

Early Head Start








Evidence Review Findings: Effective / Roadmap Strategy

Early Head Start (EHS) improves aspects of parental health and emotional wellbeing, nurturing child-parent relationships, and optimal child health and development, although evidence within these goals is somewhat mixed. EHS also supports participation in high-quality early care and education. States currently support EHS by providing supplemental state funding, leveraging federal funding, and creating state-specific programs with similar structures and quality standards as EHS. However, the current evidence base does not provide clear guidance for the optimal level of funding or best method for states to support Early Head Start.

Early Head Start (EHS) is a program serving low-income pregnant women, infants, toddlers, and their families by providing child development and family support services in home-based, center-based, and family child care settings. By providing children with individualized services and high-quality early care and learning environments and building parents' skills and community connections, EHS can directly and indirectly support children's wellbeing and development. Although EHS is primarily a federal-to-local program, states vary in how they financially support EHS, either by investing state funding directly to EHS providers in the state or by acting as a state EHS or Early Head Start-Child Care Partnership grantee, or by creating a state-specific program with similar structures and quality standards as EHS. The current evidence base does not provide clear guidance for how states can best support EHS, either through supplemental funding or other mechanisms.

Decades of research in the field of child development have made clear the conditions necessary for young children and their families to thrive.⁴³ These conditions are represented by our eight policy goals, shown in Table 1. The goals positively impacted by Early Head Start are indicated with a filled circle, and the goals theoretically aligned (but without evidence of effectiveness from strong causal studies) are indicated with an unfilled circle.

Table 1: Impacts of Early Head Start on Policy Goals

Positive Impact	Policy Goal	Overall Findings
	Access to Needed Services	Trending null impacts on safety net participation
	Parents' Ability to Work	Trending mixed impacts on education and job training
	Sufficient Household Resources	Trending null impacts on household resources
	Healthy and Equitable Births	<i>(Policy goal outside the scope of this review)</i>
	Parental Health and Emotional Wellbeing	Mixed impacts, with beneficial impacts on parenting stress and later emotional wellbeing
	Nurturing and Responsive Child-Parent Relationships	Mixed impacts, with beneficial impacts on home learning environments, parent-child interactions, and knowledge of child development and child rearing
	Nurturing and Responsive Child Care in Safe Settings	Trending positive impacts on participation in high-quality child care
	Optimal Child Health and Development	Mixed impacts, with positive impacts on language and vocabulary skills and problem behaviors

What Is Early Head Start?

Early Head Start (EHS) is a federally funded program serving low-income pregnant women, infants, toddlers, and their families by providing “intensive, comprehensive child development and family support services.”^{1,2} EHS was first established in 1994 as part of the Head Start reauthorization, and programs were initially funded in 1995.³ EHS is primarily a federal-to-local program, meaning the federal government provides grants for operating EHS programs directly to local-level organizations, such as community agencies (nonprofit and for profit), local governments, and existing Head Start grantees; however, states and territories are also eligible to be EHS grantees and may apply for and receive funding directly from the federal government to operate EHS programs.⁴ The goals of EHS programs are to promote the healthy social, emotional, cognitive, and physical development of young children; to assist parents in developing positive parenting skills and moving toward their self-sufficiency goals; and to bring together community partners and resources to provide children and families with comprehensive services and support.⁵

To accomplish these goals, EHS programs use a variety of approaches, including home-based services, center-based services, family child care services, and locally designed program approaches. EHS home-based services provide weekly home visits to families to promote the parents' skills to support healthy child development, as well as group activities for enrolled families. Center-based

services operate in a classroom setting within a child care center, Early Head Start center, or school and generally provide at least 1,380 hours of care, education, and child development services annually. Family child care services provide services similar to center-based EHS programs, but in a home or family-care setting.^{6,7} EHS grantees may also operate locally designed programs, including a combination of program services (e.g., families may receive home- and center-based services).⁷ Guidelines for each program approach (including standards for child-to-adult ratios, group sizes, teacher qualifications, and curricula) and for comprehensive services are outlined in the Head Start Program Performance Standards (HSPPS).⁸

Comprehensive services provided to children and families include a broad range of services in the following areas: core education and child development services, such as classroom education, child screenings and assessments, and parent education via home visits; health services such as monitoring and assisting with the receipt of preventative care, oral health services, nutritional services, mental health services, and connecting families to health services; family and community engagement services such as assessing and identifying family needs and connecting families to services; services for children with disabilities, including activities that promote the full participation of children with disabilities in an EHS program, individualized support for children, and supports for parents; services for pregnant women, such as assisting with connections to health care providers and other referrals and a newborn visit; and transition services for children transitioning out of EHS.⁹

Beyond being an EHS grantee, states can also support EHS by leveraging a variety of other federal and state resources. States can apply for Early Head Start Expansion Grants to create new EHS slots in their state.¹⁰ States can also apply for Early Head Start–Child Care Partnership (EHS–CCP) grants; this program brings together EHS programs and child care providers participating in the Child Care and Development Fund (child care subsidy program) by layering program funding. Participating child care providers must meet the HSPPS, which should ensure high-quality care and education and access to comprehensive services for participating children.¹¹ EHS–CCP programs operate in center-based and family child care settings.¹² EHS home-based services are also supported through the federal Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program; home-based EHS is one of the home visiting models that has been identified as effective and may be implemented by states in their statewide home visiting programs.¹³ States can also support EHS by providing professional development and technical assistance to EHS providers and their staff and by aligning EHS with other early childhood programs and policies.¹⁴ Finally, states can also create state-specific programs with similar structures and quality standards as EHS.

Who Can Participate in Early Head Start?

Pregnant women, infants, and toddlers are eligible for EHS services if their family income is at or below the federal poverty level. Children who are in foster care, are homeless, or are in families receiving public assistance (such as Temporary Assistance for Needy Families [TANF] or Supplemental Security Income [SSI]) are also eligible, regardless of family income. EHS programs must also ensure that 10 percent of enrolled children are eligible for services under the Individuals with Disabilities Education Act. EHS programs may also serve children who do not meet these criteria, provided they will benefit from program services (up to 10 percent of enrollment).^{9,15} Participation in EHS and EHS–CCP is not conditional on citizenship or immigration status.⁴⁵ Migrant

and Seasonal Head Start and tribal programs (American Indian and Alaska Native Head Start), which also serve infants and toddlers in EHS, have similar eligibility standards.⁹

As of Program Year 2019, EHS programs exist in every state.¹⁶ In Program Year 2019, EHS programs offered nearly 167,000 funded enrollment slots and cumulatively served more than 239,000 pregnant women and children.^{17,i} However, EHS serves only a small share of pregnant women and children who are eligible for EHS services; in Program Year 2019, only 9.1 percent of income-eligible children had access to EHS in the median state,¹⁸ and only 6,000 funded enrollment slots were available for pregnant women nationwide.¹⁷ The ability of EHS to reach eligible children is generally limited by federal funding levels, which are insufficient to serve a larger proportion of income-eligible children and pregnant women.¹⁹ The majority of funded enrollment slots are at center- or home-based programs.¹⁷ Approximately 73 percent of families in EHS received at least one family service during their enrollment (in addition to core program services like center-based care or home visits); the most common family services were parenting education, health education, and emergency or crisis intervention.¹⁷

What Are the Funding Options for Early Head Start?

EHS is funded jointly with Head Start and other related programs, including Early Head Start–Child Care Partnership and Expansion grants,ⁱⁱ at the federal level through the annual appropriations process. As of federal Fiscal Year 2022, these programs are funded at a combined level of about \$11.04 billion.²⁰ In 2020, the national average federal funding per child in EHS was approximately \$15,900 (not adjusted for cost of living).³⁷ However, this per-child federal funding level varies widely by states.²¹ The Head Start Act also requires grantees to cover 20 percent of program costs beyond the core federal funding, meaning that grantees must rely on outside funding sources, such as state or local funding or private philanthropic or corporate donations.²²

States also use MIECHV funding to support EHS home-based programs, including federal funding, required state maintenance of existing funding for home visiting programs, and additional state investments to expand home visiting services in their state.²³ Federal funding from the Child Care and Development Block Grant (including the infant-toddler and quality set-asides) may also be used by states to support EHS initiatives.¹⁴ States may also use Preschool Development Grant Birth through Five funding to support EHS–CCP. Among the 23 states that received the first round of renewal funding, four states (Georgia, Michigan, North Carolina, and Rhode Island) planned to use funds to expand EHS–CCP.⁴⁴ States can also use state revenue sources to support EHS, including general funds, tobacco funds, and gaming revenue.^{14,24}

Due to the COVID-19 pandemic, additional federal funding for EHS became available as a part of federal relief packages. A total of \$2 billion in funding has been allocated to Head Start, EHS, and EHS–CCP grantees through the Coronavirus Aid, Relief, and Economic Security (CARES) Act, Coronavirus Response and Relief Supplemental Appropriations (CRRSA) Act, and the American Rescue Plan Act.⁴⁹ Grantees were encouraged to use funding to allow flexibility to respond to the COVID-19

ⁱ 2021 EHS Program Information Report data are available online; data are not updated in this evidence review to be consistent with access data used in the state variation section. Data trends in 2021 remain the same as 2019.

