Introduction

A child’s language environment and experiences within the first three years of life greatly influence their language development trajectory: by the age of three, children from lower-income families hear 30 million fewer words compared to their peers from higher-income families (Hart & Risley, 1995).

A multicomponent prevention approach should be used to break the cycle of poor language development early in life. Although interventions targeted at the child/family level that have used quantitative language recording, with LENA devices, have shown to be effective in increasing parental language input (e.g., LENA devices) have shown to be effective in increasing parental language input (Suskind et al. 2016), LENA Start™ is a 13-week parent training program that teaches caregivers strategies to increase adult language input and parent-child interactions. In a group format, parents learn about language and brain development; and activities and strategies that create a language-rich environment. Additionally, families complete weekly language recordings that provide quantitative linguistic feedback.

Method

Participants and Setting

• 56 families were recruited through Early Child and Family Education (ECFE) programs in 5 local school districts

• Participants included English- and Spanish-speaking children aged 1 to 39 months who were enrolled in ECFE programs. A total of 39 families were in LENA Start™ classes; 17 families were in the Comparison group who received general education programs. See Table 1.

Measures

• Demographic survey

• Parent Satisfaction survey (LENA Start™ families only)

• Pre- and post-test measures for all participants included:
  - Daylong LENA recordings: adult word count (AWC), child vocalizations (CV) and conversational turns (CT)
  - LENA Developmental Snapshot (a 52-item parent questionnaire about receptive and expressive child language abilities)

Method Continued

LENA Start™ Intervention

• 13 weekly parent training sessions implemented by parent educator.

• Combination of PowerPoint presentations, videos, and group discussions.

• Families completed weekly, all day language recording, with LENA recorder.

• Received weekly recording reports showing breakdown of Adult Word Count (AWC), Conversational Turns (CT), and Electronic noise (Figure 1)

• Each week families received a shared reading book.

Results

Implementation Results

• Attendance for LENA Start™ classes ranged 59%-100% with higher attendance for Sessions 1-6

• 72% of parents met Graduation Criteria: (a) attended Sessions 1-5, (b) attended ≥ 5 sessions 5-13, (c) completed ≥ 10 recordings

• Overall, parents liked participating in the program (67% strongly agree; 21% agree)

• Overall, parents would recommend the program to other parents (63% strongly agree; 25% agree)

LENA Results

• LENA Start™ group increased by 7 percentiles (p=0.05)

• Comparison group decreased by 4 percentiles (p=0.05)

• p=0.31

• LENA Start™ group increased by 6 percentiles (p=0.23)

• Comparison group decreased by 15 percentiles (p=0.04)

Figure 2. Adult Word Count.

Figure 3. Conversational Turns.

Figure 4. Child Vocalizations.

Figure 5. LENA Developmental Snapshot.

Discussion

• Families participating in LENA Start™ made greater gains on all measures, compared to comparison families.

• Preliminary results suggest that it is feasible to implement LENA Start™ in ECFE programs.

• Preliminary results indicate that LENA Start™ increases adult language input and adult-child interactions, which may improve the quality of the language environment for these young children.

• Factors to further consider to fully scale-up LENA Start™ and integrate the program into ECFE programs:

  - Funding: To integrate and sustain LENA Start™ within ECFE programs, a reliable funding source will have to be identified.

  - Goodness of fit: Typically, ECFE parents choose different topics to be covered. Although both parents and parent educators reported that they liked LENA Start™ and would like to see the program continue, to increase the likelihood that it can be fully integrated within ECFE programs, there is a need to determine how to incorporate ECFC’s parent-driven approach.

  - Study Limitations:

    - Two groups were not well matched based on ethnicity and income.

    - The sample size is small, limiting generalizations and power of statistical analyses.

  - Future research is needed to:

    - Investigate how to reach families that will benefit the most from community-level language intervention programs.

    - Evaluate if LENA Start™ is effective for other populations (e.g., other languages, children with language impairment).

Select References


Funding and Acknowledgements

This work is funded by a challenge grant from the LENA Research Foundation, the Bush Foundation, and the University of Minnesota. Thanks are due to administrators, parent educators, parents, and children in Anoka/Hennepin, and Saint Paul Public Schools.