

Integrating the Little Talks Intervention into Early Head Start: An Experimental Examination of
Implementation Supports Involving Fidelity Monitoring and Performance Feedback

Patricia H. Manz^a

Thomas J. Power^b

Lori A Roggman^c

Rachel A. Eisenberg^a

Amanda Gernhart^a

Jacqueline Faison^a

Tamique Ridgard^a

Laura E. Wallace^a

Jamie M. Whitenack^a

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^aLehigh University, College of Education, 111 Research Drive, Bethlehem, PA, 18015

^bChildren's Hospital of Philadelphia, 4401 Civic Center Boulevard, Philadelphia, PA 19104

^cUtah State University, Family, Consumer, and Human Development, Old Main Hill, Logan, Utah 84322

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Abstract

Enriching home visiting services by incorporating scientifically-supported interventions is a means for improving their effectiveness in promoting child development. However, deliberate efforts to ensure that home visitors are fully knowledgeable and supported to implement interventions with parents of young children are necessary. In this experimental study, a randomly-assigned group of Early Head Start home visitors monitored the fidelity of their provision of a scientifically-based intervention, Little Talks, and the program's general child development services. On a bi-weekly basis, home visitors received performance feedback specific to their implementation of Little Talks and based upon the fidelity data. Findings demonstrated that home visitors showed immediate and consistent mastery of the Little Talks content, while the quality of their implementation, including their clinical decision-making and collaborative processes, improved to adequate levels over time. The Little Talks home visitors showed generalized improvements in their ability to obtain parent input while providing the program's typical child development services were detected. In fact, Little Talks home visitors' were superior in obtaining parent input relative to comparison home visitors. Further, parents for whom low-quality intervention implementation was observed discontinued their enrollment in home visiting prematurely, while high-quality implementation was associated with sustained enrollment. Limitations for this study are identified, leading to future directions for advancing home visitors' incorporation of evidence-based practices.

Keywords: Fidelity monitoring, performance feedback, home visiting, low-income parents and children, book sharing intervention

Infants and toddlers under the age of 3 years are more likely than older children and adults to experience socioeconomic disadvantage. In 2014, there were over 11 million infants and toddlers under the age of 3 living in the United States. Of these 11 million, 5.3 million lived in low-income families and 2.7 million lived in poor families (NCCP; Jiang, Ekono, & Skinner, 2015). Unfortunately, the number of young children living in poverty has been on the rise. From 2007 to 2013, the percentage of young children in poverty increased from 44% to 47%. This percentage has increased at an even higher rate for Hispanic children. At present, 67% of Hispanic infants and toddlers live in a low income family.

Development during infancy is rapid and foundational for future health and competence in academic, social, and emotional domains. For this reason, infants and toddlers who face socioeconomic disadvantage are especially vulnerable to delays in their physical, social-emotional, and cognitive development (Gershoff, Aber, & Raver, 2003). At the same time, intervening during these formative years, when development is most malleable, can bolster children's resilience (Shonkoff & Phillips, 2000). Home visiting is a primary means for providing early intervention services to low-income families of infants and toddlers. Home visiting is advantageous as it addresses children in familiar contexts, seeks sustainable enhancements in parenting knowledge and competence among family members who are responsible for children's well-being, and enhances the accessibility of early intervention services (Sweet & Appelbaum, 2004). Home visiting is a broad and diverse method of early intervention service delivery, with program models differing in type of providers, intensity of services, and goals for children and families.

In recognition of home visiting's promise for achieving healthy development among low-income children, the Obama administration formulated the Maternal, Infant, and Early

Childhood Home Visiting Program (MIECHV; Avellar & Supplee, 2013) for supporting and expanding home visiting programs that demonstrated effectiveness in promoting well-being in children and their families. MIECHV was especially formulated to support children who face socioeconomic threats to their health and development; the majority of children served by MIECHV programs have families whose incomes are at or significantly below federal poverty thresholds (Maternal Child Health Bureau [MCHB], 2017). An important function of MIECHV is to identify home visiting program models that have acquired sufficient empirical support to be considered evidenced-based and eligible for federal funding. The Home Visiting Evidence of Effectiveness (HomVEE; Sama-Miller et al., 2016) has established standards for defining evidenced-based status as well as a process for a continuous review and identification of home visiting programs. To date, HomVEE has identified 19 evidenced-based home visiting program models with 13 of these programs designed to primarily improve child development outcomes (Sama-Miller et al., 2016). Of concern, only 19% of the developmental outcomes tested by these programs showed significant benefits for home visited children, relative to comparison children.

These modest findings highlight the need for home visiting program models to integrate interventions that are based in research that demonstrates benefits for young children (Buzhardt et al., 2011). In response to this need, Manz and colleagues (Manz et al., 2016) intentionally developed Little Talks, an intervention to bolster infants' and toddlers' language and emergent literacy skills for use in home visiting programs. Little Talks was created by integrating empirically-based intervention components with findings from intensive community-based participatory research with low-income parents of infants and toddlers. Little Talks draws from research concerning parents' narratives and book sharing behaviors with their children (Melzi, Schick, & Kennedy, 2011; Hammer, Nimmo, Cohen, Draheim, & Johnson, 2005; Zevenbergen

& Whitehurst, 2003). The 24 Little Talks lessons are various combinations of speech acts (request or provisions) coupled with increasingly complex sequence of content foci (labels, events, personal experiences, character feelings). Designed for integration into routine home visits, home visitors have options to teach new lessons, reinforce previously-taught lessons, and guide generalization of strategies to a variety of parent-child activities. The Little Talks curriculum was innovatively formulated according to the modular treatment design (Weisz & Chorpita, 2012). This design enables home visitors to individualize the sequence and pace for progressing through the Little Talks lessons to parents' strengths, needs, and resources.

Individualizing services ensures that families' values are respected and needs met, which fosters their sustained engagement (Weisz & Chorpita, 2012). Further, home visitors can continuously guide parents to increasingly advance the foundational dialogic behaviors taught through the Little Talks lessons to their children's growing language competence. Therefore, Little Talks is intended to become an ongoing, integrated element in home visiting. In preliminary research, Little Talks has been demonstrated to increase children's vocabulary and parents' involvement in children's early learning experiences (Manz et al., 2016). Additionally, parents' reports have repeated indicated a high degree of acceptability (Manz et al., 2016).

The integration of interventions, like Little Talks, into the routine services provided by home visitors requires careful planning of processes and procedures to ensure that their effectiveness is maintained in community applications (Eccles & Mittman, 2006). Key elements in successful intervention implementation are training, fidelity monitoring, and performance feedback (Knoche, 2013). Fidelity monitoring is the pivotal element as it dually serves to direct as well as evaluate intervention implementation (Fixen et al., 2005; Breitenstein et al., 2010). Raikes and colleagues present a triadic model of home visiting fidelity, including quantity,

content, and quality of service delivery (Raikes et al., 2006). Quantity refers to the amount of home visiting provided to families; typically including indicators for frequency or time spent in home visiting. Content fidelity is an account of the program elements that were provided to parents during home visiting, such as curricula and specified intervention strategies. Quality fidelity includes the blend of interpersonal processes and clinical decision-making that enables home visitors to tailor intervention so that families experience it as acceptable, useful, and feasible (Domitrovich et al., 2010).

Although adequate quantity and content fidelity are necessary, intervention quality is the essential ingredient for its effectiveness (Durlak, 2015). This is especially true for interventions aiming to bolster young children's language skills. Multiple studies have shown that the influence of the quality of language-focused interventions on children's growth was most salient for those children who presented with underdeveloped language skills (Hamre et al., 2010; Odom et al., 2010). In contrast, intervention quality was less salient for outcomes of children with age-expected language abilities.

Given that home visiting programs target children who face developmental risks, enhancing the quality of interventions provided by home visitors' is critical. Yet, training and supporting intervention quality is challenging (Domitrovich et al., 2010). Relatively speaking, interventionists can readily conduct the expected number of required visits or provide the planned strategies to clients. However, intervention decision-making and collaboration skills are more difficult to develop. This is especially true for home visiting, since the foundational element in service delivery is a trusting, confidential relationship between home visitors and parents. The privacy of this relationship adds to the challenge of revealing interpersonal processes and decision-making for the purposes of enhancing intervention quality.

Performance feedback is an effective means for achieving fidelity in intervention delivery. The process of providing performance feedback entails the presentation of intervention fidelity data to interventionists as a means for illuminating components that are effectively implemented and areas for improvement. Performance feedback can be integrated into routine supervision or coaching. Providing ongoing performance feedback to interventionists, like home visitors, is seen as a promising method for the particular enhancement of intervention quality (Domitrovich et al., 2010).

