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School Performance in Third Grade After a Full-Day versus Part-Day Preschool Program

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Preschool improves educational outcomes and well-being, especially for economically disadvantaged children.¹ Most evidence is from part-day programs. Whether full-day preschool (FDP) promotes sustained learning gains has rarely been tested, despite its expansion in recent years.² The Child-Parent Center (CPC) program began in 1967 and was designed to promote children's school success. In a previous article, FDP compared with part-day preschool (PDP) in Chicago's CPCs was associated with greater readiness skills in 4 of 6 domains at the end of the year.³

To assess whether associated gains were sustained, we conducted a follow-up through 3rd grade, analyzing achievement scores and need for remediation.

Methods

The Midwest CPC (MCPC), an expansion of the CPCs to economically diverse communities in 4 Illinois and Minnesota districts, provides enriched services in 6 core components: effective learning experiences, family engagement, aligned curriculum, professional development, continuity and stability, and collaborative leadership (Supplement).⁴

This study includes the Chicago cohort of MCPC, which has tracked a nonrandomized group of 2630 economically-disadvantaged children since 2012-2013.⁴ As previously,³ we focused on 3- and 4-year-olds in 11 of the 16 Chicago CPCs offering FDP and PDP. Mean class sizes were 18.1 (FDP) and 16.0 (PDP), with FDP 7 hours per day vs 3 for PDP.³ The study was approved by review boards of the University of Minnesota and districts. Informed consent was written and oral.

Third grade follow up was conducted through 2017-2018, and 4 outcomes from school records included: (1) English/Language Arts (ELA) scores and proficiency and (2) Math scores and proficiency on the state Partnership for Assessment of Readiness for College and Careers test in 3rd grade (PARCC; range, 650-850; proficiency defined as Level ≥ 4 [5 levels])⁵, and (3) grade retention and (4) special education placement through third grade. CPC groups were equivalent at baseline (fall 2012) in preschool entry school readiness skills and family characteristics (Appendix).

Data were analyzed using generalized estimating equations (SPSS, v29) with school-level clustering, adjusted for 13 covariates (e.g., baseline skills, race/ethnicity; Supplement) and attrition,

via inverse propensity score weighting. Statistical significance was defined as $P < .05$ (2-tailed). Standardized mean differences (SMDs) were reported for outcomes (dichotomies converted via probit transformation) to allow comparison across measures and studies. Differences of >0.2 were defined as practically significant.^{3,4} Sensitivity analyses were conducted for children $<130\%$ poverty level. Interactions with implementation quality, measured by center ratings of collaborative leadership (high [≥ 4] vs lower [< 4]; 5-point scale) were tested for all outcomes.

Results

At follow up, 88.3% (361 of 409) and 89.5% (513 of 573) of FDP and PDP groups were enrolled in the district with available outcomes. Demographic characteristics in the cohort (mean age, 8.8y; Black, 91.9%; Hispanic, 7.3%) were similar to the original sample.³ FDP was associated with higher ELA scores compared with PDP (725.0 vs 716.1, difference, 8.9; 95% CI, 1.6-16.2, $p = .02$; SMD, .24) and higher ELA proficiency (38.3% vs. 26.8%, difference, 11.5%; 95% CI, 0.9-22.2; $p = .03$; SMD, .32, Table). FDP, compared with PDP, was associated with higher math scores (725.5 vs 719.3, difference, 6.2; 95% CI, 0.2, 12.2, $p = .04$; SMD, 0.20). Math proficiency reached practical but not statistical significance (25% vs. 17.4%, difference, 7.6%; 95% CI, -0.1-15.4; $p = .055$; SMD, 0.27).

FDP was associated with lower percentages of grade retention vs PDP (3.0% vs. 9.1%, difference, -6.1%; 95% CI = -11.1, -1.1; $p = .02$; SMD = -0.54), but not special education placement. Group differences among low-income children were similar to the overall sample (Table). The implementation quality by FDP status interaction P value was significant only for ELA proficiency ($P = .044$). FDP vs PDP was more strongly associated with ELA proficiency in centers with high implementation quality (39.6% vs 20.3%; difference = 19.3; 95% CI, 14.5-24.1; SMD = .59) vs low implementation quality (27.2% vs 21.0%, difference = 6.2%; 95% CI, -0.4-12.8; SMD = .19).

