



Neighborhood economic disadvantage and children's cognitive and social-emotional development: Exploring Head Start classroom quality as a mediating mechanism

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ABSTRACT

Past research has shown robust relationships between neighborhood socioeconomic disadvantage and children's school achievement and social-emotional outcomes, yet the mechanisms for explaining these relationships are poorly understood. The present study uses data from 1904 Head Start participants enrolled in the Head Start Impact Study to examine the role that classroom structural and relational quality play in explaining the association between neighborhood poverty and children's developmental gains over the preschool year. Results suggest that neighborhood poverty is directly related to lower levels of classroom quality, and lower gains in early literacy and math scores. Indirect relationships were also found between neighborhood poverty and children's social-emotional outcomes (i.e., approaches to learning and behavior problems) via differences in the physical resources and negative student–teacher relationships within classrooms. These findings highlight the need for policy initiatives to consider community characteristics as potential predictors of disparities in classroom quality and children's cognitive and social-emotional development in Head Start.

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Introduction

A growing body of research has found important links between neighborhood characteristics and young children's physical, social, and academic development (Brooks-Gunn, Duncan, Klebanov, & Sealander, 1993; Leventhal & Brooks-Gunn, 2000). In particular, neighborhood poverty is associated with young children's lower academic performance and higher behavioral and emotional problems, with children from the most economically disadvantaged contexts showing the largest deficits over time (Chase-Lansdale, Gordon, Brooks-Gunn, & Klebanov, 1997; Dupéré, Leventhal, Crosnoe, & Dion, 2010). Although these empirical associations have been identified across multiple studies, relatively little research has explored the specific social, structural, or relational mechanisms that contribute to negative outcomes for low-income children living in poor communities. In particular, very little is known about whether and how the quality of the educational settings

embedded within high-poverty neighborhoods may account for some of their effects on low-income children's growth. Educational settings may convey the influence of neighborhood poverty on developmental outcomes because after a child's home, these are the neighborhood settings within which children spend the most time.

The goal of the present study is to explore the role that the quality of early education environments may play in the relationship between young, low-income children's exposure to economic disadvantage in their neighborhoods and several dimensions of their academic, social-emotional, and behavioral functioning. In order to explore these relationships, we focus exclusively on children who attend Head Start classrooms in a diverse set of neighborhoods across the United States. We are particularly interested in the structural and relational quality of the Head Start classrooms that these children attend as key mechanisms in partially explaining the relationship between neighborhood disadvantage and children's outcomes. This study examines these questions using data from the Head Start Impact Study, a nationally representative, randomized controlled trial (RCT) of the effectiveness of Head Start conducted in 2002 and 2003. These data allow us to address conceptual and empirical gaps in the existing

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neighborhood and preschool literatures while capitalizing on variability in levels of neighborhood poverty across more than 20 U.S. states.

Neighborhoods as salient contexts for children's development

Several decades of research from sociology, urban studies, education, and psychology suggests that neighborhoods play an important role in shaping the development of children and adolescents. A broad collection of non-experimental studies have linked neighborhood poverty, in particular, with a host of negative outcomes for the children and young adults living in these contexts, including lower academic achievement, increased criminal and violent behavior, and lower future earnings (Leventhal & Brooks-Gunn, 2000). Experimental and quasi-experimental evidence supports these findings, with studies of programs like Moving to Opportunity and Gautreaux showing that moves out of high-poverty neighborhoods and into more economically advantaged communities may benefit children across several domains (Katz, Kling, & Liebman, 2001; Leventhal & Brooks-Gunn, 2003; Rosenbaum, Reynolds, & DeLuca, 2002).

In addition to this empirical work, a number of classic theories have helped to explain how and why these associations between neighborhoods and individual development might occur (Brooks-Gunn, Duncan, & Aber, 1997; Jencks & Mayer, 1990; Leventhal & Brooks-Gunn, 2000; Sampson, 2012; Sampson, Morenoff, & Gannon-Rowley, 2002; Shinn & Toohey, 2003). For the most part, these theories have hypothesized two primary pathways that explain the transfer of neighborhood processes to the individual level. First, *structural* theories focus on the institutions and physical resources available within communities that may directly support (or impede) individuals' development. For example, families living in neighborhoods with a high density of museums, libraries, schools, and other educational institutions may be better able to provide their children with cognitively stimulating learning experiences that promote academic achievement compared with those living in areas devoid of such resources (Leventhal & Brooks-Gunn, 2000). Second, *relational* theories highlight the role that social processes, norms, interactions, and behaviors play in linking neighborhood poverty with individual outcomes. Social disorganization theory, for example, suggests that lower levels of positive social exchange and cohesion between neighbors may mediate the relationship between neighborhood socioeconomic disadvantage and individual behavior (Shaw & McKay, 1942).

