CommonSpirit St. Joseph's Children Outcome Study: Report in Brief

March 2025

Prepared for: CommonSpirit St. Joseph's Children

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Background

New Mexico has the highest rate of adverse childhood experiences (ACEs) of any state in the nation (HHS, 2024). New Mexico also consistently ranks among the worst states for a range of behavioral and mental health issues among its adult population, such as violent crime and drug abuse rates (HHS, 2025). Crucially, these social ills may be connected. Cumulating evidence shows that early childhood conditions and experiences are critical to mental and physical health and behavioral patterns in adulthood (Felitti et al., 1998; Shonkoff, 2016). Thus, intervening during this critical period is a major public health focus to improve long-term outcomes.

Home visiting programs (HVPs) provide early intervention services, such as nutrition information and activities to stimulate brain development, to families to support the skills and resources necessary for children to thrive. Rigorous scientific research dating back to the 1960s has demonstrated the effectiveness of HVPs for producing positive outcomes in children and their parents (Sweet & Appelbaum, 2004). These outcomes include improved cognitive development, reductions in child abuse and neglect, and improved maternal life outcomes. The U.S. Health Resources & Services Administration awarded close to $350 million to fund HVPs across 56 states and territories in 2021 (HRSA, 2022).

Multiple HVPs are currently being implemented in New Mexico. These programs include: CommonSpirit St. Joseph's Children, First Born, Partners for a Healthy Baby, Parents as Teachers, Nurturing Parenting, Family Spirit, Tiwa Babies Home Visiting, and Nurse-Family Partnership. Beginning in 2016, one of these programs, CommonSpirit St. Joseph's Children (CS-SJC), partnered with the Center for Applied Research and Analysis (CARA) at the University of New Mexico to study the impacts of their HVP on New Mexican families.

The CS-SJC outcome study is significant because it is the first rigorous assessment of an HVP model developed specifically for use in New Mexican communities. HVPs that work in one context may not work well in others due to the influence of culture in shaping child-rearing behaviors. Therefore, it is important to design and test HVPs for effectiveness within New Mexican communities.

The CS-SJC Home Visiting Program

The CS-SJC program is open to any New Mexican family that is either pregnant with their first child or within the first 2 months after their first child's birth. Home visits occur weekly or biweekly and continue until the child's third birthday. During these visits, home visitors educate families about child-rearing practices using two

evidence-informed curriculums: Partners for a Healthy Baby and First Born. Other program staff, referred to as enhanced referral specialists, help connect families to resources in the community as needed.

One feature of the CS-SJC program that sets it apart from most other HVPs is that home visits are conducted by "paraprofessionals" (non-clinically trained home visitor staff) that come from the cultural communities they serve (e.g., Hispanic, Latino, and American Indian communities). By contrast, most HVPs use nurses or other healthcare professionals (Sweet & Appelbaum, 2004, p. 1438). Using paraprofessionals is expected to be more scalable in New Mexico, given the shortage of healthcare professionals and limited resources to fund such programs. Additionally, research suggests that home visitors who come from the cultural communities they serve can better understand the unique challenges and opportunities that exist in these communities and, thus, better present best practices about child-rearing to families in a way that applies to their unique parenting context (Nievar et al., 2010, pp. 512–514).

In preparation for the present outcome study, researchers from CARA completed an implementation study of the CS-SJC program in 2015. We found the program was designed and implemented according to best practices.

Outcome Study of the CS-SJC Program

Study Design

To assess whether the CS-SJC program is effective in producing improvements in the families it serves, we are currently conducting a randomized controlled trial comparing outcomes of New Mexican families who received the CS-SJC service with those who did not. The study is planned to last 22-years and involves us tracking families through their child's 19th birthday or high school graduation.

A total of 376 families were consented to participate in the study, beginning in 2016. Half of these families (188) were randomly assigned to receive the CS-SJC service (i.e., the "treatment group") and half (188) were assigned to not receive the service (the "comparison group"). Allocating services based on a lottery was ethical because there were more interested families than available slots for the program. Families in the comparison group were provided materials on other available services and supports in the community.