Discussion

This study found that an evidence-based preschool program implemented full-day vs part-day was associated with sustained achievement gains and reduced grade retention. Full-day preschool may be preferable to part-day preschool, especially among children in economically disadvantaged communities.^{1,6} Gains may be due to increased learning time.³ The individual components of CPCs warrant broader investigation. Study limitations include unknown generalizability beyond Chicago or to other programs.

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Study concept and design: Reynolds, Ou

Acquisition, analysis, and interpretation of data: Reynolds, Ou, Smerillo

Drafting of the manuscript: Reynolds, Smerillo, Loveman-Brown, Ou

Critical revision of the manuscript for important intellectual content: Reynolds, Ou, Varshney, Loveman-Brown

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The data reported in this paper and supplemental materials are available at the journal website and at [url://hrcr.umn.edu](http://hrcr.umn.edu).

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Table. Means, Rates, and Group Differences in Percentages for 3rd Grade Outcomes in Midwest Child-Parent Center (CPC) Full-Day (FDP) versus Part-Day (PDP) Preschool Adjusted for Baseline Attributes and Inverse Propensity Weighting (IPW) Attrition

Outcome/Sample group	CPC Full-Day vs. Part-Day				Stand. mean diff.
	FDP n=361	PDP n=513	Difference (95% CI)	P value	
Total sample (N = 874)					
English/Language Arts PARCC achievement	725.0	716.1	8.9 (1.6, 16.2)*	.02	0.24
Proficient (%)	38.3	26.8	11.5 (0.9, 22.2)*	.03	0.32
Math PARCC achievement	725.5	719.3	6.2 (0.2, 12.2)	.04	0.20
Proficient (%)	25.0	17.4	7.6 (-0.1, 15.4) [†]	.055	0.27
Special education placement (%)	11.4	9.8	1.6 (-5.5, 8.7)	.66	0.06
Grade retention (%)	3.0	9.1	-6.1 (-11.1, -1.1)*	.02	-0.54
Family income < 130% poverty level (N= 798)					
English/Language Arts PARCC achievement	726.1	716.1	10.0 (3.4, 16.5)*	<.01	0.29
Proficient (%)	37.8	24.8	13.0 (3.1, 22.9)*	.01	0.37
Math PARCC achievement	728.5	724.7	7.2 (1.7, 12.5)*	.01	0.25
Proficient (%)	24.2	15.6	8.6 (1.7, 15.5)*	.02	0.31
Special education placement (%)	12.4	10.1	2.3 (-5.3, 9.9)	.56	0.12
Grade retention (%)	3.2	9.5	-6.3 (-11.9, -0.6)*	.03	-0.56

Note. *Confidence interval does not include 0 ($p < .05$; two-tailed). [†] $p < .10$. Values are adjusted for 13 baseline covariates (Supplement) and attrition. Standardized differences for the continuous achievement outcomes are based on the within-group standard deviation for the total sample. For the dichotomous outcomes, coefficients from the generalized estimating equations were converted to standardized differences via the probit transformation of percentages. Proficiency is defined by performance in the top two categories (4 or 5 out of 5 levels; score ≥ 750) on the Partnership for Assessment of Readiness for College and Careers (PARCC) Estimates are based on the total cohort sample with dichotomous contrast codes but excluding the 5 sites not offering FDP ($n = 742$). A total of 874 children (FDP & PDP) had valid values for ≥ 1 outcomes (range, 786-874). Original sample sizes were 409 and 573, respectively. Total sample sizes for low-income family status ranged from 722 to 798. The maximum FDP and PDP sample sizes were, respectively, 323 and 475. Implementation quality was assessed for subgroup differences.

