

Enhancing the language development of toddlers in foster care by promoting foster parents' sensitivity: Results from a randomized controlled trial

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Abstract

Young children in foster care are at increased risk for problematic language development, making early intervention a critical tool in enhancing these children's foundational language abilities. This study examined the efficacy of an early preventative intervention, Attachment and Biobehavioral Catch-up for Toddlers (ABC-T), in improving the receptive vocabulary abilities of toddlers placed in foster care. All the children had been removed from their biological parents' care and placed into foster care. When children were between 24 and 36 months old, foster parents were contacted by research staff and consented to participate. Parents were randomly assigned using a random number generator to receive either ABC-T ($n = 45$), which aimed to promote sensitive parenting for children who have experienced early adversity, or a control intervention ($n = 43$). Foster children's receptive vocabulary skills were assessed post-intervention using the Peabody Picture Vocabulary Test, Third Edition, when children were between 36 and 60 months old. Children whose foster parents received ABC-T demonstrated more advanced receptive vocabulary abilities than children whose foster parents received the control intervention. The positive effect of ABC-T on foster children's receptive vocabulary was mediated by increases in foster parents' sensitivity during parent-child interactions. Trial registration: ClinicalTrials.gov NCT01261806.

KEYWORDS

foster care, intervention, language development, parental sensitivity

1 | INTRODUCTION

Children's language development is dependent on their social environments, including the degree to which caregivers sensitively respond to children's behaviors and vocalizations (Hoff, 2006). Children in foster care have experienced early adversity, including maltreatment and unstable caregiving conditions, which increase the risk for problematic language development (Stock & Fisher, 2006). The risk for problematic language development among foster children is concerning given that early language

abilities foreshadow later academic performance (Hoff, 2013) and childhood language impairments predict the development of behavior problems (Chow & Wehby, 2018). The Attachment and Biobehavioral Catch-up for Toddlers intervention (ABC-T; Dozier, M., & the Infant Caregiver Project, 2018) was designed to promote competent developmental outcomes for young children with histories of adversity by supporting parents' abilities to interact with their children in a sensitive manner. This study evaluated whether ABC-T promoted the receptive vocabulary skills of toddlers in foster care by promoting foster parents' sensitivity.

1.1 | Parental sensitivity and children's language development

Parental sensitivity refers to parents' prompt and appropriate responses to a child's signals and actions (Ainsworth, Blehar, Waters, & Wall, 1978). Parents' sensitive responsiveness to children's non-distress vocalizations and behavioral communications is theorized to promote children's early language development in two ways. First, sensitivity is expected to encourage children's *motivation* to develop language by supporting mutual engagement in interpersonal interactions and by facilitating children's understanding that language is a tool for communicating desires and intentions with others (Hoff, 2006; Tamis-Lemonda, Kuchirko, & Song, 2014). Second, sensitive parenting is expected to encourage children's *abilities* to understand and produce language by providing them with a higher quantity of verbal input that is matched to their interests and developmental capacities (Golinkoff, Can, Soderstrom, & Hirsh-Pasek, 2015; Hoff, 2006; Tamis-Lemonda et al., 2014).

Consistent with these ideas, parental sensitivity has been shown to reliably predict children's early expressive and receptive language abilities (for reviews, see Hoff, 2006 and Tamis-Lemonda et al., 2014). For example, maternal sensitivity when children were age 36 months was concurrently associated with children's expressive and receptive language skills (as assessed with the Reynell Developmental Language Scales) among 1,016 families participating in the NICHD Study of Early Child Care and Youth Development (Raviv, Kessenich, & Morrison, 2004). Similarly, mothers' sensitive responsiveness during interactions with their children at 6, 15, 24, and 36 months was positively associated with 36-month-old children's expressive language and receptive vocabulary abilities (as assessed with the Preschool Language Scale and the Wechsler Preschool and Primary Scales of Intelligence, respectively) among 1,123 families from the Family Life Project (Vernon-Feagans, Cox, & FLP Key Investigators, 2013).

