



Parents as Teachers®

Evaluating an Investing in Innovations Project to Improve Education Outcomes for American Indian Children



Acknowledgments

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Background

Parents as Teachers is one of the nation's largest evidence-based home visiting parenting education models. For more than 30 years, Parents as Teachers affiliates across the United States have implemented the Parents as Teachers evidence-based home visiting model with hundreds of thousands of families of children prenatally through kindergarten entry, significantly impacting outcomes in the model's four goal areas: increasing parent knowledge of early childhood development and improving parenting practices; providing early detection of developmental delays and health issues; preventing child abuse and neglect; and increasing children's school readiness and school success.

The Investing in Innovations (i3) project is among the first validation grants awarded in 2010 and supports the implementation and evaluation of the Baby FACE program, a home visiting program serving high-needs American Indian families with children from the prenatal period through 3 years of age in 22 Bureau of Indian Education (BIE) schools. The families received bi-weekly home visits from professional parent educators, group connections, screenings, and resource connections. Families also received at least three children's books each month as part of the program.

Methods

The design and conduct of the evaluation was guided by the National Evaluation of i3 conducted by Abt Associates Inc., which in turn was guided by the What Works Clearinghouse Procedures and Standards Handbook (version 3.0). The evaluation of the Parents as Teachers Baby FACE program was designed to assess the impacts of Baby FACE on children's cognitive and social-emotional development at ages 2 and 3 measured by the Devereux Early Childhood Assessment (DECA) and the Boehm Test of Basic Concepts-3 Preschool. It also sought to explore the effects of Baby FACE on home literacy activities and protective factors in the home environment measured by a Home Literacy Activity Scale and the Protective Factors Survey.

The evaluation took place between 2010 and 2015 at 20 sites throughout the United States – Arizona, New Mexico, South Dakota, Washington, North Carolina, and Idaho. Nineteen of the sites used a quasi-experimental design (QED) where Baby FACE participants were compared to a comparison group of similar families who did not receive Parents as Teachers services. One of the sites used a randomized controlled trial (RCT) where eligible parents were randomly assigned to either participate in Baby FACE or be part of the control group.

The evaluation also involved an implementation study, which examined key areas of fidelity of implementation including training, technical assistance, and adherence to the service delivery model.

Outputs

Personal Visits

Families received an average of 25.4 personal visits over the project period. Approximately half received 24 or fewer visits, and approximately 20% received 40 or more visits.

Family Circle

Each month (after initial period of enrollment and implementation) sites offered an opportunity for families to engage in a Family Circle with other families. Based on the group connections in the Parents as Teachers model, Family Circles are customized to be inclusive of the culture and language of the American Indian population. These Family Circles were often combined with cultural and/or social events in the local community. Families participated in an average of 4.5 Family Circles during this Baby FACE project, ranging from no participation to attendance at 37 Family Circles.

Screenings and Resource Connections

Participating children were screened for developmental and social-emotional delays. They also received a health review, which screened for hearing, vision, and general health problems. As needed, families were referred and connected to local resources for additional support.

Books Distributed

Over 5,500 books were distributed through the Baby FACE project. Families received at least three children's books per month, which included two per month from book sharing organizations – Penguin Putnam or Books by the Bushel. Additionally, one book per month was mailed to the family's home from Imagination Library. On average, families received 96.4 books.