ⁱⁱ Early Head Start Expansion and Early Head Start–Child Care Partnership grants are funded through the same grant program, but serve different purposes. Applicants may apply for expansion or partnership grants alone or in combination.

pandemic and to reach more families, prepare facilities for the provision of in-person services, and to support EHS staff.

Why Should Early Head Start Be Expected to Impact the Prenatal-to-3 Period?

EHS aims to affect children's wellbeing and competence (1) directly, by providing children with individualized services that lead to improved growth and development, and (2) indirectly, through staff proficiency, strong community partnerships, and through family engagement, by encouraging strong relationships between parents and children.²⁵ As mentioned, EHS is delivered in a variety of formats (home-based, center-based, family child care, and locally designed approaches), and each format approaches the goal of child wellbeing and healthy development differently.

Similar to many home visiting programs, home-based EHS aims to improve child development more indirectly by providing services and supports to parents. By improving parents' knowledge of child development, warm and responsive caregiving skills, social support, and coping and problem-solving skills, as well as connecting families to community and health resources during the prenatal and early childhood period, home-based EHS can promote positive short-term child wellbeing outcomes²⁶ and long-term developmental trajectories in children²⁷ and buffer the long-term negative effects of childhood stress and adversity.²⁸

EHS center-based early care and education environments have the potential to impact children by providing high-quality classroom environments that can lead to improved child outcomes (e.g., school readinessⁱⁱⁱ).²⁹ ECE environments provide direct support to children through their classroom context (e.g., evidence-based curricula, physical environment) and indirect support through high-quality interactions between children and caregivers (fostered by small group sizes, low child-to-adult ratios, and high teacher qualifications).^{30,31,32} By providing comprehensive services to families across program approaches, including mental and physical health services to children and a variety of supports to parents, EHS aims to bolster children's social support system of family members.³³

Although center- and home-based EHS aim primarily to provide safe environments and build caregiving skills, knowledge, and warmth, EHS may impact children through a variety of pathways, such as caregiver resources, health, or skills, due to the comprehensive nature of the program. For pregnant women who enroll in EHS, participation in the program has the potential to impact parental health and wellbeing and later child development by facilitating health care and insurance access, prenatal and postpartum health and parenting education and services, and linkage to EHS services for the child after birth.⁴⁶

What Impact Does Early Head Start Have, and for Whom?

Participation in EHS improves outcomes related to parental health and emotional wellbeing, nurturing and responsive child-parent relationships, nurturing and responsive child care in safe settings, and optimal child health and development. The current evidence base draws primarily from the Early Head Start Research and Evaluation Project. Future research is needed that draws from

ⁱⁱⁱ School readiness outcomes typically include measures of cognitive competence and language skills (e.g., operationalized by measures from the Bayley Mental Development Index, Bayley Scales of Infant Development, Woodcock-Johnson test [WJ], or Peabody Picture Vocabulary Test [PPVT]).

more diverse EHS samples, on the pathways within the EHS program that lead to positive impacts, and on how state action can support EHS, leading to improved child and family outcomes.

The research discussed here meets our standards of evidence for being methodologically strong and allowing for causal inference, unless otherwise noted. Each strong causal study reviewed has been assigned a letter, and a complete list of causal studies can be found at the end of this review, along with more details about our standards of evidence and review method. The findings from each strong causal study reviewed align with one of our eight policy goals from Table 1. The Evidence of Effectiveness table displays the findings associated with EHS (beneficial, null,^{iv} or detrimental) for each of the strong studies (A through Y) in the causal studies reference list. For each indicator, a study is categorized based on findings for the overall study population; subgroup findings are discussed in the narrative. The Evidence of Effectiveness table also includes our conclusions about the overall impact on each studied policy goal. The assessment of the overall impact for each studied policy goal weighs the timing of publication and relative strength of each study, as well as the size and direction of all measured indicators.

The Evidence of Effectiveness table (Table 2) focuses on studies that assess outcomes in the prenatal-to-3 period, with outcomes occurring after this period classified as “later” outcomes. Several studies of EHS use the same data set to examine the same indicators at a given child age. In these cases, only one study is included in Table 2 as representative of these findings.^v Studies that specifically explore the pathways through which EHS impacts outcomes are also not included in Table 2 to avoid duplicative results. Studies excluded from this table are indicated by an asterisk in the list of strong causal studies. Results from all studies included in this review are discussed within each section on impacts by policy goal.

Of the 25 causal studies included in this review, seven^{vi} examined how outcomes differed by race or ethnicity (beyond simply presenting summary statistics or controlling for race/ethnicity). Where available, this review presents the analyses’ causal findings for subgroups by race/ethnicity and demographic risk factors. A rigorous evaluation of a policy’s effectiveness should consider whether the policy has equitable impacts and assess the extent to which a policy reduces or exacerbates pre-existing disparities in economic and social wellbeing.

^{iv} An impact is considered statistically significant if $p \leq 0.05$. Results with p-values above this threshold are considered null or nonsignificant.

^v Studies I (age 2) and J (age 3) report similar findings as studies E, N, and S, both using the EHSREP dataset. Only studies I and J are reported in Table 2 to avoid duplicating results. Study S reports overall impacts and is included in the table when the study has an indicator not included in I and J. Studies E and N report subgroup impacts and are discussed in the narrative text of this review.

^{vi} The seven studies that examine how outcomes differ by race or ethnicity include: H, I, J, N, T, W, and Y. Study H examines impacts among Black families only.

Table 2: Evidence of Effectiveness for Early Head Start by Policy Goal

Policy Goal	Indicator	Beneficial Impacts	Null Impacts	Detrimental Impacts	Overall Impact on Goal
Access to Needed Services	Safety Net Program Participation		I		Trending* Null
	Later Safety Net Participation		J, T		
Parents' Ability to Work	Ever Employed		I		Trending* Mixed
	Average Hours Per Week in Employment		I		
	Participation in Education/Job Training	I			
	Average Hours Per Week in Education/Job Training		I		
	Later Education and Employment Outcomes	J	T, S		
Sufficient Household Resources	Percentage of Families with Incomes Above the Federal Poverty Line		I		Trending* Null
	Perceived Family Resources		I		
	Later Household Income		J, S, T		
Parental Health and Emotional Wellbeing	Parenting Distress/Stress	I			Mixed
	Maternal Depression		I		
	Later Coping Skills	L	L		
	Later Parent Emotional Wellbeing	S	J, L, T		
	Health Status		I		
	Later Parent Physical Health		J		

Table 2: Evidence of Effectiveness for Early Head Start by Policy Goal (Continued)

Policy Goal	Indicator	Beneficial Impacts	Null Impacts	Detrimental Impacts	Overall Impact on Goal
Nurturing and Responsive Child-Parent Relationships	Home Learning Environment and Behaviors	I			Mixed
	Family Routines	I			
	Parent-Child Interactions	I, V	I		
	Later Parenting Behaviors	J, S	T, W		
	Child Development and Child Rearing Knowledge	I			
	Emotional Responsivity		I		
	Maternal Verbal-Social Skills		I		
	Discipline and Physical Punishment	I	I, Q		
	Family Conflict	I			
	Later Family Wellbeing		J, T, S		
	Later Healthy Family Functioning	L			
	Child Abuse Risk Factors	M			
Nurturing and Responsive Child Care in Safe Settings	Participation in Good-Quality Child Care	K			Trending* Positive

Table 2: Evidence of Effectiveness for Early Head Start by Policy Goal (Continued)

Policy Goal	Indicator	Beneficial Impacts	Null Impacts	Detrimental Impacts	Overall Impact on Goal
Optimal Child Health and Development	Aggressive and Problem Behaviors	I, V	Q		Mixed
	Behavior During Play		I, V		
	Emotional Regulation		I, M		
	Social-Emotional Competence		V		
	Orientation/Engagement		I		
	Later Social, Emotional, and Behavioral Wellbeing	J, W, S	T		
	Language and Vocabulary Skills	I, R, V			
	Later Language Skills	J, W			
	Cognitive Development/ Developmental Functioning	I	P		
	Later Cognitive Development	J, S	T, W		
	Later Math Skills	W			
	Parent-Reported Child Health Status		I		
	Later Child Physical Health		J		
	Safety Practices		I		
	Later Child Welfare Encounters	F, X	F, X		

*Trending indicates that the evidence is from fewer than two strong causal studies or multiple studies that include only one location, author, or data set.