Since enrollment in the study, we have tracked families in both study groups to measure outcomes of interest at set timepoints. These timepoints are defined by the age of the child: birth, 6-months, 12-months, 18-months, 24-months, 36-months, 5-years, 8-years, 12-years, 15-years, and 19 years old, or high school graduation. We are currently conducting 8-year interviews. We analyze the data by comparing outcomes at each timepoint to see if those who received the service show improvements compared to those who did not. Because assignment into the two study groups was random, differences that emerge after one group receives the treatment can be attributed to the effect of the treatment itself. For this reason, randomized controlled trials such as this one are considered the gold standard for outcome research.

Study Measures

Two of the outcome domains we have thus far analyzed are (1) parenting attitudes and behaviors, and (2) child development and school readiness.

Parenting attitudes and behaviors refers to the ways parents think about and engage in childrearing, which is important for fostering a safe and nurturing environment for child development. To measure parenting attitudes,

we used the Adult Adolescent Parenting Inventory (AAPI; Bavolek & Keene, 2010). The AAPI includes 40-items that provide five subscale scores: (1) inappropriate expectations of children, (2) parental lack of empathy towards children's needs, (3) strong belief in the use of corporal punishment as a means of discipline, (4) reversing parent-child role responsibilities, and (5) oppressing children's power and independence. Higher scores are associated with positive parenting practices and lower scores are associated with heightened risk for child abuse and neglect (Bavolek & Keene, 2010; Conners et al., 2006).

Child development and school readiness refers to the timely acquisition of the cognitive, motor, and social emotional skills and capacities necessary to succeed in school and later life. To measure child development, we used the third edition of the Ages and Stages Questionnaires (Squires & Bricker, 2009). The ASQ is the most-widely used brief, parent-completed screener for developmental delays (Radecki et al., 2011). Developmental delays are measured across five domains: communication, fine motor, gross motor, problem-solving, and personal-social. Subscale scores are computed for each domain where higher scores reflect better development. The ASQ has been used in previous trials of HVPs (e.g., (Squires et al., 2002) and studies have found the ASQ to have desirable psychometric properties (Rothstein et al., 2017).

Study Findings

To assess the effectiveness of the CS-SJC program, we compared average assessment scores for families in the treatment group with those in the comparison group at various timepoints from birth to 36-months. Because scores will inevitably vary somewhat by random chance, we used statistical analyses to assess whether the observed differences were “statistically significant”, meaning likely to have come about due to real underlying differences in outcomes for the two groups. As is standard, results that would only come about by chance less than 5% of the time are deemed statistically significant (indicated by a p-value of less than 0.05). We also assessed the size of observed differences between the two groups, known as an “effect size”, using the standardized Cohen’s d statistic. When assessing the effects of parenting interventions on child and parent outcomes, researchers typically consider a Cohen’s d of less than 0.1 to be negligible, a d between 0.1 and 0.2 to be small but meaningful, a d between 0.2 and 0.5 to be moderate, and a d>0.5 to be large (Jeong et al., 2021).

The ASQ results showed statistically significant improvements in child development for the treatment group across all 5 developmental domains and at 4 time-points from 2-months to 24-months of age (Table 1). The size of these effects ranged from large to moderate.

Table 1.
Average scores on the Ages and Stages Questionnaire (ASQ) for those who received the treatment (CS-SJC) and for the comparison group. Statistically significant results (in bold) are indicated by a p-value of <0.05. Meaningfully large effects sizes (d) are color-coded (green=large; blue=moderate).