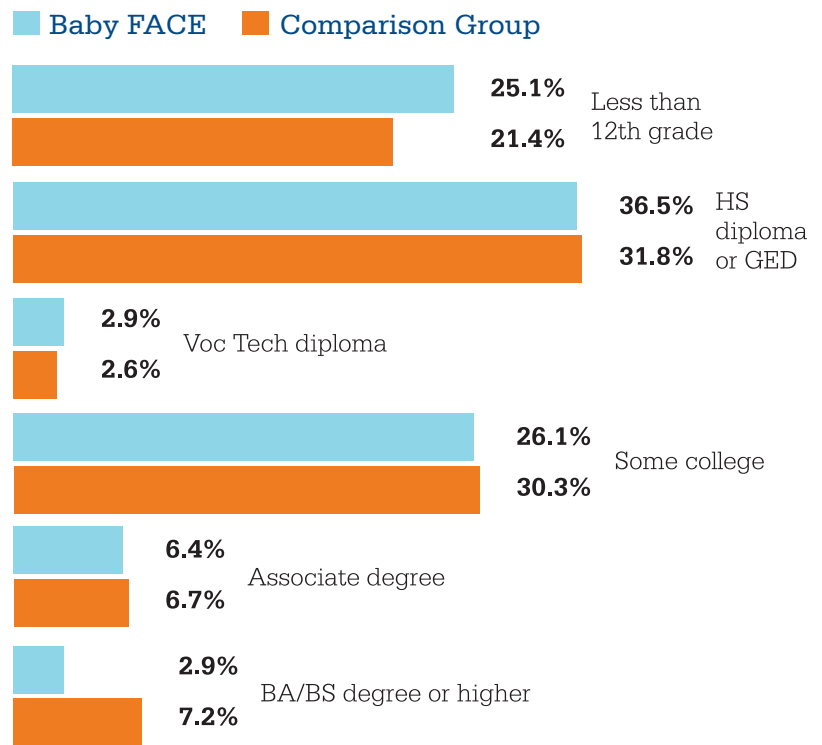
Study Participants

The QED study began with 1,329 total participants: 853 families who were participating in Baby FACE and 476 comparison families. The RCT began with 129 participants: 63 families who were randomly selected to receive Baby FACE and 66 families who were randomly selected to not receive Baby FACE.

At the end of the third year, 1,006 families remained in the QED (614 participating in Baby FACE and 392 from the comparison group). This resulted in an overall attrition rate of 24.3%. Excluding external reasons for attrition (e.g. the family was found to be ineligible, family was never located, or family moved out of the geographic area prior to the child's third birthday), the attrition rate was 4.6%. For the RCT study, 67 families remained (38 Baby FACE participants and 29 control group families) for an overall attrition rate of 48.1%. Excluding external reasons for attrition, the RCT attrition rate was 25.6%.

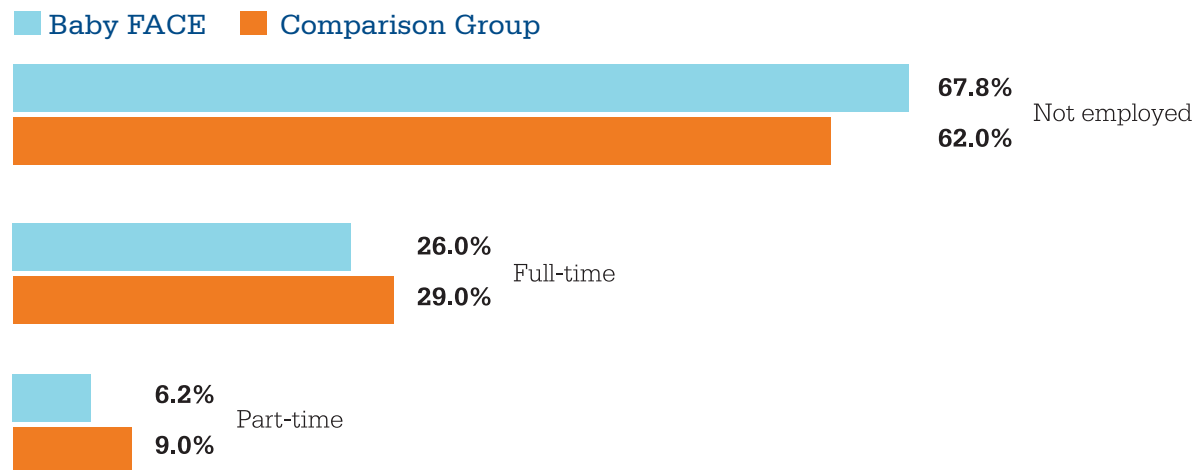
Baby FACE and comparison groups were equivalent at baseline on mother's education and household poverty. Approximately three-fourths of Baby FACE and comparison group families were high poverty as characterized by their receipt of Temporary Assistance for Needy Families (TANF) funds and/or food stamps (SNAP). The average household size was six, which typically included three adults and three children. Mothers averaged 26 years of age; approximately 20% of mothers were age 19 or younger. More than 20% of mothers had less than a 12th grade education and over 50% had no more than a High School diploma or GED.

Figure 1: Mother's Educational Level



Approximately two-thirds of parents reported that English was the primary language used in their home while approximately one-fourth reported that both English and a Native language were primary. Less than 5% reported that their Native language was the primary language spoken at home. Two thirds of mothers were not employed at the time of this study.

Figure 2: Mother's Employment Status



Impact Analysis

For the QED study, a precision-weighted average impact estimate for all outcome measures was calculated and included mother's educational level and household poverty as covariates for all outcome measures. For the RCT study, the ANCOVA model similarly included these background variable as covariates.

Outcomes

Cognitive Ability

When an impact regression model was utilized to control for covariates such as intergenerational households and frequency with which parents spoke English to their child, overall scores were significantly higher ($p = .05$) for children who participated in Baby FACE than for those who did not (for the RCT only) as measured by the Boehm Test of Basic Concepts-3 (Boehm-3) (Boehm, 2001). For the RCT study, a small to moderate effect for program impact on children's cognitive ability was obtained ($ES = .336$).

