language**
 - Respond
 - Model
 - Expand
 - Prompt

Maximizing Intervention Effects



Teach-Model-Coach-Review Parent Training (Parent Intervention)	
<ul style="list-style-type: none"> • Based on 6 adult learning strategies (Dunst & Trivette, 2009). • Simultaneous use of different methods has the largest effect ($d=1.25$). 	
Coach	<ul style="list-style-type: none"> • Coached the caregiver while she practiced the strategy with the child
Review	<p>Last 10 minutes of each session</p> <ul style="list-style-type: none"> • Discussed the session • Linked parent and child behaviors • Made a plan for home use of strategies



Research Questions

- Do parents in the treatment group use more EMT language support strategies than parents in the control group?
- Do children in the treatment group have better language skills than children in the control group?
- Does intervention reduce the number of children classified as having a language impairment?

Design

- Randomized controlled trial (NCT01975922)
 - Treatment n=45
 - Control n=43
- Children were assessed:
 - At the start of the study
 - Once a month during intervention
 - At the end of intervention
 - 6 months after intervention
 - 12 months after intervention

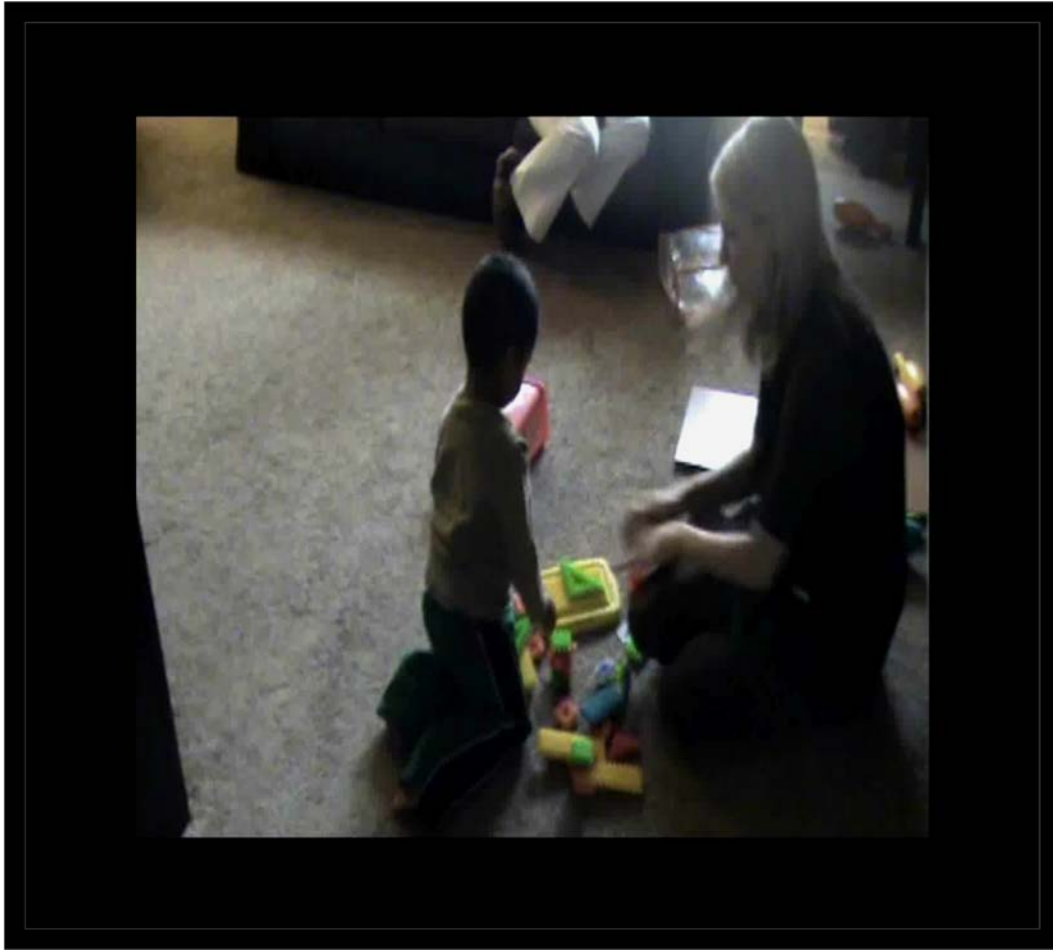
Participants

- **Age**
 - 24-42 months
 - mean age of 30 months
 - 83% boys
- **Race**
 - 80% White
 - 18% African American
 - 2% Other
- **Mother Education**
 - High school only: 40%
 - Undergraduate degree: 30%
 - Graduate degree: 26%
- **Cognitive Skills** (Bayley Scales of Infant Development)
 - 90 (SD 8)
- **Language Skills** (Preschool Language Scales – 4th Edition)
 - Expressive language: 75 (SD 8)
 - Receptive language: 75 (SD 16)

Measures

- Preschool Language Scale – 4th Edition
- Peabody Picture Vocabulary Test – 4th Edition
- Expressive One Word Picture Vocabulary Test – 3rd Edition
- Number of different words in a 20 minute language sample
- Number of words said reported by the parent on the MacArthur Bates Communicative Inventories
- Lena Home Recordings (2 days at each assessment)

