



KANSAS ABC

EARLY CHILDHOOD INITIATIVE

Phase II Evaluation Report

November 2024



KANSAS ABC EARLY CHILDHOOD INITIATIVE Phase II

MAY 2020 – APRIL 2024
Evaluation Report

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Participating agencies in Phase II included: LiveWell Northwest Kansas, Russell Child Development Center and Rainbows United.



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EXECUTIVE SUMMARY

Kansas ABC Early Childhood Initiative-Phase II

In May 2020, Phase II of the Kansas ABC Early Childhood Initiative was launched, building on the evidence gathered in Phase I. Both phases included implementing the ABC Parenting Institute's Attachment Biobehavioral Catch-up (ABC) intervention program for families in Kansas. In Phase I, the ABC for Infants model was implemented, which was designed for children ages 6-24 months old. In Phase II, an additional ABC model was implemented – ABC for Early Childhood – that was designed for children ages 24-48 months old. As part of Phase II, the KU School of Social Welfare (KUSSW) developed a rigorous evaluation of the program with the following considerations:

- Transition to new areas of inquiry:**
Phase I of the Kansas Early Childhood Initiative demonstrated positive outcomes locally, including improved caregiver sensitivity, caregiver knowledge and caregiver beliefs about parenting. Given these established findings, Phase II shifted focus to measure other outcome areas that had not yet been studied or verified in Kansas.
- Reduction of evaluation time and effort:**
The Phase II evaluation plan aimed to decrease the evaluation burden for both parent coaches and caregivers. This was achieved by reducing the number of evaluation components at all time points, including the removal of cortisol testing and the North Carolina Family Assessment Scale-General (NCFAS-G).
- Addition of child development measures central to school readiness:**
To align with Phase II's provision of the ABC for Early Childhood (ABC-Early Childhood) model in Kansas, the evaluation included new measures aimed at assessing development and preschool readiness. Specifically, the Ages and Stages Questionnaire-3 (ASQ-3) and the Behavior Rating Inventory of Executive Function-Preschool Version (BRIEF-P) were added.
- Continued examination of social-emotional development:**
Phase II continued to evaluate the impact of ABC for Infants (ABC-Infants), as well as ABC-Early Childhood, on children's social-emotional development as measured by the Ages and Stages Questionnaire: Social-Emotional-2 (ASQ:SE-2).
- Exploration of new outcome areas hypothesized to be impacted by ABC:**
Phase I's implementation/process evaluation suggested that caregiving, despite its stresses, has inherent rewards. Also, Phase I indicated ABC often led to caregivers feeling more empowered post-ABC completion and less stressed. Therefore, Phase II examined these additional outcome areas. Specifically, the Parental Stress Scale and the Family Empowerment Scale were administered pre- and post-ABC.

Evaluation procedures mirrored that of Phase I. Families continued to be screened for eligibility via the Household Strengths and Strain Inventory. If meeting eligibility, families were referred to the ABC evaluation and informed consent was collected. After obtained consent, ABC parent coaches then completed and submitted a battery of baseline measures (Time 1) including:

- 1. Demographics Form:**
One-page demographic form about family and child characteristics.
- 2. The completed HSSI:**
Parent completed assessment that measures toxic stress risk and protective factors. It measures both the presence and degree of household stressors of economic hardship, family health and mental health, and family relations; as well as the protective factors of attachment characteristics and sensitive parenting.
- 3. Other Services Form:**
Two-page form that collects information about other services used by the family before, during and after ABC participation.
- 4. Ages & Stages Questionnaire-3:**
The ASQ-3 focuses on development progress for young children. Areas covered include: communication, gross motor, fine motor, problem solving, and personal-social development. It is a parent-completed assessment for parents of children ages 1 to 66 months that takes approximately 10 minutes to complete.
- 5. Behavior Rating Inventory of Executive Function-Preschool Version** (*for the toddler sample only*):
The BRIEF-P is a 63-item parent report scale of child executive functioning, including subscales of inhibitory self-control, flexibility and emergent metacognition.
- 6. Ages & Stages Questionnaire-Social Emotional-2:**
The ASQ:SE-2 focuses on the social and emotional development in young children. Areas covered include: self-regulation, compliance, social-communication, adaptive functioning, autonomy, affect, and interaction with people. It is a parent-completed assessment for parents of children ages 1 to 72 months that takes approximately 10 minutes to complete.
- 7. Parental Stress Scale:**
This is a self-report scale that contains 18 items representing the positive themes of parenthood as well as the negative components. Positive themes include: emotional benefits, self-enrichment and personal development. Negative themes include: demand on resources, opportunity costs, and restrictions.

8. **Family Empowerment Scale:**

This is a 34-item, parent self-report scale that measures the parents' ability or confidence in managing their child(ren)'s needs. Only the knowledge, competence and self-efficacy subscales was administered, resulting in a 25-item scale.

At Time 2 (post-ABC completion), ABC parent coaches then completed and submitted the following measures:

1. ASQ-3
2. For the toddler sample only, the BRIEF-P
3. ASQ-SE-2
4. Parental Stress Scale
5. Family Empowerment Scale

ABC-Infant continued to be implemented in three sites: LiveWell Northwest Kansas; Rainbows United; and Russell Child Development Center. Two sites, Livewell Northwest Kansas and Russell Child Development Center, expanded to implement ABC-Early Childhood for toddlers. In total, there were 92 infant/caregiver and 76 toddler/caregiver dyads enrolled in the evaluation. Seventy-four infant/caregiver and 54 toddler/caregiver dyads completed Time 2 measures. Initial evaluation results indicate that children, both infants and toddlers, demonstrated improved well-being, and caregivers reported less stress and increased feelings of empowerment.

These findings are significant, as they continue to highlight the effectiveness of the ABC-Infant intervention. Further, these findings build the evidence-base supporting the use of the ABC-Early Childhood model. The evaluation found that both models enhance the overall health and development of young children and improve caregiver well-being and empowerment. Both of these constructs are crucial for sustaining positive parenting practices, which in turn foster a supportive and nurturing environment for children's growth. This evaluation underscores the importance of continued investment in early childhood interventions, which can lead to long-term benefits for families and communities.



Both models enhance the overall health and development of young children and improve caregiver well-being and empowerment.



PHASE II OVERVIEW

Primary Goals

The primary goals of Phase II of the Kansas ABC Early Childhood Initiative were to further expand early childhood service capacity in Kansas by continuing the implementation of ABC-Infant across three agencies and extending implementation to include the delivery of ABC-Early Childhood for toddlers in two of these agencies.

LiveWell Northwest Kansas and Russell Child Development Center expanded their ABC implementation efforts to include the ABC-Early Childhood intervention for toddlers, while Rainbows United continued to deliver the ABC-Infant model.

In addition to expanding services to include families with toddlers, Phase II also aimed to evaluate outcome areas not investigated in the previous phase, including parental/caregiver stress, child development as it relates to school readiness, and family empowerment. **TABLE 1** contains each measure included in the Phase II evaluation.