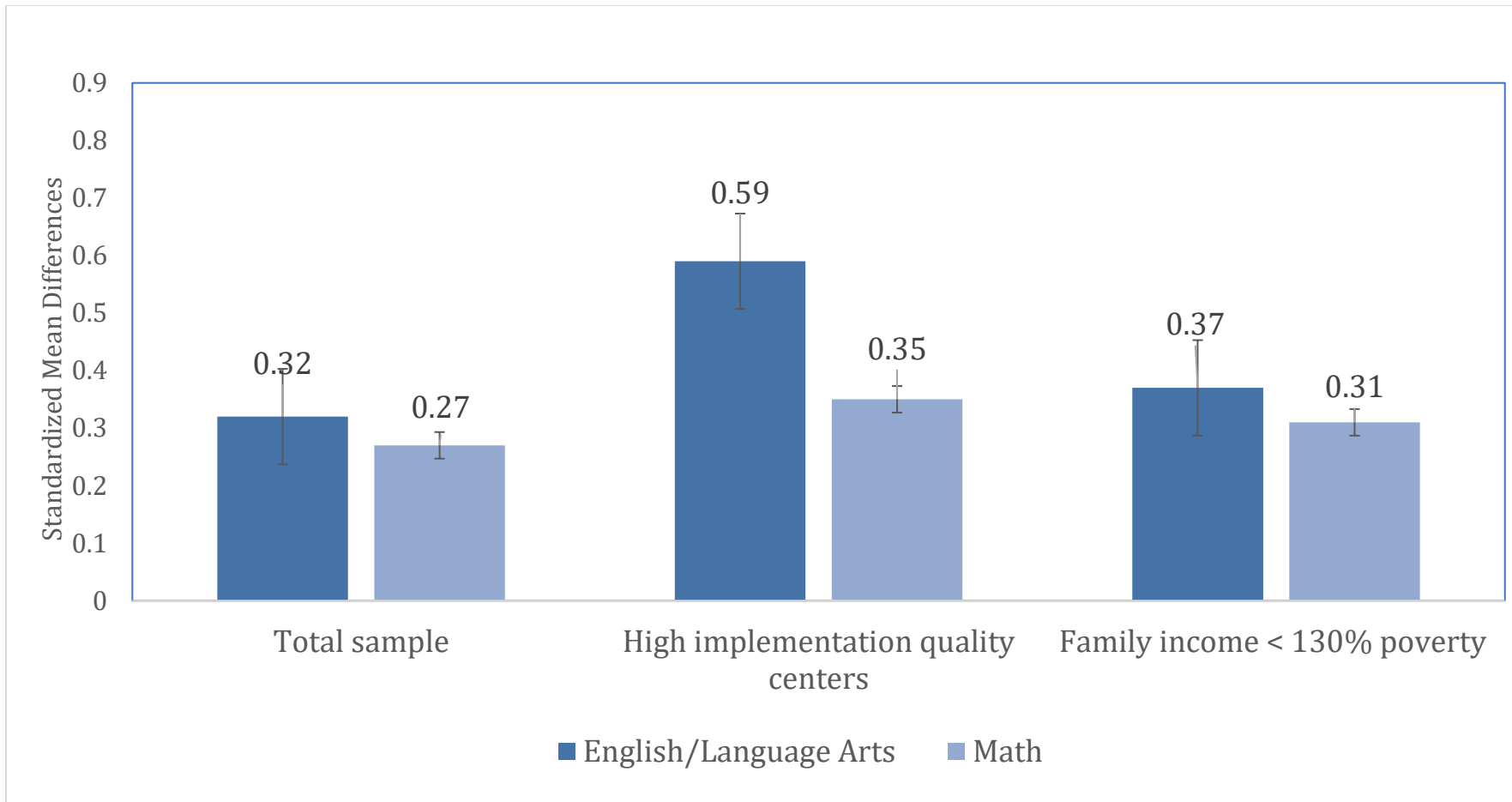


Figure. *Standardized Mean Differences for 3rd Grade English/Language Arts Proficiency and Math Proficiency by CPC Full-Day vs Part-Day Preschool Status.* Values are from the probit transformation of marginal means (percentages) between groups on PARCC (Partnership for Assessment of Readiness for College and Careers), adjusted for 13 baseline characteristics and attrition via inverse propensity score weighting (Supplement; sample sizes = 786 to 874). Estimates are from logit regression in generalized estimating equations with school-level clustering. Implementation quality measured by ratings on collaborative leadership over first two years of program (≥ 4.0 [high] versus < 4.0 [low], 1 to 5 scale; Supplement). The sample size for the high implementation quality group was 561. Family income < 130% poverty is based on the federal poverty level adjusted for family size (sample sizes = 738-786). Math proficiency in both the total sample ($p = .055$) and for high implementation quality interaction test ($p = .12$) was not significant (two-tailed). All values exceed the threshold for practical significance (≥ 0.20).