EMT Example

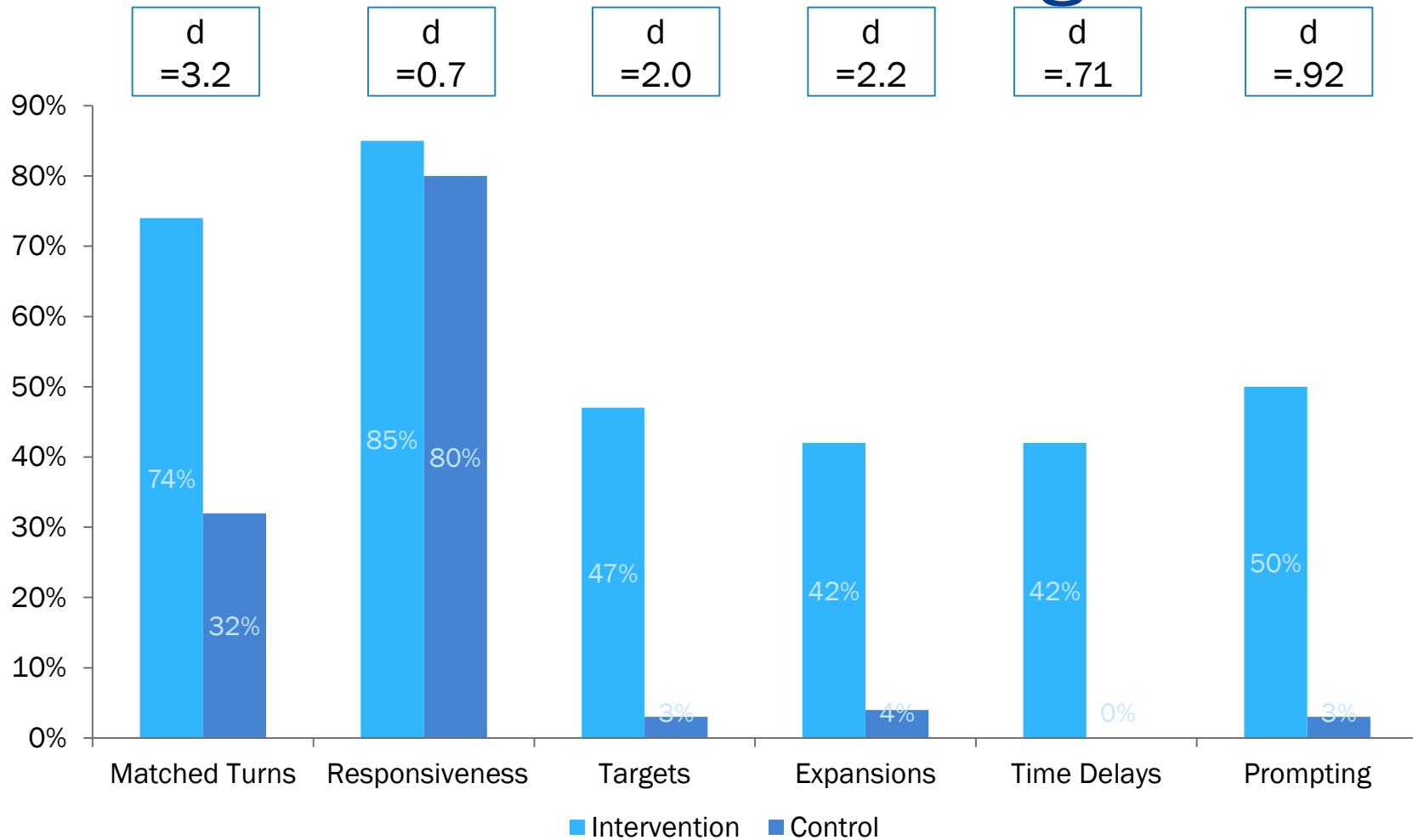


Parent + Therapist EMT

Enhanced Milieu