Outcome areas evaluated in Phase II



- Caregiver stress (NEW)
- Family empowerment (NEW)



- Preschool readiness (NEW)
- Social-emotional development
- Physical development

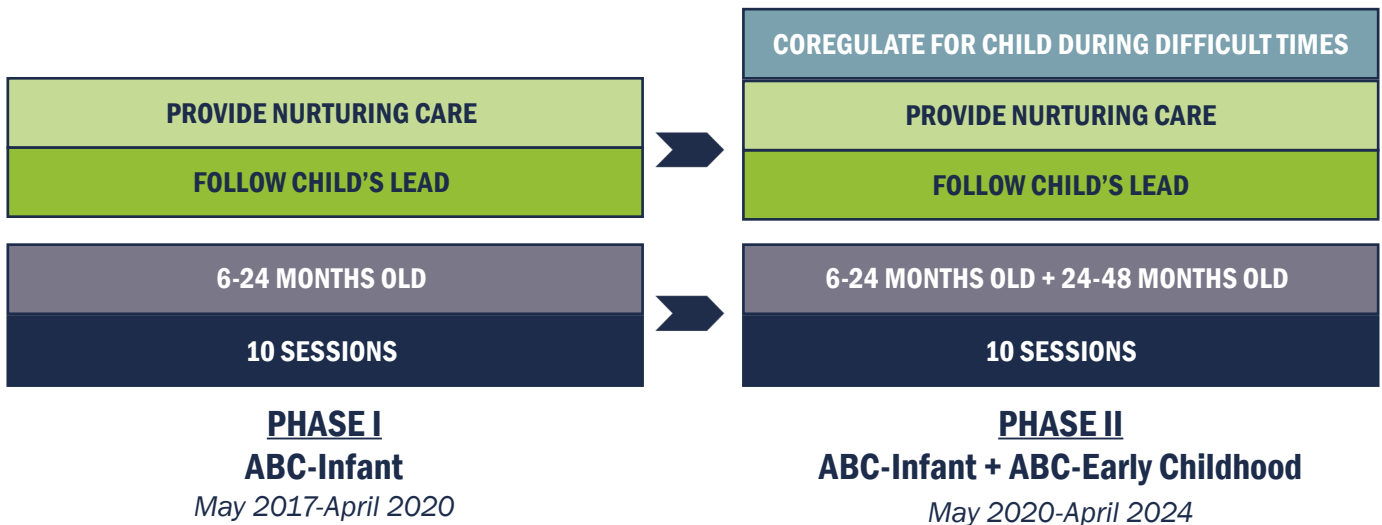


TABLE 1: Evaluation outcome measures

MEASURE	DESCRIPTION	TARGET SAMPLE		
		Infants	Toddlers	Caregivers
Ages and Stages Questionnaire – Social Emotional - 2 <i>(ASQ-SE-2; Brookings Publishing Co.)</i>	Measure completed by caregiver and used to identify early social-emotional difficulties	✓	✓	
Ages and Stages Questionnaire- 3rd Edition <i>(ASQ-3; Brookings Publishing Co.)</i>	Focuses on development progress for young children. Areas covered include: communication, gross motor, fine motor, problem solving, and personal-social development	✓	✓	
Behavior Rating Inventory of Executive Function-Pre-School Version <i>(BRIEF-P; Gioia et al.,)</i>	Measure completed by caregiver and is used to measure executive functioning		✓	
Parental Stress Scale <i>(PSS; Berry & Jones, 1995)</i>	Self-report scale assessing the positive themes of parenthood as well as the negative components. Positive themes include: emotional benefits, self-enrichment, and personal development. Negative themes include: demand on resources, opportunity costs, and restrictions			✓
Family Empowerment Scale <i>(Koren et al., 1993)</i>	Self-report scale that measures the parents’ ability or confidence in managing their child(ren)’s needs. Specifically, assesses caregivers knowledge, competence, and self-efficacy			✓

Screening for Eligibility

As with eligibility in Phase I, families in Phase II were screened for the ABC program through use of the Household Strength and Strain Inventory (HSSI) screening tool. The HSSI measures families’ economic and familial risk factors as well as environmental and familial protective factors.

Families’ eligibility for referral to ABC was established if:

- Scores on the HSSI reflected high potential risk of experiencing toxic stress evidenced by a high score on any one protective factor item indicating low strength in this area, **OR**
- A pattern of moderate/high scores across the protective factor scale items indicated more generalized potential risk.

Additionally, professionals administering the HSSI could refer families to the ABC program based on their clinical expertise or judgment in relation to each family’s reported constellation of risk and protective factors. After initial referral to the ABC program, families were provided detailed information regarding ABC services to make a decision about if they were interested in participating in ABC services.

Evaluation Process

Evaluation processes remained consistent with that of Phase I. After agreeing to participate in services, ABC parent coaches met with caregivers, obtained consent, and completed Time 1 evaluation measures. In total, 171 families were served across 33 Kansas counties. The majority of families enrolling in the evaluation enrolled in ABC-Infant, with approximately 54% of the sample comprising this type of ABC enrollment, while 46% of the sample enrolled in the ABC-Early Childhood intervention. Time 1 Evaluation measures include: demographic form; home visiting information form; HSSI; ASQ-SE-22; ASQ-3; Parental Stress Scale; Family Empowerment Scale; and (for toddlers only) the BRIEF-P. ABC parent coaches then went on to deliver 10 ABC sessions, and at the conclusion of those 10 sessions, completed Time 2 evaluation measures that included: ASQ-SE-22; ASQ-3; Parental Stress Scale; Family Empowerment Scale; and (for toddlers only) the BRIEF-P. While 171 families enrolled in Time 1, due to attrition, 128 (approximately 75% of the sample) completed Time 2 evaluation measures. Enrollment breakdown by site and type is included in **FIGURE 1**.

FIGURE 1: Families enrolled & completed by site

Note: Three cases were missing demographic information including type of ABC received