Social-emotional Development

Social-emotional development was measured using the Devereux Early Childhood Assessment for Infants and Toddlers (DECA) (Powell, 2007). Initial comparison of means found that children who participated in Baby FACE showed a significant improvement on the Initiative subscale. For the QED, children who participated in PAT scored higher on the initiative subscale at age 2, though not at age 3. For the RCT, children scored higher on initiative at age 3 with a large effect size generated ($p > .05$). Other subscales of the DECA did not meaningfully or significantly differ for the QED or RCT. When covariates were added to the ANCOVA model for intergenerational households and frequency with which parents spoke English to their child, children who participated in Baby FACE displayed significantly fewer behavioral concerns in the RCT than those who did not.

Protective Factors

Protective Factors were measured using the Protective Factors Survey (PFS) (FRIENDS National Resource Center for Community-Based Child Abuse Prevention, 2008). Scores did not significantly differ between those who did and did not receive Baby FACE in the QED or RCT.

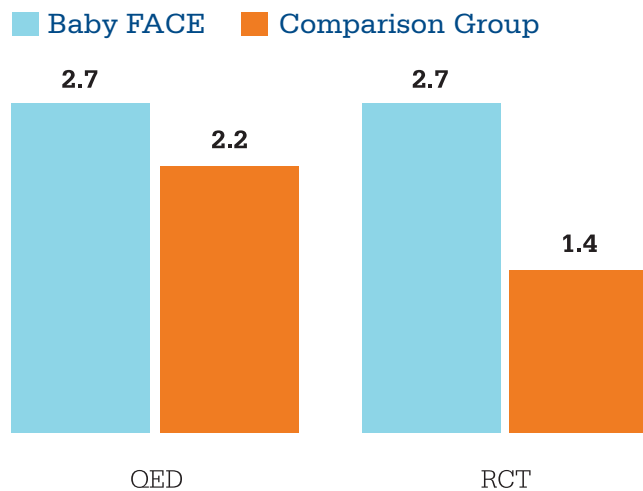
Home Literacy Activities

At the end of the project, families who participated had significantly more books in their home than non-participating families for both the RCT and QED. Baby FACE parents reported twice as many age-appropriate children's books than did comparison group parents. Families who participated also read to their child significantly more frequently than parents who did not participate for both the RCT and QED studies. For the QED, Baby FACE parents read to their child an average of 2.7 hours per week compared with 2.2 hours per week for comparison parents. For the RCT, Baby FACE parents read to their child for 2.7 hours per week compared to 1.4 hours per week for parents in the control group. Scores on the Home Literacy Activity Scale were also significantly higher for Baby FACE parents than control/comparison group parents for both the RCT and QED studies. This scale asked caregivers how often (from *rarely or never* to *several times a day*) children do activities like writing and drawing and caregivers read and talk to their child.

Exploratory Analysis

An exploratory analysis adding additional factors to the impact ANCOVA model, including level of participation in Baby Face, family background variables and number of books, generated additional meaningful and statistically significant findings. Participating in more than 18 personal visits positively and significantly predicted children's cognitive ability at age 3 in the QED ($p < .01$). Frequency of home literacy activities positively and significantly predicted children's cognitive ability at age 3 in the QED ($p < .001$). Number of books in the home positively and significantly predicted children's cognitive ability at age 3 in both the QED and RCT ($p < .01$).

Figure 3: Number of Hours Per Week Parents Read to Child



Limitations

Throughout the project period, the Baby FACE programs encountered predictable obstacles to implementation. Due to the very rural setting of the communities and their limited access to resources, it was difficult for many of the sites to hire and retain staff members. This grant also took place at the time that Parents as Teachers was in the midst of completing an update to the curriculum, and the newer resources were only available online. This presented a challenge as many of the sites faced technological limitations at their sites. This limitation was largely resolved over the course of the project but served as a challenge in the early phase of the grant.

The randomized controlled trial was limited by small sample sizes and high rates of attrition, which made it difficult to assess improvement. Also, due to the five year time period of the grant, age 3 became the latest point in time for impact evaluation in this study. This age involves rapid child developmental changes that are not highly predictive of later outcomes. Thus, it is paramount to be able to follow participating children into the elementary years where there are more valid tools that have benchmarks and that have been linked to later success.

Looking Forward

The results from Baby FACE shows promise as a means of improving cognitive and social-emotional development and home literacy activity for American Indian families with limited resources. For this study, researchers were only able to follow children up to age 3, but thanks to generous investments from Kellogg Foundation and Heising Simons Foundation this research project will be able to continue, following the children to kindergarten entry. This will allow researchers to evaluate if the impacts of pre-birth to age 3 programs help children enter kindergarten on a level playing field. If this long-term evaluation continues to show progress, dissemination of the findings and project design will be pursued to support programs in replicating the project in other settings and with other populations.

For more information:

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