Teaching with a
Toddler



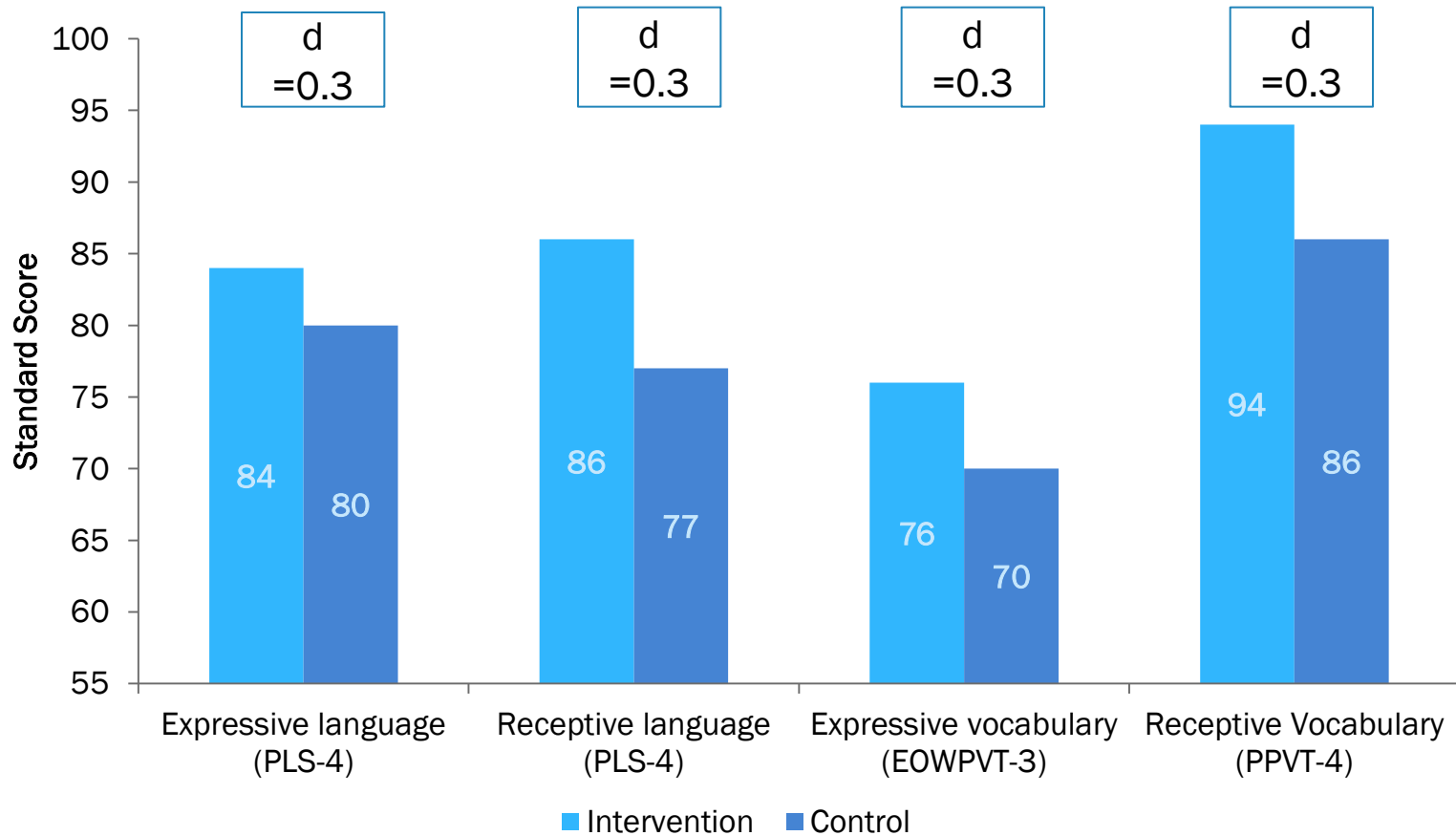
Parent Use of EMT Strategies