Note: If a study is placed in multiple impact categories (beneficial, null, detrimental) for an indicator, results were inconsistent within the study (e.g., across time points or various ways of measuring similar indicators).

The majority of research on the impacts of EHS is derived from the Early Head Start Research and Evaluation Project (EHSRE), a large-scale, randomized controlled trial (RCT) of EHS conducted early in EHS program history when the program was first being implemented.^{vii} Of the 25 strong causal studies included in this review, all but the two studies of Educare use data from the EHSRE project or

^{vii} For additional information on the Early Head Start Research and Evaluation Project, see: <https://www.acf.hhs.gov/opre/research/project/early-head-start-research-and-evaluation-project-ehsre-1996-2010>; results reported in this summary from the EHSRE study reports and related publications are statistically significant at the 0.05 level and do not include results significant at the trend level ($p < 0.10$). Throughout this document, the main publications of this project are referred to as “the EHSRE project study.”

use EHSRE study sites to exploit randomization at these locations. The EHSRE study was conducted at 17 sites nationally, which each offered either center-based, home-based, or mixed-approach EHS programs. If a program site offered mixed-approach EHS, families at that site were served by either home-based or center-based services, but individual families did not receive both types of services simultaneously. Families in the EHSRE study were recruited to participating sites from 1996 to 1998, randomized to either the control group or the EHS treatment group, and enrolled either prenatally or before the child was 12 months old. Depending on when the family enrolled, children and families received different amounts of program services at each assessment period (by child age).^{34,1}

Results from the EHSRE study demonstrate that EHS participation had positive impacts on the type and amount of services families received: “the estimated program impacts on the receipt of key program services and core child development services (home visits and center-based child care) were significant, large, and broad-based during the combined follow up period” (p. 188).^J This finding suggests that EHS worked as intended, as families participating in the program received more of the core and comprehensive services EHS strives to provide. As described below, EHS has demonstrated positive impacts on child, parent, and family outcomes; however, these favorable impacts emerge in the context of many more null findings in each of these areas. Due to the large number of indicators tested in the main EHSRE impact studies and publications, beneficial or detrimental results are discussed in detail and null results are discussed more broadly below; however, it is important to keep the context of null findings in mind when interpreting overall findings. Studies examining sustained impacts of EHS over time also found mixed results. One study examining the impact of formal early care and education experiences from birth to age 5 found that children who participated in EHS and subsequently participated in formal early care and education programs between ages 3 and 5 had positive outcomes in “social-emotional, vocabulary, parenting, and home environment” domains at pre-K entry (p. 127).^D However, across policy goals, the grade 5 follow-up study found only null impacts on child, parent, and family outcome measures; subgroup analyses from this study are generally excluded from the discussion that follows.^T

Subgroup analyses of EHSRE study data also allow for the examination of how EHS participation impacts different groups of children, such as those categorized by race/ethnicity, by demographic risk factors,^{viii} and by program approach. These analyses control for a large number of potential confounding factors but should still be interpreted with a degree of caution because participants were not randomized based on child and family characteristics or to specific program approaches. In the EHSRE study, programs used three approaches to serve children and families: center-based programs, which served children directly through center-based early care and learning services; home-based programs, which served families through home visits and focused on improving parenting skills and parent-child relationships; and mixed-approach programs, which served some

^{viii} Race and ethnicity subgroups included Black, non-Hispanic; White, non-Hispanic, and Hispanic. Demographic risk in this study was measured by five factors: teenage parent status, single parent status, parent not employed or in school, parent receiving cash assistance, and parent has not completed high school (measured at program entry). In studies E, J, N, and S, children/families are considered low risk if they had 0 to 2 risk factors, moderate risk if they had 3 risk factors, and high risk if they had 4 or 5 risk factors. In study I, risk groupings are slightly different: low risk is defined as 0 to 1 risk factors, and moderate risk is defined as 2 to 3 risk factors. This creates some discrepancies between the findings in studies I and N, but results are reported according to low-, moderate-, and high-risk groups, as classified in the studies.

families through the center-based model and other families through the home-based model.^{ix,l} Study authors recommend that differences in impacts by program approach between the EHS and control groups be interpreted as “the effectiveness of [a] program approach for programs that adopted that approach, given their community contexts and eligible populations” (p. 95).^E Although the generalizability of the subgroup analyses is limited, understanding how EHS affects diverse groups of children and families is critical for understanding program effectiveness, and these analyses suggest that program impacts associated with EHS participation do vary by child and family characteristics, as well as program model.

Access to Needed Services

Limited evidence exists on the impact of EHS on access to needed services beyond the receipt of core and comprehensive services provided as a part of EHS program models.^x At child ages 2 and 3, the EHSRE study found null impacts overall for indicators of safety net program participation, including ever receiving welfare,^{xi} ever receiving cash assistance (Aid to Families with Dependent Children [AFDC] or TANF), ever receiving food stamps, and the total benefit amount received for each.^{l,j}

Access to Needed Services: Subgroup Findings by Race, Ethnicity, Demographic Characteristics, and Program Approach

Largely consistent with overall impacts on access to needed services, analyses of EHSRE study subgroup impacts at child ages 2 and 3 found mostly null results for subgroups by race, ethnicity, demographic risk level, and program approach. Statistically significant findings for indicators of access to needed services were limited and mixed.^{l,j} At child age 2, relative to their respective control group counterparts not enrolled in EHS, a greater share (15.3 percentage points higher) of high-risk families participating in EHS reported ever receiving AFDC/TANF benefits, but a smaller percentage (9.3 percentage points lower) of Black families participating in EHS reported ever receiving food stamps.^l At child age 3, compared to their respective control group counterparts, Hispanic families participating in EHS were 12.3 percentage points more likely to have reported receiving AFDC/TANF benefits, but Black families participating in EHS reported lower AFDC/TANF benefits (by \$775) and total welfare benefits (by \$1,522).^j

Among demographic risk groups, moderate-risk families participating in EHS reported more food stamp benefits (by \$676), and a greater percentage of high-risk families participating in EHS reported ever receiving AFDC/TANF (by 10 percentage points). A higher share of families who report receiving benefits and higher total benefit amounts are considered beneficial in this case, because EHSRE study authors noted that programs may have sought to improve families' self-sufficiency in the short-term by assisting families in accessing benefits for which they were eligible while working on other self-sufficiency goals for the longer term (e.g., education or employment).

^{ix} The evaluation study took place during the early stages of national EHS implementation, therefore program approaches varied over time. Program approach is assessed as implemented in the fall of 1997. For additional details on changing program approaches over time, see Study I. Allowable EHS program approaches now vary from those in use at the time of the original EHSRE study design and program implementation; this is why program approach categories discussed here do not perfectly align with those discussed in the overview of EHS.

^x See studies I and J for additional details on the receipt of core and comprehensive services.

^{xi} Welfare receipt includes AFDC/TANF cash assistance, food stamps, general assistance, and SSI/SSA benefits.

Parents' Ability to Work

Evidence of the impact of EHS on parents' ability to work is also derived from the EHSRE study. Among the overall study population, no statistically significant impacts were found on employment indicators for parents' ability to work at child ages 2, 3, or 5,^{I,J,S} or employment or education indicators at the grade 5 follow-up.^T Among outcomes related to education and training at child ages 2 and 3, a greater percentage of parents with children in EHS reported being in school or in job training programs as compared to the control group^{I,J} (effect sizes^{xii} were 0.09 and 0.16,^S respectively^{xiii}). Parents participating in EHS also reported 1.1 and 1.2 average hours more per week in education or training at child ages 2 and 3, respectively, as compared to their control group counterparts.^{I,J}

Parents' Ability to Work: Subgroup Findings by Race, Ethnicity, Demographic Characteristics, and Program Approach

In line with overall analyses, the impacts of EHS on employment indicators were null for most subgroups and at most child ages (2, 3 and 5).^{E,I,J,N,S} At child age 2, one detrimental impact was found: Higher-risk families participating in EHS reported 3.4 fewer average hours per week in employment than their similarly at-risk control group counterparts.^I At child age 3, Black parents and parents in mixed-approach EHS programs were more likely to report ever being employed (effect sizes 0.23^N and 0.16,^E respectively), relative to their control group counterparts.^J

Similar to findings for the overall study population in the EHSRE study, positive impacts on education and training were more common. The following subgroups participating in EHS were more likely to report ever being in education or training programs relative to their respective control group counterparts not enrolled in EHS:^{I,J} White families at child age 3 and Hispanic families at child ages 2 and 3 (effect sizes range from 0.19 to 0.28),^N moderate-risk families at child ages 2 and 3 (effect size 0.21 at age 3),^{N,xiv} and parents participating in home-based and mixed-approach EHS programs at child ages 2 and 3 (effect sizes at age 3 range from 0.14 to 0.25).^{E,xv} At child ages 2 and 3, Black and Hispanic families participating in EHS and parents participating in home-based EHS programs reported a higher number of average hours per week in education and training relative to their respective control group counterparts (impacts ranged from 1.3 to 2.4 average hours per week).^{I,J} One study that examined the effects of EHS participation by the level of program implementation of the HSPPS found no impacts of full implementation of these standards on parent participation in employment or education/job training at program end or kindergarten entry. This study found that in incompletely implemented programs, EHS parents in home-based programs at program end were more likely to be in education or job training programs compared to parents in the control group (effect size 0.43).^G

^{xii} Effect sizes are reported from intent-to-treat analyses. Where positive and beneficial negative effect sizes are reported in a range, the absolute value of effect sizes is reported. When possible, effect sizes are reported from studies E, N, and S as these effect sizes are reported using Cohen's *d* effect size measure. When no effect sizes are available from these studies, impacts are described using measures in studies I and J.