Appendix: Midwest Child-Parent Center (CPC) Expansion Group Equivalence at 3rd Grade Follow-Up for Full-Day (FDP), Part-Day (PDP), and Comparison Contrasts

<i>Child and Family Characteristics</i>	<i>Full-day PreK group (n = 361)</i>	<i>Part-day PreK group (n=513)</i>	<i>P-value</i>	<i>FDP vs. Compar. (n=1520) P-value</i>
Female child, (%)	53.6	50.2	.34	0.26
Black, (%)	88.2	94.4	.01	<.01
Age in months on Sept. 1, 2012 (mean)	50.1 (5.4)	46.6 (6.5)	<.01	.70
4-year-old at start (%)	75.3	43.3	<.01	.68
4-year-old, 3-year-old mean; full-day by age group mean difference	53.3, 41.4	52.9, 41.6	.26	.73
Special education status (IEP), (%)	6.5	4.2	.16	.51
Mother completed high school, (%)	79.8	76.0	.48	.32
Eligible for fully subsidized meals (%)	88.2	92.1	.09	.40
Single parent family status (%)	63.8	67.9	.33	.60
Mother employed full-time (%)	29.3	31.9	.53	.29
Attended a school with high percentage of students meeting 3 rd grade reading norms (%)	15.1	36.1	<.01	<.01
Fall preschool baseline school readiness total score, Teaching Strategies GOLD (mean, SD)	192.8 (53.8)	187.1 (61.0)	.12	.29
Fall preschool baseline readiness assessed after October (%)	47.4	48.7	.73	.15
Low-income students in school (mean, SD)	93.4 (5.9)	93.5 (5.4)	.09	.07
Sample retention, 3 rd grade outcomes (%)	89.3%	88.5%	.30	.051
Selective attrition, fall baseline total score (in sample vs out, mean diff.)	13.7	3.1	.18	.06

Note. Follow-up sample was active in the district for any of the years 2015-2016 through 2017-2018 and had valid values for at least one outcome (English/literacy & math test scores, special education placement, and grade retention). Baseline indicators were measured at the beginning of the preschool year, 2012-2013 or closely to time of program enrollment and are adjusted for baseline school readiness skills (fall 2012). School readiness skills is the Teaching Strategies Gold age-adjusted composite score (literacy, language, math, socio-emotional, cognitive, math, and physical). Reading norm was set at 70% or more of 3rd grade students. Mother's employment, education, and single-parent status are from the Year 1 parent survey without imputation. Original baseline sample values for 982 children in 11 schools offering FDP (not shown) are very similar to 3rd grade follow-up. Sample sizes at baseline were as follows: CPC full-day (409), CPC part-day (573), and nonCPC comparison group (906) in other district PDP (Head Start or State of Illinois PreK). The latter provides a reference comparison with the typical program experiences in the district.

Supplemental Online Content

Reynolds AJ, Smerillo NE, Ou SR, Loveman-Brown M, Varshney N. School performance in third grade after a full-day vs part-day preschool program. *JAMA*. doi:10.1001/jama.2023.20010

eAppendix. Study Sample and Background for the Midwest Child-Parent Centers

eReferences

eTable. Midwest Child-Parent Center (CPC) Program Core Elements and Implementation

This supplemental material has been provided by the authors to give readers additional information about their work.

eAppendix. Study Sample and Background for the Midwest Child-Parent Centers

The study includes the Chicago cohort of the larger Midwest Child-Parent Center (MCPC) Expansion Program, Preschool to Third Grade. Comprising over 70% of the total program sample in four districts, the Chicago Public Schools is the only one that offered full-day preschool the first year in 2012-2013. The study background, rationale, sample selection, and data collection procedures are described elsewhere.¹⁻⁵ Whether full-day preschool promotes sustained gains over time has rarely been investigated, with existing evidence mixed and lacking in tests of high-quality programs.⁶

In the present analysis, we reported findings for 874 of the 982 (89%) children from the original baseline sample and study report¹ who were enrolled in Chicago schools during any of the three-year period from 2015-2016 through 2017-2018. The latter was the third grade year for the younger children. Included children had available outcome data for one or more of the four school performance measures. They enrolled in 11 of the 16 CPC schools and attended full-day (FDP) or part-day (PDP) classes. This sample is part of the Chicago cohort (2630 children in 30 schools). In addition to our main sample of 982, children attended Child-Parent Centers (CPC) in five schools not offering FDP (n = 742) and the matched comparison group (n = 906) enrolled in other district PDP (Head Start or State Prek). Sample retention was similar across the groups. The follow up sample included 373 3-year-olds and 501 4-year-olds from the original fall 2012 cohort.