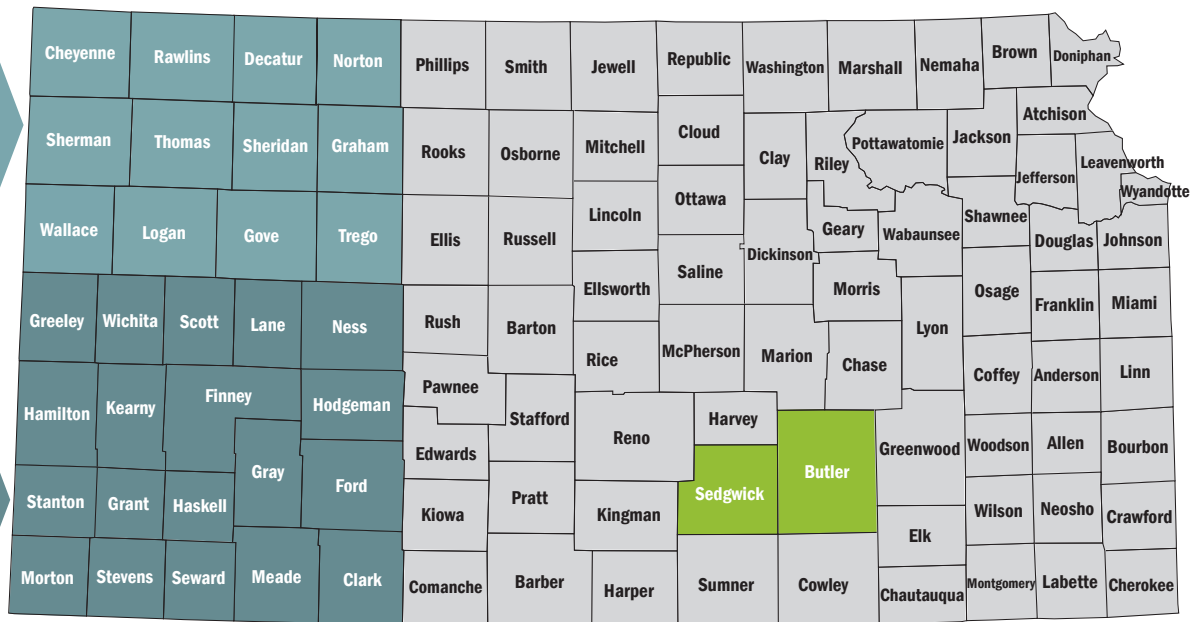
ABC-INFANT
Enrolled: 26
Completed: 24


ABC-EARLY CHILDHOOD
Enrolled: 19
Completed: 15



ABC-INFANT
Enrolled: 19
Completed: 15

ABC-EARLY CHILDHOOD
Enrolled: 57
Completed: 39





ABC-INFANT
Enrolled: 47 Completed: 35

ABC FOR INFANTS

Ages 6-24 months

Infant Sample

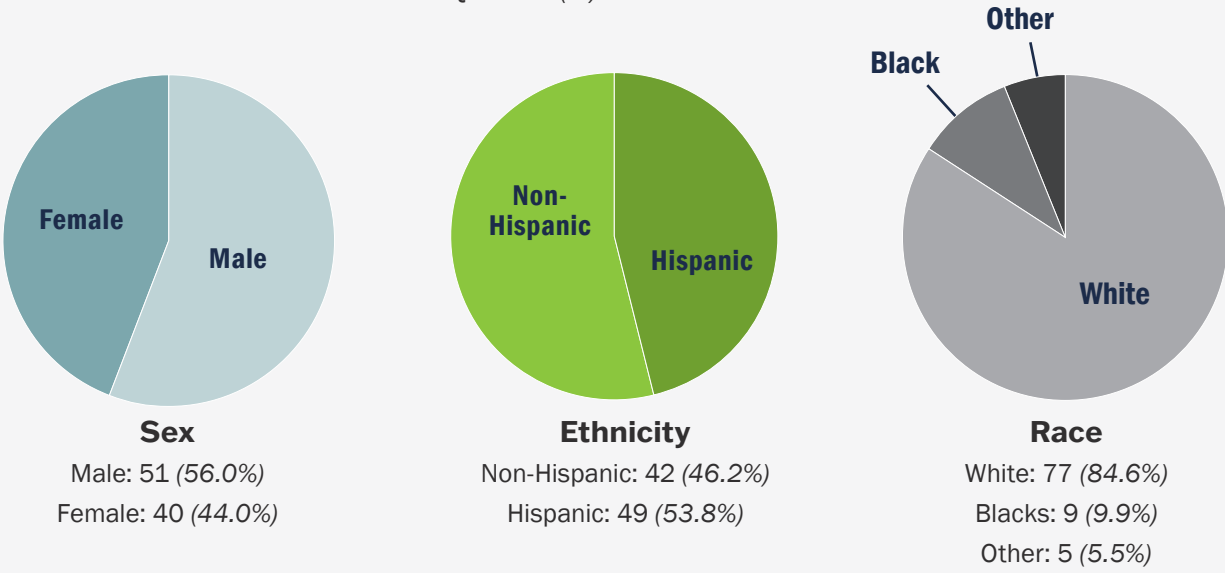
As discussed previously, Phase II aimed to gather evidence on ABC’s effectiveness across various outcome domains not previously studied and to assess the efficacy of the ABC-Early Childhood model. This phase sought to extend our understanding of the intervention’s impact beyond the initial findings, examining areas such as parental stress, family empowerment and child development. First presented are evaluation findings pertaining to the infant sample, which highlight significant improvements in both child well-being and caregiver outcomes.

INFANT CHARACTERISTICS –

The average age of the infant sample was 15.73 months, with a slight majority being male (56%). Additionally, approximately 84% were identified as White, and 46% were identified as having Hispanic ethnicity. For comprehensive demographic information on the infant sample, refer to **FIGURE 2**.

FIGURE 2: Demographics of target child: Infants (N=92)

CATEGORICAL VARIABLES AND FREQUENCY (%)



CONTINUOUS VARIABLES AND MEAN (SD)

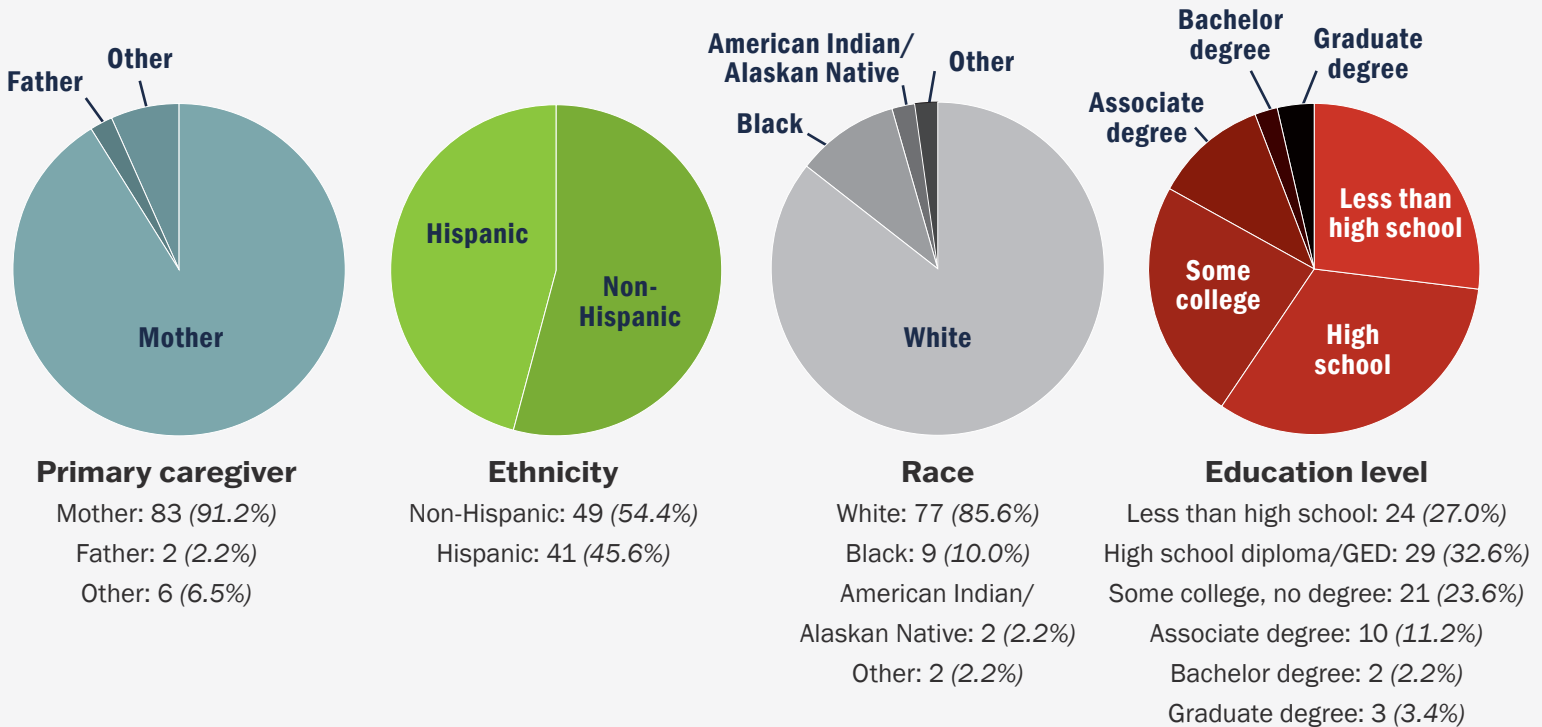


CAREGIVER CHARACTERISTICS –

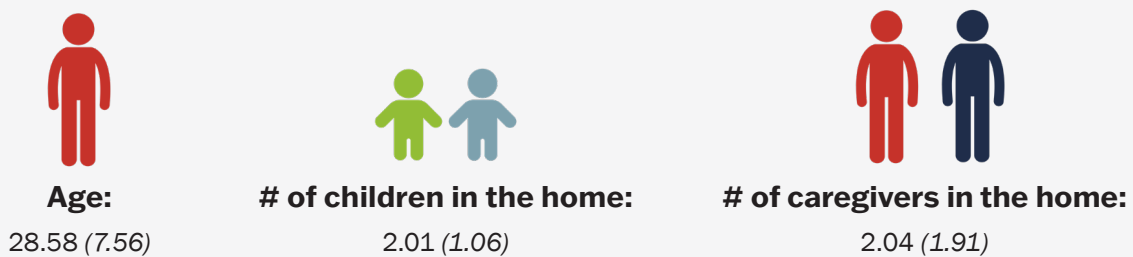
While ABC is intended to be administered to any designated caregiver as identified by the family, the primary caregiver receiving the ABC-Infant intervention was predominantly the mother (92%). Alternatively, 2 fathers, as well as 6 other caregivers, were identified as primary caregivers receiving the intervention in this sample. On average, caregivers were 28.6 years old and White (86%). Approximately 46% of the sample identified as Hispanic, with 31% of caregivers primarily spoke Spanish in the home. This demographic makeup reflects the racial composition of the statewide population but over-represents the Kansas Hispanic population. In terms of education, 59% reported earning a high school diploma (or GED equivalency) or less. An important demographic finding in this sample is the average income in the home. Close to 72% of families reported making less than \$30,000 a year. The average size of each family within the sample was reported as 4. The corresponding federal poverty level for a family of four in 2024 is \$31,200. Thus, it can be assumed that most of the families represented in the sample were experiencing poverty. **FIGURE 3** contains complete caregiver demographic information.