1.2 | Language development in high-risk populations

Children placed into foster care have experienced a number of adversities within their early caregiving relationships. Specifically, many children in foster care have experienced maltreatment, which confers risk for problematic receptive and expressive language development (Lum, Powell, Timms, & Snow, 2015). Moreover, the disruption of the parent-child relationship and additional placement changes that can occur within the foster care system can further harm these children's development (Rubin, O'Reilly, Luan, & Localio, 2007). Although it is difficult to disentangle the distinct consequences of each of these experiences, a growing number of studies demonstrate that children in foster care are at heightened risk for problems with language development (for a review, see Stock & Fisher, 2006). For example, Reams (1999) examined the language abilities of 84 foster children using the Batelle Developmental Inventory Screening Test and reported that 8% of foster children performed two or more

RESEARCH HIGHLIGHTS

- This study examined the efficacy of a brief, parenting-focused intervention in improving the receptive vocabulary skills of toddler-age children in foster care.
- Children whose foster parents received the experimental intervention demonstrated more advanced receptive vocabulary abilities than children whose parents received the control intervention.
- The positive effect of the intervention on children's receptive vocabulary abilities was mediated by increases in foster parents' sensitive caregiving.

standard deviations below national norms for receptive language and 15% performed two or more standard deviations below national norms for expressive language. In contrast, only 2%–3% of children in the general population perform two standard deviations below the mean. Similarly, Stacks, Beeghly, Partridge, and Dexter (2011) analyzed data for 963 children involved with the National Survey of Child and Adolescent Well-Being, a nationally representative, longitudinal study of children and families who were investigated for possible child maltreatment. Results indicated that children in foster care exhibited auditory comprehension and expressive communication scores below the population mean when children were approximately 8, 23, 39, and 69 months.

1.3 | Attachment and biobehavioral catch-up

ABC is a parenting intervention developed to improve outcomes for young children who have experienced early adversity by increasing parental sensitivity when children are not distressed, increasing nurturance when children are distressed, and decreasing parenting behaviors that are potentially frightening to the child (Dozier, Roben, Caron, Hoyer, & Bernard, 2018). It is a brief, 10-session intervention led by trained clinicians referred to as "parent coaches." During the sessions, parent coaches discuss research supporting the relevance of each target parenting behavior, provide parents with opportunities to practice the target behaviors during structured play interactions, provide in vivo feedback for parents, and use video feedback to reinforce the learned behaviors.

The original intervention was designed for infants between 6 and 24 months old. Multiple randomized controlled trials have demonstrated that ABC results in improvements in sensitive caregiving among foster parents (Bick & Dozier, 2013) and parents living in high-risk settings (Yarger, Hoyer, & Dozier, 2016). ABC also leads to improvements in key developmental outcomes for children, including infant attachment security, diurnal cortisol production, emotional development, and executive functioning skills (Bernard, Dozier, Bick, & Gordon, 2015; Bernard et al., 2012; Bernard, Hostinar, & Dozier, 2015; Lewis-Morrarty, Dozier, Bernard, Terracciano, & Moore, 2012; Lind, Bernard, Ross, & Dozier, 2014).



The intervention was recently adapted for older children and is referred to as Attachment and Biobehavioral Catch-up for Toddlers. ABC-T focuses on the developmental needs of children between the ages of 24 and 48 months. The two interventions have many common characteristics in purpose and implementation. However, in addition to focusing on sensitivity, nurturance, and frightening behaviors, ABC-T also addresses the importance of behaving in calming ways when the child is frustrated or upset so that the parent can serve as an effective co-regulator for the child (for more details, see Dozier, M., & the Infant Caregiver Project, 2018).

1.4 | The current study

The first aim of the current study was to evaluate whether ABC-T improves the receptive vocabulary abilities of children in foster care. In a recent report, a small group of infants whose foster parents received the ABC intervention prior to 24 months of age demonstrated more advanced receptive vocabulary skills at 36 months than infants whose foster parents received a control intervention (Bernard, Lee, & Dozier, 2017). The current study is intended to extend these findings by targeting foster children later in development.