As with the original sample at the beginning of the study (Table 2, p. 2130),¹ FDP and PDP groups at follow up were equivalent on school readiness skills and family demographics. The FDP sample was more likely to be in schools with lower levels of schoolwide achievement. Associations between FDP status and third grade outcomes were similar by age group.

As described previously,^{1,2} while there were no administrative or quality differences between schools offering and not offering FDP, our focus has the advantage of examining outcomes within the same school learning environments. Principals used three criteria for enrollment in full-day classrooms: children were 4-year-olds; parent preferences due to employment, education, or transportation barriers; and educational need. There was no hierarchy among these. Although children in FDP were more likely to be 4-year-olds, no differences in age-adjusted baseline school readiness were detected. Moreover, no selective attrition by age group occurred on baseline school readiness. Because of the accumulated positive evidence for preschool programs, especially for CPCs, a randomized design would have been unethical and led to crossover contamination.¹⁻³

We note a number of events and circumstances that affected implementation quality and likely led to conservative bias in group differences. These were as follows: (a) a one-week teacher strike in September 2012 disrupted school time, (b) early childhood leadership transitions due to retirements reduced efficiency in program start up and organization, (c) enrollment in some schools continued to January 2013, the cut-off date for inclusion in the study sample, (d) family outreach staff went to a full-time schedule in the first half of the year due to work demands, and, most importantly, (e) City of Chicago initiated a school action process midway through the first year that led to the closure or restructuring of 50 schools, many of which were elementary schools of CPCs. For the analysis, a dichotomous variable was included for enrollment in schools identified for school action.

Program Description

MCPC is a scale up of the original CPC program, which was established in 1967 through funding from Title I of the landmark Elementary and Secondary Education Act of 1965. The program was designed to promote children's school success and well-being from preschool through 3rd grade and beyond.^{3,5} Recent expansions have served more economically diverse communities. The six core elements of the Midwest Expansion CPC implemented in the current study are summarized in eTable along with implementation. The distinguishing characteristics of CPC are the collaborative leadership teams in each school, small classes (≤ 17), a comprehensive family program, and aligned service from preschool to 3rd grade. MCPC findings have been reported for implementation, impact, and implications for scaling.^{3,7-11} Our focus in this study is the preschool component and FDP participation.

Outcome Measures

Partnership for Assessment of Readiness for College and Careers (PARCC) Math and English Language Arts/Literacy Scores. The PARCC is a state-level assessment administered to children in grades 3-8.¹² The PARCC exams consist of two components: English/language arts (ELA) and math. PARCC scores are assigned based on performance levels. The scale score range for both tests is from 650 to 850. Students receive marks between Levels 1 to 5, with Levels 4 and 5 (score of 750 or above) indicating that students are meeting expectations for the next grade and for college readiness (Level 4) or exceeding expectations (Level 5). To assess proficiency, students who received a 4 or 5 on their assessment were coded 1, and students who scored 3 or below (approaching expectations, partially meeting, or did not meet) were coded 0. A small number of scores were imputed using the expectation maximization (EM) algorithm. For math, reliability for Chicago in spring 2017 ranged from .856 to .929 depending on mode (paper versus computer). For ELA, reliability ranged from .899 to .936. The test was administered in the spring of 2017 (3rd grade, 3-year-olds) and spring 2018 (3rd grade, 4-year-olds).

Special education services, kindergarten through third grade. Receipt of special education services was based on yearly school district records. If a child received special education services for a diagnosis other than autism, traumatic brain injury, or vision and hearing impairment between kindergarten and third grade, they were coded 1. Otherwise, they were coded 0. In some cases, the special education classification in PARCC data was used if children were missing the district indicator.

Grade retention. Based on school records, students who repeated a grade from kindergarten through 3rd grade were coded 1. Those at the expected grade level at 4th grade were coded 0.

Program Indicators and Covariates

CPC Full-day preschool (FDP). If a child attended the preschool program the entire school day (7 hours, 5 days per week), they were coded 1. Those attending part-day preschool (3 hours, 5 days per week) in the same 11 schools were coded 0. Although not a focus, the nonCPC comparison group attended part-day district programs, either State of Illinois Prekindergarten or Head Start.