Although theories supporting these neighborhood characteristics as mechanisms for influencing young children's development are well developed, there has been very little work that has tested these suggested relationships empirically (Leventhal & Brooks-Gunn, 2000). Extant literature most often relies on simple counts of the number of institutions present in a neighborhood and individual reports of broader social relationships, rather than direct, contextual-level observations of the quality of structural and relational supports. The present study aims to understand the early childhood classroom setting as one possible conduit for community structural and relational resources to reach low-income children and their families. We build off of recent work by Dupéré et al. (2010) that has found distinct, positive links between neighborhood advantage, quality of childcare, and individual academic achievement in several ways. First, we deepen the conceptualization and measurement of classroom quality and child outcomes through focusing on three distinct, directly observed dimensions of classroom quality, as well as representations of both cognitive and social-emotional skills. Second, unlike previous work that has examined relationships between neighborhood, classroom, and child-level phenomena independently, we use a

structural equation modeling approach to capture these processes in a single, cohesive model. Third, we focus specifically on the critical early childhood support of preschool education in a group of particularly vulnerable low-income children attending Head Start. Given the well-established benefits of quality preschool education for later development and unique focus of Head Start on a "whole-child" approach, this is an especially policy-relevant setting to examine.

Head Start classroom quality as a mediating setting

There is substantial evidence that high-quality early care and education can help to support young children's cognitive and social-emotional development (Howes, Phillips, & Whitebook, 1992; Mashburn et al., 2008; Pianta, Barnett, Burchinal, & Thornburg, 2009; Peisner-Feinberg et al., 2001; Votruba-Drzal, Levine Coley, & Chase-Lansdale, 2004; Yoshikawa et al., 2013; Zaslow, Tout, Halle, Whittaker, & Lavelle, 2010; Zill et al., 2001). Conversely, additional work has shown a direct, negative relationship between children's behavioral outcomes and the number of hours that they spend in low quality programs (McCartney et al., 2010). Indeed, Burchinal, Vandergrift, Pianta, and Mashburn (2010) find that the benefits of increments in quality for improving positive child outcomes do not accrue until quality reaches a moderate level.

In the present study, we define classroom quality in terms of two distinct but complementary components that directly parallel the neighborhood theoretical literature outlined above. *Structural quality* describes the physical space and materials present and used to support children's learning in the classroom. *Relational quality* refers to the interactions, relationships, and day-to-day exchanges between teachers and children. Relational quality can be further categorized into high levels of emotionally *positive* (e.g., supportive, warm, caring) student-teacher interactions, and low levels of *negative* (e.g., harsh, punitive, dismissive) interactions. The result is three distinct yet interrelated dimensions of classroom quality: structure, positive teacher-child interactions, and negative teacher-child interactions. Although both structural and relational quality have been linked to child outcomes broadly defined, there is some evidence to suggest that different components of quality may be linked more closely with particular child outcomes than others (Mashburn et al., 2008). In particular, recent evidence suggests that structural and instructional quality are more strongly associated with cognitive or academic outcomes, whereas positive relational quality is more important for children's social-emotional and behavioral development (Burchinal et al., 2010; Mashburn et al., 2008).

The current study considers the ways that the economic resources of neighborhoods may be associated with the structural and relational quality of the Head Start classrooms embedded in these settings. Although historically Head Start programs have targeted some of the poorest counties in the United States (Ludwig & Miller, 2007), they currently exist within a broad range of neighborhood contexts to better reach all low-income children. The level of economic disadvantage in the neighborhoods surrounding Head Start classrooms may be associated with the quality of those classrooms in several ways. First, Head Start awards federal funds to local public or private organizations within the communities that they serve (U.S. Department of Health and Human Services, Administration for Children and Families, Office of Head Start, n.d.). Consequently, Head Start programs are often under-resourced as a result of being located in economically disadvantaged communities that have a smaller tax base (for public programs) or serving parents who cannot afford to pay high fees (for private programs). This lower availability of fiscal resources likely has direct and negative impacts on the structural quality of these classrooms through

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