The second aim was to evaluate whether increases in foster parents' sensitive caregiving represent the mechanism of change for improvements in foster children's receptive vocabulary abilities. Specifically, we hypothesized that (a) foster parents who received ABC-T would exhibit greater parental sensitivity than foster parents who received the control intervention, (b) children whose foster parents interacted with them in a more sensitive manner would demonstrate more advanced receptive vocabulary abilities than those with less sensitive parents, and (c) changes to parental sensitivity would mediate the positive effect of ABC-T on foster children's receptive vocabulary abilities.

2 | METHOD

2.1 | Participants

Parents fostering a child between the ages of 24 and 36 months old were eligible for this study. Eligible parents were referred by the State of Delaware Division of Family Services and then contacted by research staff. The Division of Family Services required foster parents to participate in training, but participation in research was voluntary. The progress of all participants through the trial is presented in the CONSORT diagram in Figure 1. Although the target enrollment was 220 children, we successfully enrolled 205 eligible children during the enrollment period (leaving enough time for post-intervention assessments in the funded period). Ultimately, 88 foster children who completed an assessment of receptive vocabulary during the post-intervention visits were included in the analytic sample. Attrition analyses indicated that this sample did not differ from the group of children who were enrolled but ultimately were not included in the analyses in terms of children's characteristics (biological sex or ethnicity), child welfare experiences (age of separation from biological families and the number of

placements), or foster parents' demographic characteristics (biological sex, ethnicity, marital status, educational attainment, and household income). Demographic information for the 88 parents and children included in the analytic sample is provided in Tables 1 and 2.

2.2 | Procedure

The study was a parallel randomized controlled trial design. Families were randomly assigned to receive either the ABC-T or a control intervention (Developmental Education for Families; DEF). Randomization was completed by a project manager using a random number generator. The project manager had no involvement in collecting follow-up data, and the research assistants who collected and coded the data were blind to which intervention the families received. Demographic data were collected and parent-child interactions were observed during a home visit when children were an average of 28.5 months ($SD = 9.25$). Post-intervention assessments were completed approximately 1 month after finishing the intervention as well as annually until the child reached 60 months of age. The University of Delaware Institutional Review Board approved this research.

2.3 | Interventions

ABC-T and DEF were both manualized interventions consisting of 10-hr-long sessions that took place in foster parents' homes. Parent coaches were trained and employed by the study. Different parent coaches completed trainings for administering ABC-T and DEF based on their preference and skill administering each intervention. However, all parent coaches were selected based on strong letters of recommendation and experience, and the parent coaches for ABC-T and DEF were matched on educational attainment. All intervention sessions were video-recorded and reviewed for intervention fidelity during weekly supervision meetings. ABC-T coaches were supervised by an ABC-T expert, and DEF coaches were supervised by a DEF expert. The parent coaches were not informed about the hypotheses concerning the anticipated effects of the two interventions, and they did not collect or analyze the data from the follow-up assessments.

2.3.1 | Experimental intervention: Attachment and Biobehavioral Catch-up Intervention for Toddlers (ABC-T)

ABC-T is designed to increase parental nurturance in response to distress, increase sensitive and responsive behaviors in response to non-distress, and to help parents serve as co-regulators when children are overwhelmed. A key component of the intervention is "in the moment" commenting, in which parent coaches comment on parent behaviors and link them to intervention targets (Meade, Dozier, & Bernard, 2014). This feedback was designed to facilitate comprehension and consolidation of the target behaviors; both quantity and quality of these comments were found to predict parent behavior change in ABC (Caron, Bernard, & Dozier, 2016).

