The Effects of a Parent-Implemented Language Intervention for Children With Language Impairment

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Including Parents in Intervention

- Quantity and quality of linguistic input provided by parents impacts child language development (Hart & Risley, 1995; Smith, Landry, & Smiley, 2005; 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 ($g=0.38$)

A Cascading Intervention Model

<table>
<thead>
<tr>
<th>How to Teach Parents</th>
<th>Parent Training</th>
<th>Parent Use of Strategies</th>
<th>Child Language</th>
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Lack of Intervention Effects

<table>
<thead>
<tr>
<th>Fidelity of Parent Training</th>
<th>Parent Outcomes</th>
<th>Child Outcomes</th>
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<tbody>
<tr>
<td>Carter et al. (2011): high</td>
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Maximizing Intervention Effects

<table>
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<tr>
<th>Teach-Model-Coach-Review Parent Training (Parent Intervention)</th>
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<tr>
<td>Parent Training</td>
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<tr>
<td>- Based on 6 adult learning strategies (Dunst &amp; Trivette, 2009)</td>
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<td>- Simultaneous use of different methods has the largest effect ($d=4.25$)</td>
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<tr>
<td>Coach</td>
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<td>- Conducted two categories while also practiced the strategy with the child</td>
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<tr>
<td>Review</td>
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<tr>
<td>- Last 10 minutes of each session</td>
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<td>- Discussed the session</td>
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<td>- Linked parent and child behaviors</td>
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<tr>
<td>- Made a plan for home use of strategies</td>
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<th>Enhanced Milieu Teaching (EMT) (Child Intervention)</th>
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<tr>
<td>Parent Training</td>
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<tr>
<td>- EMT is a widely studied intervention with consistently positive effects on various language forms and structures (Kaiser &amp; Trent, 2007)</td>
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<td>- Gains in language have been observed in children with intellectual disabilities</td>
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<td>- Classes of language structures (Goldstein &amp; Mousésis, 1989; Warren, Gazdag, Bambara, &amp; Jones, 1994)</td>
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<td>- Global language development (Hancock &amp; Kaiser, 2002; Kaiser et al., 2000)</td>
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How is This Study Different?

- Includes children with receptive and expressive language delays
- Includes systematic parent training procedures with ongoing fidelity checks
- Includes continuous monitoring of parent use of language support strategies
  - Parents are not taught a new skill until they have achieved mastery with previous skill

Research Questions

- Do parents in the treatment group use more 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?

Participants

- **Age**
  - 24-42 months
  - Mean age of 30 months
- **Race**
  - 80% White
  - 18% African American
  - 2% Other
- **Mother Education**
  - High school only: 40%
  - Undergraduate degree: 30%
  - Graduate degree: 20%
- **Cognitive Skills** (Bayley Scales of Infant Development)
  - 50 (8)
  - Expressive language: 75 (8)
  - Receptive language: 75 (16)

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 (completed)
  - 6 months after intervention (in progress)
  - 12 months after intervention (in progress)

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
Intervention

- 28 Intervention Sessions
  - 4 Workshops
  - 11 Home sessions
  - 13 Clinic sessions
- Clinic Sessions
  - 10 minutes of review of strategies
  - 25 minutes watching the therapist play with the child and use the strategies
  - 15 minutes practicing the strategies with the child
  - 10 minutes of discussion
- Home Sessions
  - 10 minutes of review of strategies
  - 25 minutes watching the therapist use the strategies with the child
  - 30 minutes practicing the strategies with the child during play
    - Play: 15 minutes
    - Book: 5 minutes
    - Snack: 5 minutes
    - Routine of their choice: 5 minutes
  - 10 minutes of discussion

RQ1: Parent Use of Strategies

RQ2: Child Norm-Referenced Outcomes

RQ2: Child Norm-Referenced Gains

RQ2: Child Number of Different Words

RQ3: Reduction of language delays
Overall Parent Satisfaction

- Helped their child’s language skills: 98%
- Level of comfort using the strategies
  - Somewhat comfortable: 8%
  - Very comfortable: 92%
- Average amount of strategy use: 17 hrs (range: 2 to 77, SD=18)
- Taught the strategies to another caregiver: 98%
- Preference for intervention location
  - Clinic only – 2.5%
  - Clinic + home – 95%
  - Home only – 2.5%

Parent Satisfaction with Specific Strategies

- Parent teaching strategies parent found most helpful
  1. Practice with coaching (78%)
  2. Observing (78%)
  3. Workshops (95%)
  4. Role playing (20%)
- Language strategies parents found most effective
  1. Responding
  2. Matched turns
  3. Expansions
  4. Targets
  5. Prompting
  6. Time Delays

Future Directions

- Long term effects, 6 and 12 months after intervention?
- Long-term effects on reading?
- Can the intervention be shorter?

Parent Use of Strategies Across Routines

The Cost of Intervention

- Average cost of $3861
- Range of $2678 to $5653
- $70 per word

Acknowledgments

- Parents and children who participated in the study
- Staff
  - Kalynn Komon, Stephanie Jordan, Suzanne Thrower, Kim McCalla, Christine Mosley and Lauren Lackey
- Funding agencies
  - IES grant number R324A090181
  - UL1 TR000445 from NCATS/NIH