The application of implementation science, including the key elements of fidelity monitoring and performance feedback, has been understudied in home visiting program models (Marturana & Woods, 2012; Knoche 2013). In fact, comprehensive, scientifically-tested supports for home visitors' use of evidence-based interventions for low-income children are lacking. Addressing this gap is necessary for developing home visiting programs that meet federal standards for evidenced-based.

This study was designed to experimentally examine the Little Talks program, which couples the scientifically-grounded intervention with rigorous processes for monitoring intervention fidelity and providing bi-weekly performance feedback to home visitors. In the experimental condition, a randomly-selected subset of Early Head Start home visitors implemented Little Talks as part of the program's child-development-focused services. For this subset of home visitors, the program's routine, bi-weekly reflective supervision was enhanced by the provision of performance feedback derived from the Little Talks Fidelity Form. The Little Talks condition was experimentally compared to the program's typical delivery of child development services coupled with its provision of bi-weekly reflective supervision (which did

not include performance feedback). The study spanned the period of time necessary to introduce families to the 24 Little Talks lessons (e.g. around 6 months).

This experimental study intensively examined the fidelity patterns for home visitors assigned to Little Talks and comparison conditions. Three research questions guided the examination of fidelity for Little Talks home visitors only: 1) Is there significant growth in Little Talks quantity, content, and quality fidelity indicators throughout the intervention period? Little Talks content and quality integrity was expected to significantly increase over time given the ongoing performance feedback; since Little Talks was integrated into Early Head Start home visiting, quantity fidelity was expected to be acceptable throughout the intervention. 2) Do mean fidelity indicators for the Little Talks components correspond with mean fidelity indicators Early Head Start child development activities? Mean fidelity indicators for Little Talks and general Early Head Start child development activities were expected to be positively and moderately correlated given that the ongoing performance feedback was expected to improve foundational skills for intervening with families. 3) Do mean Little Talks fidelity indicators differ for families who prematurely discontinued Little Talks relative to those who sustained participation throughout the study? As high quality relationships are viewed as the mechanism for successful home visiting, extended participation in Little Talks was expected to correspond with higher fidelity than that measured for families who discontinued participation.

In addition to looking at fidelity patterns within the Little Talks group, a fourth research question sought to compare Little Talks and comparison home visitors' implementation of the Early Head Start program's general child development activities. Based on the assumption that performance feedback would enhance foundational skills, Little Talks home visitors were

expected to show greater fidelity in the program's child development services than comparison visitors.

Method

Participants

This study included eight Early Head Start home visitors along with the 41 families whom they served. Table 1 presents the demographic information for the home visitors, by their assignment to Little Talks and comparison groups. For both groups, all home visitors were females who were around mid-thirties in age; on average, they had about four years of experience in Early Head Start and served about nine families. Half of the Little Talks and comparison home visitors identified as Hispanic/Latina. However, the majority of Little Talks home visitors spoke only English, while half of the comparison home visitors were mono-lingual English-speaking. The educational background varied among Little Talks home visitors, with most having a Bachelor's Degree. All comparison home visitors had a Bachelor's Degree.

A total of 41 parents and their children participated in this study, with 21 parents included in the Little Talks intervention and 20 parents serving in the comparison condition. Table 2 provides demographic information for the parents and children in each condition. On average, children were 17.2 months of age ($SD = 8.6$), and mothers were 28.9 years ($SD = 6.8$). The majority of mothers identified as Hispanic and about half were Spanish-speaking (9.4% were bi-lingual Spanish and English). The high prevalence of Hispanic and Spanish-speaking children and parents in this sample is characteristic of the region in which this study was situated. This region included two-small cities where Hispanic populations were 28.2% and 47.4%; these proportions exceeded the prevalence of Hispanic families statewide (10.8%) (City-Data, 2015). Additionally, these areas present with lower rates of mono-lingual English speaking families

(47.4%, 75%) and higher proportions of mono- and bi-lingual Spanish-speaking families (City-Data, 2015). There were no statistically significant differences between the Little Talks and comparison participants.

Home visitors and families were recruited from a regional Early Head Start program that was situated in a small city, yet served families in surrounding urban and rural communities. Keeping in mind that Little Talks is designed to enhance and support home visitor competencies as a means for intervening with families, home visitors were the unit for randomization. Eight of the 17 home visitors employed by the Early Head Start program were randomly selected to participate in the study and then randomly assigned to Little Talks intervention and implementation supports ($n = 4$) or treatment-as-usual comparison ($n = 4$) conditions. The random selection and assignment was stratified according to years of experience and bi-lingual status to ensure equal distribution in both conditions. Prior to randomly selecting the home visitors, each visitors' length of home visiting experience was categorized as "above" or "below/equal to" two years. Additionally, home visitors; were categorized as bi-lingual English/Spanish or mono-lingual English. Since the program aims to assign Spanish-speaking families to the bi-lingual home visitors, stratification according to this variable was undertaken to allow for equal distribution of Spanish-speaking families in the two conditions. Collectively, four categories of home visitors were constructed (> 2 years of experience + bilingual, > 2 years of experience + monolingual, ≤ 2 years of experience + bilingual, ≤ 2 years of experience + monolingual). Using web-based randomization program (Urbaniak & Plous, 2013), random numbers were generated and home visitors were selected and assigned according to the stratification variables.

The number of families served by each of the selected Early Head Start home visitors ranged from eight to ten at the time of this study. The home visitors invited all of their families to participate according to the condition to which the home visitor was assigned. A total of 21 families were recruited for Little Talks and 26 families for the comparison condition. The number of families per home visitor varied from two to eight, with a mean of 6 ($SD = 2.14$). All families were compensated for their participation in the assessments, which were conducted four times throughout the study.

Of the 21 Little Talks families, 4 did not sustain participation in Early Head Start due to personal reasons. Therefore, their participation in Little Talks discontinued as well. These four families were only included in the analysis of the association of intervention duration and fidelity (research question 3); they are not included in the analysis examining fidelity trends (research question 1), generalization to Early Head Start fidelity (research question 2), and between-group differences (research question 4). Among the comparison families, six discontinued participation and were not included in the analyses for this study. Four of the six children turned 3 years of age, which naturally concluded their enrollment in Early Head Start; the other two discontinued due to personal reasons.

Procedures

Little Talks Curriculum and Home Visit Structure. In each weekly home visit, Early Head Start home visitors implemented a lesson from the Little Talks curriculum. Little Talks was planned for a 30-minute portion of the two-hour weekly Early Head Start visits. The Little Talks portion of the visit consisted of three sequential activities: observation of parent-child book sharing, checking-in, and collaborative planning. Home visitors began by asking the parents to share books with their Early Head Start child for 10 minutes. During this time, the home visitor

observed the parents' use of Little Talks strategies as well as the quality of the interaction. The observation allowed the home visitor to gain insight into the parents' progress with using strategies and readiness for new strategies. It also created a shared experience that facilitated discussions about Little Talk in the next two components. Checking-in provides opportunity for the home visitor and parent to discuss the facilitators and barriers to using Little Talks since the last visit. This led into the third and final segment of collaboratively planning next steps for progressing with Little Talks. Based upon the observation and checking-in discussion, home visitors guided parents in deciding to reinforce previously-taught lessons or to teach a new lesson. Additionally, home visitors and parents worked together to identify solutions for barriers experienced by the parent. A minimum of six months was necessary to provide all 24 Little Talks lessons through weekly Early Head Start home visiting, although the actual amount of time needed varied according to the sequencing and pacing of intervention for individual families.

Prior to the start of the Little Talks intervention, members of the Little Talks research team trained the four home visitors who were randomly assigned to the Little Talks group. Three-hours of preservice training addressed the Little Talks curriculum content and decision-making processes through a combination of lecture, review of curriculum materials, activities, modeling, and role plays. Additionally, members of the Little Talks research team trained the home visitors in the use of the Little Talks fidelity monitoring form.

Fidelity Monitoring

Little Talks. Web-based survey software (iFormBuilder Mobile Software; Zerion Software, 2015) was modified to monitor the Early Head Start home visitors' adherence with major elements of the Little Talks intervention. For the Little Talks home visitors only, the Little Talks Fidelity Form was embedded into the program's Home Visit Summary. The Little Talks

Fidelity monitoring form was organized according to the expected sequence of major Little Talks activities conducted by Early Head Start home visitors, including observation of parent-child book sharing, adaptation and delivery of Little Talks curriculum to parents based upon their assessment of parents' strengths and needs, and collaborative goal setting with parents to address challenges in formulating a books sharing routine and using Little Talks strategies. Using tablets, home visitors collected fidelity data during every visit. When appropriate, items included a drop-down menu to ease the home visitors' reported adherence. For example, an item asking home visitors to identify the Little Talks lesson discussed during the home visit included a drop-down menu listing all Little Talks lessons. Items that required descriptive information, such as the home visitors' decision making or parents' input, were open-ended, and space was provided on the form for home visitors to summarize their activity. Along with the Home Visit Summary, Little Talks fidelity data were uploaded to a universal data base, where information was retrievable by members of the research team and Early Head Start administration.

