



## **Ready or Not:**

# **An Examination of the Associations between Participation in Subsidized Care Arrangements, Pre-Kindergarten, and Children's Readiness for School upon Kindergarten Entry**

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# Early Care and Education Choices, Quality and Continuity for Low-Income Families: A Maryland-Minnesota Research Partnership

- Partners include:
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  - RESI, Towson University
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# Introduction and Motivation

- Disparities in children's development and school readiness are associated with family income.
- “Readiness” for school at kindergarten entry is predictive of later school success
- Public prekindergarten programs have been consistently positively associated with school-readiness.
- Studies of developmental outcomes for children receiving child care subsidies show mixed findings.



# Study Context: Public Pre-K and Child Care Subsidies in Maryland

## Bridge to Excellence in Public Schools Act, 2002

- Prekindergarten expansion offered to all 4-year old children from low-income families
- Provided through local school districts
- Structure varies: Full day, part day, and sometimes combined with Head Start
- State-certified lead teachers
- Standard content and quality standards

## Child Care Subsidy Program

- Provides vouchers to help low-income working families pay for child care costs.
- Eligibility is set at 50% of state median income
- Parents choose child care provider



# Study Population

- Study population: 6,856 children who entered kindergarten in Maryland in the fall of 2009 or 2010 and who received a child care subsidy in either of the two years prior to entering kindergarten.
- Nearly all of the children received a child care subsidy in the year prior to kindergarten, and most (74%) also received a subsidy for care when they were three-years-old.
- Those who are kindergarten repeaters and late entrants (after age 6) are dropped from the analysis (399 children).



# Data Sources

- Maryland’s child care subsidy administrative data (Child Care Automated Tracking System, CCATS), and public prekindergarten enrollment data
- The Maryland Model for School Readiness (MMSR)
  - Kindergarten teachers assess children’s school readiness based on work sample portfolios developed during the first quarter of the school year.
  - While seven domains are assessed, we focus in this paper on the domains of language and literacy, mathematical thinking, and personal and social development
  - Based on their work sample portfolios, kindergarteners are determined to be “developing readiness,” “approaching readiness,” or “fully ready” on each of these domains



# Model of school readiness

## Simplified empirical model:

$$\Pr(\text{FR}_i = 1) = f(X_i \beta + \text{SCC}_i \alpha + \gamma \text{PK}_i + (\text{SCC}_i * \text{PK}_i) \delta + \varepsilon_i)$$

- $\text{FR} = 1$  if the child is assessed as fully ready and 0 otherwise.
- $\text{SCC}$  = set of dummies for type of subsidized child care
- $\text{PK} = 1$  if attended prekindergarten, 0 otherwise
- $X$  is a vector of child, family and community characteristics associated with school readiness.
- Linear probability model (OLS); logit/probit results were similar.



# Combinations of subsidized care types and prekindergarten enrollment

Child enrolled in prekindergarten?	Type of subsidized care when age 3 and age 4	Number	Percent of children
Yes	Centers both years	1103	16.1
No	Centers both years	1125	16.4
Yes	Center only age 4	382	5.6
No	Center only age 4	454	6.6
Yes	Family CC both years	763	11.1
No	Family CC both years	417	6.1
Yes	Family CC only age 4	265	3.9
No	Family CC only age 4	208	3.0
Yes	Multiple care types	800	11.7
No	Multiple care types	537	7.8
Yes	Informal care only	538	7.9
No	Informal care only	264	3.9



# Enrollment in Prekindergarten Varies with Type of Subsidized Care

	Percent enrolled in pre-K	Percent not enrolled in pre-K
Center	48.5%	51.5%
Family Child Care	62.2%	37.8%
Informal care only	67.1%	32.9%
Multiple types	59.8%	40.2%



# School-readiness is higher on two domains among children who enrolled in prekindergarten

<b>Percent of children who are fully ready</b>	<b>Language-Literacy</b>	<b>Mathematical Thinking</b>	<b>Social and Personal Development</b>
<b>Those who attended pre-kindergarten</b>	66.3**	70.5**	67.2
<b>Those who did not attend pre-kindergarten</b>	57.0**	61.6**	65.8



# Linear probability model: Probability of being fully ready

## Estimated parameters-demographic characteristics

Variable	Language & Literacy	Mathematical Thinking	Personal & Social Development
Received TCA	-0.033 *	-0.024+	-0.029
Single parent	-0.001	0.007	-0.022
Medium copay level	0.038 ***	0.028+	0.006
Highest copay level	0.069 ***	0.072 ***	0.036 *
Average household size	-0.021 ***	-0.012 ***	0.011 *
Black	-0.045 *	-0.048 ***	-0.028
Hispanic	-0.064+	-0.041	0.043
Other	0.049	0.080	0.037
English-language learner	-0.060	-0.080 *	-0.008
Special education	-0.312 ***	-0.293 ***	-0.193 ***
Age at kindergarten entry (months)	0.016 ***	0.018 ***	0.012 ***
Male	-0.070 ***	-0.030 ***	-0.151 ***
Title 1 School	0.013	-0.017	-0.018
Adj R-sq	0.100	0.100	0.072
Number of observations	6756	6757	6757