FIGURE 3: Infant caregiver characteristics (N=92)

CATEGORICAL VARIABLES AND FREQUENCY



CONTINUOUS VARIABLES AND MEAN



Infant Outcomes

Phase II's evaluation of ABC-Infant introduced three new evaluation measures and continued the use of one. The three new measures introduced for the infant sample included: the ASQ-3, the Parental Stress Scale and the Family Empowerment Scale. The ASQ-SE-2, which was used in Phase I, was also included in Phase II's evaluation. The following section details outcome results for both of the infant oriented measures, the ASQ-SE-2 and the ASQ-3.



SOCIAL-EMOTIONAL DEVELOPMENT –

Social-emotional development in young children is a critical factor related to later life outcomes such as school success, social interactions, and mental health. Given the importance of social-emotional development in infants and young children, as well as Phase I's evidence that ABC-Infant can positively impact social-emotional development, the ASQ-SE-2 was included in Phase II's evaluation.

The Ages & Stages Questionnaire-Social Emotional, version 2 (ASQ-SE-2) is an age-specific measure that caregivers completed independently, or parent coaches administered orally to caregivers. The ASQ-SE-2 consists of nine questionnaires separated by monthly intervals (e.g., 2-month, 6-month, 12-month, etc.). Each questionnaire varies in its length. Response options include often/always, sometimes, or rarely/never. Reverse-scoring is built into the questionnaires. Each response corresponds to a score but given the reverse coding of the questions, each response's score can be different depending on the question. Possible scores for each question include: 0, 5 or 10. Further, a caregiver can indicate that particular questions are of concern. If a caregiver indicates this, an additional 5 points are added to that question.

One raw cumulative score is provided per questionnaire; this total score is then compared to standardized cutoff points (provided in the manual and scoring guides) and indicates whether referral to intervention or additional assessments are needed, if the child should be monitored, or if there are no concerns requiring further action by a clinician. Using the total score and the predetermined cutoffs, a ratio score is calculated. Anything above a 1 would indicate further referral/intervention. Anything below a 1 would indicate no further action is needed. Psychometric properties for the ASQ-SE-2 are strong with reliability at .89, validity at .84, sensitivity at .81 and specificity at .83 (Squires et al., 2015).



Infants' ASQ-SE-2 average item score decreased from baseline to post-ABC completion, indicating decreased caregiver concerns over their infant's social-emotional development. These results demonstrated statistical significance.



Given the distinctive characteristics of the ASQ-SE-2 and the longitudinal design of the evaluation, specialized analysis was necessary. This is because the version of the ASQ-SE-2 administered at baseline likely differed from the version completed post-ABC (i.e. at baseline, an infant is 6 months old, thus the caregiver completes the 6-month version; however, post-ABC, the infant is now 12 months old and thus, the caregiver needs to complete the 12-month version).

To conduct analysis based on scoring instructions provided by the ASQ-SE-2 developers, an “average item score” was computed to examine changes/trends in each infant’s social-emotional development. To compute the average item score, the total score for each questionnaire was divided by the number of questions comprising that questionnaire [ASQ-SE-2 Average Item Score = (total ASQ-SE-2 Score) / (# of Scored Items on Respective Questionnaire)]. Using the average item score, a paired samples t-test was conducted. Results reveal that infants’ ASQ-SE-2 average item score decreased from baseline to post-ABC completion, indicating decreased caregiver concerns over their infant’s social-emotional development. These results demonstrated statistical significance. See **TABLE 2** for complete results.

Table 2

Paired samples t-test examining Time 1 to Time 2 for ASE-SE-2 scores: Infants

	TIME 1		TIME 2		df	t	p
	x	SD	x	SD			
ASQ-SE2 Average Item Score	1.72	2.46	1.27	1.5	73	1.75	.04*

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

In addition to a paired samples t-test examining pre- and post-ABC ASQ-SE-2 scores, an additional analysis was conducted. Specifically, a McNemar’s Chi-square test was enumerated to examine if

there was a statistically significant difference in infants needing further assessments/referrals for social and emotional concerns from baseline to post-ABC. To conduct this analysis, a new variable was created indicating whether each infant’s ASQ-SE-2 ratio scores met the threshold for additional assessments/referrals (as determined by the ASQ-SE-2 scoring guide). This variable was dummy coded with “1” indicating the infant needed more intervention/referrals; and “0” the infant did not meet threshold for additional assessments/referrals. At time 1, 38% of the sample met the threshold for additional assessments and referrals while at time 2, only 17.6% met the threshold.

Overall, chi square results indicate statistically significant fewer infants needed additional assessments or referrals for social and emotional concerns post-ABC completion. **TABLE 3** contains full McNemar’s chi square results.

Table 3

McNemar chi-square results for ASQ-SE-2: Infants

THRESHOLD	TIME 1	TIME 2	n	p
Met threshold (needs more referrals)	35 (38%)	13 (17.6%)	74	.002**
Did not meet threshold	57 (62.0%)	61 (82.4%)	--	--

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

PHYSICAL DEVELOPMENT –

In addition to evaluating the impact of ABC on the social-emotional development of each infant, the evaluation also collected data concerning their physical development. Specifically, the Ages and Stages Questionnaire-3rd edition (ASQ-3; Squires & Bricker, 2009) was administered both at the beginning and upon completion of the ABC program to monitor changes in physical milestones and overall development. Like the ASQ-SE-2, the ASQ-3 contains various versions corresponding to the child’s age. Specifically, there are 21 versions (separated in two-month intervals) spanning ages 1 month through 66 months.

The ASQ-3 is a caregiver-reported measure designed to identify potential developmental delays across five domains: communication, gross motor skills, fine motor skills, problem-solving and personal-social abilities. Responses to questions include three options: yes (10 points); sometimes (5 points) and not yet (0 points). Total scores are captured for each domain. These total/raw scores are then compared to standardized cutoff points provided in the manual and scoring guides to determine developmental status. Higher scores suggest typical development for the corresponding domain, while lower scores may indicate the need for further assessment or monitoring (Squires & Bricker, 2009).

The ASQ-3 demonstrates robust psychometric properties, including validity ranging from .82 to .88, test-retest reliability at .92, inter-rater reliability at .93, sensitivity at .86, and specificity at .85 (Squires & Bricker, 2009). By analyzing both the ASQ-SE-2 and the ASQ-3, the evaluation achieves a comprehensive and holistic understanding of the infants’ development.

For analysis, as there is not a singular score assigned ASQ-3, only a McNemar chi square test was conducted examining differences in the number of infants needing further assessments/referrals for physical development concerns from pre- to post-ABC completion.

Results indicate there was not a statistically significant difference in the number of infants needing additional referrals for developmental concerns. **TABLE 4** contains details concerning the number of infants meeting the cutoff score (meeting the cutoff score indicates no more referrals are needed in any area of development).

Table 4

McNemar chi square results for ASQ-3 domain scores: Infants

DOMAINS	TIME 1 (n%)		TIME 2 (n%)		n	p
	Met Cutoff (no referrals needed)	Did not meet cutoff	Met Cutoff (no referrals needed)	Did not meet cutoff		
Communication	61 (66.3)	31 (33.7)	51 (68.9)	23 (31.1)	74	.82
Gross-Motor	60 (65.2)	32 (34.8)	57 (77.0)	17 (23.0)	74	.18
Fine-Motor	60 (65.2)	32 (34.8)	57 (77.0)	17 (23.0)	73	.54
Problem-Solving	64 (69.6)	27 (29.7)	55 (74.3)	19 (25.7)	74	1.0
Personal-Social	58 (63.0)	34 (37.0)	50 (67.6)	24 (32.4)	74	.13

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Infant Caregiver Outcomes

As indicated throughout, Phase II introduced new evaluation measures. Two of these measures specifically examined caregiver outcomes/behaviors, the Parental Stress Scale and the Family Empowerment Scale. This section details outcome results for these two measures.