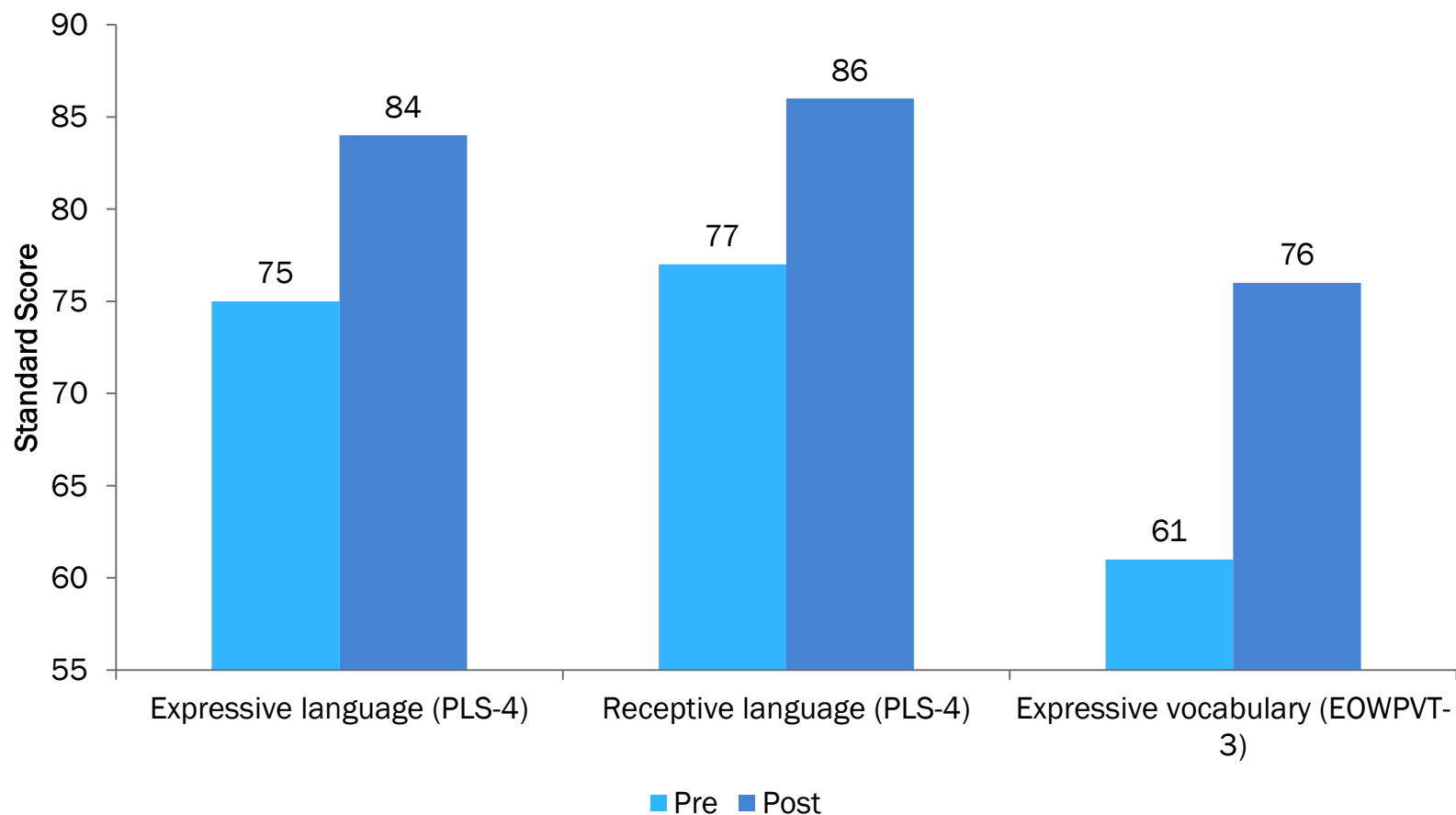
Parents Met Fidelity of Implementation Criteria

