

# The Effectiveness of Head Start in Low-Wealth, Rural Communities: Evidence From The Family Life Project

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## Description

The federal Head Start program is the single largest provider of early childhood education programming in the U.S. Despite a wealth of evidence to indicate that Head Start participation can boost children's academic readiness for school, the Head Start Impact Study found that the favorable effect of Head Start quickly disappeared during the early elementary grades as the test scores of Head Start and non-Head Start participants began to converge as early as kindergarten (Puma et al., 2012). The "sustaining environments" hypothesis suggests that the benefits of early childhood programs like Head Start can *only* be sustained if children continue to experience high-quality educational environments in elementary school (Bailey et al., 2016).

The current study examined the effect of Head Start participation on children's language, literacy, and mathematics skills in the spring of preschool as well as the sustained effect of Head Start into the spring of kindergarten. This study also examined if the quality of children's kindergarten classroom environments contributed to the sustained effect of Head Start. These issues were examined with a sample of children born in rural communities. This focus on rural communities was important given the unique challenges and affordances of life in rural America as well as documented variation in the effectiveness of Head Start between urban and rural regions of the U.S. (McCoy et al., 2016).

## Research Questions

1. Did Head Start participation affect children's language, literacy, and mathematics skills in the spring of preschool?
2. If an initial effect was observed, was that effect sustained into the spring of kindergarten?
3. If an initial effect was observed, was the sustained effect of Head Start enhanced in higher-quality kindergarten classroom environments?

## Sample

The Family Life Project (FLP) is a prospective longitudinal study of 1,292 children born in two historically low-wealth, rural regions of the U.S. located east of the Mississippi: the southern region (indexed by three counties in Eastern North Carolina) and the Appalachian Mountains region (indexed by three counties in Central Pennsylvania; Vernon-Feagans et al., 2013). Families were recruited shortly after the birth of the child during a one-year period between the fall of 2003 and fall of 2004. The FLP continued to collect extensive information on children's developmental competencies and caregiving environments throughout childhood.

## Methods

Analyses were undertaken in three phases:

- *Phase I: Multiple Imputation Analyses.* Multiple imputation analyses were used to account for missing data on all of the analytic variables in order to retain the full sample of 1,292 children in the subsequent analyses.
- *Phase II: Propensity Score Analyses.* Propensity score analyses were conducted to estimate the probability of treatment assignment (i.e., Head Start vs. comparison group) for each study participant. Specifically, stabilized inverse probability of treatment weights (IPTWs) were estimated using logistic regression based on 26 covariates related to children's demographic/family background characteristics and developmental competencies assessed when children were 36-months of age or younger.

- *Phase III: Multi-Level Regression Analyses.* A series of multi-level regression models were used to address each of the study's research questions (RQs). Two-level regression models were estimated with children (Level-1) nested within preschool classrooms (Level-2). The regression models were weighted by the stabilized IPTWs to estimate the effect of Head Start participation at a level in which there was covariate balance between the Head Start and comparison groups. After considering the main effect of Head Start on child outcomes in the spring of preschool (RQ #1) and in the spring of kindergarten (RQ #2), interaction terms were added to the regression models in order to examine if measures of kindergarten classroom quality moderated the effect of Head Start on child outcomes in the spring of kindergarten (RQ #3).

## Results

Head Start participants outperformed the comparison group in literacy in the spring of preschool ( $\beta = 0.18$ ), and the magnitude of this effect was medium according to empirical benchmarks established for educational interventions. This favorable effect of Head Start was only sustained into the spring of kindergarten for children who subsequently experienced high-quality emotional support in kindergarten, but not average-quality or low-quality emotional support, as measured by the Classroom Assessment Scoring System (Pianta et al., 2008). The Head Start and comparison groups were found to be comparable in terms of language and mathematics skills in the spring of preschool and in the spring of kindergarten.

## Implications for policy/practice

Education stakeholders are increasingly interested in the design of policies and practices to align children's educational experiences across preschool and elementary school. Head Start's Program Performance Standards define effective teaching practices, in part, as those that "emphasize nurturing and responsive practices, interactions, and environments that foster trust and emotional security" (Administration for Children and Families, 2010, p. 26). The current study suggests that Head Start participation benefited children's literacy skill development, and that benefit was only sustained across the

transition to elementary school for children who subsequently experienced kindergarten classrooms characterized by high-quality emotional support.

Strategies should be implemented to promote emotional support quality in elementary schools, through classroom quality monitoring as well as professional development. For example, the National P-3 Center's framework for preschool through third grade alignment calls for "observations of classroom practices to assess and improve teachers' effectiveness in creating high-quality instructional, social, and emotional climates" in preschool and elementary school (Kauerz & Coffman, 2013, p. 6).

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## Acknowledgement

This study was supported by the Early Care and Education Research Scholars Grant Program, Grant Number 90YR0107-01-00, awarded to Lynne Vernon-Feagans and Robert C. Carr from the Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

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