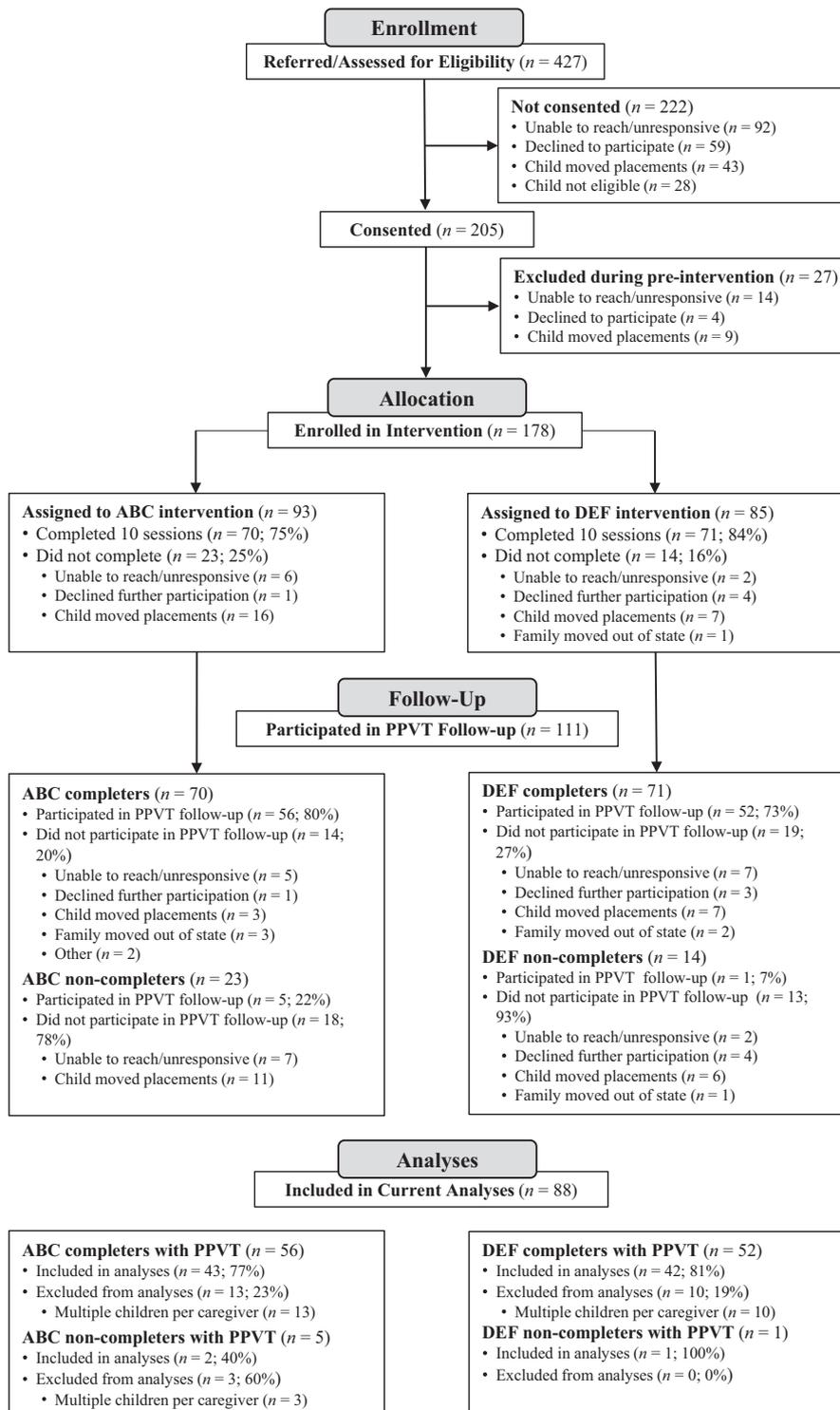


FIGURE 1 Participant flow diagram for the randomized controlled trial of the Attachment and Biobehavioral Catch-up for Toddlers intervention

2.3.2 | Control intervention: Developmental Education for Families

Developmental Education for Families is an adapted version of evidence-based interventions designed to improve children's motor and cognitive development (Brooks-Gunn, Klebanov, Liaw, & Spiker, 1993). Activities were chosen based on the child's developmental level. Components related to parental sensitivity were excluded in order to differentiate it from ABC-T. Parent coaches focused on methods to

help children reach developmental milestones and provided opportunities for practice, using video feedback as reinforcement.