Items from the Little Talks fidelity measure were grouped into four categories (see Table 4). The Little Talks Curriculum fidelity component included six items that documented the content that was presented and instructional strategies included in the home visit. Additionally, parents' report about the use of the previously taught lessons and book sharing was included in this fidelity component. The Collaborative Goal Setting fidelity component included six items that reflected the goals and corresponding actions steps that were addressed during the visit. This fidelity component included both home visitors' and parents' descriptions about their decision making with regards to addressing goals and action steps. The Home Visitor Decision Making fidelity component included two items that elicited home visitors' report of the considerations that led to goals and actions steps for supporting parents' use of Little Talks. The

Parent Collaboration fidelity component included six items that elicited parent report and input regarding the use of Little Talks between home visits and collaborative planning for goals and action steps.

The Little Talks Fidelity Form was scored by members from the research team. Items that were appropriately completed were assigned a value of “1”; those that were not completed as expected were assigned a value of “0”. Within each fidelity component, the values assigned to items were summed. A proportion of the complete items for the total number of items in the component was calculated to reflect the level of fidelity. The total number of expected items for each component was: Little Talks Curriculum, 6; Collaborative Goal Setting, 6; Home Visitor Decision Making, 2; and Parent Collaboration, 6. There were no missing data as the system required completion of the form prior to submission.

Thirty percent of the Little Talks Fidelity Forms were selected, coded, and analyzed for this study. To ensure representation of fidelity throughout the full intervention period, it was divided into four six-week segments, and one Little Talks Fidelity Form per family was randomly selected for each segment.

Early Head Start Child Development Services. Web-based survey software (iFormBuilder Mobile Software; Zerion Software, 2015) was adapted by the Early Head Start program to formulate the Home Visit Summary which elicited home visitors’ self-reported activity. Mirroring the two-generation focus of Early Head Start, the full Home Visiting Summary collected information about home visit logistics and topics concerning child development and learning, comprehensive services to promote wellness and safety, and the families’ engagement in Early Head Start programming. Additionally, parents’ comments about various topic areas as well as their perspectives about the usefulness of the home visit were

recorded on the Home Visit Summary. Home Visiting Summary items were open-ended, requiring home visitors to provide brief summaries of their activity. These data were collected on tablets.

Program-wide, home visitors were required to complete and submit the Home Visit Summary at the conclusion of each visit and in the presence of the parent. When submitted, information from the Home Visiting Summary was automatically uploaded to the program's data management system to maintain a central location for all home visiting activity per family. Early Head Start administrators had access to these data, which were usually used for administrative reporting. During the time that this study was conducted, members of the university research team were granted access to the data that pertained to the home visitors and families who consented to participate in this study.

For the purpose of this study, the home visit summary items that the Early Head Start program designated as child development focused as well as those eliciting parent perspectives were targeted. These two portions of the home visit most directly corresponded with the Little Talks intervention and are therefore appropriate targets for assessing generalization of fidelity among Little Talks home visitors and differences between groups in home visitors' reported fidelity. As seen in Table 3, four fidelity categories were conceptually formed to represent the child development and parent perspective home visiting activity. The Child Development Discussion component is largely comprised of home visitors' and parents' discussion of a collaboratively developed goal for the child, referred to as the Individual Child Plan (ICP). Fidelity was determined by home visitors' self-reported identification of the ICP, discussion of its status with the parent, and record of parent input. The Child Development Discussion component also included the home visitors' reported completion of a literacy activity and

observation of the child's development. As this study is focused on promoting parent-child book sharing, fidelity for the sole literacy activity item was singled out to represent the Literacy Activity Focus fidelity component. The Parent-Child Interaction fidelity component also consisted of a single item from the Home Visit Summary that elicited home visitors' reported adherence with the requirement to guide parents' interactions with their children around an activity. The Parent Input intervention component included four items that recorded parents' contributions to the home visits. Home visitors' adherence to asking parents what they liked and learned from the home visit as well as their rating of the quality of the visit was included in this component. Additionally, home visitors' request of parents' input on the ICP was included in this component.

To derive scores for the Early Head Start Child Development Fidelity, the researchers scored the home visitors' responses on the Home Visit Summaries. Items that were appropriately completed were assigned a value of "1"; those that were not completed as expected were assigned a value of "0". The item scores for each component were summed. Fidelity for each component was indicated by calculating a proportion of completed items to total items. For the four fidelity components, the number of items expected to be complete were Child Development Discussion, 5; Literacy Focused Activity, 1; Parent-Child Interaction, 1; and Parent Input, 4. As the software required all items to be completed prior to submission, there were no missing data.

Following the same data selection procedures for the Little Talks Fidelity Forms, 30% of the Home Visit summaries were selected, coded, and analyzed for this study. To ensure representation of fidelity throughout the full intervention period, it was divided into four six-week segments, and one Home Visit Summary was selected for each segment. For comparison families, the selection of Home Visit Summaries was random in the six-week period. For the

Little Talks group, the Home Visit Summary that corresponded with the Little Talks Fidelity Form (i.e., both collected for same visit) was selected.

Little Talks Performance Feedback. Little Talks Early Head Start home visitors received ongoing support for their implementation of Little Talks during the routine, bi-weekly supervision provided by the Early Head Start program. Each Little Talks home visitor was assigned a member from the research team who provided performance feedback throughout the intervention period. Performance feedback was derived from the data that were provided on the Little Talks Fidelity Form. In between the bi-weekly supervision sessions, the research team member would review the home visitors' data for all of her families who were receiving Little Talks. These data were examined for quantity, content, and quality of Little Talks implementation for individual families as well as collectively the group of families served by the home visitor. The quantity of Little Talks was determined by the number of Little Talks Fidelity Forms and Early Head Start Summaries submitted by the home visitor. Since Early Head Start home visits were planned to occur weekly, Little Talks home visitors were expected to submit two Early Head Start home visit summaries, with Little Talks Fidelity Forms, between bi-weekly supervision sessions. Content and quality fidelity were determined through examination of the four Little Talks Fidelity categories: Little Talks Curriculum, Collaborative Goal Setting, Home Visitor Decision Making, and Parent Collaboration (Table 4). Home visitors' reported adherence to the items in these four categories reflected the proportion of content that was provided to parents. Quality of Little Talks implementation was reflected in the items comprising the Home Visitor Decision Making, Collaborative Goal Setting, and Parent Collaboration components. Performance feedback procedures consisted of several key elements, including an emphasis of home visitor strengths, examination of a visual representation of performance, teaching to

address a targeted area for growth, and home visitor input (Noell et al., 2005; Solomon, Klein, & Politylo, 2012). In this study, performance feedback was designed to reinforce four strengths in addition to addressing one skill for improvement. Visual displays of data were used to illuminate the strengths and target for improvement. The research team member would create graphs, pie charts or other summaries of the data to share with the home visitor. These visual displays would serve to stimulate dialogue between the home visitor and research team member, allowing detailed discussion of implementation aspects. Home visitors were also encouraged to initiate discussion of their questions or concerns about Little Talks implementation. Performance feedback concluded with clearly articulated plan for the following two weeks. Additionally, home visitors were asked to summarize their understanding of the performance feedback and affirm that the session addressed their needs for support.

Results

Within-Group Analyses for Little Talks Home Visitors

Little Talks Fidelity. Within-group repeated measures ANOVA was applied to determine changes in the Little Talks home visitors' fidelity to intervention components as they received ongoing implementation supports. This analysis specifically examined Little Talks fidelity in the four program components, including Little Talks Curriculum, Collaborative Goal Setting, Decision Making, and Parent Collaboration, across four time points. The study's hypotheses would be confirmed if the fidelity indicators showed statistically significant increases across the time points. Additionally, the percent of adherence reported by home visitors was expected to increase to amounts commonly found in community-based intervention implementation, which is between 60 – 80% (Durlack & DuPre, 2008; Odom et al., 2010).