# Empirical results: For children not enrolled in prekindergarten

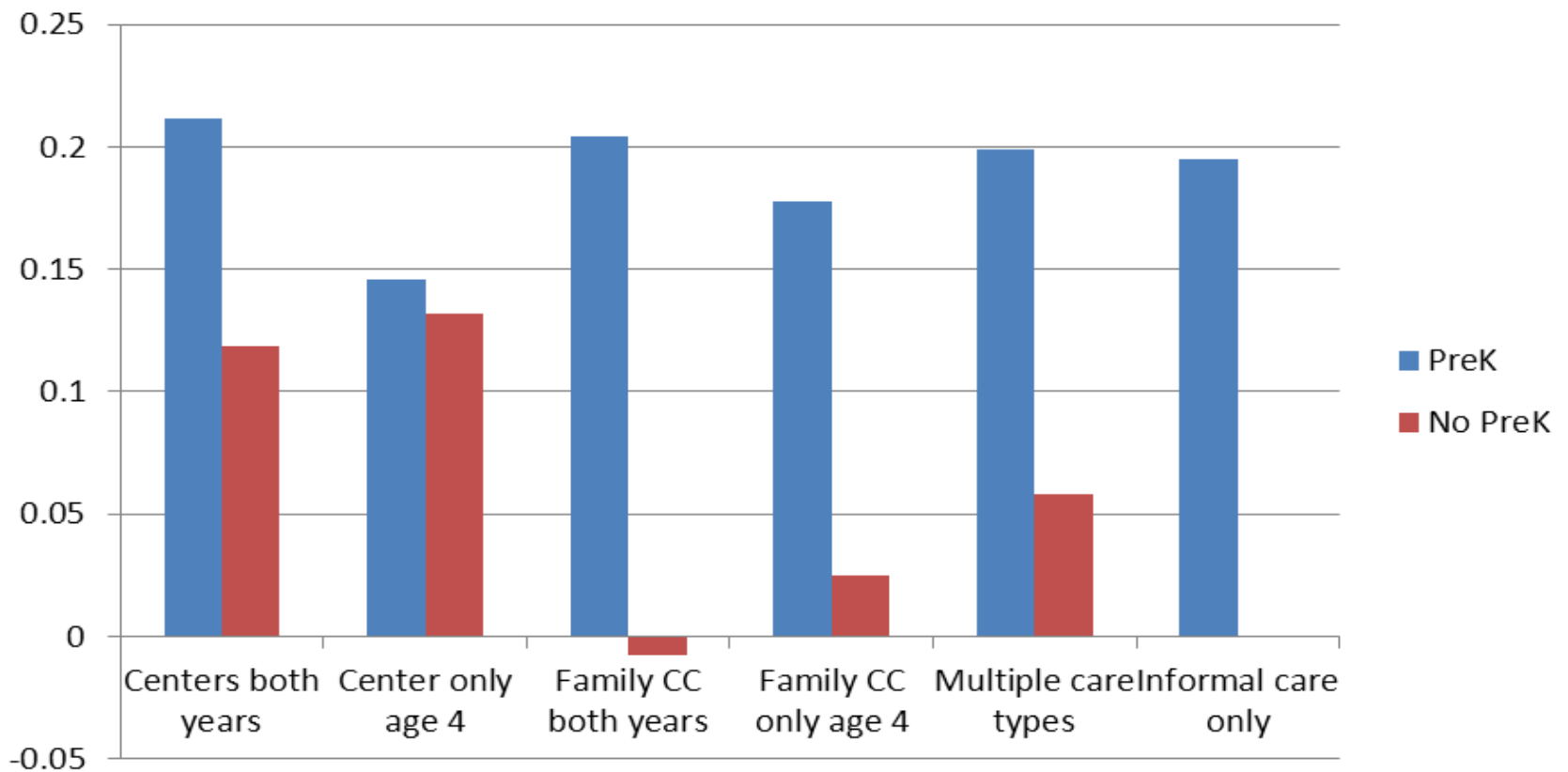
Probability of being “fully ready” on language or math...

- Was higher for children in subsidized center care compared to those in informal subsidized arrangements.
- Was not significantly different for children in family child care or multiple types compared to informal subsidized arrangements.

