



JEOC REVIEW

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The Chicago Child-Parent Centers program: Pre K treatment and educational attainment

Subject paper. Reynolds, A. J., Suh-Ruu Ou, & J. A. Temple (2018). *A Multicomponent, Preschool to Third Grade Preventive Intervention and Educational Attainment at 35 Years of Age*. JAMA Pediatrics, 29 January 2018.

Reported Findings. “Preschool participants had higher rates of postsecondary degree completion, including associate’s degree or higher, master’s degree, and years of education. Duration of participation showed a consistent linear association with outcomes. Compared with fewer years, preschool to second or third grade participation led to higher rates of associate’s degree or higher, bachelor’s degree, and master’s degree or higher. The pattern of benefits was robust and favored male participants for high school graduation, female participants for college attainment, and those from lower-educated households.” [edited from Reynolds, et al. (2018) to simplify]

Nature of treatment. The Child-Parent Centers program began in 1967 and continues to present as a program allied with public schools in high poverty neighborhoods. Provides: (1) Comprehensive services for children and families, (2) A transition into grade school, and (3) Substantial follow through that might encompass six years per child (through 3rd grade).

The functional principles include early intervention, fostering of cognitive and scholastic growth, and use of parent participation to sustain and reinforce gains. Parents of preschool students are required to participate in training for one hour per week at the centers. The centers are either housed within the school or on the same block as the school. In addition to the required parental participation, the program also features as many as six years of treatment through third grade to provide continuity, a dedicated staff including non-teaching teachers as administrators, a developed set of activities and experiences, and provision for health and nutrition services.

Distinguishing features of the program include the mandatory parental involvement in preschool years (and encouraged through grade 3), continuity of services up through grade 3, summer programming, and inclusion of health services. While a contemporary beginning with Head Start, Child-Parent Centers were always staffed by certified teachers and were not co-opted into being a local jobs program. Preschool is federally funded including nutrition funding (under a variety of federal laws). While instruction in grades 1 through 3 is specially funded, non-instruction services (e.g. meals and health care) still tap federal funds.

Longitudinal study. The treatment has been the subject of longitudinal study using a “matched” quasi-experiment design. While longitudinal studies are rare, the reader is cautioned that matched designs are considered inferior to random assignment and matching on demographics alone can be far less predictive than matching on more specific variables.¹ That said, longitudinal analysis is extremely important when the benefits of an educational treatment may not be manifest until a decade or two has passed. Further, unlike studies of the popularly cited Abecedarian and Perry Preschool programs, the Chicago Child-Parent Center program (CCPC) has been

¹ For example, demographic matching resulted in less than 15% of variance explained when predicting grade 5 OST Science test results. Using prior year test scores in reading and mathematics increased the prediction to nearly 60%.

implemented at scale and in continuous operation. While the study is for a particular cohort, the cohort was more than a decade removed from the founding efforts for the program, the study includes a far larger cohort than Perry Preschool or Abecedarian, and the cohort in the study tapped multiple treatment sites.

Variables under study. The primary variables of interest are educational attainment spanning early dropout (before age 16) to obtaining a Master's degree. The study examined education outcomes of around 1,400 students as either participants or controls. As is typical of this type of study, the control groups may have also had some preschool treatment but the data show the control group generally did not participate in any preschool. Table 2 in the original report shows the treated group in the study to be initially more than nine hundred in count and equally divided between males and females as well as more than ninety percent black. The control group was initially nearly 500 in count and the report shows tests of statistically significant differences for gender, race, risk factors, parent educational attainment and several other factors that might be thought to influence the program outcomes beyond the program treatments. There were no statistically significant differences in these matching variables except for the portion with a child welfare history and the portion of mothers completing high school; both differences seem small. Strict partitioning of the control group from receiving some of the treatment once the children became school age was not possible. However, the treated group was participating in the treatment in continuity until either end of preschool, partially through the school years or until program completion following grade 3. The data suggest that partial completion participants were reverted to control group status when exiting the treatment group prior to terminus at the end of third grade. This makes the study robust and tests the benefits of the program in grades K through three.

Findings. Table 3 shows the treated program completers to be more likely to graduate high school, to graduate on time, and to attend college. The largest difference was for on-time high school graduation (48.5% compared to 34.7%). There were no statistically significant differences in the propensity to dropout prior to age 16 or to obtain a college degree. Program completers through third grade tended to be more educationally successful than those who exited the program part way through.