^{xiii} For effect sizes reported as Cohen's *d*, an effect size of 0.2 is considered small, 0.5 medium, and 0.8 large.

^{xiv} Studies I and N have conflicting findings for moderate-risk families participating in education and training at age 2. Although study I finds a positive impact, the result reported in N is null.

^{xv} Studies E, I, and J have conflicting findings. At child age 2, home-based impacts are only marginally statistically significant (therefore null by the 0.05 threshold) in E. At child age 3, mixed-approach impacts are null in study J, but statistically significant in study E.

Sufficient Household Resources

The EHSRE study measured two indicators of sufficient household resources: the share of families with incomes above the federal poverty level and perceived family resources (overall population only) and found no statistically significant impacts at any child age or for any subgroups.^{I,J,T,xvi}

Parental Health and Emotional Wellbeing

Evidence on the impact of EHS on parental health and emotional wellbeing comes from the analyses of the EHSRE study data. The main impact evaluation reports^{I,J} identified only a few positive impacts: At child age 2, EHS parents had lower distress associated with parenting, and at child age 5, parents reported a lower number of depressive symptoms compared to their control group counterparts, but effect sizes were small (-0.11 and -0.10, respectively).^S No impacts were found on parent health status at child age 2 or 3.^{I,J}

Beyond the main EHSRE study reports, a study using EHSRE data examining how the impacts of EHS affect later maternal depression found that the EHS impacts on child outcomes (aggression, developmental functioning) and family outcomes (parenting distress, spanking the child) at ages 2 and 3 explained the connection between EHS participation and maternal depression at age 5.^C A study of one EHSRE site implementing an infant mental health (IMH)-based EHS program examined the effects of the IMH-based EHS program 2 to 4 years after program completion and found small to moderate impacts on indicators of parent emotional wellbeing.^L Three positive impacts on measures of coping were found: EHS parents had higher levels of empowerment on two aspects of the Psychological Empowerment Scale (attitudes and skills/knowledge, effect sizes 0.59 and 0.46 averaged across ages 5 and 7, respectively), and higher levels of perceived mastery (age 7, effect size 0.41) relative to the control group. However, EHS families were less likely to seek support from neighbors relative to their control group counterparts (effect size 0.35), a detrimental finding. The study found no impact on parenting stress.

Parental Health and Emotional Wellbeing: Subgroup Findings by Race, Ethnicity, Demographic Characteristics, and Program Approach

Analyses from the EHSRE study data suggest similar patterns of mixed parental health and emotional wellbeing impacts for subgroups. No significant impacts were found for any subgroups at child ages 2 and 3 for parent health status.^{I,J} Among subgroups of families by race and ethnicity, at child age 2, Black parents with children in EHS had lower distress associated with parenting,^I and at child age 5, Black EHS families reported a lower number of depressive symptoms and had a lower likelihood of reporting someone in the household with alcohol or drug problems, compared to their Black control group counterparts (effect sizes ranged from 0.21 to 0.30).^N At the grade 5 follow-up, Black families formerly enrolled in EHS reported less use of alcohol compared to Black families in the control group (effect size -0.34).^T

^{xvi} Studies E, N, and S examine income using an annual income measure. The results are null at all child ages for all subgroups. Study G did find one positive subgroup impact: In fully-implemented EHS home-based programs, parents reported higher monthly income at kindergarten entry than control group parents (effect size 0.20).

Among demographic risk subgroups, parents in moderate-risk families participating in EHS were less likely to experience distress associated with parenting at child ages 2^{N,xvii} and 3^J and reported fewer depressive symptoms at child age 5.^N Effect sizes for these outcomes ranged from -0.20 to -0.27.^N A study focused on the developmental pathways to integrated social skills also found that EHS participation was protective of the influence of demographic risk factors on parenting-related stress.^A By program approach, significant impacts were found for families in mixed-approach EHS programs at age 2^I and home-based EHS programs at age 3^J (effect sizes were -0.23 and -0.13,^E respectively).

Nurturing and Responsive Child-Parent Relationships

Evidence of the impact of EHS on nurturing and responsive child-parent relationships is derived primarily from the EHSRE study and data, with the greatest number of positive effects seen at child age 2.^{I,J,S} However, a number of null results were found across ages and the overall impact of EHS on this goal is mixed. The EHSRE study examined more than a dozen different indicators within this policy goal at various ages and only statistically significant results are discussed in detail below. No statistically significant impacts on indicators of child-parent relationships at the grade 5 follow-up were found.^T

In the EHSRE study, positive impacts of EHS participation were seen for a number of outcomes in the areas of home environments, parent behaviors and interactions with children, and family routines. Positive impacts included more supportiveness of the home environment for language and literacy (ages 2 and 3), a greater percentage of parents reading daily to the child (ages 2, 3, and 5) and at bedtime (ages 2 and 3), more parent supportiveness during play (ages 2 and 3), less parent detachment during play (age 2), a higher percentage of parents reporting a regular bedtime (age 2), more teaching activities (age 2 and 5), and parents attending meetings or open houses (age 5).^{I,J,S,xviii} Effect sizes for significant findings were small, ranging from 0.09 to 0.19.^S At child age 2, EHS participation was also linked to slightly higher parent scores (by 0.1 points) on the Knowledge of Infant Development Inventory.^I Null impacts were found for emotional responsivity, warmth, and maternal verbal-social skills at child ages 2 and 3.^{I,J}

The ability of EHS participation to affect other child development outcomes through improved child-parent relationships has been examined in several studies using ESHREP data. For example, one study found that the positive impact of EHS on responsive parenting at child age 2 led to later language development at child age 5.^{Yxix} Another study found that EHS was protective against demographic risk factors for parents' ability to provide cognitive stimulation.^A A separate study found that the impacts of EHS may vary depending on the specific parenting environment at home (e.g., warmth in the home, level of stimulation, etc.).^B

Compared to the control group, a lower percentage of parents with children in EHS reported spanking their children (ages 2 and 3,^J effect sizes -0.11 and -0.13, respectively).^S A higher percentage of parents with children in EHS suggested positive responses (i.e., talk and explain, prevent or distract) to

^{xvii} Studies I and N have conflicting findings. Study I reports a null result.

^{xviii} Parent supportiveness during play was only statistically significant at the 0.05 level in study I (not study S). Parent detachment during play was only statistically significant at the 0.05 level in study S, not in study I.

^{xix} The authors conducted post-hoc analyses to examine difference in pathways by race/ethnicity and found no evidence significant differences between groups.

hypothetical discipline strategies at age 2^l and a lower percentage of suggested negative responses (i.e., physical punishment, threaten or command) in discipline situations at age 3 (differences ranged from 3.5 to 6.1 percentage points) compared to control group parents, both beneficial outcomes.^j At child age 2, parents with children in EHS reported slightly less family conflict (effect size -0.09)^s than families in the control group, but this effect was not sustained at age 3.^{l,j} Null impacts were found for the absence of punitive interactions and parent-child dysfunctional interactions.^{l,j}

Several studies beyond the main EHSRE project impact reports also examined indicators of child-parent relationships. A study of two EHSRE sites examining how EHS may impact mothers with mental health risks found that the impacts of EHS on maternal hostility, maternal sensitivity, and child interaction with a parent during play were concentrated among mothers who were depressed and mothers who were both depressed and reported insecure relationship attitudes.^o One study of a small sample at a single EHSRE site found that EHS participation buffered the negative impact of child abuse risk factors on positive parenting regard^{xx} and children's emotional regulation.^m A study of one EHSRE site implementing an IMH-based EHS program found that the EHS program group had higher scores on healthy functioning and lower scores on unhealthy functioning (effect sizes 0.51 and 0.46, respectively) than control group families.^l

An RCT that began in 2010 of Educare, a program model described as a hybrid between EHS and a model demonstration program (with enhanced requirements beyond the HSPPS^{xxi}), found more parent-positive parent-child interactions^{xxii} among families enrolled in the program relative to the control group (effect size 0.42), but null impacts on negative parent interactions at child age 2.^v At child age 3, null impacts were found for three measures of parent-child interaction quality; however, the authors noted that the study was underpowered to detect small and moderate effect sizes, in part because of study attrition.^w Although Educare is considered an enhanced model of EHS, these results should be considered alongside studies of typical EHS programs to fully understand the potential impact of EHS and other programs similar to EHS.