For three of the four Little Talks fidelity components, significant growth across the four randomly-selected time points was found. As seen in Table 5, significant change was indicated for Collaborative Goal Setting, Decision Making, and Parent Collaboration fidelity components. Figure 1 illustrates the trends of adherence across time. At the start of the Little Talks program, levels for three fidelity components, Collaborative Goal Setting, Decision Making, and Parent Collaboration, were below or near the lower-limit of fidelity expected for community-based intervention (Durlack & DuPre, 2008; Odom et al., 2010). Notable, trends for all three components showed remarkable increases by the second time point (i.e., at about 8 weeks into the Little Talks program), with Collaborative Goal Setting and Decision Making exceeding the standard of 80%. Collaborative Goal Setting showed a slightly increasing trend throughout the remaining three time points. Contrary, fidelity trends for Decision Making decreased during the remaining time. The trend for Parent Collaboration fidelity trend showed a sharp increase at the start although it was not as steep as those noted for Collaborative Goal Setting and Decision Making; yet, it gradually increased over time, exceeding the recommended standard of 80% by the fourth time point.

Although repeated measures ANOVA did not reveal significant changes across the four time points for the Little Talks Curriculum component (see Table 5), examination of Figure 1 shows that fidelity indicators at all four time points were high, continuously exceeding the 80% standard. Even though there was little variation from point 1 to point 4, a slightly increasing trend was noted, with 100% fidelity obtained at the final time point.

Associations between Little Talks and Early Head Start Fidelity Components.

Correlational analysis (Pearson r) was undertaken to examine the interrelationship of Little Talks home visitors' adherence to Little Talks and Early Head Start visit components. The mean level

of fidelity obtained across the four time points was calculated for each component of Little Talks and Early Head Start (see Table 6) and submitted to correlational analysis. Noteworthy is that fidelity indicators for most categories are high and show very little variation. Only one significant correlation occurred and that was between the Little Talks Curriculum and Early Head Start Parent Input fidelity ($r = .48, p = .02$). No additional statistically significant associations were found for the Little Talks and Early Head Start fidelity components.

Little Talks Fidelity and Attrition. To examine the relationship of fidelity and attrition, the mean level of Little Talks fidelity was examined for families who discontinued their enrollment in Early Head Start after consenting to Little Talks and prior to the fourth fidelity check. There were four families who discontinued Early Head Start and Little Talks prior to the completion of this study and 17 who sustained Early Head Start enrollment and Little Talks participation, resulting in a 19% attrition rate during the course of the intervention. Of note, these families discontinued their enrollment in Early Head Start, which naturally resulted in their attrition from Little Talks. No family in this study solely discontinued Little Talks, while maintaining Early Head Start enrollment. Effect sizes were calculated to illuminate the differences in mean fidelity for families who sustained and those who discontinued participation in Early Head Start and Little Talks. Consistent with Cohen (1992), effect sizes were characterized as small ($d = 0.20$), medium ($d = 0.50$), and large ($d = 0.80$).

The Little Talks fidelity components that reflected the quality of intervention delivery, emphasizing interpersonal and decision-making processes, were clearly lower for families who discontinued their enrollment in Early Head Start and Little Talks relative to those who sustained participation (see Figure 2). Among the families who discontinued, the means for the Collaborative Goal Setting, Decision Making, and Parent Collaboration components ranged from

0.69 to 0.73. In contrast, mean fidelity for the families who continued Early Head Start and Little Talk enrollment exceeded that expected for community-based intervention, ranging from 0.85 to 0.89. Reflecting substantial group differences, effects size for Collaborative Goal Setting, Decision-Making, and Parent Collaboration far exceeded the standard for determining a large effect (i.e., $d = 0.80$; Cohen, 1992). All three effect sizes were greater than 1, showing higher fidelity for families who continued participation. Results differed for the Little Talks Curriculum intervention component, where both groups achieved high levels of fidelity.

Since home visitors served families who discontinued as well as sustained Early Head Start and Little Talks enrollment, mean quality fidelity was additionally examined per home visitor. Figure 3 displays means for the quality Little Talks components (Collaborative Goal Setting, Decision Making, and Parent Collaboration) for the home visitors. The arrows on the figure show the points in time when families discontinued participation (each arrow represents one family). Evident in Figure 3 is a notable contrast between the consistency of quality fidelity for Lucy, who did not have families discontinue, and the remaining three home visitors, who did experience attrition. Whereas quality indicators for Lucy are consistently very high, indicators for the other home visitors showed greater variation. Further, each of these three home visitors had at least one time-point where quality fidelity was significantly below the ideal standard for community-based intervention (Durlack & DuPre, 2008; Odom et al., 2010). The figure also shows that the discontinuation of the family is not followed by an increase in the home visitors' quality fidelity. On the contrary, in all but one incidence, quality decreased to some extent after a family discontinued Early Head Start and Little Talks.

Between-Group Differences for Little Talks and Comparison Home Visitors

Between-groups repeated measures ANOVA was undertaken to compare levels of fidelity for Early Head Start visit components for the Little Talks and comparison home visitors. Across the four randomly-determined time points, changes in these home visitors' fidelity were examined for Early Head Start visit components, including Child Development Discussion, Parent-Child Interaction Facilitation, Literacy Activity, and Parent Input. Consistently high and relatively invariable indicators for Early Head Start fidelity components across the four time points were noted for Little Talks and comparison home visitors. This is evident in Table 6 which shows the mean fidelity indicators and standard deviations across the four time points for the Little Talks and comparison home visitors' implementation of Early Head Start. Notable are the high mean values and small standard deviations for Early Head Start fidelity categories. Only one significant between-group difference was noted for the Parent Input component ($F(1, 35) = 9.63, p = .004$). As seen in Figure 4, Little Talks home visitors showed consistently high adherence to this component over time, relative to comparison home visitors. However, both groups demonstrated fidelity that was equivalent to or exceeded the upper limit of that expected for community-based intervention implementation. No statistical differences between-groups and across time were noted for Child Development Discussion, Parent-Child Interaction Facilitation, and Literacy Activity.

Discussion

As home visiting offers numerous advantages for bolstering low-income children's development, enriching it with an increased availability of empirically-supported interventions that are coupled with implementation supports can improve upon the modest outcomes that are currently noted (Sama-Miller et al., 2016). In order to inform the advancement of implementation supports for intervening through home visiting, this study examined the

application of consistent fidelity monitoring and performance feedback to Early Head Start home visitors' use of Little Talks, a research-based curriculum for promoting language acquisition. Findings from this study suggest that the enhanced implementation supports fostered Early Head Start home visitors' use of Little Talks with families, with slight generalization to improving their engagement of parents in routine Early Head Start activities. An especially encouraging finding in this study is the impact of the implementation supports on the quality of intervention implementation, a critical ingredient for obtaining positive impacts on children's language skills (Hamre et al., 2010). At the start of the Little Talks, fidelity indicators were discrepant for the Little Talks curriculum and the intervention components that reflect the quality of home visitors' intervention and collaboration skills, including Decision Making, Collaborative Goal Setting, and Parent Collaboration. Home visitors immediately administered the content of the Little Talks lessons with strong fidelity, and sustained high fidelity throughout the intervention period. Likely, this reflects home visitors' familiarity with core concepts in the Little Talks curriculum, such as approaches to book sharing and engaging young children. Schoenwald and Hoagwood (2001) reported that fidelity tends to be higher when interventions are closely aligned with interventionists' existing knowledge. Additionally, the relatively higher fidelity for the Little Talks Curriculum component may also be associated with the type of fidelity it reflects: content fidelity. Home visitors' attainment of adequate to high levels of content fidelity is relatively easier than more complex, interpersonally-based intervention quality (Domitrovich et al., 2010). In fact, the three Little Talks fidelity components that reflected quality implementation were initially much lower than the Little Talks component and lower than acceptable fidelity standards for community-based intervention (Durlack & DuPre, 2008; Odom et al., 2010). Several researchers have noted that quality implementation is more difficult to achieve and requires

ongoing supervision (Durlack and DuPree, 2008; Kormacher et al., 2008). At the same time, implementation supports have been shown to increase skills more rapidly for novice versus experienced providers (Straus et al., 2012). Indeed, this study revealed steep increases in the home visitors' acquisition of new skills for quality implementation of Little Talks, likely indicating the benefits of the bi-weekly performance feedback that was provided to them.

In addition to this study's focus on implementation supports for the Little Talks intervention, the generalization of home visitors' acquired skills to their delivery of routine Early Head Start child-development-focused activity was empirically examined. First, the interrelationship of fidelity indicators for major components of the Little Talks intervention and Early Head Start components were examined among the home visitors in the Little Talks condition. This within-group analysis indicated a single positive association between the home visitors' fidelity of implementing the Little Talks curriculum and Parent Input Early Head Start component. Additionally, fidelity for the Early Head Start components was experimentally examined between home visitors assigned to the Little Talks intervention and comparison conditions. This between-group examination revealed that Little Talk home visitors attained higher fidelity on the Parent Input component than their peers in the comparison condition.

