

PRELIMINARY & CONFIDENTIAL DRAFT; PLEASE DO NOT CITE

The Effects of Center-Based Care on the Achievement of Low-Income Children:

**An Instrumental Variable Analysis Using Experimental Data from Welfare and
Employment Programs**

Draft

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Childcare serves two functions: support for maternal employment and developmental enrichment for children. Changes in welfare policies in recent years have been designed to promote employment among low-income parents (primarily single mothers), leading to an increased need for non-parental child care. The effects of these policy changes on children's development are likely to vary, depending on how they change family resources and children's proximal environments, particularly the kind of care children receive while parents are working. In the research reported here, we take advantage of a set of experiments testing different welfare and employment policies to address the role of child care as an influence on children's academic achievement as their parents move to increased employment. We address two related questions: a) Does type of child care affect children's academic achievement; and b) Do welfare and employment policies for parents affect children's achievement in part through the type of child care parents use?

This study contributes to two types of prior research—an expansive set of literature examining the effects of child care on cognitive and social development and a relatively modest set of literature examining the effects of employment policies on children's development. Most of the empirical studies in these two strands of literature commonly use linear regression techniques to answer questions about the effects of child care (and/or employment and income) on children's well-being. These techniques, however, may be confounding experiences in certain care settings with other characteristics of families, children or local environment. The exceptions are studies that specifically use experimental data. Here studies find that high quality early childhood intervention programs have positive effects on children's development and employment policies that boost employment and family income have positive effects on children's development. While these findings can cleanly link the effects of interventions or programs to children's outcomes, they do not speak to the general care that most low-income children receive (in the case of the former) or address whether or not child care is the way in which children's development improves (in the case of the latter).

Instrumental variables (IV) analysis is one promising method of answering questions about the effects of child care on children's development. Having access to an instrument, or to an exogenous source of variation, that predicts use of center-based care is key to successfully implementing an IV model but difficult to find. Our study overcomes this challenge by leveraging pooled data with information on approximately 12,000 young low-income children whose parents were part of 7 different welfare and employment experiments. We use instrumental variable (IV) techniques to determine whether the type of child care experienced by young children mediates the impact of welfare policies on children's achievement, controlling for the effects of income and employment.

There are two aspects of our analysis that make it particularly exciting and a unique contribution to research and policy. First, random assignment to a "treatment" is a valid and appropriate instrument to answer the proposed questions. Previous reports have shown that the welfare and work programs in these studies significantly affected parents' employment, family income and child care decisions, and, because such treatments are not directly targeted to children, any resulting changes in children's well-being are, in theory, attributed to changes in parent's economic behavior and child care decisions. Second, multiple treatments across the

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random assignment studies in the pooled data set offer access to multiple instruments – a condition necessary in our study in order to predict the three key mediators of interest.

We find that use of center-based care during the child’s preschool years has a positive effect on school achievement in the early grades of elementary school. In contrast, use of center-based care increases maternal reports of problem behavior and reduces maternal reports of positive behavior. These effects hold up when controlling for income and employment, or for earnings. While there is some previous experimental evidence that small-scale, high quality early childhood programs can improve children’s cognitive functioning, our analyses reveal evidence that large-scale center-based programs of the quality typically accessed by low-income families can also improve children’s cognitive functioning. Our results also provide confirming evidence from what has been found in recent research in the NICHD Early Child Care Study representing a more economically-diverse population of children. Our empirical technique further reveals that the effect of center-based care among low-income populations is underestimated in linear regression techniques.