Nurturing and Responsive Child-Parent Relationships: Subgroup Findings by Race, Ethnicity, Demographic Characteristics, and Program Approach

Subgroup child-parent relationship impacts of EHS participation by race and ethnicity are generally mixed (positive and null), with the majority of positive impacts by group seen among Black families.^{l,j,n} Compared to Black parents in the control group, Black parents participating in EHS had more supportive home environments for language and literacy (child ages 2^{xxiii} and 3), a greater share of

^{xx} In this study, child abuse risk factors were assessed by a measure of mothers' potential child abuse, defined as a score above a cutoff threshold (166) on the Abuse Scale of the Child Abuse Potential Inventory. Positive parenting regard is an element of parenting quality, defined by "expressions of love/praise, respect for and enjoyment of child" as coded from video interactions during the "Three Bag Task" between the parent and child.

^{xxi} For example, Educare has lower teacher-to-child ratios than EHS as required in the HSPPS, has higher lead teacher degree requirements, relies on a "master teacher"/coaching framework, and requires greater utilization of data than EHS programs are typically required to do. For more information, see Yazejian et al. (2020).

^{xxii} Parent-positive parent-child interactions were measured using parent emotional supportiveness, parent stimulation of cognitive development, and parent detachment (reversed) scales from the Two Bags Task.

^{xxiii} The significant, positive impact for HOME support for language and literacy for Black families was identified in study N, but not study I (in the latter, it was marginally significant). The positive impact for White families for reading daily was found in study I, but not N; the impact for family conflict was found in study N, but not study I.

parents reporting reading at bedtime (age 2), and lower reported parent-child dysfunctional interaction (age 2). Results also suggested less severe discipline strategies (ages 2 and 3), more supportiveness during play (ages 3 and 5), a higher likelihood to have a regular bedtime (age 3), more warmth (age 3), and more children's books in the home (age 5), relative to Black control group parents (effect sizes range from 0.19 to 0.40^N).^{I,J} At the grade 5 follow-up, the only significant impact on child-parent relationships by race/ethnicity were found among Black families: Black families formerly enrolled in EHS were more involved in school (effect size 0.37).^T

Fewer statistically significant impacts were seen among White and Hispanic families at any child age. Among White families participating in EHS, a lower percentage of parents reported spanking their child in the previous week and less family conflict was reported at child age 2 relative to White control group families (effect sizes ranging from -0.18 to -0.22^N).^I White parents participating in EHS also reported less intrusiveness during play and suggested less severe discipline strategies, relative to their control group counterparts at child age 2.^I Two detrimental impacts were identified among White families who participated in EHS: at child age 3, higher parent-child dysfunctional interaction was reported,^J and children in these families were more likely to have witnessed violence at age 5 than their control group counterparts (effect size 0.21).^N Among Hispanic families, a greater share of EHS parents read daily to their children at ages 2, 3, and 5 (effect sizes ranging from 0.23 to 0.27),^N reported higher scores on the Knowledge of Infant Development Inventory, and reported reading at bedtime at child age 2 relative to Hispanic control group parents.^{I,J}

Variation of impacts by subgroups was also tested in the evaluation of Educare. However, at child age 3, there were no significant interactions between Educare and the child's race (Black) or dual-language learner status (highly correlated with Hispanic ethnicity) in models testing the impact of Educare on parent-child interaction quality.^W

By level of demographic risk, both low- and high-risk families saw few positive impacts on child-parent relationships as a result of EHS participation; evidence of the effectiveness of EHS was generally found among the moderate-risk group. Positive parenting and home environment outcomes identified among moderate-risk EHS families relative to their control group counterparts included a supportive home environment for language and literacy (age 2 and 5), reading daily (age 2 and 3), parent detachment during play (age 3), a regular bedtime (age 2), and teaching activities (ages 2 and 3).^{I,J} Effect sizes for these outcomes ranged from 0.18 to 0.36.^N The main EHSRE project impact evaluation reports examined a greater number of indicators of child-parent relationships and also found positive impacts for parents' knowledge of infant development (age 2), reading frequency (age 2), emotional responsiveness (age 2), parent supportiveness during play (ages 2 and 3), and reading at bedtime (age 3).^{I,J}

By program approach, most positive outcomes in the EHSRE studies were seen for mixed-approach programs, and these effects were concentrated at child ages 2 and 3. For example, families participating in mixed-approach EHS programs saw a range of positive impacts, including more supportive environments for language and literacy (age 2), more teaching activities (age 2), higher reading frequencies (age 2), more parents reading daily (ages 2 and 3), a smaller share of parents reporting spanking (ages 2 and 3), more parent supportiveness (ages 2 and 3) and less detachment during play (age 3), more parents reading at bedtime (age 3), more parents suggesting positive

discipline strategies (age 3), and more parents reporting attending meetings or open houses (age 5).^{E,I,J} Effect sizes were still small, ranging from 0.16 to 0.28.^E Mixed-approach programs may have had the greatest impact because multiple program options allowed families to opt into the EHS approach they preferred (i.e., either home-based or center-based EHS).

In contrast, center-based programs demonstrated very few positive impacts across the range of child-parent relationship indicators at different child ages.^{E,I,J} Similarly, few statistically significant impacts were found for home-based EHS programs, despite a theory of change that suggests home-based programs should demonstrate positive impacts specifically on child-parent relationships, given the focus on parent education and training. Positive impacts for parents in home-based EHS programs relative to the control group were seen for the following indicators: supportive home environment for language and literature (ages 2 and 5), parent detachment (age 2) and parent supportiveness (age 3) during play, the share of parents who read at bedtime (age 2) and daily (age 5), teaching activities (age 5), and having at least 26 children's books in the home (age 5).^{E,I,J} Consistent with other findings, effect sizes were relatively small, ranging from 0.10 to 0.16.^{E,xxiv}

Three studies outside of the main EHSRE project publications have also examined home-based EHS program impacts; however, all studies used data from EHSRE project sites. One study of home-based EHSRE study sites examining the impacts of full or incomplete implementation of HSPPS on indicators of child-parent relationships found that parents in EHS in fully implemented programs were less likely to report spanking their children at program end, provided more supportive environments for language and literacy, engaged in more teaching activities, and were more likely to read daily at pre-K entry compared to their control group counterparts (effect sizes ranged from 0.20 to 0.26).^G A study of one EHSRE site found participation in EHS was linked to higher attachment security when children were 18 months old.^P Another study of the same EHSRE site found that EHS had no impact on physical punishment (spanking) at 36 months,^Q which is inconsistent with the overall impact evaluation findings; this finding may be due to the assessment of spanking in only one EHS home-based site sample, rather than the full sample.

Nurturing and Responsive Child Care in Safe Settings

Only one EHSRE project study included in this review assessed the impact of EHS participation on the quality of care children received among children participating in center-based or mixed-approach EHS programs. The study found that EHS participation increased the “percentage of children who were in good-quality center care” at all ages (p. 80).^K At child ages 14 and 24 months, the share of children participating in EHS in good-quality^{xxv} center-based care (versus low-quality or no center-based care) was approximately three times the control group, and at child age 36 months, EHS children were still more likely to be in good-quality care, although differences from the control group were smaller at this age (12 percentage points). Positive impacts were seen at both center-based and mixed-approach EHS programs, but the effects on these measures of quality were larger at center-based sites.

^{xxiv} Positive impacts for home supportiveness for language and literature and parent detachment during play (at child age 2) were reported only in study E, not study I.

^{xxv} Good quality was defined by the study authors as a score equal to or greater than 5.0 on the ITES or ECERS-R.

The study also found that EHS participation had large impacts on child-caregiver interactions: At child ages 24 and 36 months, a greater share of children participating in EHS at center-based sites experienced high levels of caregiver talk in center care compared to children in the control group. Positive impacts were also seen for children in care at a center in mixed-approach sites, but the effects were not as consistent.^{xxvi}

The quality center-based child care experiences among EHS participants were associated with positive child outcomes; however, these impacts cannot be interpreted as causal due to limitations of study design. Furthermore, some caution is needed when generalizing overall impacts of EHS participation on the quality of care children received; this study only examined quality levels in center-based providers among a subsample of the EHSRE study population and did not examine quality in home-based providers or for other aspects of the EHS program.

