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Do the Positive Effects of Tulsa's Head Start Program Persist Through Middle School?

Deborah A. Phillips, William T. Gormley Jr., and Sara Anderson

SUMMARY OF FINDINGS

We found enduring positive effects of a high-quality Head Start program on middle-school academic outcomes and progress. While effects diminished over time, they remained significant for several highly consequential outcomes. Tulsa's Community Action Project (CAP) Head Start participants, as compared to non-participants:

- Scored significantly *higher* on the state math achievement test in middle school;
- Demonstrated significantly *lower* rates of grade retention;
- Were significantly *less* likely to be chronically absent.

BACKGROUND

Prior Research on Head Start Impacts

Research on the school readiness impacts of Head Start gathered from the program's inception to the current day has produced both encouraging and discouraging evidence. The most recent and best available evidence from the Head Start Impact Study indicates that children who enrolled in Head Start demonstrated significant, but modest, impacts after one year. Today, however, the more pressing question is whether these short-term positive effects of Head Start on school readiness persist or dissipate over time.

Evidence on the lasting impacts of current-day Head Start programs suggests that early benefits of the program dissipate relatively quickly once children enter elementary school. Most of the immediate school readiness effects in the Head Start Impact Study diminished considerably or disappeared altogether by the end of 1st grade. By the end of 3rd grade, only two significant cognitive impacts were found: a positive impact on the ECLS-K Reading assessment for the 4-year old cohort and a negative impact on parent reports of grade promotion for the 3-year old cohort.

Nevertheless, several well-crafted, quasi-experimental studies of earlier cohorts of Head Start participants have found long-term impacts of Head Start on grade repetition, high school graduation, college attendance, and earnings.

Taken together, this research suggests that long-term academic impacts of Head Start can occur in the context of short-term test score fade-out. This pattern of results has also been found for high-intensity interventions such as the Perry Preschool and Abecedarian programs. Importantly, like Head Start, these programs served low-income children, many of them children of color. But this evidence comes from children who attended these programs in the 1960's and 1970's and cannot be assumed to reflect the Head Start of today.

Efforts to gain a deeper understanding of the circumstances under which long-term impacts emerge have included recent examinations of patterns of outcomes for subgroups. These inquiries are framed in terms of "for whom" the strongest impacts emerge and endure over time. Subgroups defined by race, gender, and extent of economic disadvantage have been examined, with some evidence that children

growing up in especially high-risk households exhibit lasting impacts on some academic outcomes.

The Tulsa CAP Head Start Program

In 1998, Oklahoma established the nation's second universal pre-kindergarten program, available to all four-year-old children irrespective of income. The program is administered by the state's school districts that provide pre-kindergarten services directly or through partnerships with other providers, such as CAP Head Start. All state-funded pre-kindergarten programs, including CAP Head Start, must maintain high quality standards as measured by specific "input" requirements: all teachers must have a B.A. degree and be early childhood certified while classrooms must have child/staff ratios of 10/1 or lower. CAP Head Start teachers are paid on the public school wage scale. CAP Head Start serves students from diverse subgroups defined by race-ethnicity and English Language Learner (ELL) status, as well as children with special needs. With the exception of the latter group, all enrollees must live at or below 100% of the federal poverty line.

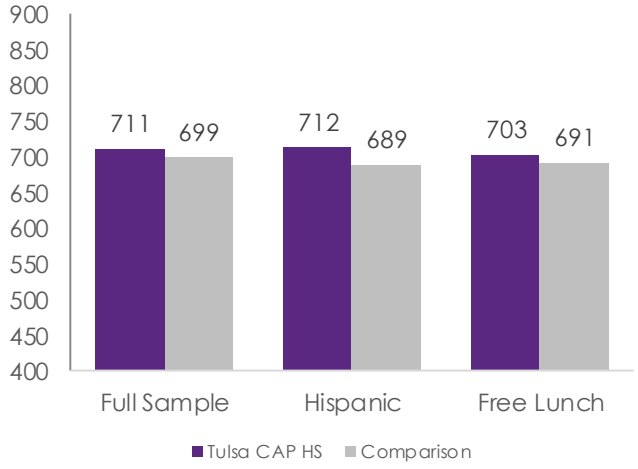
Prior results regarding effects of Tulsa CAP Head Start have been restricted to school readiness outcomes at kindergarten entry. The Head Start participants demonstrated significant school readiness impacts on pre-reading, pre-writing, and pre-mathematics subtests that translated into gains of three to five months of additional learning, indicating that CAP Head Start got its graduates off to a strong start in school.

THE PRESENT STUDY

The question addressed in this study is whether the school readiness impacts found for the CAP Head Start participants in kindergarten did or did not persist as the children progressed through school. We compared the Head Start participants (2005-06 cohort) to children who attended neither a CAP Head Start nor a school-based pre-K classroom. Most of the children in this follow-up study were in 8th grade, but we also included students who were retained in grade once and were thus 7th graders. Achievement test data reflect 7th grade test sores. Overall, state and district administrative data provided the students' academic outcomes: standardized test scores, GPA, enrollment in honors/advanced courses, gifted education classification, receipt of special education program, grade retention, days absent, and in/out of school suspension. District administrative data, parental surveys and U.S. Census data provided the covariates and subsample identifiers.