The consistent association of the Little Talks implementation supports with greater adherence to the Early Head Start Parent Input components is a logical extension from the extensive supervision Little Talks home visitors received to adhere to the intervention's structure for interfacing with parents in the implementation of Little Talks. However, conceptual similarities between the other Little Talks and Early Head Start components also exist, calling into question the lack of additional associations between the Little Talks and Early Head Start components. Mastery of new skills may be a necessary condition before generalization occurs

(Strauss et al., 2012). In this study, the Little Talks curriculum component was immediately mastered by the home visitors, possibly providing a sufficient amount of skill acquisition for improving the home visitors' attainment of parent input, as required in the Early Head Start home visit components. The slower rate of acquisition and mastery noted for the additional Little Talks fidelity components that were associated with quality implementation may account for their lack of generalization to Early Head Start components. Strauss and colleagues (Strauss et al., 2012) further note that interventionists require direct training and support to generalize skills. Therefore, rather than expecting natural generalization of skills, especially in the more challenging quality implementation components, training and supervision should be designed to foster the expansion of skills across components of home visiting service delivery.

Although an understanding of generalization processes can offer possible explanations for the lack of additional associations between the Little Talks and Early Head Start fidelity components, restricted variance in fidelity indicators likely influenced these findings. Both groups of home visitors showed nearly perfect implementation of these elements. Thus, the minimal variance associated with the Early Head Start fidelity measures likely restricted the potential for revealing associations between Little Talks and comparison conditions.

As expected, indicators for quality fidelity components of Little Talks were lower for families' who prematurely discontinued their participation in Early Head Start and Little Talks than for those who sustained Early Head Start enrollment and Little Talks participation throughout the study. That is, mean fidelity was low for Collaborative Goal setting, Decision Making, and Parent Collaboration among the families who discontinued, while these indicators exceeded common standards for community interventions among families with sustained participation. Content fidelity indicators for the Little Talks curriculum were high and similar

for both groups. Consistent evidence shows that the quality of intervention implementation has a greater influence on parents' sustained participation than the parents' situational or demographic characteristics (Brand & Jungmann, 2013; Kormacher et al., 2007; Roggman, Boyce, Cook, & Jump, 2001). For instance, Barak (2014) demonstrated that home visitors who were responsive and adaptive to families' needs were more likely to sustain families' engagement in the program than those who showed less responsiveness to parents. Therefore, the findings that poorer quality in collaborative, interpersonal, and decision-making elements of home visitors' provision of Early Head Start and Little Talks components were associated with attrition is consistent with prior research.

An interesting implication of this study is the extent to which quality is primarily a function of the home visitors' competence or evolves through the reciprocal, interpersonal processes occurring between parents and home visitors. In other words, is quality primarily a product of home visitor competence or is it specific to the home visitor-parent interactional process? Although it is beyond the scope of this study to draw conclusions, the findings may suggest that both explanations are true. In this study, no attrition occurred for the home visitor who consistently demonstrated high-quality intervention implementation. This may suggest that regardless of the families' responsiveness, this home visitor was consistently competent in establishing rapport and providing high-quality intervention. In contrast, home visitors who initially demonstrated poor quality in their Little Talks implementation experienced the loss of at least one family during the period of this study. Two of the three home visitors who experienced attrition showed a significant increase and maintained quality fidelity at levels above the upper standard of 80% for community-based intervention. Collectively, these findings suggest that *consistency* in quality is likely a crucial ingredient for sustaining families' program participation.

Achieving consistency requires continuous provision implementation support to home visitors' as they encounter families who vary in their responsiveness and capacity to engage in home visiting.

Limitations in the research methods should be recognized when considering the findings of this study. Sole reliance on home visitors' self-report of fidelity limits the reliability of this study's findings, although it is a feasible and frequently used measure in home visiting programs. The accuracy of self-report is possibly diminished by interventionists' ability to self-reflect on their adherence to intervention elements as well as their vulnerability to report in a socially desired manner (Breitenstein et al., 2010). However, research has demonstrated that self-report can be a reliable method for obtaining fidelity data (Sanetti & Kratochwill, 2009). For example, Power, Dowrick, Ginsburg-Block, & Manz (2004) determined an average agreement of 97% between community paraprofessionals' self-reported fidelity and researchers' direct observation of their implementation of a reading intervention. Further, the accuracy of self-reported fidelity is enhanced when researchers are forthcoming about the importance and role of fidelity procedures and collaborate with interventionists to monitor fidelity (Power et al., 2005). In this study, the home visitors were engaged as partners in monitoring and applying fidelity data. Therefore, the limitations associated with self-report methods may have been minimalized.

Additional limitations in this study's design concern the small and nested sample. The small number of home visitors and representation of a single home visiting program restrict the generalization of this study's findings. Additionally, since home visitors served multiple families, the patterns and associations in the fidelity data found for this study may be confounded by the common variance shared between each home visitor and the families she served.

Although measurement and sample components restrict the internal and external validity of this study, these elements offer practical implications. Home visitors' completion of summaries is a common practice for documenting the delivery of home visiting services. This study demonstrates how this information may go beyond meeting administrative requirements. Summaries can be used in home visitor supervision to facilitate discussion, goal setting, as well as enhancing and monitoring service delivery to families. The home visitor, child, and family samples were diverse in ethnicity and native language.

This study replicates findings from prior research concerning the challenges and benefits in attaining high quality intervention implementation in home visiting. Further, it demonstrates correspondence between increasing self-reported competencies in quality implementation and the provision of direct training and performance feedback. Scientific advancement of home visiting implementation supports is contingent upon demonstrating the psychometric quality of fidelity monitoring procedures as well as in illuminating the interpersonal processes and elements that are fundamental for effective performance feedback.

References

- Avellar, S. A. & Supplee, L. H. (2013). Effectiveness of home visiting in improving child health and reducing child maltreatment. *Pediatrics, 132* (2), 90-99.
- Barak, A., Spielberger, J., & Gitlow, E. (2014). The challenge of relationships and fidelity: Home visitors' perspectives. *Children and Youth Services Review, 42*, 50-58.
- Brand, T. & Jungmann, T. (2012). Participant characteristics and process variables predict attrition from a home-based early intervention program. *Early Childhood Research Quarterly, 29*(2), 155-167.
- Breitenstein, S. M., Gross, D., Garvey, C. A., Hill, C., Fogg, L. & Resnick, B. (2010). Implementation fidelity in community-based interventions. *Research in Nursing & Health, 33*, 164-173.
- Buzhardt, J., Greenwood, C. R., Walker, D., Anderson, R., Howard, W., & Carta, J. J. (2011). Effects of web-based support on Early Head Start home visitors' use of evidence-based intervention decision making and growth in children's expressive communication. *NHSA Dialog, 14*(3), 121-146.
- City-Data (2015). *City-Data*. Retrieved from <http://www.city-data.com/>
- Cohen, J. (1992). A Power Primer. *Psychological Bulletin 112* (1), 152-159.
- Domitrovich, C., Gest, S. D., Jones, D., Gill, S. & Sanford DeRousie, R. M. (2010). Implementation quality: Lessons learned in the context of the Head Start REDI trial. *Early Childhood Research Quarterly, 25*, 284-298.
- Durlak, J. A. (2015). What everyone should know about implementation. In J. A. Durlak, C. E. Domitrovich, R. P. Weissberg & T. P. Gullotta (Eds.), *Handbook of Social and Emotional Learning: Research and Practice* (pp 395-405). New York, NY: Guilford Press

- Durlak, J. A. & duPre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology, 41*, 327-350.
- Eccles, M., & Mittman, B. (2006). Welcome to implementation science. *Implementation Science, 1*(1), 10.1186/1748-5908-1-1.
- Fixen, D. L., Naoom, S. F., Blasé, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, the National Implementation Research Network (FMHI Publication #231).
- Gershoff, E. T., Aber, J. L., Raver, C. C. (2003). Child poverty in the United States: An evidence-based conceptual framework for programs and policies. In R. M. Lerner, F. Jacobs, & D. Wertlieb (Eds.), *Handbook of Applied Developmental Science, Volume 2* (p. 81-136). Thousand Oaks, CA: SAGE Publications.
- Hammer, C. S., Nimmo, D., Cohen, R., Draheim, H. C., & Johnson, A. A. (2005). Book reading interactions between African American and Puerto Rican Head Start children and their mothers. *Journal of Early Childhood Literacy, 5*, 195-227. doi: 10.1177/1468798405058683
- Hamre, B. K., Justice, L. M., Pianta, R. C., Kilday, C., Sweeney, B., Downer, J. T., & Leach, A. (2010). Implementation fidelity of MyTeachingPartner literacy and language activities: Association with preschoolers' language and literacy growth. *Early Childhood Research Quarterly, 25*, 329-347.
- Jiang, Y., Ekono, M., & Skinner, C. (2015). *Basic Facts about Low-Income Children: Children under 3 Years, 2014*. New York: national Center for Children in Poverty, Mailman School of Public Health, Columbia University.