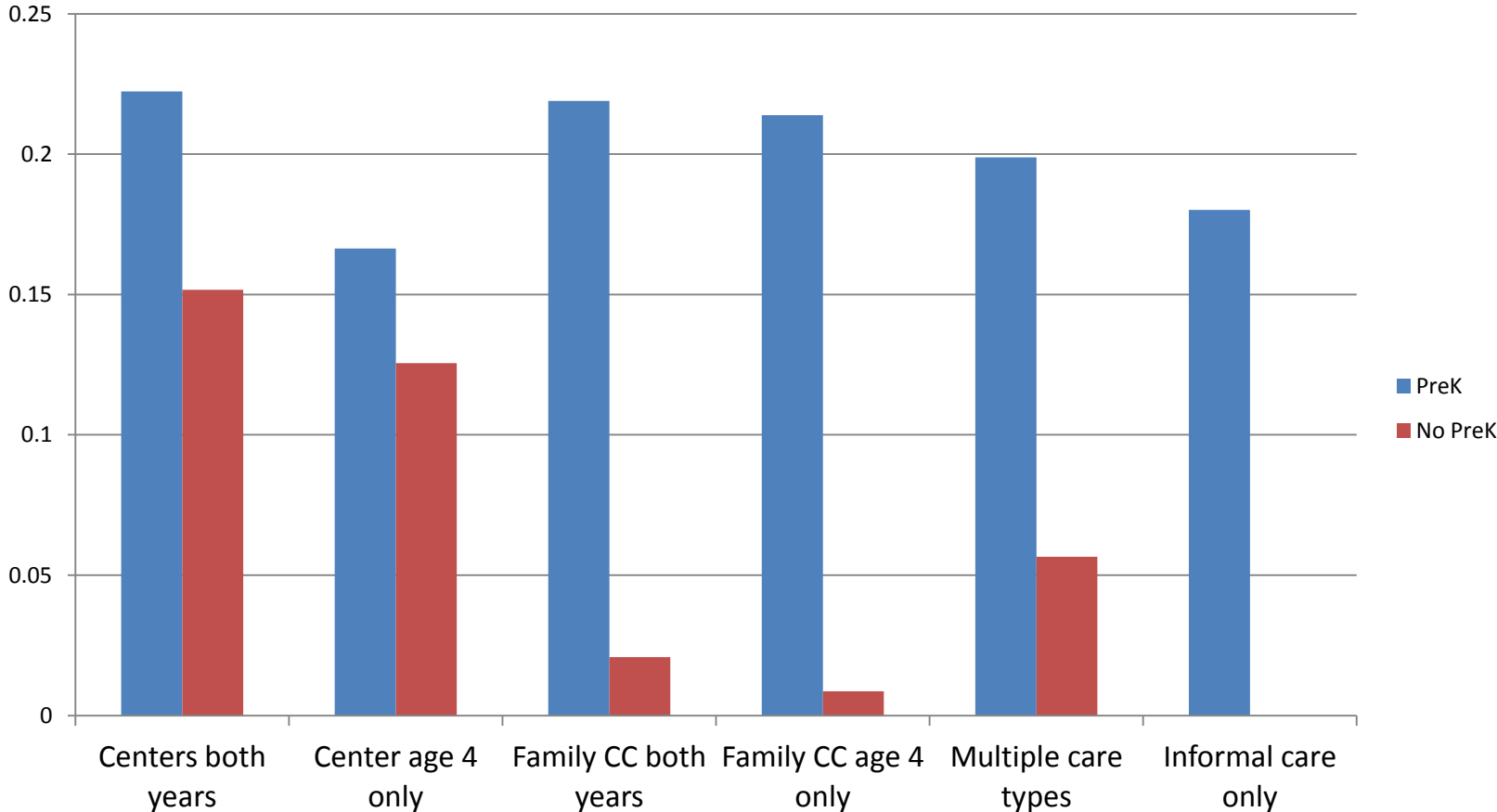
Probability of being “fully ready” on personal and social development was not statistically significant across care types.



## Difference in Probability of Being Fully Ready for School on Language-Literacy Domain by Type of Care Prior to Kindergarten



# Difference in Probability of Being Fully Ready for School on Mathematical Thinking Domain by Type of Care Prior to Kindergarten



# Empirical results: For children enrolled in Prekindergarten

- Children enrolled in pre-kindergarten had between 15 and 22% higher probability of school-readiness on the two pre-academic domains across the subsidized care settings.
  - Children in informal care had 18-19% increase in school-readiness on these domains compared to children who did not attend pre-kindergarten.
- Probability of being “fully ready” on personal and social development was not statistically significant across care types.



# Conclusions and Study Limitations

- Children enrolled in pre-K and those in subsidized center care were more likely to be fully ready on academic domains compared to those in informal subsidized arrangements who did not attend pre-K.
- None of the types of subsidized care arrangements, nor participation in pre-K, were predictive of children's personal and social school readiness skills.
- Study design does not support a causal interpretation.
- Information on quality of programs and on any non-subsidized child care arrangements was not available.



# Policy Implications

- Facilitate accessibility to public prekindergarten programs for low-income children, including those who receive child care subsidies
  - Transportation
  - Wrap-around care
  - Coordination of programs
- Improve quality of child care programs, particularly those serving children receiving child care subsidies.
- Identify effective programs to enhance personal and social development in preschoolers.