THE FAMILY EMPOWERMENT SCALE –

The Family Empowerment Scale (FES; Koren et al., 1993) contains 34 questions and three domains: feelings about family; feelings about child services; and feelings toward community. For the purposes of this evaluation, only two domains (feelings about family and feelings about child services) were examined. Feelings towards community was felt to be outside of the scope of ABC’s influence. Per the FES developers, using all domains would likely dilute any change identified in statistical analysis if one of the domains was identified as not relevant or likely not addressed by the intervention yet included in analysis.



Infant caregivers’ feelings of empowerment in each domain (their family and their child’s services) improved from pre-ABC to post-ABC.



Twenty-four questions comprise the two domains used in the evaluation. Each domain contains Likert Scale responses (1-never; 2- seldom; 3-sometimes; 4-often; 5-very often). The FES was administered at baseline and again post-ABC completion. The maximum total score for each domain is 60 (5 points possible for each question * 12 questions in each domain). For Time 1, the mean score for the Family domain was 49.8 and the mean score for the Child Services domain was 53.1. For Time 2, the mean score for the Family domain was 52.1 and the mean score for the Child Services domain was 55.0.

For this measure, two paired samples t-tests were conducted. First, a paired samples t-test was conducted examining the changes in total score in each domain then an additional paired samples t-test was conducted examining changes in each domain’s mean item score. Domain mean item scores were calculated by summing the score on each domain question and dividing by the number of questions comprising that domain.

Results indicate infant caregivers’ feelings of empowerment in each domain (their family and their child’s services) improved from pre-ABC to post-ABC. Further, these results were statistically significant. **TABLE 5** contains full details of these results.

Table 5

Paired-samples t-test results examining the Family Empowerment Scale domain item means and total score: Infants

DOMAINS	TIME 1		TIME 2		df	t	p
	x	SD	x	SD			
Family Mean Item Score	4.16	.55	4.37	.45	66	-3.54	<.001***
Child’s Services Mean Item Score	4.45	.54	4.59	.43	69	-2.85	.006**
Family Total Score	49.95	6.6	52.19	5.51	63	-3.24	.002**
Child’s Service Total Score	53.29	6.65	55.09	5.32	64	-2.70	.009**

Note: * p < .05; ** p < .01; *** p < .001

PARENTAL STRESS SCALE –

In addition to evaluating caregiver feelings of empowerment, the evaluation utilized the Parental Stress Scale (PSS; Berry & Jones, 1995), a self-report scale, to comprehensively assess both positive and negative aspects of parenthood. Derived from the Parental Stress Index, the PSS delves into positive themes of parenting/caregiving, such as emotional benefits, self-enrichment, and personal development, while also addressing negative themes including demands on resources, opportunity costs, and restrictions. This dual focus facilitates a nuanced understanding of caregivers' experiences. The PSS comprises 18 questions with Likert scale responses ranging from 1 (strongly disagree) to 5 (strongly agree). Total scores were calculated, with lower scores indicating lower stress levels and higher scores indicating higher stress levels. The baseline total PSS score for the infant caregiver sample was 36.5, which decreased to 32.9 post-ABC completion. Statistical analysis via paired samples t-test revealed these changes were statistically significant, indicating a reduction in reported stress levels among caregivers from baseline to post-ABC completion. See **TABLE 6** for complete results.

Table 6

Paired-samples t-test results examining the Parental Stress Scale: Infants

RESULTS	TIME 1		TIME 2		df	t	p
	x	SD	x	SD			
Total score	36.56	8.81	32.94	7.21	71	5.43	<.001***

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Summary of Findings for Infant Sample

The goal for Phase II of the Kansas Early Childhood Initiative was to expand upon the results of Phase I. Specifically, Phase II aimed to measure additional outcome areas not previously explored or identified in the ABC literature.

Phase I demonstrated significant benefits of the ABC intervention, including more comprehensive early childhood services across the state and evidence indicating ABC families experienced healthier children, more confident parents, and stronger family dynamics. Phase II's evaluation accomplished identified objectives and reaffirmed ABC's impact on improvements in infants' social and emotional concerns.

Phase II results indicate caregivers experience decreased feelings of stress and increased feelings of empowerment after completing the ABC intervention. This suggests that ABC is effective in supporting both the infants' development and caregivers' well-being.

Specifically, the evaluation found that the infant sample showed statistically significant improvements in social and emotional concerns. The consistency of these findings across both phases reinforces the value of the ABC program for Kansas families, highlighting its role in enhancing family dynamics and child development.

This ongoing research underscores the importance of continued investment in programs like ABC to foster healthy and supportive environments for both children and their caregivers. By validating the results from Phase I and exploring new outcome areas, Phase II has contributed significantly to the understanding and effectiveness of the ABC intervention, ensuring its continued relevance and impact on early childhood development.

CAREGIVERS

INFANTS




INCREASED
feelings of empowerment


DECREASED
feelings of stress


DECREASED
number of children
requiring additional
referrals or assessments



ABC is effective in supporting both the infants' development and the caregivers' well-being.



ABC FOR EARLY CHILDHOOD

Ages 24-48 months

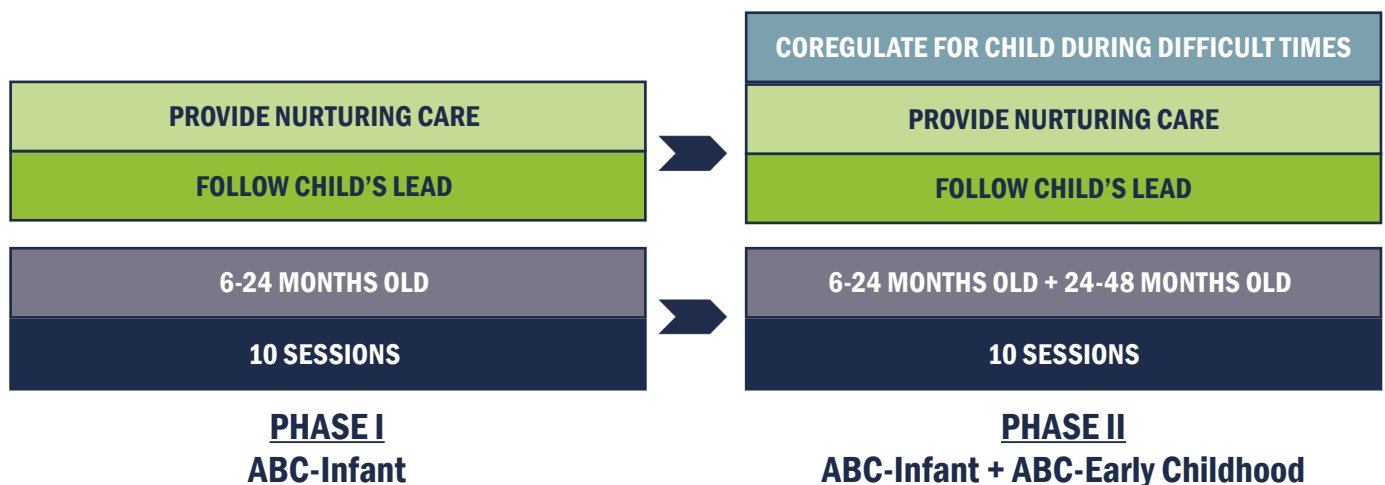
Toddler Sample

As the previous section detailed results pertaining to the infant sample, the following section details analysis and results pertaining to measures used for the toddler sample. As part of the evaluation measures, ABC parent coaches submitted demographic information for each family participating in the evaluation. Included within the demographic information was what type of ABC was provided to the family. Only two Phase II sites (LiveWell Northwest Kansas and Russell Child Development Center) were trained for and implemented the ABC-Early Childhood program for toddlers. This demographic variable was used to split the sample into infant and toddler.

ABC for Early Childhood Program

The ABC-Early Childhood intervention mirrors the ABC-Infant program by offering 10 sessions, ideally held weekly, though the schedule is adaptable to fit the needs of each family. Trained parent coaches lead these sessions in the family’s home. Both ABC-Early Childhood and ABC-Infant aim to help parents follow their child’s lead and provide nurturing care.