- Knoche, L.L. (2013). Implementation of Getting Ready: A relationship-focused intervention to support parent engagement, birth to 5. In T. Halle, A. Metz, & I. Martinez-Beck (Eds.), *Applying Implementation Science in Early Childhood Programs and Systems* (pp. 117-137). Baltimore, MD: Paul H. Brookes Publishing Co.
- Korfmacher, J., Green, B., Spellman, M. & Thornburg, K. R. (2007). The helping relationship and program participation in early childhood home visiting. *Infant Mental Health Journal*, 28(5), 459-480.
- Korfmacher, J., Green, B., Staerkel, F., Peterson, C., Cook, G., Roggman, L., Faldowski, R. A., & Shiffman, R. (2008). Parent involvement in early childhood home visiting. *Child Youth Care Forum*, 37, 171-196.
- Maternal Child Health Bureau (2017). *The Maternal Infant Early Childhood Home Visiting Program: Partnering with parents to help children succeed*. Retrieved from <https://mchb.hrsa.gov/sites/default/files/mchb/MaternalChildHealthInitiatives/HomeVisiting/pdf/programbrief.pdf>
- Manz, P. H., Eisenberg, R. A., Gernhart, A., Faison, J., Laracy, S., Ridgard, T., & Pinho, T. (2016). Engaging Early Head Start Parents in a Collaborative Inquiry: The Co-Construction of Little Talks. *Early Child Development and Care*. DOI: 10.1080/03004430.2016.1169177
- Marturana, E., & Woods, J. (2012). Technology-supported performance-based feedback for early intervention home visiting. *Topics in Early Childhood Special Education*.
- Melzi, G., Schick, A. R., Kennedy, J. L. (2011). Narrative elaboration and participation: Two dimensions of maternal elicitation style. *Child Development*, 82, 1282-1296.
doi:10.1111/j.1467-8624.2011.01600.x

- Noell G.H, Witt J.C, Slider N.J, Connell J.E, Gatti S.L, Williams K.L, et al. (2005). Treatment implementation following behavioral consultation in schools: A comparison of three follow-up strategies. *School Psychology Review*, 34, 87–106.
- Odom, S. L., Fleming, K., Diamond, K., Lieber, J., Hanson, M., Butera, G., Horn, E., Palmer, S., & Marquis, J. (2010). Examining different forms of implementation and in early childhood curriculum research. *Early Childhood Research Quarterly*, 25, 314-328.
- Power, T. J., Blom-Hoffman, J., Clarke, A., Riley-Tillman, T. C., Kelleher, C., & Manz, P. H. (2005). Reconceptualizing intervention integrity: A partnership-based framework for linking research with practice. *Psychology in the Schools*, 42(5), 495-507.
- Power, T. J., Dowrick, P. W., Ginsburg-Block, M. & Manz, P. H. (2004). Partnership-based, community-assisted early intervention for literacy: An application of the participatory intervention model. *Journal of Behavioral Education*, 13(2), 93-115.
- Raikes, H., Green, B. L., Atwater, J., Kisker, E., Constantine, J., & Chazan-Cohen, R. (2006). Involvement in Early Head Start home visiting services: Demographic predictors and relations to child and parent outcomes. *Early Childhood Research Quarterly*, 21(2006), 2 – 24.
- Roggman, L. A., Boyce, L. K., Cook, G. A., & Jump, V. K. (2001). Inside home visits: A collaborative look at process and quality. *Early Childhood Research Quarterly*, 16(1), 53-71.
- Sama-Miller, E., Akers, L. Mraz-Esposito, A., Avellar, S., Paulsell, D., and Del Grosso, P. (2016). *Home Visiting Evidence of Effectiveness Review: Executive Summary*. Washington, D.C.: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

- Sanetti, L.M.H., & Kratochwill, T. R. (2009). Treatment integrity assessment in the schools: An evaluation of the Treatment Integrity Planning Protocol. *School Psychology Quarterly, 24*(1), 24-35.
- Schoenwald, S. K. & Haogwood, K. (2001). Effectiveness, transportability, and dissemination of interventions: What matters when? *Psychiatric Services, 52*(9), 1190-1197.
- Shonkoff J. P. & Phillips, D. (2000). *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Washington, DC: National Academic Press.
- Solomon B. G., Klein S. A., Politylo B. C. (2012). The effect of performance feedback on teachers' treatment integrity: A meta-analysis of the single-case literature. *School Psychology Review, 41*, 160–175. doi:10.1002/pits.20625
- Strauss, K., Vicari, S., Valeri, G., D'Elia, L, Arima, S., & Fava, L. (2012). Parent inclusion in early intensive behavioral intervention: The influence of parental stress, parent treatment fidelity and parent-mediated generalization of behavior targets on child outcomes. *Research in Developmental Disabilities, 33*, 688-703.
- Sweet, M. A., & Appelbaum, M. I. (2004). Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. *Child Development, 75*(5), 1435-1456.
- Urbaniak, G. C., & Plous, S. (2013). Research Randomizer (Version 4.0) [Computer software]. Retrieved on June 22, 2013, from <http://www.randomizer.org/>
- Weisz, J. R., & Chorpita, B. F. (2012). Mod squad for child psychotherapy: Restructuring evidence-based treatment for clinical practice. In P. C. Kendall (Ed.), *Child and adolescent therapy: Cognitive-behavioral procedures* (4th ed.). New York, NY: Guilford.

Zerion Software (2015). *iFormBuilder Mobile Platform*. Available from <https://www.iformbuilder.com/>

Zevenbergen, A. A., & Whitehurst, G. J. (2003). Dialogic reading: A shared picture book reading intervention for preschoolers. In A. Van Kleeck, S. A. Stahl, & E. B. Bauer (Eds.), *On reading books to children: Parents and teachers*. Mahwah, NJ: Lawrence Erlbaum.

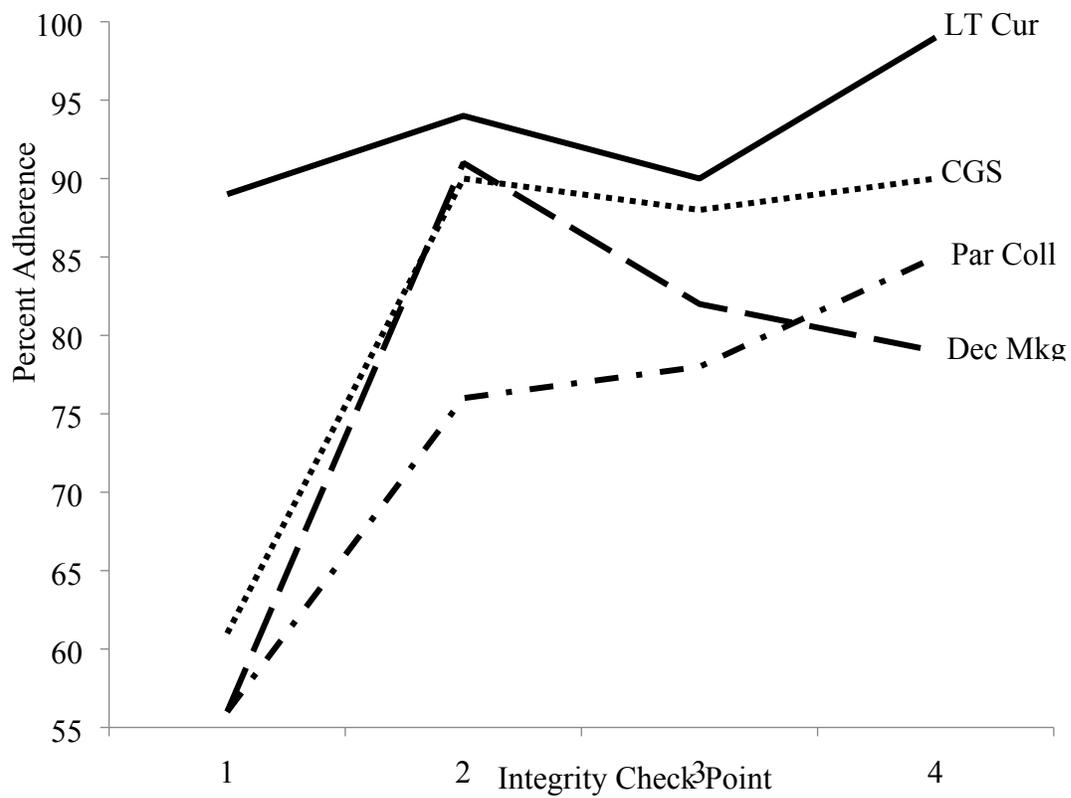


Figure 1. Little Talks Fidelity across Four Time Points. LT Curr = Little Talks Curriculum, CGS = Collaborative Goal Setting, Par Coll = Parent Collaboration, Dec Mkg = Decision Making.