2.4 | Measures

2.4.1 | Children's receptive vocabulary abilities

The Peabody Picture Vocabulary Test-Third Edition (PPVT; Dunn & Dunn, 1997), a standardized and widely used measure of children's

TABLE 1 Demographic characteristics of foster parents by intervention condition

	ABC-T (n = 45)	DEF (n = 43)	Test of difference
Foster parent biological sex (% female)	86.7	97.7	$\chi^2(1, 88) = 3.63$, $p = 0.06$
Foster parent ethnicity			
Caucasian (%)	50.0	33.3	$\chi^2(3, 86) = 3.83$, $p = 0.28$
African-American (%)	43.2	50.0	
Hispanic (%)	4.5	7.1	
Other (%)	2.3	9.5	
Foster parent marital status			
Married (%)	58.1	45.0	$\chi^2(1, 83) = 1.43$, $p = 0.23$
Not married (%)	41.9	55.5	
Foster parent educational attainment			
Less than high school degree (%)	13.5	0.0	$\chi^2(4, 73) = 5.82$, $p = 0.21$
High school degree or GED (%)	18.9	25.0	
Some college (%)	21.6	22.2	
Baccalaureate degree (%)	27.0	25.0	
Post-baccalaureate degree (%)	18.9	27.8	
Foster parent household income			
<\$10,000 (%)	8.8	3.1	$\chi^2(6, 66) = 3.35$, $p = 0.76$
\$10,000–\$19,999 (%)	8.8	12.5	
\$20,000–\$29,999 (%)	11.8	6.3	
\$30,000–\$39,999 (%)	8.8	15.6	
\$40,000–\$59,999 (%)	8.8	15.6	
\$60,000–\$99,999 (%)	26.5	28.1	
≥\$100,000	26.5	18.8	
Foster parent age in years at intervention (M, SD)	47.0	48.0	$t(86) = -0.41$, $p = 0.68$

Note. ABC-T, Attachment and Biobehavioral Catch-up for Toddlers; DEF, Developmental Education for Families; PPVT, Peabody Picture Vocabulary Test.

receptive vocabulary abilities, was administered following completion of the intervention when children were approximately 36, 48, and 60 months of age. The PPVT was not collected earlier due to a minimum age requirement of 30 months for this measure. For the PPVT, the researcher presented the child with a set of four pictures and asked the child to point to the picture of a stated word. Children earned a point for each correct answer. Raw scores were converted to the age-based standard scores, which were used in the analyses for this study. Not all children completed the research visits at each time point, resulting in participants with missing PPVT data at each age ($n = 32$ at 36 months, $n = 53$ at 48 months, and $n = 58$ at 60 months). On average, children's PPVT scores increased from 36 months ($M = 87.34$, $SD = 16.35$) to 48 months ($M = 98.40$, $SD = 14.75$) and then remained nearly level through 60 months ($M = 100.95$, $SD = 16.34$). There was significant rank-order stability in children's PPVT scores at each age (r s between 0.74 and 0.76). A composite measure of children's receptive vocabulary skills was

created by averaging the standardized PPVT scores collected at the three ages. The use of a composite measure maximizes the statistical power of the analyses by creating a highly robust measure of children's receptive vocabulary skills and by maximizing the sample size for analyses. This resulted in a final sample size of 88 children.

2.4.2 | Foster parents' sensitive caregiving

For each foster family, the caregiver who cared for the child the majority of the time was video-recorded while interacting with his/her foster child during semi-structured play interactions for 7 min. These interactions were recorded prior to receiving the intervention ($n = 79$) as well as at multiple time-points after the intervention, including approximately 1 month after finishing the intervention ($n = 85$) and when children were 36 ($n = 28$), 48 ($n = 38$), and 60 ($n = 54$) months of age. At each visit, the foster parent was provided with developmentally appropriate toys and instructed to play with