A key distinction of the ABC-Early Childhood program is that it seeks to guide parents in becoming coregulators for their children during difficult times, such as when the child is frustrated, irritated or angry. According to Lind et al. (2017), these opportunities are uniquely different from nurturance opportunities and are based on the specific emotion the child is experiencing. Nurturance would be solicited when the child is sad, hurt or scared. Whereas coregulation would occur when the child is angry/irritated. ABC-Early Childhood teaches parents to see these contextual and distinct nuances and underscores the importance of staying emotionally available to their children and provides strategies for effectively soothing and calming them. Trained ABC-Early Childhood parent coaches also stress the importance of avoiding actions that can worsen a child’s dysregulation.

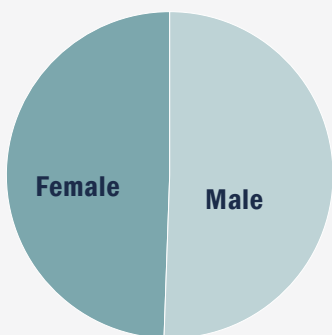


TODDLER CHARACTERISTICS –

The average age of the toddler sample was 33.44 months which is approximately 2 years and 9 months old. While the infant sample was primarily male, the toddler sample was more evenly split with 50.7% of the sample being male and 49.3% being identified as female. Additionally, approximately 93% were identified as White, and 61% were identified as having Hispanic ethnicity. For comprehensive demographic information on the toddler sample, refer to **FIGURE 4**.

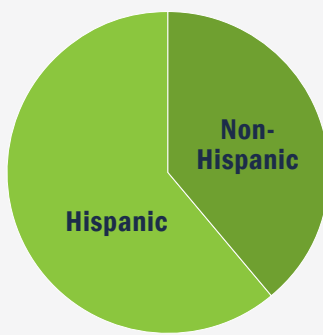
FIGURE 4: Demographics of target child: Toddlers (N=76)

CATEGORICAL VARIABLES AND FREQUENCY (%)



Sex

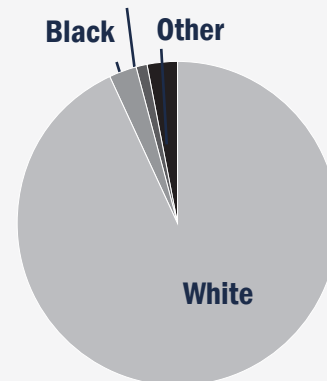
Male: 37 (50.7%)
Female: 36 (49.3%)



Ethnicity

Non-Hispanic: 28 (38.9%)
Hispanic: 44 (61.1%)

Asian/Pacific Islander



Race

White: 67 (93.1%)
Black: 2 (2.8%)
Asian/Pacific Islander: 1 (1.3%)
Other: 2 (2.8%)

CONTINUOUS VARIABLES AND MEAN (SD)



Age (months)

33.44 (8.40)

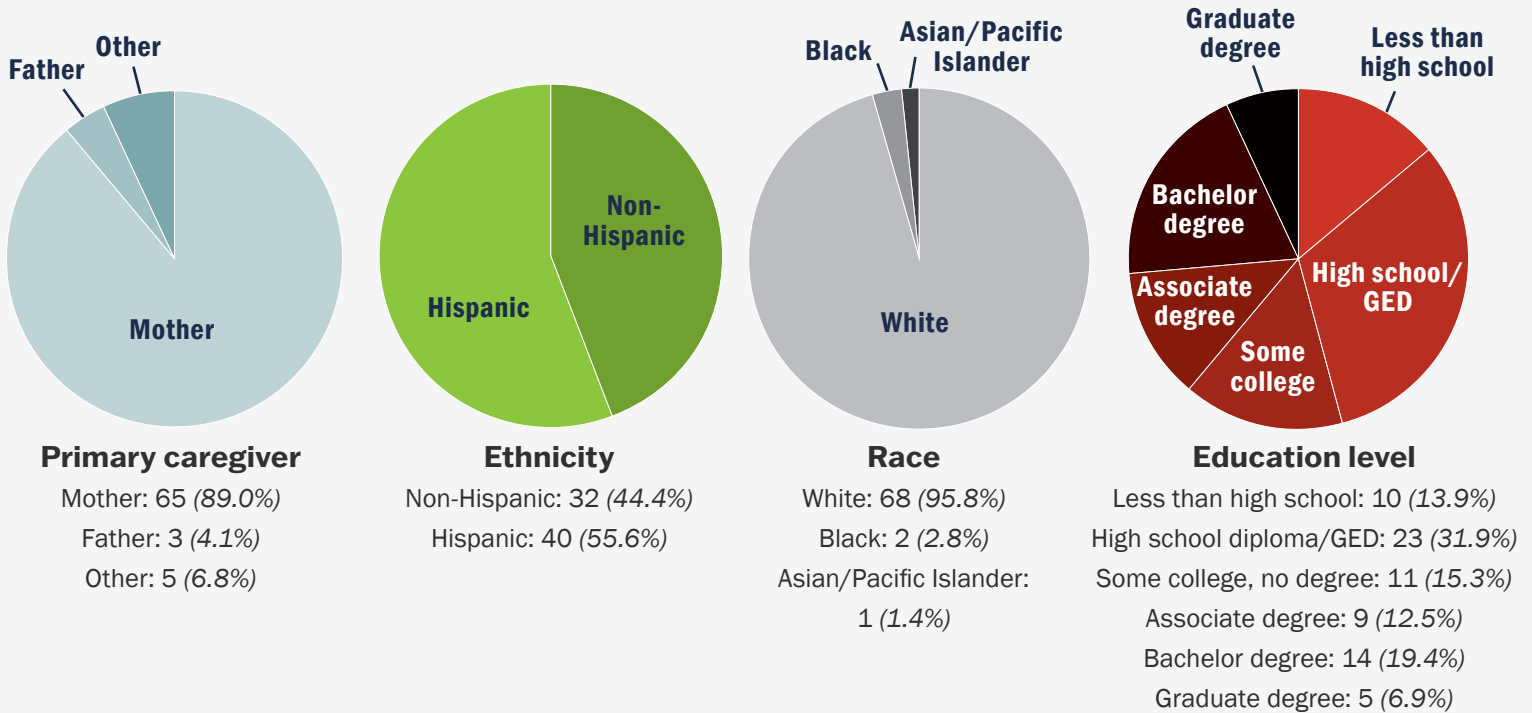
TODDLER CAREGIVER CHARACTERISTICS –

The primary caregiver receiving the ABC-Early Childhood intervention was predominantly the mother (89%). Additionally, 3 fathers and 6 other caregivers were identified as primary caregivers. On average, caregivers were slightly older than the infant sample, as the average age for the toddler caregiver sample was 33.41 years. Most were White (96%). However, over half (55%) of the toddler

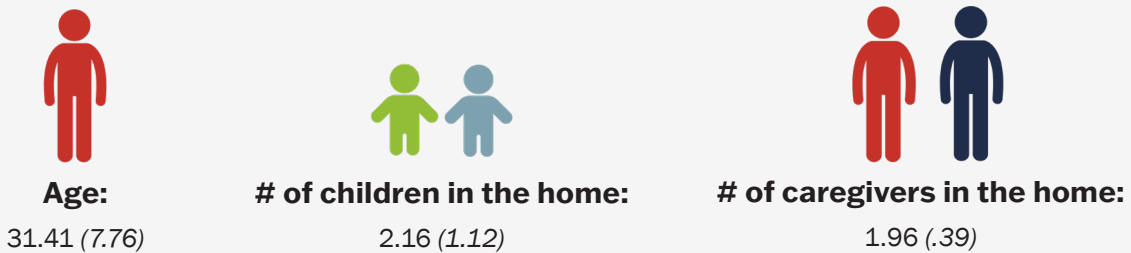
caregiver sample identified as Hispanic, with 31% of caregivers speaking Spanish in the home. This demographic makeup tends to over represent White caregivers compared to the statewide population and over-represents the Kansas Hispanic population. In terms of education, 45% reported earning a high school diploma (or GED equivalency) or less. While the infant caregiver sample had close to 72% of families making less than \$30,000 a year, the toddler caregiver sample had only 51% of the sample making less than \$30,000 a year. Like the infant sample, the average size of each family within the sample was 4. **FIGURE 5** contains complete caregiver demographic information.