Age of enrollment in preschool, fall 2012. Children's age on September 1, 2012 was calculated from the individual's birthdate. The age was calculated in years and retained two decimal places to provide variation, rather than rounding to the nearest year. A dichotomous indicator was whether children began the year as a three-year-olds versus four-year-olds. This was used in analysis.

Female. For this variable, if the district reported the child's gender as female, they were coded 1. Males were coded 0. No additional gender categories were provided by the district.

Race and ethnicity variables. Race was measured from school district records, and was originally parent-reported. We used a single dichotomous variable for Black children ("African American" in records) versus all other races/ethnicities. Since nearly all other children were Hispanic/Latino, those coded 0 denoted this group and a separate ethnicity variable was redundant.

Eligibility for fully subsidized lunch program. As a measure of family income at baseline, the district reported whether the child was eligible for fully subsidized lunches funded by the U. S. Department of Agriculture. This is set at 130% of the federal poverty line or below. All others, including those eligible for reduced subsidies or not eligible, were coded 0. Values for a few children were imputed.

Mother's educational attainment. During the baseline year (2012-2013), parents reported through survey/interview educational attainment status. We used a dichotomous variable for high school graduation or equivalent and beyond versus less than high school graduation. Missing survey respondents were imputed by the EM algorithm.

Preschool school readiness skills. We used school district records on the Teaching Strategies GOLD (TS GOLD) performance assessment as the measure of baseline school readiness skills. Administered in fall 2012, these teacher ratings of children's mastery of skills cover 6 domains of development (cognitive, literacy, oral language, math, physical health, and socio-emotional) and include 49 items. Three domains (social studies, science, and art) not widely rated across sites were excluded. Teachers observe children's behaviors and performance for 4-6 weeks prior to assessing mastery with each item rated from 0 to 9 (not meeting objective to full mastery of objective). Ratings are made in fall, winter, and spring. As with the prior study,¹ we used the total raw score covering all domains with

imputation (mean = 190.7, SD = 61; range 10-391). The assessment demonstrates high reliability and validity in measuring school readiness and, unlike most standardized assessments, is aligned to state learning and development standards.¹ Further information on the background and measurement of TS GOLD is available.^{1,2,11}

Timing of preschool school readiness assessment. Because the date of assessment (scoring) for TS GOLD may affect gain scores over time, we included a dichotomous variable indicating whether scores were assigned after October 31, 2012 (1) or before this date (0). This is consistent with the prior study.

Special education status, baseline. If a child was receiving special education services at baseline for a diagnosis other than autism or traumatic brain injury, they were coded 1, otherwise they were coded as 0. For the analysis, fall baseline school readiness was used in lieu of this status.

Child attended MCPC program in study years 2 through 5. If a child attended an MCPC program in any of years 2 through 5, they were coded 1. If they did not attend the program during these years, they were coded 0. This enables assessment of the value added by FDP above and beyond later program participation.

School was identified for potential closure or restructuring in Year 1. School sites identified for school action by the district were coded 1 and 0 otherwise. The process that occurred led to the closure or restructuring of 50 schools. Even if schools remained open after Year 1, the time-consuming process of the school actions disrupted children's educational experiences.

School-level reading achievement proficiency. The percentage of 3rd graders performing at/above grade level norms on state assessments in 2011-2012 was included as a baseline measure of school quality. A dichotomous indicator denoted whether $\geq 70\%$ were at this norm.

School poverty status. This was the percentage of children schoolwide at baseline who resided in low-income families defined at 185% of the federal poverty line.

School size. This structural factor is the number of children in each CPC at baseline (Year 1).

Implementation quality (fidelity). The quality of program implementation was measured as a function of how well the collaborative leadership team in each school (Head Teacher working with the principal and family support team) supported and executed the CPC requirements and guidelines.^{3,5} Based on observations, interviews, and reviews of records, ratings ranged from 1 to 5 (low, few requirements met to high, nearly all requirement met). Average ratings of ≥ 4 over the first two years were coded as high implementation quality (1) versus lower quality (0; average ratings < 4.0). A rating of 4 is a relatively high threshold, signifying strong implementation and leadership in the program. This measure was used to assess subgroup differences as in "effect" modification.