	ABC-T (n = 45)	DEF (n = 43)	Test of difference
Child biological sex (% female)	46.7	51.2	$\chi^2(1, 88) = 0.18,$ $p = 0.67$
Child race/ethnicity			
Caucasian (%)	31.1	25.6	$\chi^2(3, 88) = 0.56,$ $p = 0.91$
African-American (%)	46.7	51.2	
Hispanic (%)	8.9	7.0	
Other (%)	13.3	16.3	
Age in months when first removed from birth parents (M, SD)	13.8 (12.7)	13.6 (13.5)	$t(82) = -0.08,$ $p = 0.94$
Reason for removal (not mutually exclusive)			
Physical or sexual abuse (%)	66.7	33.3	$\chi^2(1, 79) = 2.56,$ $p = 0.11$
Neglect (%)	46.5	53.5	$\chi^2(1, 79) = 0.10,$ $p = 0.76$
Caregiver incarceration (%)	0.0	100.0	$\chi^2(1, 79) = 11.84,$ $p < 0.01$
Caregiver substance abuse (%)	41.9	58.1	$\chi^2(1, 79) = 1.47,$ $p = 0.23$
Unable to care for child (%)	52.0	48.0	$\chi^2(1, 79) = 0.83,$ $p = 0.36$
Caregiver mental health problems (%)	62.5	37.5	$\chi^2(1, 79) = 0.74,$ $p = 0.39$
Domestic violence (%)	50.0	50.0	$\chi^2(1, 79) = 0.01,$ $p = 0.91$
Other (%)	33.3	66.7	$\chi^2(1, 79) = 0.89,$ $p = 0.35$
Number of placements (M, SD)	2.2 (0.8)	2.2 (0.8)	$t(85) = -0.16,$ $p = 0.88$
Time in months with caregiver at post assessment (M, SD)	36.0 (16.2)	33.0 (15.3)	$t(84) = 0.88, p = 0.38$
Placement type			
Non-relative (%)	72.1	75.6	$\chi^2(1, 88) = 0.14,$ $p = 0.71$
Relative (%)	27.9	24.4	
Child age in months at PPVT (M, SD)	52.1 (9.1)	51.4 (8.7)	$t(86) = 0.37, p = 0.71$

Note. ABC-T, Attachment and Biobehavioral Catch-up for Toddlers; DEF, Developmental Education for Families; PPVT, Peabody Picture Vocabulary Test.

their child as they normally would for 7 min. When children were under 24 months of age, the foster parent was given a rattle, stacking cups, and a squeaky toy. When children were between 24 and 60 months of age, the foster parent was given stacking blocks. When children were 60 months of age or older, the foster parent was given art supplies. When children were under 24 months of age, the foster parent was also instructed to play with their children as he or she normally would from 2 feet away without touching the child or the toys for 2 min in order to code joint attention, although this part of the interaction was weighted less heavily in the coding of sensitivity.

Reliable coders rated parents' sensitivity to the child's non-distressed signals and behaviors during the parent-child interactions using a 5-point scale adapted from the Observational Record of the

TABLE 2 Demographic characteristics and child welfare experiences of foster children by intervention condition

Caregiving Environment (National Institute of Child Health and Human Development Early Child Care Research Network, 1999). Foster parents received a high rating for sensitivity if they consistently followed the child's cues and responded in a timely and appropriate fashion. Foster parents received a low rating if they rarely responded to the child's cues appropriately and/or frequently displayed intrusive or detached behavior. All coders were blind to intervention status. All of the pre-intervention observations were double-coded, and the intra-class correlation (one-way random effects, average measure) was 0.82. For the observations collected after the intervention, 20% were double-coded and the intra-class correlation (one-way random effects, single measure) was 0.83. For all double-coded observations, the average of the ratings assigned by the two coders was used in the analyses. As

with the PPVT scores, a composite measure of foster parents' post-intervention sensitivity was created by averaging the ratings of foster parents' sensitivity during post-intervention visits. Observations of parent-child interactions were not collected at the post-intervention visits for three foster parent-child dyads.

2.5 | Statistical analysis

The effect of ABC-T on foster children's receptive vocabulary abilities was evaluated using an independent samples *t*-test. The possibility that ABC-T's effect on foster children's receptive vocabulary skills was mediated by increases in foster parents' sensitive caregiving was evaluated using MPlus version 7.4 (Muthén & Muthén, 1998–2017). Full-information maximum likelihood (FIML) was used to account for missing data related to foster parents' sensitive caregiving after the intervention. FIML produces less biased and more consistent parameter estimates than pairwise or listwise deletion (Graham, 2009). For all analyses, effect sizes are represented using bivariate correlations and standardized regression coefficients.

Based on a prior power analyses, the current study enrolled over 200 families so that statistical analyses of the data collected at follow-up visits would have sufficient power to detect medium to large effects (Cohen, 1992). Indeed, with a sample size of 88 parent-child pairs, the current analyses had 80% power to detect medium-sized effects approximately equal to a bivariate correlation of .30. This is similar to the reported effect of ABC on children's receptive vocabulary skills (Bernard et al., 2017) and comparable to the estimated association between parental sensitivity and children's receptive language outcomes (Raviv et al., 2004; Vernon-Feagans et al., 2013).