FIGURE 5: Toddler caregiver characteristics (N=92)

CATEGORICAL VARIABLES AND FREQUENCY



CONTINUOUS VARIABLES AND MEAN



Toddler Outcomes

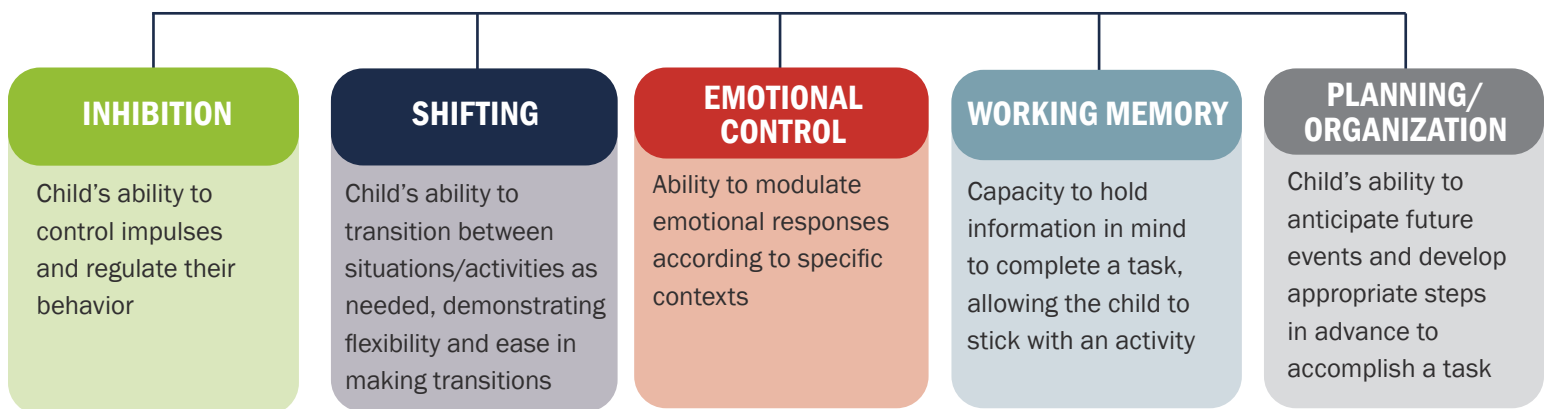
To determine changes in toddler outcomes after receiving the ABC-Early Childhood intervention, Phase II's evaluation included administration of the BRIEF-P, the ASQ-SE-2, and the ASQ-3. The following section details the analysis and results for these three measures.

EXECUTIVE FUNCTIONING –

For Phase II, as ABC was expanded to include the ABC-Early Childhood model, a particular area of interest for the evaluation was the impact of ABC-Early Childhood on school readiness. As such, the Behavior Rating Inventory of Executive Functioning-Preschool Version (BRIEF-P; Gioia, et al., 2003) was utilized. The BRIEF-P is a standardized measure that examines traditional executive functioning behaviors in young children ages 2 to 5. Executive functioning behaviors refer to essential skills needed to plan, organize, self-regulate, and appropriately adapt to new and unexpected situations (Calderon, 2020). These behaviors are imperative for a successful transition into school settings, and increased functioning in these areas can be viewed as increased school readiness.

The BRIEF-P contains 63 items within five distinct domains of executive functioning: inhibition, shifting, emotional control, working memory, and planning/organization. *Definitions per Green et al., 2019 below.* In addition to the five overall domains, each domain forms what is deemed as a Global Executive Composite (GEC), which includes three overlapping summary indexes, each consisting of two domains and are based on theoretical and statistical considerations. The Inhibitory Self-Control Index (ISCI) is comprised of scores on the Inhibition and Emotional Control domains. The Flexibility Index (FI) includes the Shifting and Emotional Control domains, and the Emergent Metacognition Index (EMI) which includes the Working Memory and Planning/Organization domains. Overall, the BRIEF-P can be used as a screening tool for potential executive functioning difficulties and as an index of the ecological validity of laboratory or clinic-based assessments (Isquith & Gioia, 2008).

DOMAINS OF EXECUTIVE FUNCTIONING



= Inhibitory Self-Control Index



= Flexibility Index



= Emergent Metacognition Index









When administering the BRIEF-P, caregivers are asked to reflect on the last six months and rate how often each item on the measure has been problematic for their child, with response options of: 1 (never), 2 (sometimes), and 3 (always). Example items include things such as “does your child over re-act to small problems”; “is unaware of how his/her behavior affects or bothers others”; “becomes upset with new situations.” When completed by caregivers, the BRIEF-P demonstrates high internal consistency/reliability (.80–.95) and moderate test-retest reliability (.78–.90; Gioia et al., 2003) It should be noted that the BRIEF-P also includes a teacher report version. However, for this evaluation, only the caregiver report was collected.

For clinical scoring purposes, raw scores are calculated by summing the corresponding domain items. These raw scores are then converted to Z-scores and subsequently to T-scores, which allow for the comparison of each toddler to a normative/standardized population. Higher scores (both raw scores and t-scores) would indicate more problematic functioning. T-scores greater than 65 would indicate clinically significant concerns in that domain.

While T-scores allow for comparisons between samples and are useful for clinical purposes, raw scores were examined for statistical analysis. Specifically, a paired samples t-test was conducted on the calculated raw scores for each individual domain, as well as for the three sub-scales and the overall composite score. The analysis of raw scores showed statistically significant improvements in inhibition, shifting, working memory, planning/organization, inhibitory self-control, emergent metacognition, and the global executive composite score. Results indicate there was a small percentage increase in the number of toddlers scoring at the clinical range but overall, functioning did improve in most areas measured. **TABLE 7** contains full results.

Table 7

Paired samples t-test examining BRIEF-P: Toddlers

DOMAINS	TIME 1		TIME 2		df	t	p
	x	SD	x	SD			
DOMAINS OF EXECUTIVE FUNCTIONING							
 Inhibition	26.90	7.7	24.85	7.64	40	2.76	.009**
 Shifting	15.83	4.64	14.79	4.02	42	1.53	.133
 Emotional Control	15.25	5.15	14.04	4.58	42	1.83	.074
 Working Memory	23.75	6.01	22.15	6.17	39	2.19	.035*
 Planning/Organization	16.43	4.23	15.17	3.94	40	2.47	.018*
SUMMARY INDEXES							
 Inhibitory Self-Control	42.65	12.35	39.15	11.80	39	2.59	.013*
 Flexibility Index	30.82	9.27	28.70	8.22	40	1.72	.094
 Emergent Metacognition	40.39	10.12	37.02	9.51	37	2.92	.006**
Global Executive Functioning Composite	99.54	25.35	90.60	23.58	34	2.95	.006**

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

SOCIAL-EMOTIONAL DEVELOPMENT –

As with the infant sample, for the evaluation of toddler outcomes, an ASQ-SE-2 was administered at both Time 1 and Time 2. For the analysis of the toddler ASQ-SE-2, the same procedures used for the infant sample were applied. An average ASQ-SE-2 item score was calculated, followed by a paired samples t-test. The results indicate a statistically significant decrease in reported social-emotional concerns. See **TABLE 8** for complete results.

Table 8

Paired samples t-test examining Time 1 to Time 2 for ASE-SE-2 scores: Toddlers

	TIME 1		TIME 2		df	t	p
	x	SD	x	SD			
ASQ-SE2 Average Item Score	1.35	1.48	.78	.90	54	3.40	<.001***

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

A McNemar chi-square test was also conducted to examine the number of toddlers meeting the threshold cutoff scores indicating the need for additional referrals/assessments due to reported social-emotional concerns. The results did not demonstrate statistical significance. However, it is noteworthy that there was a sizable decrease in the number of toddlers needing referral at Time 1 compared to Time 2. At Time 1, 12% of the sample met the threshold indicating a need for further referrals/assessments, while only 3% met this threshold at Time 2. While the results were not statistically significant, the lack of significance could be attributed to sample size limitations. See **TABLE 9** for complete results.