Discussion. A major concern in this study is the mechanism that produces these results. It is plausible that securing the participation of parents is filtering program participants toward families that value education. Would the students of the participating families be more likely to graduate on-time even without the treatment? Along that line of thinking, the content of the treatments might be less important than securing the commitment and reinforcing the commitment to one's child's education.

The failure to see higher education or college success among the treated students (compared to the control) might be caused by several factors including students that graduate from high school on time are probably better able to commence meaningful employment that competes with college completion.

The CCPC program funding seems to be supported by a patchwork of federal programs woven together along with some non-federal monies. It is challenging to see how a local district could be legislatively provoked into replicating the features of a program like this unless there is a local commitment to doing a good job in operating the program. Yale's Ed Zigler, involved with Head Start at the beginning, describes the co-opting of Head Start at the local level as a local jobs program that served children instead of as the education and health services program Head Start was intended to be.

Table 3. Adjusted Rates of Educational Attainment by Preschool, School-aged, and Extended-Intervention Group Status^a

Educational Outcomes by 35 Years of Age	Preschool Groups			School-aged Groups			Extended Intervention Groups ^b		
	Intervention (n = 904)	Comparison (n = 494)	Difference (95% CI)	Intervention (n = 776)	Comparison (n = 622)	Difference (95% CI)	Intervention (n = 514)	Comparison (n = 884)	Difference (95% CI)
Dropout by 16 y of age	11.2	13.9	-2.7 (-6.8 to 1.3)	12.4	11.6	0.8 (-2.2 to 3.8)	11.6	12.6	-1.0 (-5.2 to 3.1)
4-y High school graduation	51.0	44.0	7.0 (1.4 to 12.6) ^c	49.1	46.3	2.8 (-4.4 to 10.0)	55.3	44.7	10.6 (3.4 to 17.8) ^c
On-time high school graduation	42.1	34.3	7.8 (2.5 to 13.1) ^c	42.3	35.1	7.2 (0.8 to 13.6) ^c	48.5	34.7	13.8 (6.0 to 21.6) ^c
High school completion	86.9	80.7	6.2 (0.9 to 11.6) ^c	85.2	83.5	1.7 (-2.5 to 5.9)	87.3	82.8	4.5 (1.3 to 7.8) ^c
High school graduation	56.0	50.5	5.5 (0.3 to 10.8) ^c	53.7	52.4	1.3 (-6.3 to 8.9)	59.6	50.4	9.2 (2.3 to 16.0) ^c
Years of education	12.81	12.32	0.49 (0.20 to 0.77) ^c	12.65	12.55	0.1 (-0.14 to 0.33) ^c	12.95	12.45	0.5 (0.17 to 0.84) ^c
College attendance	61.2	53.1	8.1 (0.8 to 15.4) ^c	59.4	56.5	2.9 (-3.1 to 9.0)	63.2	55.8	7.4 (1.4 to 13.4) ^c
4-y College attendance	29.3	21.4	7.9 (1.9 to 14)	25.6	26.0	-0.4 (-7.1 to 6.4)	31.4	24.0	7.4 (0.4 to 14.4)
Associates' degree or higher	15.7	10.7	5.0 (1.0 to 9.0)	14.2	13.4	0.8 (-3.8 to 5.3)	18.5	12.5	6.0 (1.0 to 11.0)
Bachelor's degree or higher	11.0	7.8	3.2 (-0.3 to 6.7)	10.8	8.7	2.1 (-1.8 to 6.0)	14.3	8.2	6.1 (1.3 to 10.9)
Master's degree or higher	4.2	1.5	2.7 (1.3 to 4.1)	3.8	2.3	1.5 (-0.5 to 3.4)	5.9	2.3	3.6 (1.4 to 5.9)
Postsecondary credential	18.3	17.2	4.1 (-1.1 to 9.3)	20.4	19.2	1.2 (-4.4 to 6.7)	25.0	18.1	6.9 (0.9 to 12.9)

^a Data are percentage of individuals unless otherwise indicated. Adjusted with inverse probability weighting for program selection and attrition. Comparisons for other extended intervention groups showed a similar pattern. Child welfare history by 4 years of age was not included in the models of bachelor's degree and master's degree or higher because it predicted the outcomes. A total of 57 individuals (4%) reported having a master's degree or higher. The extended intervention model was estimated separately from the preschool and school-aged model.

^b Extended intervention was 4 to 6 years; comparison, less than 4 years.

^c The 95% CI does not include zero

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