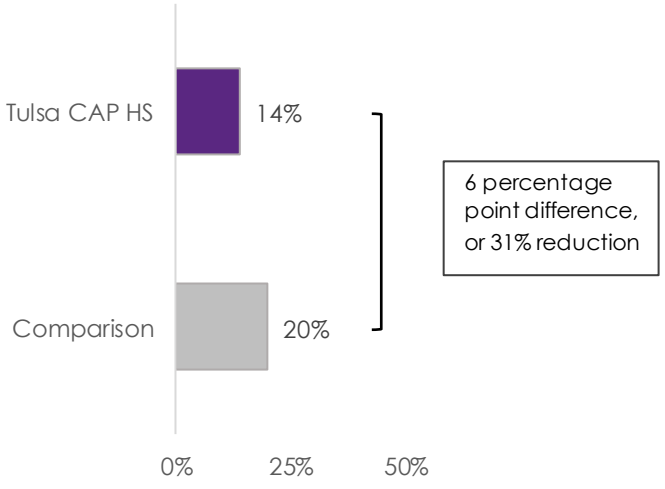
KEY FINDINGS

Figure 1: Overall, CAP Head Start participants scored higher on the state math achievement test in 7th grade, compared to those who did not participate, as did Hispanic and white participants and participants who received free lunch.



Note: Regression adjusted math test scores with covariate balance between groups

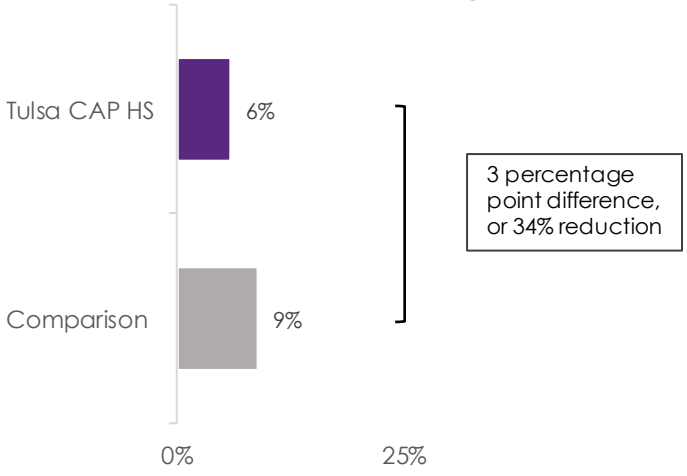
Figure 2: CAP Head Start alumni were 31% less likely to be retained prior to 8th grade.



Note. Regression adjusted grade retention with covariate balance between groups.

Subgroup analyses indicated that girls who attended Head Start, and free-lunch eligible children who attended Head Start, were significantly *less* likely to be retained in grade by 8th grade. Hispanic and ELL students who attended Head Start were marginally less likely to have been retained in grade.

Figure 3: CAP Head Start participants were 34% less likely to be chronically absent in 8th grade.



Significant subgroup effects for Head Start attendance on chronic absenteeism were found for girls, free-lunch eligible and Hispanic students.

Head Start participants fared similarly to non-Head Start participants on the following outcomes: suspensions, special education placement, course grades, reading achievement, honors course selection, and gifted program placement. Furthermore, there were no enduring impacts for boys or blacks on any of the achievement-related outcomes.

IMPLICATIONS

Ensuring that low-income children start and progress through school to their fullest potential demands attention to providing highly effective Head Start programs *and* post-Head Start classroom experiences that support continuous learning and school engagement for all children.

Each of the effects we have documented is rather modest in isolation, but together they suggest that students who participated in Tulsa's Head Start program performed better in middle school than a comparable group of students who did not participate in Head Start. The challenge for public officials is how to replicate this record of success.

Assuring That All Children Succeed

Head Start participants in Tulsa constitute a very diverse group of young children with regard to race/ethnicity. The positive impacts of the program on Hispanic, ELL, and the lowest income children offer signs of hope and affirm the importance of outreach efforts to enroll these children. That the longer-term impacts did not extend to black children -- or to boys -- is of great concern and warrants focused attention to their experiences post-Head Start in the public school system.

Enhancing Program Quality

Our research team observed and reported that the Tulsa CAP Head Start program provided higher levels of instructional support than was typical of Head Start in 2005-06. National efforts to upgrade the qualifications and professional development of Head Start teachers, assess classroom quality, and update the Head Start Performance Standards in light of new evidence on effective early education are important steps in the right direction.

Increased teacher qualifications and competencies need to be accompanied by increased compensation to assure adult well-being and stem turnover.

Adequate public school funding is crucial to providing strong professional learning and teacher support efforts post-Head Start.

