



ELSEVIER

Contents lists available at ScienceDirect

Economics of Education Review

journal homepage: www.elsevier.com/locate/econedurev

One year of preschool or two: Is it important for adult outcomes? ☆



Irma Arteaga^a, Sarah Humpage^e, Arthur J. Reynolds^c, Judy A. Temple^{b,d,*}

^a Truman School of Public Affairs, University of Missouri, United States

^b Department of Applied Economics, University of Minnesota, United States

^c Institute of Child Development, University of Minnesota, United States

^d Humphrey School of Public Affairs, University of Minnesota, United States

^e Mathematica Policy Research, Inc.

ARTICLE INFO

Article history:

Received 4 June 2012

Received in revised form 25 July 2013

Accepted 27 July 2013

Available online 6 August 2013

JEL classification:

I2

I28

H43

Keywords:

Early childhood education

Preschool

Program evaluation

Inverse propensity score weighting

ABSTRACT

Until recently, public funding for preschool education had been growing rapidly over a decade with most state programs providing one year of preschool for four year olds. Fewer three year olds are enrolled in preschool. To investigate the importance of enrollment duration, this study is the first to estimate long-term dosage effects of years of preschool. We use data from a cohort of 1500 students in the Chicago Longitudinal Study who enrolled in the Chicago Public Schools in the mid-1980s. Many of these students participated in a high-quality preschool program called Child-Parent Centers (CPC) for one or two years. To address selection with multiple treatments, we employ inverse propensity score weighting. Relative to children who attended one year of CPC preschool, the two-year group is significantly less likely to receive special education or be abused or neglected or to commit crimes. The findings provide support for the long-term benefits of greater exposure to preschool.

Published by Elsevier Ltd.

1. Introduction

Numerous studies suggest that investments in early childhood intervention offer high returns to society (Dynarski, Hyman, & Schanzenbach, 2011; Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010; Karoly, Kilburn, & Cannon, 2005; Ludwig & Phillips, 2007; Reynolds, Temple, Robertson, & Mann, 2002; Reynolds, Temple, White, Ou, & Robertson, 2011). Policy-makers allocating scarce resources may ask: Is one year enough to create long-term benefits? What is the impact of a second year of

preschool? Several studies of outcomes observed in elementary school find that better outcomes are associated with two years of preschool compared to one at kindergarten entry (Barnett & Lamy, 2006; Loeb, Bridges, Bassok, Fuller, & Rumberger, 2007; Wen, Leow, Hans-Vaughn, Kormacher, & Marcus, 2012) and by sixth grade (Reynolds, 1995). This paper uses data from the Chicago Longitudinal Study, where many children participated in a high-quality preschool program called Child-Parent Centers (CPC) for one or two years. CPC is characterized by an emphasis on parental involvement, education supports such as small class sizes, an aligned curriculum and additional resources, such as provision of health and social services and free meals. We expand on previous findings by estimating the effects of zero, one, or two years of CPC preschool on outcomes from eighth grade into adulthood. Ours appear to be the first study to examine these long-term dosage effects. We address two questions: What is the

* This work was funded by grants from the National Institute of Child Health and Human Development (No. R01 HD034294) and the Doris Duke Charitable Foundation (No. 2003-0035).

* Corresponding author at: Humphrey School of Public Affairs, University of Minnesota, United States.

E-mail address: jtemple@umn.edu (J.A. Temple).

marginal effect of a second year of CPC preschool (in comparison to one year) on long-term outcomes such as the educational attainment or arrest? What is the marginal effect of a first year of CPC preschool (in comparison to zero years) on long-term outcomes? Is the marginal effect for some subgroups such as boys or higher-risk children in our sample greater than others? If so, for what outcomes and what groups is the marginal effect most important? The Chicago Longitudinal Study is an ongoing project investigating the effects of the federally funded Child-Parent Center (CPC) preschool program on the educational and social development of 989 low-income minority children into adulthood and a control group of 550 that did not attend CPC preschools. While previous research has examined test score differences in elementary school resulting from one versus two years of preschool (Reynolds, 1995), in this study we compare a larger set of cognitive and social outcomes observed in eighth grade and twelfth grade, as well as educational, crime and economic outcomes into adulthood. We use propensity score weighting to address the nonrandom assignment of children to zero, one, or two years of preschool.