Parent Use of EMT Strategies	Criteria	Mean (SD)
Matched turns	>.75	.78 (.12)
Responsiveness to child verbal turns	>.80	.92 (.05)
Talk at the child's level	>.50	.57 (.18)
Expansion of child's utterances	>.40	.46 (.11)
Time delay strategies	>.80	.61 (.36)
Prompting strategies	>.80	.82 (.24)

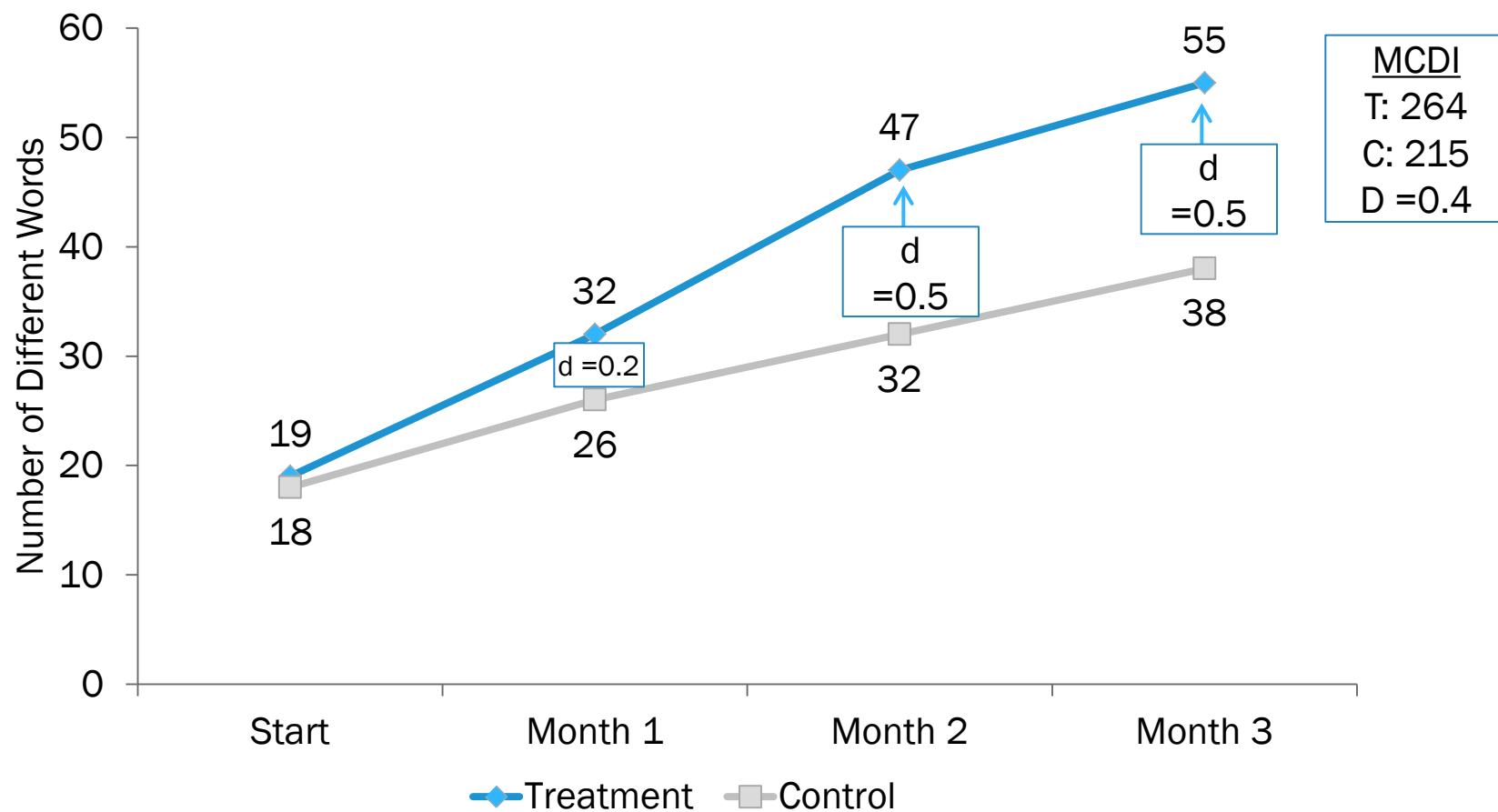
Child Norm-Referenced Outcomes



Child Norm-Referenced Gains

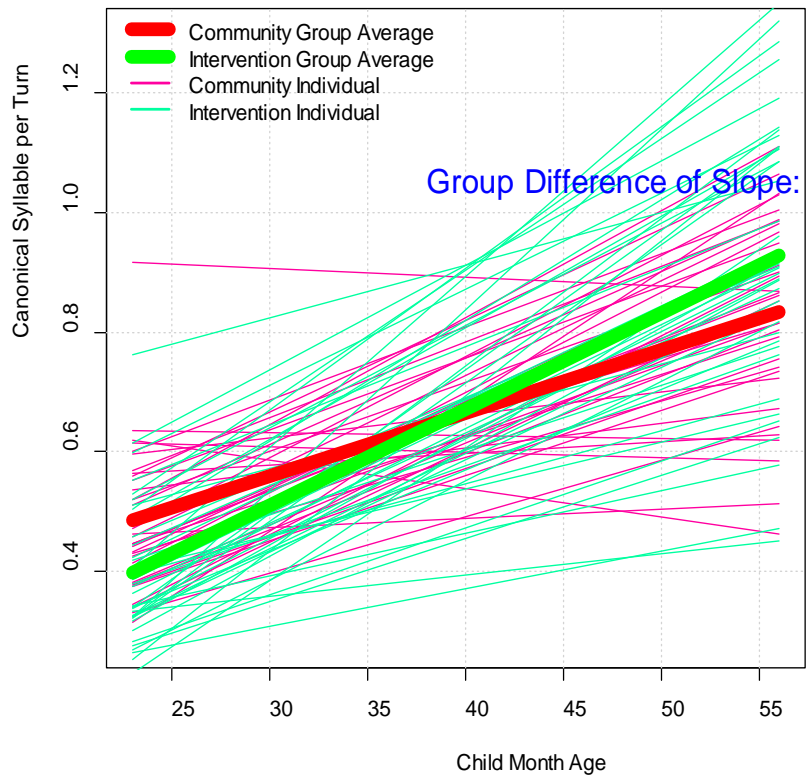


Child Number of Different Words

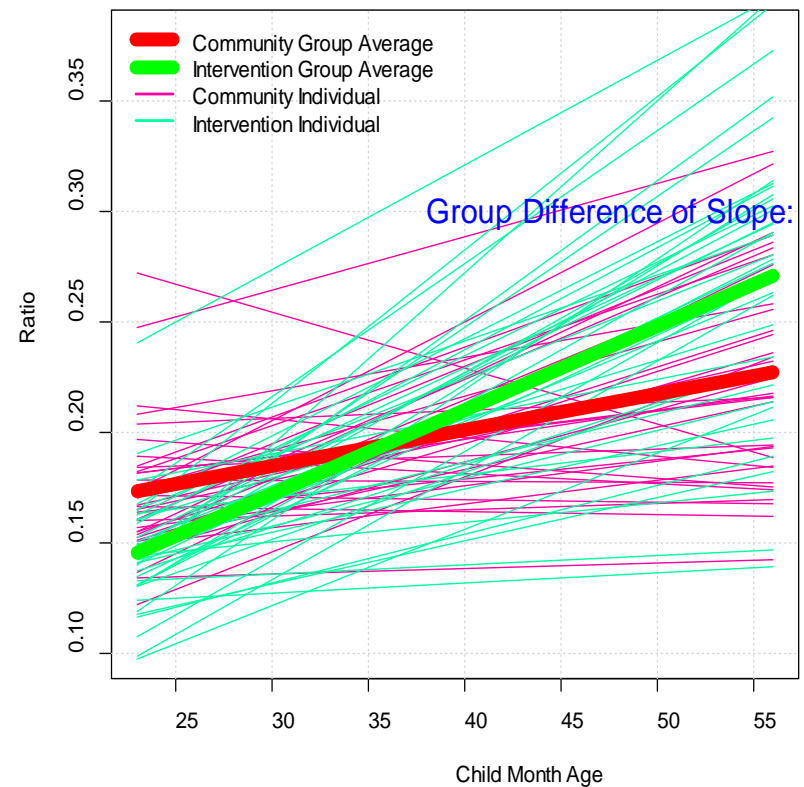


Growth in Child Vocalizations Over Time

Canonical Syllable per Turn