Assuring Adequate Program Exposure

Attending to the dosage of young children's exposure to high-quality instruction, and efforts to sustain their attendance throughout the Head Start year and beyond offer additional promising approaches to promoting sustained outcomes.

Extending Learning Throughout the School Years

Evidence of fade-out has implications not only for early education quality, but for instruction in elementary school as well. The core challenge is one of ensuring continuous learning on behalf of all children. If teachers cover material that students already know or by-pass essential building block skills that children have not acquired, both motivation and academic progress are likely to suffer. Teachers' skill in calibrating instructional content and strategies to match individual students' learning trajectories warrants explicit attention in professional learning efforts, and may play a critical role in sustained or diminished pre-K impacts.

CONCLUSION

With the nation's attention now turned to preschool education, it is essential to make the investments necessary to ensure that the initial impacts of Head Start are sufficiently robust to launch children along a promising path into elementary school and beyond. The Tulsa CAP Head Start program produced significant and consequential effects on several, but not all, outcomes and for many, but not all, students into the middle-school years.

Sustained impacts also depend upon efforts at every grade level to ensure that all children receive the educational experiences they need for on-going growth, learning, and engagement in school.

DATA AND METHODS

Our sample consists of 8th grade students and once-retained 7th grade students who started kindergarten in Tulsa Public Schools in the fall of 2006. We define Head Start participation from 2006 TPS administrative records based on enrollment in 2005-06 and on having attended Head Start for at least 50% of the academic year to capture a reasonable treatment exposure.

The analytic sample for this study was 1,774 students (357 of whom attended CAP Head Start as 4-year-olds, and the remaining 1,417 were considered the comparison sample). Of these 1,774 students, 1,278 enrolled in a TPS middle school (277 of whom attended CAP Head Start), and the remaining 1,001 were the comparison group.

Five indicators of school achievement and six measures of school progress constitute the outcomes for this study. The school achievement outcomes are: State standardized test scores (Oklahoma Core Curriculum Test [OCCT]) in (1) math and (2) reading/language arts, (3) Grade Point Average, (4) whether or not the student took any honors-level courses, and (5) whether or not the student was designated as gifted and talented.

School progress was measured by whether or not the student was designated as (1) currently receiving special education services, (2) whether or not he or she had been retained in grade, (3) number of days absent during the 2013-14 school year, (4) whether or not the student had been chronically absent (or, absent more than 10% of the school year), and whether or not the student had been suspended in (5) or out (6) of school.

Given the absence of an experimental design and the current examination of long-term outcomes, we took advantage of naturally occurring differences in children's enrollment in Head Start and employed propensity score estimation to balance treatment and comparison groups on observable covariates (e.g., school lunch status, race/ethnicity, maternal education and marital status, neighborhood median). Accordingly, we estimated the difference in Head Start effects between children who did and did not participate in Head Start, taking into account observable characteristics obtained from the parent questionnaire and the 2006 school administrative data. We used boosted regression modeling techniques to estimate the propensity scores. We then used multiple regression with elementary school fixed effects, with weights and covariates as additional controls.

FURTHER READING

Our Papers

Gormley, W., Phillips, E., Adelstein, S., & Shaw, C. (2010). Head Start's comparative advantage: Myth or reality? *Policy Studies Journal*, *38(3),* 397-418.

Gormley, W. T., Phillips, D., & Gayer, T. (2008). Preschool programs can boost school readiness. *Science*, *320(5884),* 1723-1724.

Phillips, D., Gormley, W., & Anderson, S. (2016). The effects of Tulsa's CAP Head Start program on middle-school academic outcomes and progress. *Developmental Psychology*, 52(8), 1247-1261.

Phillips, D. A., Gormley, W. T., & Lowenstein, A. E. (2009). Inside the pre-kindergarten door: Classroom climate and instructional time allocation in Tulsa's pre-K programs. *Early Childhood Research Quarterly, 24(3),* 213-228.

Related Work

Cooper, B.R., & Lanza, S.T. (2014). Who benefits most from Head Start? Using latent class moderation to examine differential treatment effects. *Child Development, 85*, 2317-2338.

Puma, M., Bell, S., Cook, R., Heid, C., Broene, P., Jenkins, F., … Downer, J. (2012). *Third grade follow-up to the Head Start impact study: Final report*. OPRE Report 2012-45. Washington, D.C.: Administration for Children & Families.

Puma, M., Bell, S., Cook, R., Heid, C., Shapiro, G., Broene, P., … Friedman, J. (2010). *Head Start impact study: Final report.* Washington, D.C.: Administration for Children & Families.

Zhai, F., Brooks-Gunn, J., & Waldfogel, J. (2011). Head Start and urban children's school readiness: A birth cohort study in 18 cities. *Developmental Psychology, 47(1)*, 134-152.

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About Us

Deborah Phillips, Professor of Psychology, Georgetown University; William Gormley, Professor of Public Policy, Georgetown University; and Sara Anderson, Assistant Professor, Learning Sciences and Human Development, West Virginia University.

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