Optimal Child Health and Development

The EHSRE study examined more than 20 different indicators of child wellbeing at a number of ages in the overall study sample. The EHSRE study found small, positive impacts of EHS participation across a range of social-emotional, cognitive, language, and health outcomes at ages 2, 3, and 5, demonstrating evidence of effectiveness; however, null results were also found across a range of outcomes at different ages.^{I,J,S} No sustained positive child impacts overall were found at the grade 5 follow-up of the EHSRE study.^T Beyond the main EHSRE study findings, several other studies have used RCTs (including those that focus on specific EHSRE study sites) or quasi-experimental designs to assess the impact of EHS on child outcomes.

Social-Emotional Wellbeing

Among the overall study sample in the EHSRE project, at child age 2, EHS program participants demonstrated less aggressive behavior relative to the control group.¹ At age 3, EHS children demonstrated less aggressive behavior,^{xxvii} lower negativity toward their parents during play, higher engagement during play, and greater sustained attention with objects during play, relative to the control group.¹ At age 5, EHS children also demonstrated fewer social and behavioral problems and more positive approaches to learning.^S Effect sizes for all statistically significant outcomes were small (ranging from 0.10 to 0.18); findings for all other outcomes were null.^{S,xxviii} Although results for individual measures were not always sustained over time, these findings suggest positive social-emotional outcomes associated with EHS participation during the program eligibility period, as well as shortly after the end of the program.

^{xxvi} The study authors defined good-quality care as experiencing high levels of caregiver talk, assessed as scoring in the top quartile on the Child-Caregiver Observation System (C-COS). Three measures were assessed: incidents of any caregiver talk (at least 34), incidents of caregiver responding to child (at least 11), and incidents of caregiver initiating talk with child (at least 28). Differences were significant at all ages for all measures for children in center-based EHS sites, and impacts ranged from 5 percentage points to 24 percentage points. In mixed-approach sites, differences were statistically significant and beneficial for caregiver talk and caregiver initiating talk at 24 months, caregiver responses to the child at both ages. Beneficial impacts ranged from 4 to 17 percentage points. Detrimental impacts were found at 36 months for any caregiver talk and caregiver initiating talk (a smaller share of EHS children experienced high levels as compared to control group children).

^{xxvii} Aggressive behavior was statistically significant in study J, but not in study S (only marginally significant at the 0.1 level).

^{xxviii} Social-emotional wellbeing outcomes in the EHSRE studies were measured using the Child Behavior Checklist (Aggressive), Bayley Behavior Rating Scale, FACES Social Behavior Problems, and other measures discussed in text.

Two studies using data from individual EHSRE sites found null impacts on child social-emotional outcomes, including aggressive behavior^Q and child emotion regulation.^M However, the RCT of Educare found that participation in Educare resulted in fewer parent-reported problem behaviors (effect size -0.28), but null impacts were found on child behavior during play and social-emotional competence when children were an average of 2 years old at 1 year after randomization into the program.^V The impact of Educare participation on parent-reported behavior problems was sustained at child age 3 (effect size -0.36).^W One study of center-based EHSRE sites also found evidence that “participating in center-based EHS services may help mitigate the impact of [family] conflict on children’s aggressive behavior” (p. 952), suggesting that EHS may help buffer negative impacts of family conflict.^U These mixed results are consistent with the findings of the EHSRE study.

Cognitive, Math, and Language Development

At child age 2, the EHSRE study found that EHS children had larger vocabularies and higher developmental functioning relative to the control group.^{xxix} At age 3, positive impacts for developmental functioning were sustained, and positive impacts were found on a measure of English language receptive vocabulary. At age 5, the only statistically significant finding was that EHS children had greater Spanish language receptive vocabulary than their control group counterparts. Effect sizes for cognitive and language outcomes were again generally small (ranging from 0.11 to 0.26).^S A separate study of one EHSRE site found mixed impacts of participation in EHS on cognitive development: impacts were null at child age 2 but positive at child age 3 (a small impact of a 0.19 point increase).^P

Moderately-sized positive impacts were also found in the Educare evaluation at child age 2: Children participating in Educare had higher expressive and receptive English, but not Spanish, language skills relative to the control group (effect sizes 0.36 and 0.58, respectively).^V Similarly, at child age 3, children assigned to Educare demonstrated higher English, but not Spanish, language skills as compared to the control group (effect size 0.24).^W Children in the Educare programs also had higher math scores relative to the control group at child age 3 (effect size 0.28), but not executive function skills. Effects of Educare appear to lessen over time, but remain stronger than impacts found in the EHSRE project.^W

Physical Health

Many of the indicators of child health examined in the EHSRE study represent the receipt of services that EHS programs promote by design, including visits to doctors and dentists for routine and needed care, receipt of screenings, and general receipt of health services. Because these indicators focus on services families should receive by nature of their participation in EHS, they are not a focus in this section; however, null impacts of EHS participation were found for many of these indicators at child ages 2 and 3.^{I,J}

Among health outcomes assessed in the EHSRE study, EHS children were more likely to have received any immunizations at age 2 (effect size 0.09)^S and were less likely to ever have been hospitalized for

^{xxix} Developmental functioning was measured by the Bayley Mental Development Index. Vocabulary outcomes were assessed using the MacArthur Communicative Development Inventories (CDI) at age 2 and the Peabody Picture Vocabulary Test at ages 3 and 5.

an accident or injury in their third year (1.3 percentage points less).^J No other health outcomes were significant at ages 2, 3, or 5 (e.g., emergency room visits, parent-reported child health status).^{I,J,S}

Child Safety and Welfare

Few studies examine child safety and welfare impacts as a result of EHS participation. Within the larger EHSRE study, null impacts were found for a number of positive safety practices (e.g., proper car seat placement, safe play area for the child, use of electrical outlet covers).^I One study using a subsample of the EHSRE study population found that EHS participation reduced the likelihood of a child welfare encounter between ages 5 and 9 (adjusted odd ratio 0.64) but not at other child ages.^F EHS participation also had a positive impact on the length of time between first and second child welfare encounters: “children in the control group were 2.7 times more likely [to experience] a second child welfare encounter earlier than children in the EHS program group” (p. 131).^F

A second study examining the pathways through which EHS may impact the likelihood of child maltreatment found that although EHS had no direct impact on child welfare involvement (either after child age 2 or child age 3), EHS participation did have indirect impacts on child welfare involvement, primarily through family and parent factors.^X For example, parents in EHS, compared to parents in the control group, reported less parenting stress, less family conflict, and had more positive and emotionally responsive home environments at child age 2, and these, in turn, decreased the likelihood of later maltreatment between child ages 2 and 17. Null results were found for potential pathways of other parenting behaviors (e.g., child rearing knowledge, spanking, dysfunctional interactions) and child aggressive behavior.

Optimal Child Health and Development Subgroup Analyses: Race, Ethnicity, Demographic Characteristics, and Program Approach

By race and ethnicity, the greatest number of positive impacts were seen among Black children in both social-emotional and cognitive domains.^{I,J,N} During the program at child age 2 and at child age 3, Black children participating in EHS had less reported aggressive behavior than their control group counterparts. Black children participating in EHS also had less negativity toward their parent during play and higher engagement and sustained attention with objects during play at age 3 relative to Black children in the control group; at age 5, former EHS children had more positive approaches to learning and greater levels of attention while performing difficult tasks. Black children in EHS also had a greater vocabulary and higher developmental functioning at age 2, relative to their counterparts in the control group; at ages 3 and 5, these children also had larger receptive vocabularies; and at age 5, Black children who had participated in EHS were reported to have fewer speech problems than their control group counterparts. Effect sizes for impacts among Black children ranged from 0.19 to 0.41.^N At the grade 5 follow-up, the only significant child impacts by race/ethnicity were found among Black children: Black children enrolled in EHS had fewer reported externalizing behavior and attention problems compared to Black children in the control group (effect sizes -0.26 and -0.22, respectively).^T A study examining the pathways through which EHS impacted Black children found that, in addition to direct impacts on child outcomes at age 3, EHS indirectly affected sustained attention, engagement with the parent, and negativity toward the parent through parent supportiveness during play.^H

Very few statistically significant outcomes were found for White or Hispanic children at any age. At age 2, White EHS participant children demonstrated less negativity toward their parent during play, relative to their White control group counterparts,^{I,N} and at age 5, White former EHS participants had more speech problems than their counterparts (effect sizes ranging from 0.20 to 0.27).^N The identification of more speech problems may be a detrimental impact, but the interpretation depends on whether groups were screened similarly for these types of problems. If groups were not screened at similar rates or proportions, identifying more speech problems may be because of more screenings among a subgroup, rather than the identification of a detrimental impact. Unfortunately, rates of screening cannot be identified with the information reported in this study. Significant impacts were also limited among Hispanic children: at age 3, Hispanic former EHS children had better orientation/engagement^I and at age 5, Hispanic former EHS children had better emotion regulation, greater Spanish receptive vocabulary, and fewer speech problems than their Hispanic counterparts in the control group (effect sizes ranging from 0.25 to 0.34).^N

Variation in impacts on indicators of child development by race and ethnicity was also tested in the evaluation of Educare. One positive interaction was found: At child age 3, the impact of Educare on English-language skills was larger for dual-language learners (highly correlated with Hispanic ethnicity, effect size 0.73).^W However, at child age 3, there were no significant interactions between Educare and the child's race (Black) or dual-language learner status in models testing the impact of Educare on Spanish-language skills, executive function, math skills, problem behaviors, and social competence.