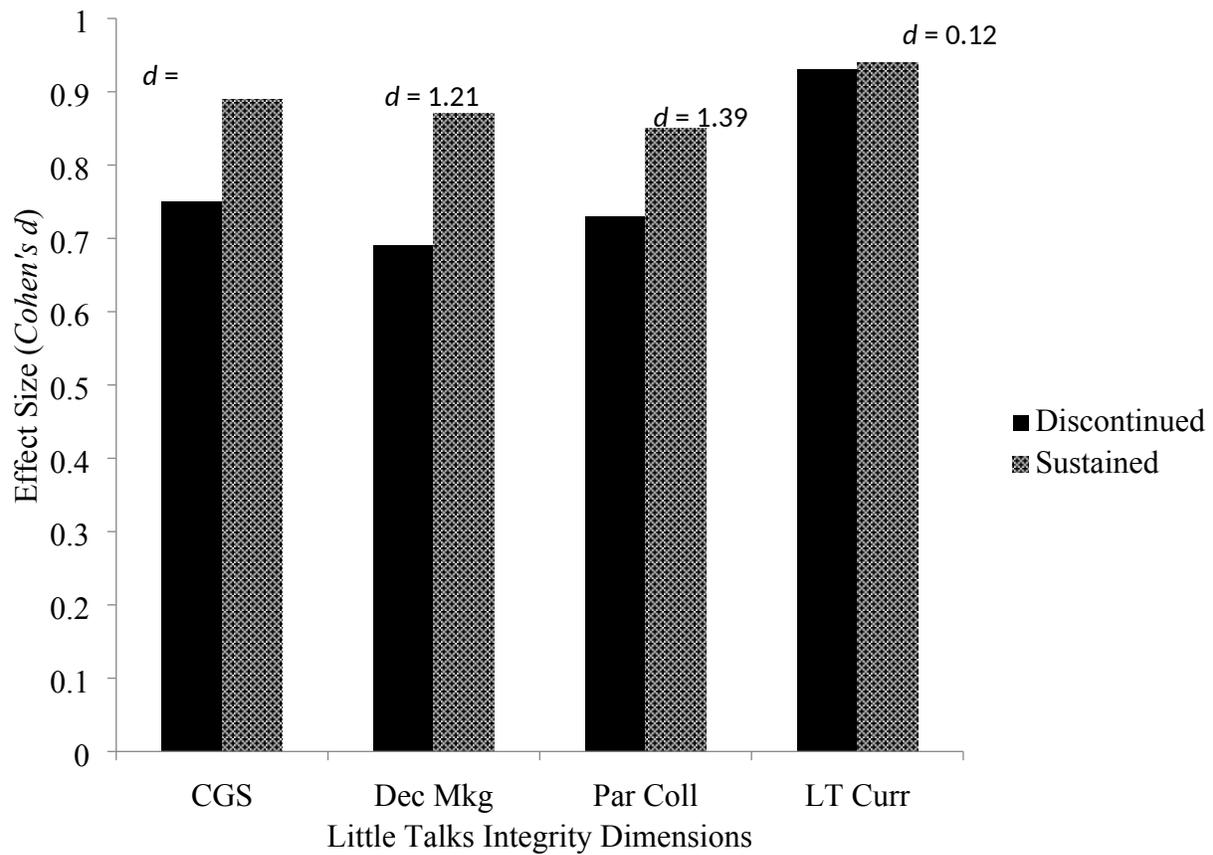


Figure 2. Mean fidelity and effect sizes for families who discontinued and sustained EHS and Little Talks intervention. CGS = Collaborative goal setting, Dec Mkg = Decision making, Par Coll = Parent collaboration, LT Curr = Little Talks curriculum.

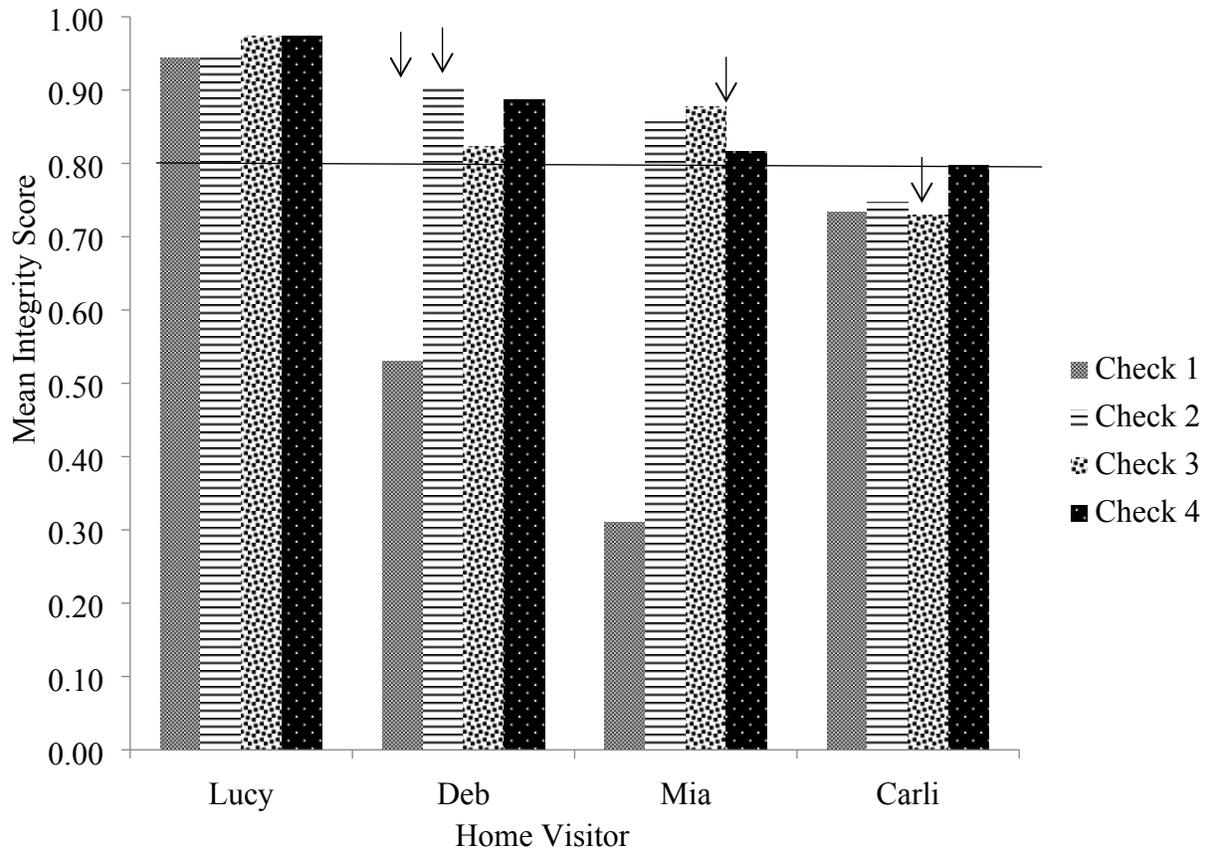


Figure 3. Means for quality fidelity for Little Talks home visitors. Note that names are pseudonyms.