2. Related literature

Early childhood is recognized as an important period for human capital investments. Numerous studies have suggested that high-quality preschool programs can have strong short and long-term benefits for both preschool participants and society at large (e.g., Barnett, Belfield, and Nores, 2005; Camilli, Sadako, Sharon Ryan, & Barnett, 2010; Heckman, 2006). In the short term, preschool participation has been shown to improve children's cognitive skills as well as health outcomes (Currie & Thomas, 1995; Gormley & Gayer, 2005; Magnuson et al., 2007). The preschool enrollment of peers recently has been shown to positively affect test scores of other classmates, suggesting that some societal benefits of preschool can be observed early in elementary school (Neidell & Waldfogel, 2010). Additionally, preschool is promoted as a cost-effective way to reduce the achievement gap in elementary school and beyond (Karoly et al., 2005).

Notably, influential research on the Abecedarian and Perry Preschool projects has documented preschool's longer-term benefits for disadvantaged youth, including higher rates of high school completion, higher earnings and decreased crime (Campbell et al., 2012; Heckman et al., 2010; Schweinhart et al., 2005). Research on the long-term effects of the CPC program and Head Start has been consistent with these findings (Barnett et al., 2005; Deming, 2009; Ludwig & Phillips, 2007; Reynolds, Temple, Ou, Arteaga, & White, 2011; Temple & Reynolds, 2007). Recognizing the benefits of investments in early childhood education, the Obama administration has proposed a federal-state partnership to increase access to preschool programs that meet established quality standards for lower-income families and incentives to states for expanding programs for higher-income families (State of the Union Address, 2013).

As public attention devoted to preschool grows, budget constraints generate a tradeoff between offering one year

of government-funded preschool at age 4 to a larger number of children, offering two years of preschool or more to a smaller number of children, or dedicating the additional resources necessary to ensure that all children have access to two years of preschool. The recent State of Preschool yearbook published by the National Institute of Early Education Research highlights a recently developing, serious resource problem causing U.S. children to experience the largest single-year reduction in state spending on pre-kindergarten (Barnett, Carolan, Fitzgerald, & Squires, 2012). While in previous years access to preschool was expanding in many states and many states were expanding their programs to cover three as well as four year olds, now there is added urgency for policymakers to consider how to effectively use scarce preschool dollars.

Concern exists that one year may not be enough to achieve meaningful gains in school readiness. For example, Chase, Coffee-Borden, Anton, Moore, and Valcrose (2008) recommended increasing access to two years of preschool in a report that estimated that poor school readiness among Minnesota children increases public K-12 education costs by \$100 million annually. Little research exists, however, on the marginal benefit of a second year of preschool to help guide these investment decisions.

A small but growing body of literature examines the short-term effects of different lengths of exposure to preschool. The small number of studies on preschool dosage are limited to evidence on the short-term effects of one or two years of preschool observed in preschool or kindergarten. Furthermore, many, though not all studies, are based on regression estimates that may be subject to selection bias. Nonetheless, these papers suggest that children with longer exposure to preschool demonstrate advantages over children with shorter exposure, at least in the short term (Barnett & Lamy, 2006; Berhman, Cheng, & Todd, 2004; Loeb et al., 2007; Skibbe, Connor, Morrison, & Jewekes, 2011). These benefits include stronger cognitive skills during preschool or kindergarten (Barnett & Lamy, 2006; Loeb et al., 2007; Perez-Escamilla & Pollitt, 1995; Skibbe et al., 2011), improved socioemotional outcomes (Berhman et al., 2004; Skibbe et al., 2011), and physical growth in a preschool program in Colombia that included a strong nutrition component (Perez-Escamilla & Pollitt, 1995). A recent meta-analysis by Nores and Barnett (2010) on the effects of preschool outside the United States found that programs lasting one to three years had average effect sizes of 0.312 standard deviations, as compared to 0.196 for programs lasting less than one year. Participating in preschool for more than three years does not, however, translate to greater gains; the average effect size for programs with this duration is 0.3 (Nores and Barnett, 2010). Similarly, according to recent estimates from the large and rich Early Childhood Longitudinal Survey-Kindergarten Cohort (ECLS-K), children who begin preschool at age two or three have cognitive advantages in kindergarten, but those who begin before age two show lower socioemotional functioning (Loeb et al., 2007).

Evidence on whether these early advantages persist into later elementary school and beyond is limited. In one study that does provide some evidence on outcomes into elementary school, Perez-Escamilla and Pollitt (1995)

Download English Version:

<https://daneshyari.com/en/article/354509>

Download Persian Version:

<https://daneshyari.com/article/354509>

[Daneshyari.com](https://daneshyari.com)