Differential impacts of EHS participation were also found among low-, moderate-, and high-demographic risk groups. Few significant impacts were found among children in the low-risk^{xxx} and high-risk groups at any age; EHS had the greatest impact among the moderate-risk group.^{I,J,N} Among the moderate-risk group, EHS participants had better language outcomes at age 2 and cognitive outcomes at ages 2 and 3,^{I,J} relative to their control group counterparts (effect sizes ranging from 0.25 to 0.35);^N few significant effects were seen in any child outcome domains at ages 3 and 5.^{J,N} Beyond demographic risk, one study using both national and site-specific EHSRE study data found that EHS participation affected child vocabulary through different pathways for boys and girls in the context of parenting stress: EHS participation reduced the impact of parenting stress on girls' vocabulary scores (among girls whose mothers had moderate or high parenting stress, effect sizes of 0.19 and 0.42, respectively) and was protective for boys' vocabulary growth from the effects of parenting stress.^R

By program approach, a small number of child social-emotional and cognitive outcomes were significant for EHS children in mixed-approach programs, relative to the control group at these sites, but impacts were generally null for home- or center-based EHS programs at any age.^{I,J,E} In mixed-approach EHS programs, positive vocabulary impacts were found at ages 2 and 3 and among social-emotional indicators: children in EHS had lower aggressive behavior at age 2^{xxxi} and fewer social behavioral problems at age 5, greater engagement of the parent during play at ages 2 and 3, and sustained attention with objects during play at age 3. Effect sizes were generally small, ranging from

^{xxx} At child age 2, a small, detrimental outcome was found for engagement during parent-child structured play for low-risk EHS families, relative to their control group counterparts.

^{xxxi} The positive impact at age 2 was found only in study E, but not in study I (where the impact was marginally significant at the 0.10 level).

0.16 to 0.29.^E A study of home-based EHSRE study sites examining the impacts of full or incomplete implementation of HSPPS on child outcomes found mixed evidence of differential impacts by implementation status at program end and pre-K entry.^G Compared to children in the control groups, children in fully-implemented home-based EHS had higher cognitive development; were less likely to visit the emergency room at program end; and had higher math skills, positive approaches to learning, and engagement during play at pre-K entry (effect sizes range from 0.19 to 0.33).^{xxxii}

Is There Evidence That Early Head Start Reduces Disparities?

Although seven studies included in this review look at differences in impacts by race and ethnicity, only two studies that meet our evidence standards examined whether participation in EHS or Educare reduced disparities in outcomes between groups by race, ethnicity, or socioeconomic status (rather than within groups by treatment or control status). The evaluation of the impact of Educare at child age 3 found only one statistically significant effect (on English-language skills) when analyzing differences by race and dual-language learner status; all other results were null.^W A study of the how EHS impacts later child development outcomes by parenting behaviors found no differences by race/ethnicity.^Y

The EHSRE study found that Black and moderate-demographic-risk families may benefit most from EHS relative to their nonparticipant counterparts; however, study authors did not report between-group differences to allow assessment of EHS's potential to reduce disparities. One set of study authors did note that, in testing between-group race and ethnicity differences, they found “significant differences between groups for nearly half of the outcomes at age 2, two-thirds of outcomes at age 3, and one-quarter of outcomes at age 5” (p. 66), but additional details were not provided to assess how EHS may reduce disparities between groups.^N

EHSRE impact study report authors hypothesized about differences in EHS impact findings within subgroups. The authors suggested that confounding factors do not appear to explain the differences in outcomes between racial and ethnic groups, although this possibility cannot be fully ruled out due to the study design. The authors further suggested that Black control group families may have started the program worse off than their White and Hispanic control group counterparts, which may have allowed more room for growth and positive outcomes among Black children and families participating in EHS, as compared to other groups. The EHSRE study authors also suggested that “unfavorable impacts” among the highest-risk families “suggests that the services provided by Early Head Start programs may not be sufficient to meet the needs of these families” (p. 344) and that this population was the most difficult to serve, which may be reflected in null outcomes for this group.^J

Has the Return on Investment for Early Head Start Been Studied?

None of the strong causal studies included in this review directly assess return on investment or cost savings as a result of EHS participation. Data on the cost of EHS are limited: In 2020, the national average federal funding per child in EHS was \$15,900 (not adjusted for cost of living).³⁷ These cost

^{xxxii} In incompletely implemented programs, children in EHS had higher engagement during play as compared to control group children (effect size 0.34). All other impacts were null at program end and pre-K for this group.

figures vary widely by state²¹ and do not include grantee cost-sharing spending. A more comprehensive analysis of the return on investment is forthcoming.

What Do We Know, and What Do We Not Know?

Studies of EHS have consistently found evidence of direct, positive impacts of EHS on a variety of child, parent, and family outcomes across several policy goals. However, many of these effects demonstrate small impacts, and positive findings are generally matched in number or outnumbered by null findings within these same areas. Existing evidence suggests that EHS impacts children and families directly but also impacts children indirectly through improved parenting knowledge, skills, and behavior. Evidence of direct and indirect impacts supports the theory of change for both home-based and center-based EHS, although additional research on precisely which program elements of EHS are critical in leading to these impacts will help clarify how and by what mechanisms EHS impacts families. This information would be particularly relevant in the context of the positive mixed-approach findings. Future research should continue to expand on initial impact studies of EHS to assess the impact of EHS programs now that they have matured and expanded from the initial period of funding and implementation and use data beyond those provided in the EHSRE study.

Future research studies should also measure program dosage clearly to identify variation in the impact of EHS by the amount of a program approach a child and family receives (e.g., number of home visits, weeks in center-based care, amount of comprehensive services received). The EHSRE study does not measure program dosage well, which may mask important variation in services families received; the completeness of program implementation varied among program sites due to the timing of the research study, and this variation may, as one study of home-based EHS programs suggests,⁶ affect program impacts. Findings on the effectiveness of EHS as a strategy to improve prenatal-to-3 outcomes may also be affected by program implementation, something that may be able to be addressed by newer studies of more fully implemented programs. More research is needed that examines why certain program approaches are effective (or ineffective) at impacting targeted outcomes.

Additional research is also needed to assess the ability of EHS to reduce disparities between groups of children; current subgroup analyses are an important first step but should move beyond assessing differences within groups and determine if EHS closes gaps in outcomes between groups. In addition, research is needed to examine the impact of state-level investments on EHS participation and program impacts, as little is currently known about how state contributions to EHS can expand the reach and impact of federal grants.

To date, no strong causal studies of Early Head Start–Child Care Partnerships exist; however, initial findings from the National Descriptive Study of Early Head Start–Child Care Partnerships provide some observational context for how these partnerships are working and may contribute to indicators of child and family wellbeing. The point-in-time survey of EHS–CCP grantees did not suggest that the EHS–CCP grants “increased the number of infant-toddler child care slots available in partner centers and family care homes” (p. 22); however, the grants did increase per-child funding, allowed partners to purchase materials and supplies for the classroom, supported the education and professional development of staff, and provided comprehensive services to children and families.³⁵ Many EHS–CCP partner organizations also offered comprehensive services to children not served by partnership

slots.³⁵ EHS–CCP grantees did encounter some challenges in partnerships, highlighting difficulties for partners in meeting the HSPPS, particularly with regard to staff-child ratios and group size requirements.³⁵ Future research on EHS–CCPs is needed to examine the impact of this funding on providers and child and family outcomes. As the EHS–CCP program matures, research should examine the impact of these partnerships on expanding access to high-quality early care and education and subsequent impacts on indicators of child wellbeing, particularly among state grantees. Similarly, research is needed on the impact of state-specific programs similar to EHS in design and quality standards; causal research is not yet available on these programs.

Is Early Head Start an Effective Policy for Improving Prenatal-to-3 Outcomes?