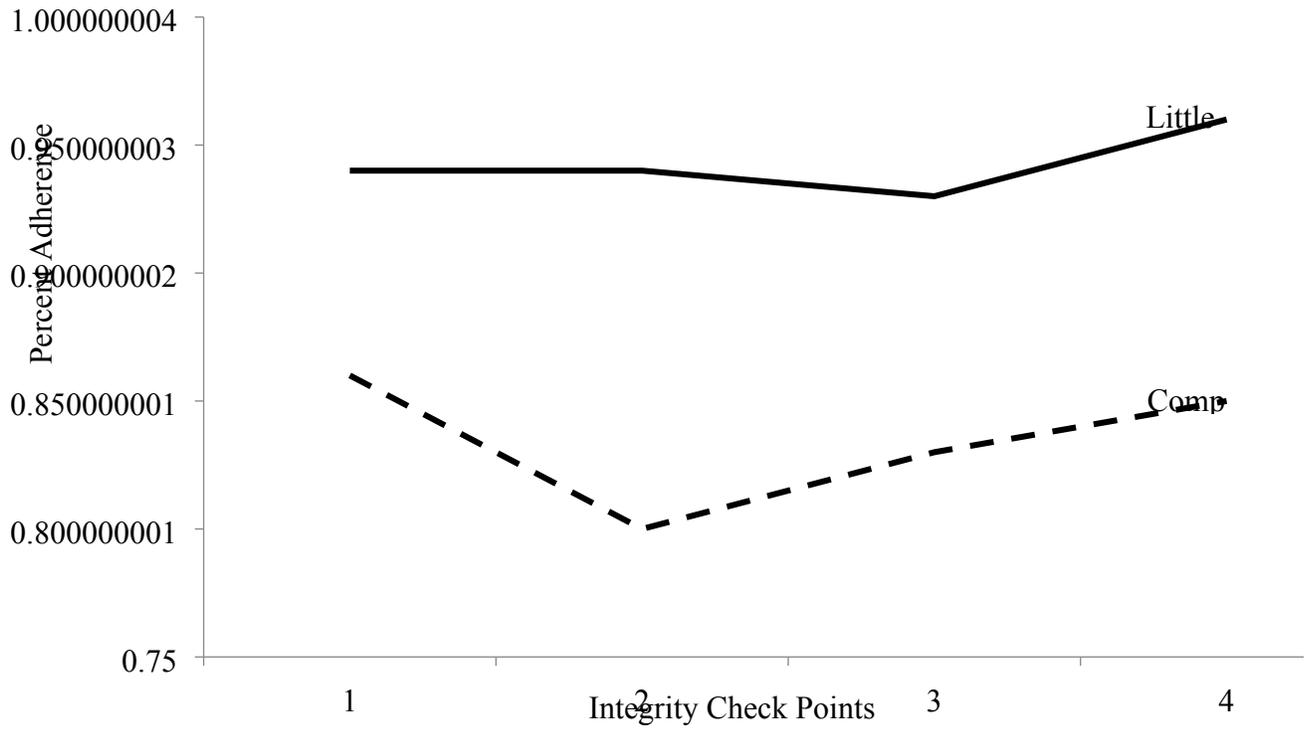


Figure 4. Little Talks and Comparison Home Visitors' Fidelity to EHS Parent Input Component across Four Time Points

Table 1. Home Visitor Demographic Information

	Little Talks (<i>n</i> = 4)	Comparison (<i>n</i> = 4)
Gender: Female	100%	100%
Age (years)		
<i>M</i> (<i>SD</i>)	37.0 (13.08)	33.75 (11.35)
Range	28 - 50	27 - 41
Race/Ethnicity (%)		
Hispanic/Latina	50	50
Caucasian	25	50
Bi-Racial (African American- Caucasian)	25	0
Native Language Spoken (%)		
English	75	50
Bilingual English & Spanish	25	50
Education (%)		
Child Development Associate	25	0
Bachelor's Degree (4-yr college)	50	100
Master's Degree	25	0
U.S. Residency (years)		
<i>M</i> (<i>SD</i>)	34.00 (7.94)	22.5 (9.61)
Range	28- 43	11 - 34
Experience in EHS (years)		
<i>M</i> (<i>SD</i>)	4.06 (4.24)	3.54 (3.92)
Range	0.25 - 10	0.42 - 9
EHS Families Served		
Range	8 - 9	9 - 10

Table 2. Parent and Child Demographic Information

	Little Talks (<i>n</i> = 21)		
	Sustained Participation (<i>n</i> = 17)	Attrition (<i>n</i> = 4)	Comparison (<i>n</i> = 20)
Parent			
Age (years): <i>M (SD)</i>	27.82 (6.06)	22.50 (4.51)	30.50 (7.02)
Gender			
Female	94.10%	100%	95.50%
Male	5.9%	0%	4.50%
Primary Caregiver	100%	100%	100%
Length of U.S. Residency (years)	10.50 (4.54)	0%	13.53 (8.81)
Level of Employment			
Full Time	23.50%	0%	27.30%
Part Time	35.30%	25%	13.60%
Not Employed	41.20%	75%	59.10%
Marital Status			
Married	35.30%	0%	45.40%
Never Married	52.90%	100%	22.70%
Common Law Marriage	5.90%	0%	4.50%
Separated/Divorced	5.90%	0%	27.30%
Native Language Spoken			
English	47.10%	75%	22.70%
Spanish	47.10%	25%	63.60%
Bilingual English & Spanish	5.90%	0%	13.60%
Primary Home Language			
English	52.90%	100%	27.30%
Spanish	41.20%	0%	59.10%
Bilingual English & Spanish	0%	0%	13.60%
Bilingual English & Other	5.90%	0%	0%
Child			
Age (months): <i>M (SD)</i>	18.76 (6.88)	8.50 (7.51)	16.86 (9.53)
Gender			
Female	70.60%	50%	54.50%
Male	29.40%	50%	45.50%
Race/Ethnicity			
Hispanic/Latino	82.40%	25%	77.30%
Black/African American	11.80%	25%	4.50%
White	0%	0%	4.50%
Mixed Race/Ethnicity	5.9%	50%	13.50%
Native Language Spoken			
English	47.10%	100%	31.80%
Spanish	41.20%	0%	63.60%
Bilingual English & Spanish	11.80%	0%	4.50%

Table 3: EHS Child-Development-Focused Fidelity Components and Corresponding Items from the Home Visit Summary

Child Development Discussion
Individual Child Plan (ICP)
Status of ICP
Parent input on ICP
Literacy activity conducted in visit
Observation of child development
Literacy Focus Integrity Component
Literacy Activity
Parent-Child Interaction Integrity Component
Observation of parent-child activity
Parent Input Integrity Component
Parent learned
Parent liked
Parent rating
Parent input ICP

Table 4: Little Talks Fidelity Components and Corresponding Items from the Little Talks Integrity Toll

Little Talks Curriculum
Parent-child book sharing observation
Parent-report about book sharing frequency
Little Talks lesson
Teach or practice Little Talks lesson
Approaches for teaching or practice Little Talks lesson
Activity for teaching or practicing Little Talks lesson
Collaborative Goal Setting
Goal identified
Action step identified
Progress towards goal
Parent report on action step
Action step decision making
Goal decision making
Home Visitor Decision Making
Action step decision making
Goal decision making
Parent Collaboration
Checking in on parents' perspectives about intervention
Parent-report about who shared books with child
Parent-report about book sharing frequency
Parent description of action step
Parent description of action step use
Parent-report about progress towards goal

Table 5: Within-group Repeated Measures ANOVA for Little Talks Fidelity Components

Component	Mauchly's Test of Sphericity	Epsilon ϵ (if needed)	Within-Subjects Test
Par Coll	$\chi^2(5) = 12.23, p = .02$	Greenhouse-Geisser, .64	$F(1.90, 30.48) = 5.72, p = .009$
CGS	$\chi^2(5) = 12.42, p = .03$	Greenhouse-Geisser, .68	$F(2.03, 32.55) = 4.33, p = .02$
Dec Mkg	$\chi^2(5) = 8.41, p = .13$		$F(3,48) = 3.43, p = .02$
LT Curr	$\chi^2(5) = 7.36, p = .20$		$F(3,48) = 0.66, p = .58$

Note: Par Coll = Parent Collaboration fidelity component; CGS = Collaborative Goal Setting fidelity component; Dec Mkg = Decision-Making fidelity component; LT Curr = Little Talks curriculum fidelity component.

Table 6: Fidelity Indicator Means and Standard Deviations

Fidelity Component	Group	
	Little Talks	Comparison
<i>Little Talks Intervention</i>		
Little Talks Curriculum	0.94 (0.08)	
Collaborative Goal Setting	0.82 (0.15)	
Parent Collaboration	0.79 (0.10)	
Home Visitor Decision Making	0.79 (0.18)	
<i>EHS Routine Visit</i>		
Child Development Discussion	1.00 (0.00)	0.98 (0.05)
Literacy Activity	1.00 (0.02)	0.91 (0.24)
Parent-Child Interaction	0.78 (0.24)	0.84 (0.14)
Parent Input	0.95 (0.09)	0.82 (0.09)