3 | RESULTS

3.1 | Preliminary analyses

There were no demographic differences between the parents and children who received ABC-T and those in the control group (Tables 1 and 2). In addition, children assigned to the control group and ABC-T did not differ in their child welfare experiences, except that children in the control group were removed from their biological parents due to parental incarceration more often than children in the ABC-T group (Table 2). However, this variable was not significantly associated with children's PPVT performance ($t(77) = 0.73, p = 0.47$); therefore, this variable was

not included as a covariate in subsequent analyses. Further, there was not a significant difference at pre-intervention in the ratings of parental sensitivity for foster parents who were eventually randomly assigned to ABC-T or the control group ($M = 2.9, SD = 1.1$ and $M = 2.5, SD = 1.0$, respectively; $t(77) = 1.52, p = 0.13$).

3.2 | Intervention effects on foster children's receptive vocabulary development

An independent *t*-test revealed a significant effect of ABC-T on foster children's receptive vocabulary abilities: children whose foster parents received ABC-T demonstrated greater receptive vocabulary skills after the intervention than children whose foster parents received DEF ($M = 99.4, SD = 15.9$ and $M = 92.3, SD = 16.5$, respectively; $t(86) = 2.06, p = 0.04, r = 0.21$).

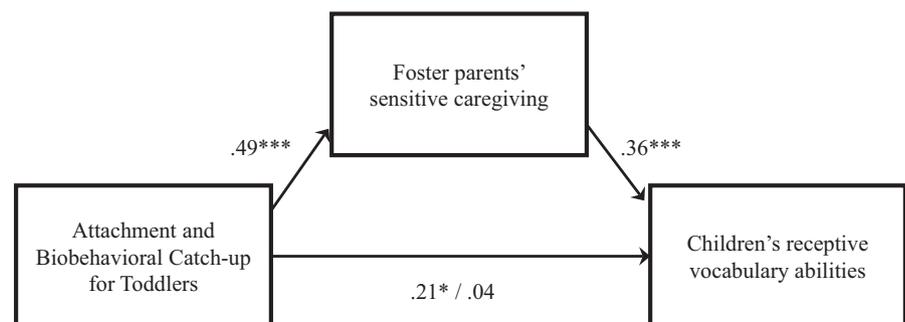
3.3 | Improvement in foster parent sensitivity as a mechanism of change

Results of the mediation analyses are presented in Figure 2. Foster parents who received ABC-T interacted with their children in a more sensitive manner following the intervention than foster parents who received DEF ($M = 3.5, SD = 1.0$ and $M = 2.5, SD = 0.8$, respectively). Moreover, children who experienced more sensitive caregiving from their foster parents exhibited greater receptive vocabulary skills than children who experienced less sensitive caregiving. The indirect effect of ABC-T on children's receptive vocabulary through foster parents' sensitive caregiving was statistically significant ($\beta = 0.18, p < 0.01$). Foster parents' sensitivity at the post-intervention assessments accounted for approximately 82% of the effect of ABC-T on children's receptive vocabulary abilities, as indicated by the ratio of the indirect to total effect.

4 | DISCUSSION

The current study demonstrated that children whose foster parents received ABC-T exhibited greater receptive vocabulary abilities than children whose foster parents received the control intervention. The average receptive vocabulary score for children whose foster parents received ABC-T was nearly equal to the nationally normative score of 100. In contrast, children whose foster parents received the

FIGURE 2 The positive effect of the Attachment and Biobehavioral Catch-up for Toddlers intervention on the receptive vocabulary abilities of toddlers in foster care through improvements in foster parents' sensitive caregiving. Values represent standardized regression coefficients ($N = 88, *p < 0.05, ***p < 0.001$)





control intervention had an average receptive vocabulary score that was over half a standard deviation below the age-based normative score, which is consistent with previous evidence indicating that children in foster care are at risk for problematic language development (Reams, 1999; Stacks et al., 2011; Stock & Fisher, 2006).