EHS improves numerous aspects of child-parent relationships, leaving children better off because of more nurturing and responsive relationships. Evidence for the impact of EHS on parental health and emotional wellbeing, nurturing and responsive child care in safe settings, and optimal child health and development is also mixed, but does suggest that EHS can positively impact certain indicators within these policy goals. States currently support EHS through providing supplemental funding, leveraging federal funding (e.g., acting as an EHS–CCP grantee), or by creating their own state-specific program similar to EHS in program design and quality standards. However, the current evidence base does not provide clear guidance for the optimal level of funding or specific method for states to best support Early Head Start.

How Does Early Head Start Vary Across the States?^{xxxiii}

States' primary policy lever for EHS is their power to determine how to invest in EHS, including through the use of state funds to increase the number of EHS slots available to eligible families and through the leveraging of federal funding (to EHS directly or to support EHS providers). States can also create and fund state-specific programs with similar structures and quality standards as EHS.

As noted earlier, as of Program Year 2019, EHS programs exist in every state,¹⁶ and one state, Pennsylvania, is a state grantee of the EHS program.³⁶ Center- and home-based EHS programs are available in all 51 states,^{xxxiv} family child care EHS is available in 31 states, and 24 states have grantees offering locally-designed options.^{16,xxxv} States vary in the share of income-eligible children with access to EHS within that state, ranging from 3.8 percent in Tennessee to 31.0 percent in the District of Columbia (see Table 3).¹⁸ However, the share of children with access to EHS within a state is driven primarily by how many local grantees a state has and how many children those grantees serve. States can increase the percent of income-eligible children with access to EHS by supporting local EHS programs with state funding.

However, the majority of states do not use their own funding to invest directly in EHS (see Table 3). Only 12 states supplement federal funds to implement EHS programs. States can also leverage federal

^{xxxiii} For details on state progress implementing Early Head Start, see the Early Head Start section of the US Prenatal-to-3 State Policy Roadmap: <https://pn3policy.org/pn-3-state-policy-roadmap-2022/us/early-head-start/>.

^{xxxiv} State counts include the District of Columbia.

^{xxxv} Includes program approaches offered under EHS and EHS–CCP in regions 1 – 10 (including interim grants) in Program Year 2019. Does not include American Indian and Alaska Native (AIAN) or Migrant and Seasonal Head Start (MSHS) EHS or EHS–CCP grants.

funding by applying for EHS expansion grants and/or participating in the EHS–CCP program. There are six state EHS–CCP grantees.^{36,38,39} State grantees vary in their approaches to EHS–CCP. For example, Alabama uses EHS–CCP funding to increase per-child contractual payments to child care partners. California, Georgia, and Pennsylvania use hub models to provide services to partners. Delaware and the District of Columbia use funding for quality improvement initiatives.⁴⁰ The District of Columbia’s EHS–CCP supports the Quality Improvement Network, which uses EHS–CCP and state funding to support 10 centers and 18 family care homes in an EHS–CCP model.⁴⁸ States may also invest in EHS by supporting EHS providers using other federal funding, such as MIECHV¹³ and the Child Care and Development Block Grant, including the infant-toddler and quality set-asides.⁴² For example, Kansas uses federal Child Care and Development Fund and Temporary Assistance for Needy Families funds to support Kansas Early Head Start.⁴⁷

State support of EHS also includes creating, funding, and implementing a state-specific program with a similar structure and quality standards as EHS. Currently four states have known state-specific programs, including Illinois (Illinois Prevention Initiative), Nebraska (Sixpence Early Learning Fund), Oregon (Oregon Pre-K), and Washington (Early ECEAP^{xxxvi}). These state-specific programs are typically designed with similar eligibility criteria, quality performance standards, and program structures as EHS (including serving families through home- or center-based services, family engagement activities, and comprehensive services).

^{xxxvi} ECEAP stands for Early Childhood Education Assistance Program.

Table 3: State Variation in Early Head Start

State	Type of State Support for Early Head Start Programs*	Estimated % of Income-Eligible Children With Access to Early Head Start
Alabama	EHS-CCP grantee	6.0%
Alaska	State funding	26.0%
Arizona	N/A	6.5%
Arkansas	N/A	8.7%
California	EHS-CCP grantee	10.4%
Colorado	N/A	8.1%
Connecticut	State funding	8.6%
Delaware	EHS-CCP grantee	8.8%
District of Columbia	State funding, EHS-CCP grantee	31.0%
Florida	N/A	6.2%
Georgia	EHS-CCP grantee	5.7%
Hawaii	N/A	9.1%
Idaho	N/A	7.7%
Illinois	State-specific program	11.6%
Indiana	N/A	5.1%
Iowa	State funding	9.9%
Kansas	N/A	11.5%
Kentucky	N/A	5.9%
Louisiana	N/A	6.5%
Maine	State funding	15.8%
Maryland	State funding	13.5%
Massachusetts	State funding	7.9%
Michigan	N/A	10.8%
Minnesota	State funding	11.2%
Mississippi	N/A*	9.6%
Missouri	State funding	10.5%
Montana	N/A	15.8%
Nebraska	State-specific program	15.7%
Nevada	N/A	4.8%
New Hampshire	N/A	9.9%
New Jersey	N/A	7.5%
New Mexico	N/A	9.0%
New York	N/A	7.9%
North Carolina	N/A	6.5%
North Dakota	N/A	16.8%

Table 3: State Variation in Early Head Start (Continued)

State	Type of State Support for Early Head Start Programs	Estimated % of Income-Eligible Children With Access to Early Head Start
Ohio	N/A	6.3%
Oklahoma	State funding	10.9%
Oregon	State funding, state-specific program	11.5%
Pennsylvania	EHS-CCP grantee*	9.5%
Rhode Island	N/A	14.1%
South Carolina	N/A	5.1%
South Dakota	N/A*	15.4%
Tennessee	N/A	3.8%
Texas	N/A	4.5%
Utah	N/A	8.2%
Vermont	N/A	24.6%
Virginia	N/A	6.5%
Washington	State-specific program	10.9%
West Virginia	N/A	8.6%
Wisconsin	State funding	12.5%
Wyoming	N/A	18.2%
Best State	N/A	31.0%
Worst State	N/A	3.8%
Median State	N/A	9.1%
State Count	20	N/A

State support: As of September 2, 2022. Personal communications by Prenatal-to-3 Policy Impact Center staff with Head Start Collaboration Office Directors and/or other state experts; the Office of Early Childhood Development, ACF, U.S. Dept. of Health & Human Services; and the National Head Start Association. *Data as of July 2021; data for these states were not able to be verified in 2022 data collection..

Access: 2019 Early Head Start Program Information Report and 2018-2019 American Community Survey Public-Use Microdata Sample. For additional source and calculation information, please refer to the [Methods and Sources](#) section of pn3policy.org.

How Did We Reach Our Conclusions?

Method of Review

This evidence review began with a broad search of all literature related to the policy and its impacts on child and family wellbeing during the prenatal-to-3 period. First, we identified and collected relevant peer-reviewed academic studies as well as research briefs, government reports, and working papers, using predefined search parameters, keywords, and trusted search engines. From this large body of work, we then singled out for more careful review those studies that endeavored to identify causal links between the policy and our outcomes of interest, taking into consideration characteristics such as the research designs put in place, the analytic methods used, and the relevance of the populations and outcomes studied. We then subjected this literature to an in-depth critique and chose only the most methodologically rigorous research to inform our conclusions about

policy effectiveness. All studies considered to date for this review were released on or before February 28, 2022.

Standards of Strong Causal Evidence

When conducting a policy review, we consider only the strongest studies to be part of the evidence base for accurately assessing policy effectiveness. A strong study has a sufficiently large, representative sample, has been subjected to methodologically rigorous analyses, and has a well-executed research design allowing for causal inference—in other words, it demonstrates that changes in the outcome of interest were likely caused by the policy being studied.

The study design considered most reliable for establishing causality is a randomized controlled trial (RCT), an approach in which an intervention is applied to a randomly assigned subset of people. This approach is rare in policy evaluation because policies typically affect entire populations; application of a policy only to a subset of people is ethically and logistically prohibitive under most circumstances. However, when available, RCTs are an integral part of a policy's evidence base and an invaluable resource for understanding policy effectiveness.

The strongest designs typically used for studying policy impacts are quasi-experimental designs (QEDs) and longitudinal studies with adequate controls for internal validity (for example, using statistical methods to ensure that the policy, rather than some other variable, is the most likely cause of any changes in the outcomes of interest). Our conclusions are informed largely by these types of studies, which employ sophisticated techniques to identify causal relationships between policies and outcomes. Rigorous meta-analyses with sufficient numbers of studies, when available, also inform our conclusions.

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