Methods and Analysis

Similar to the previous study, we used generalized estimating equations (GEE) for analysis.¹³ This is a population-based, marginal means model using maximum likelihood (quasi-likelihood for binary outcomes) estimation with clustering of standard errors at the school level. The approach is generally robust to model misspecification of the working correlation matrix of error terms and input variables.¹³ GEE linear regression was used for the continuous achievement outcomes and logit regression (binomial model with logit link function) estimated using the full log quasi-likelihood function for the dichotomous outcomes. The working correlation matrix structure was exchangeable, meaning equal correlation of observations within schools. Coefficients from the logit regression model were converted to marginal means and differences using the probit transformation.¹⁴ We used 13 baseline covariates in the models. Standardized mean differences were calculated from the within-group standard deviations or the probit transformation of percentages in the case dichotomous outcomes (i.e., proficiency rates, special education, and grade retention).^{14,15} Estimates were from the total sample at follow up with dichotomous indicators for CPC PDP and the nonCPC comparison group but excluding CPC PDP from the five schools not offering FDP.

Following previous studies,^{7,8,11} Inverse Propensity Score Weighting (IPW) was used to adjust for potential attrition bias. IPW attempts to correct confounding by creating a population where attrition from the study sample is independent of the measured potential confounders (baseline attributes).¹⁶ This allows the study sample to more closely resemble that of the sample prior to attrition, thereby strengthening inferences. The predicted probabilities of sample retention (SR) were estimated by logistic

regression with 16 input predictors expected to influence attrition (e.g., baseline readiness score at preschool entry, gender, race and ethnicity, school poverty, family socioeconomic status).

In this model, the estimated probability of SR in the 3rd grade follow up (P_{sr}) is inversely weighted ($1/P_{sr}$) for each participant. The assumptions, which were satisfied in the study, are that the propensity score model predicts SR reasonably well and the propensity score distributions are similar for full-day and part-day preschool groups.

For the outcome regressions, the weights were applied such that students with higher weights were counted more heavily in estimating associations of FDP with outcomes. They had lower probabilities of being in the sample at follow up. For example, a participant with a weight of 1.5 ($P_{sr} = 67\%$) is counted considerably more than a participant with a weight of 1.15 ($P_{sr} = 87\%$). Robustness checks revealed that estimates were similar between IPW and non-IPW models.

Two other sets of analysis were conducted. First, a sensitivity analysis of the model was conducted for children <130% of the federal poverty level for family income. This was based on eligibility for fully subsidized lunches (see covariate section). Second, we tested FDP vs PDP interactions by implementation quality (high vs low). This assessed whether the association between FDP and outcomes was greater in sites rated strong in collaborative leadership than in sites rated weaker on this core program component.

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eTable. Midwest Child-Parent Center (CPC) Program Core Elements and Implementation

Element	CPC preschool program elements	Full-Day CPC Preschool Select Indicators
Collaborative Leadership Team	Head Teacher and Family Resource Teacher direct program with Principal. School-community representative conducts outreach activities. Ratings in the first two years were 4.1 and 4.4 on a 5-point scale (1 = few requirements met, 5 = nearly all requirements met).	11 of 16 sites offered this format based on enrollment demand and school priorities. There were no differences in principals' interest in offering full-day classes.
Effective Learning Experiences	Average class size (16.6) & child:staff ratio (8.4). Percent of observed classrooms high in task orientation (81%). ⁹ Child-initiated instructional activities are also emphasized. ⁸	Average class size (18.1) & child:staff ratio (9.0) compared to 16.0 & 8.2; Higher in task orientation and instructional balance in class observations; Greater observed instructional time (936 hours vs. 418 [part-day]). ³
Parent involvement & Engagement	Parent Resource Team and Room in sites, menu system of services. Percent of families rated high in school involvement (59%). ⁵	Very similar but more opportunities during day for family services.
Aligned Curriculum & Activities	Head Teacher completes curriculum plan for cross-grade coordination; engages teachers in sharing strategies	Full-day enables more coverage of curricular domains, enhancing continuity
Professional Development System	Hybrid system of on-line module trainings and in-person coaching and consultation	Very similar across centers
Continuity and Stability	Engage families in school and at home for continued participation	Full-day prepares children for K-3 instructional continuity

Note. Data are from the Chicago implementation, 2012 to 2014, and include observations, interviews, administrative records, parent reports, and on-going site reports.^{3,5,8} Classroom observations used the Classroom Learning Activities Checklist.⁹ Parent involvement ratings based on teacher reports at the end of the school year.⁵