The second goal was to evaluate the mechanism by which ABC-T exerted a positive effect on children's receptive vocabulary abilities. Consistent with our hypotheses, foster parents who received ABC-T interacted with their children in a more sensitive manner than foster parents who received the control intervention, and foster parents' sensitivity at the post-intervention visits was positively associated with children's receptive vocabulary abilities. Mediation analyses indicated that ABC-T led to improvements in foster children's receptive vocabulary abilities by promoting foster parents' sensitivity.

The findings of the current study also advance understanding of early parent-child interactions for children's language development in two key ways. First, these results add to the limited body of research examining language outcomes of foster children by highlighting the associations between foster parents' sensitive responsiveness and the vocabulary abilities of this higher risk group of children. Second, the results from this RCT demonstrate that training foster parents to interact with their toddlers in sensitive ways leads to improvements in the children's receptive vocabulary abilities. These findings extend the evidence from Bernard et al. (2017) by: (a) demonstrating the efficacy of the ABC intervention on receptive vocabulary abilities when it is implemented with toddler-aged children and (b) documenting that parental sensitivity represents the mechanism by which ABC-T leads to improvements in foster children's receptive vocabulary development. Although the overall size of ABC-T's effect on foster children's receptive vocabulary was small by Cohen's (1992) standards, there are few interventions that are effective in improving early language outcomes, especially for vulnerable children in foster care.

A limitation of the study is the lack of information about children's receptive vocabulary abilities prior to random assignment to the interventions. However, families assigned to ABC-T and DEF did not differ in parents' sensitivity prior to intervention, parents' and children's demographic characteristics, or children's child welfare experiences. This increases our confidence that the post-intervention differences in foster parents' sensitive caregiving and foster children's receptive vocabulary abilities reflect the positive effects of ABC-T.

A second limitation is the fact that approximately half of the participants who consented ultimately completed an assessment of children's receptive vocabulary abilities during the follow-up visits. Families did not complete aspects of the trial for many reasons, including children moving placements. Although the attrition analyses did not identify systematic differences between the participants included in the analyses and those who were not retained throughout the trial, it is possible that the analytic sample represents a more stable population of foster families than those not included. Additional research is needed to better understand the degree to which the current set of findings generalize to all foster parents and children. In addition, although there were no significant differences in caregiver demographics between the two intervention conditions, there

was variability in parental race, marital status, and gender that could be investigated as potential moderating influences in future studies.

This study assessed children's language with a standardized assessment of receptive vocabulary. An important direction for future studies will be testing whether parenting-focused interventions, such as ABC-T, have positive impacts on other aspects of children's receptive language development, expressive language abilities, and language processing. This is of particular interest given that these language skills are compromised in high-risk children (Lum et al., 2015) and are associated with parents' sensitive responsiveness (Hoff, 2006; Tamis-Lemonda et al., 2014). Moreover, given that language abilities are strong predictors of children's later academic performance and behavior problems (Chow & Wehby, 2018; Hoff, 2013), future research should evaluate whether ABC-T's positive effects on early receptive vocabulary skills have cascading benefits for foster children's functioning in these developmental domains.

Data regarding parental sensitivity were only available for one foster parent for each child. Future studies should consider assessing the sensitivity of other caregivers, as this may provide a more thorough assessment of children's language environment. The global ratings of parents' sensitivity used in this study captured the degree to which parents sensitively responded to a range of child cues and behaviors. Coding systems that capture nuanced parenting behaviors theorized to be related to children's language development, such as joint attention or parental language that is contingent on the child's vocalizations and responsive to the child's interests (e.g., Hirsh-Pasek et al., 2015), may enrich our understanding of the specific elements of sensitive parenting that scaffold children's early language development.

In conclusion, the results from this study indicate that the ABC-T intervention is effective in improving the receptive vocabulary abilities of children in foster care by promoting foster parents' sensitivity during parent-child interactions. These findings offer rigorous support for the causal influence of parental sensitivity on children's language development and suggest that this brief intervention which targets parents' sensitive behaviors may represent an effective tool for reducing the harmful impact of early adversity on the developmental outcomes of children in foster care.

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