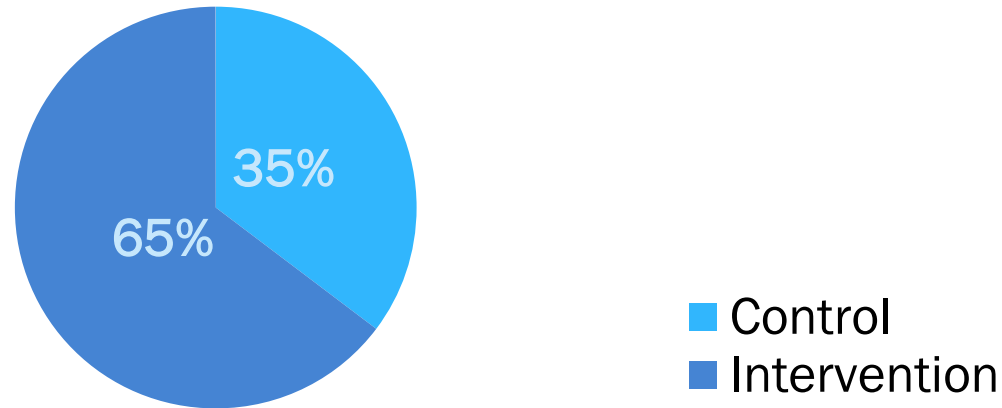


Ratio of Child Vocalization to Adult



Reduction of Language Delays

Children with scores in the average range on the PLS-4



Odds ratio: 2.391 (.98, 5.82) $p = .05$

Relative risk = 1.40 (.99, 1.97)

Implications for Practice

- Parent plus therapist model provide efficient and effective early intervention
 - 28 sessions; less than 30 hours of intervention/training
- High quality parent training can positively impact children's language development
 - Parents learned strategies to fidelity
 - Used the strategies across the day, taught others
- Training parents at fidelity requires early interventionist preparation
 - Teach-Model-Coach- Reflect
 - Monitoring fidelity

Implications for Policy

- Screening children at age 2 can identify children for whom language impairment is likely to persist
 - 65% of control group had persistent language impairment
 - Bayley cognitive score and receptive language (PLS-AC) predicted child language outcomes (66% of variance)
- “Wait and See” may not be the best policy
- Improve access to early intervention for children with receptive and expressive language delays

Acknowledgments

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