Table 9

McNemar chi-square results for ASQ-SE-2: Toddlers

THRESHOLD	TIME 1	TIME 2	n	p
Met threshold (needs more referrals)	12 (15.8%)	3 (5.6%)	54	.21
Did not meet threshold	64 (84.2%)	51 (82.4%)	--	--

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

PHYSICAL DEVELOPMENT –

As with the infant sample, for the evaluation of toddler outcomes, an ASQ-3 was administered at both Time 1 and Time 2. For the analysis of the toddler ASQ-3, the same procedures used for the infant sample were applied. A McNemar chi-square test was conducted to examine the number of toddlers meeting the threshold cutoff scores indicating no need for additional referrals/assessments due developmental delays.

The results of the analysis did not demonstrate statistical significance. Like the results pertaining to the ASQ-SE-2 scores, while the results were not statistically significant, the lack of significance could be attributed to sample size limitations. See **TABLE 10** for complete results.

Table 10

McNemar chi square results for ASQ-3 domain scores: Toddlers

DOMAINS	TIME 1 (n%)		TIME 2 (n%)		n	p
	Met cutoff (no referrals needed)	Did not meet cutoff	Met cutoff (no referrals needed)	Did not meet cutoff		
Communication	61 (80.3)	15 (19.7)	44 (81.5)	10 (18.5)	54	1.00
Gross-Motor	68 (89.5)	8 (10.5)	49 (90.7)	5 (9.3)	54	1.00
Fine-Motor	70 (92.1)	6 (7.9)	47 (87.0)	7 (13.0)	54	.75
Problem-Solving	64 (84.2)	12 (15.8)	46 (85.2)	8 (14.8)	54	1.00
Personal-Social	58 (63.0)	34 (37.0)	42 (77.8)	12 (22.2)	54	.21

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Toddler Caregiver Outcomes

As indicated throughout, Phase II introduced new evaluation measures. Two of these measures were specific to caregivers, the Parental Stress Scale and the Family Empowerment Scale. This section details outcome results for these two measures for toddler caregivers.

THE FAMILY EMPOWERMENT SCALE –

For this measure, the same analytical procedures that were conducted for the infant sample were also conducted for the toddler sample. Specifically, two paired samples t-tests were conducted examining changes in each domain’s total score and each domain’s mean item score.

For Time 1, the mean score for the Family domain was 48.4 and the mean score for the Child Services domain was 51.7. For Time 2, the mean score for the Family domain was 51.3 and the mean score for Child Services domain was 55.9. Domain mean item scores were calculated by summing the score on each domain question and dividing by the number of questions comprising that domain. Results indicate toddler caregivers’ feelings of empowerment in each domain (their family and their child’s services) improved from pre-ABC to post-ABC. Further, these results were statistically significant. **TABLE 11** contains full details of these results.

Table 11

Paired-samples t-test results examining the Family Empowerment Scale: Toddlers

SCORES	TIME 1		TIME 2		df	t	p
	x	SD	x	SD			
Family Mean Item Score	4.03	.58	4.26	.54	42	-2.89	.006**
Child’s Services Mean Item Score	4.30	.79	4.65	.43	44	-3.21	.002**
Family Total Score	48.42	7.09	51.33	6.59	41	-2.97	.005**
Child’s Services Total Score	51.68	9.56	55.91	5.16	44	-1.57	.002**

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

PARENTAL STRESS SCALE –

Lastly, the Parent Stress Scale was also administered to the toddler sample. Total scores were calculated, with lower scores indicating lower stress levels and higher scores indicating higher stress levels. The baseline total PSS score for the toddler caregiver sample was 35.90, which decreased to 33.11 post-ABC completion. Statistical analysis via paired samples t-test revealed these changes were statistically significant, indicating a reduction in reported stress levels among caregivers from baseline to post-ABC completion. See **TABLE 12** for complete results.

Table 12

Paired-samples t-test results examining the Parental Stress Scale: Toddlers

RESULTS	TIME 1		TIME 2		df	t	p
	x	SD	x	SD			
Total score	35.90	7.69	33.11	8.00	50	2.65	.01*

Note: * $p < .05$; ** $p < .01$; *** $p < .001$



Toddler caregivers’ feelings of empowerment in each domain (their family and their child’s services) improved from pre-ABC to post-ABC.



Summary of Findings for Toddler Sample

This evaluation holds significant implications, particularly concerning the application of the ABC intervention to the toddler population. A main objective for Phase II was to examine additional outcome areas not previously explored in the ABC literature, including toddler outcomes. Phase II's results pertaining to the ABC-Early Childhood model and the toddler population demonstrate that ABC-Early Childhood produces promising results, as evidenced by improvements in the executive functioning of the sample.

A key performance indicator for Phase II was to enhance school readiness. Phase II's results showed that after receiving the ABC-Early Childhood intervention, toddlers demonstrated improvements in their executive functioning, which is crucial for school readiness. These results indicate that children who participated in the ABC intervention may be better prepared for academic environments. Additionally, caregivers of these toddlers experienced decreased stress levels and improved feelings of empowerment, underscoring the comprehensive benefits of the ABC model. These outcomes suggest that the ABC intervention not only supports toddlers' cognitive development, but also positively impacts caregiver well-being, thereby fostering a more supportive and nurturing environment for early childhood growth.

The consistency of these findings across different age groups and developmental stages reinforces the ABC program's overall efficacy, highlighting its significant role in enhancing both child development and family dynamics. This comprehensive impact underscores the importance of continued support and investment in the ABC program to ensure that children and their caregivers receive the necessary resources for optimal development and well-being.

CAREGIVERS

TODDLERS



INCREASED
feelings of
empowerment



DECREASED
feelings of stress



INCREASED
executive
functioning



INCREASED
school readiness

PHASE II LIMITATIONS

Despite the valuable insights gained from the Phase II evaluation, particularly regarding reductions in caregiver stress and increased feelings of empowerment, there are notable limitations to consider.

One significant limitation is the absence of a control group, which restricts the ability to draw definitive conclusions about the ABC intervention's effects compared to non-intervention conditions. Since all participants received the ABC intervention, making causal inferences is challenging. Additionally, the relatively small sample size for toddlers may affect the generalizability of the findings and limit the detection of more subtle effects. Another limitation is the lack of triangulation of outcomes, as Phase II relied solely on parent-reported measures and did not include provider report measures.

Although Phase I utilized both parent and provider reports, the decision to eliminate provider-reported measures in Phase II was made to reduce evaluation burdens on providers. This absence of multiple data sources may impact the comprehensiveness and accuracy of the outcome assessments. These factors should be considered when interpreting the results and evaluating the overall impact of the ABC intervention.

“

Children who participated in the ABC intervention may be better prepared for academic environments.

”



PHASE II CONCLUSION

Phase II of the Kansas ABC Early Childhood Initiative sought to expand early childhood service capacity in Kansas, by implementing an additional model of the ABC intervention. Specifically, Phase II continued to implement ABC-Infant in three sites (Rainbows, LiveWell Northwest Kansas; and Russell Child Development Center) but also introduced the ABC-Early Childhood model to two of the three sites: LiveWell Northwest Kansas and Russell Child Development Center.

The objectives of Phase II extended beyond introducing the ABC-Early Childhood model to Kansas; it also aimed to broaden the evidence base supporting both ABC models by examining additional outcome areas not previously investigated in Phase I. Specifically, Phase II focused on assessing the impact on parental stress, family empowerment, infant and toddler physical development, and preschool readiness.

Through the administration of numerous measures, Phase II of the Initiative has demonstrated the positive impact of both the ABC-Infant and ABC-Early Childhood models on Kansas children and families. The results indicate several significant benefits: healthier infants, increased school readiness among toddlers, reduced caregiver stress, and enhanced caregiver confidence in advocating for services for their families. The success of this Initiative underscores the importance of continued investment in early childhood interventions that support both child development and family well-being.



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The success of this Initiative underscores the importance of continued investment in early childhood interventions that support both child development and family well-being.



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