		CS-SJC	Comparison		
Sub-Domain	Time Point	*Avg.*	*Avg.*	*p*	*d*
Communication Score	2-Month	53.57	43.36	**<0.001**	**0.93**
Gross Motor Score		56.57	54.66	**<0.05**	**0.29**
Fine Motor Score		53.40	49.67	**<0.001**	**0.45**
Problem Solving Score		52.21	44.09	**<0.001**	**0.70**
Personal Social Score		54.77	50.21	**<0.001**	**0.59**
Communication Score	12-Month	54.41	52.47	**<0.05**	**0.23**
Gross Motor Score		52.43	48.43	**<0.05**	**0.30**
Fine Motor Score		56.88	54.11	**<0.01**	**0.38**
Problem Solving Score		54.17	47.75	**<0.001**	**0.62**
Personal Social Score		53.15	49.47	**<0.001**	**0.39**
Communication Score	18-Month	44.27	40.37	**<0.05**	**0.27**
Gross Motor Score		56.50	56.13	>0.1	0.04
Fine Motor Score		55.54	52.36	**<0.01**	**0.36**
Problem Solving Score		50.42	45.20	**<0.001**	**0.46**
Personal Social Score		54.92	51.76	**<0.001**	**0.41**
Communication Score	24-Month	49.09	50.00	>0.1	-0.07
Gross Motor Score		55.52	54.75	>0.1	0.10
Fine Motor Score		52.21	51.27	>0.1	0.11
Problem Solving Score		54.35	50.21	**<0.001**	**0.47**
Personal Social Score		52.26	49.68	**<0.05**	**0.31**
Communication Score	36-Month	52.19	50.94	>0.1	0.13
Gross Motor Score		57.42	55.72	>0.1	0.18
Fine Motor Score		46.45	43.44	>0.1	0.12
Problem Solving Score		51.54	52.13	>0.1	-0.02
Personal Social Score		50.56	52.55	>0.1	-0.09

Similarly, AAPI results showed that average scores were consistently higher in the treatment group, indicating improved parenting attitudes (Table 2). Six of these measured improvements were statistically significant with moderate effect sizes (d>0.2). These improvements occurred at the 12, 24, and 36-month time points. There were six additional measured improvements with moderate sized effects, but only marginal statistical significance (p<0.1).

Table 2.
Average scores on the Adult Adolescent Parenting Inventory (AAPI) for those who received the treatment (CS-SJC) and for the comparison group. Statistically significant results (in bold) are indicated by a p-value of <0.05. Blue indicates a moderate effect size.

		CS-SJC	*Comparison*		
Construct	*Time Point*	*Avg.*	*Avg.*	*p*	*d*
A	Birth	5.476	5.265	>0.1	0.12
B	Birth	5.124	5.032	>0.1	0.05
C	Birth	5.465	5.355	>0.1	0.06
D	Birth	5.753	5.555	>0.1	0.09
E	Birth	6.371	6.213	>0.1	0.08
A	6-Month	5.923	5.680	>0.1	0.14
B	6-Month	6.123	5.807	>0.1	0.15
C	6-Month	5.445	5.280	>0.1	0.09
D	6-Month	5.729	5.473	>0.1	0.13
E	6-Month	6.052	5.611	<0.1	0.21
A	**12-Month**	**6.068**	**5.579**	**<0.05**	**0.28**
B	**12-Month**	**6.158**	**5.566**	**<0.05**	**0.28**
C	12-Month	5.637	5.179	<0.1	0.23
D	12-Month	6.219	5.910	>0.1	0.17
E	**12-Month**	**6.199**	**5.448**	**<0.01**	**0.38**
A	18-Month	6.080	5.871	>0.1	0.13
B	18-Month	5.891	5.409	<0.1	0.21
C	18-Month	5.536	5.091	<0.1	0.23
D	18-Month	6.203	5.992	>0.1	0.11
E	18-Month	6.014	5.689	>0.1	0.15
A	24-Month	6.032	5.733	>0.1	0.18
B	24-Month	5.720	5.208	<0.1	0.22
C	**24-Month**	**5.640**	**4.892**	**<0.001**	**0.43**
D	24-Month	6.488	6.100	<0.1	0.24
E	**24-Month**	**5.936**	**5.367**	**<0.05**	**0.26**
A	36-Month	6.025	5.972	>0.1	0.03
B	36-Month	5.252	4.963	>0.1	0.13
C	36-Month	5.521	5.215	>0.1	0.17
D	36-Month	6.252	6.206	>0.1	0.03
E	**36-Month**	**5.924**	**5.262**	**<0.05**	**0.29**

Note: the 36-month sample had high attrition, which could introduce bias for measures at this timepoint.

Taken together, these results suggest the CS-SJC program is effective at promoting child development and improving parenting attitudes among New Mexican families. What the downstream effects of these developmental and child-rearing improvements may be later in life remains an open question that we are actively studying.

Conclusions

Intervening in early childhood may be an effective way to prevent behavioral problems that compound later in life. Past research shows HVPs can be effective at improving a range of early childhood outcomes. The results of the CS-SJC study demonstrate that these improvements can be achieved by HVPs in New Mexican communities.

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