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Family and child strengths that promote early reading and math proficiency in low-income, minority preschoolers

Abstract

The present study investigated the household resources and family and child strengths that contribute to positive developmental outcomes among low-income, minority preschoolers. Using longitudinal data from *Welfare, Children, and Families: A Three-City Study*, we examined the reading and mathematics proficiency of 530 children, ages 3 to 6 years. No significant gaps in cognitive achievement were detected among White, African American, and Hispanic children, even after accounting for immigration status, country of origin, and English proficiency in the Hispanic group. Moreover, 56-60% of children were performing at or above average on standardized tests of reading and mathematics skills. Economic resources, family stability, mothers' literacy-promoting practices, and children's socioemotional and behavioral functioning emerged as significant factors in children's early competence in reading and math.

Key Words: CHILDREN, FAMILIES, LOW-INCOME, RACIAL AND ETHNIC DIFFERENCES, READING, MATHEMATICS

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For decades, low-income children have been the focus of intervention, research and policy efforts, in large part because of concern about their school readiness skills, academic achievement, and eventual educational attainment and vocational success. The size and persistence of educational disparities between advantaged and disadvantaged children in America, even during recent periods of economic prosperity (NCES, 1999), have motivated continued investigative pursuits to identify the nature and sources of these discrepancies as well as to elucidate the factors that promote more positive developmental outcomes for children in poverty.

To date, large national or multi-site data sets have been used primarily to compare the performance of poor and nonpoor students across an array of academic and behavioral outcomes (Duncan & Brooks-Gunn, 1997; NCES, 1999). In addition, considerable research on young, low-income children has included children of color from various samples, such as child-oriented interventions (e.g., Campbell, Pungello, Miller-Johnson, Burchinal, & Ramey, 2001; Love et al., 2002), antipoverty programs (e.g., Gennetian & Miller, 2002; Huston et al., 2001), or smaller regional samples (e.g., Alexander & Entwisle, 1988; Brody & Flor, 1997; Jackson, Brooks-Gunn, Huang, & Glassman, 2000). Only recently have researchers focused on emergence of school readiness skills of ethnic minority preschoolers and kindergarteners in more representative samples (Rouse, Brooks-Gunn, & McLanahan, 2005a; Brooks-Gunn, Klebanov, Smith, Duncan, & Lee, 2003). Still, within-group approaches remain underutilized to examine distinctive family processes and patterns of resilience among minority children and families facing economic adversity (Friedman & Chase-Lansdale, 2002; García Coll et al., 1996; Johnson

et al., 2003; Luthar, Cicchetti, & Becker, 2000; McLoyd, 1990). In the present study, a representative, random sample of urban, low-income families from *Welfare, Children, and Families: A Three-City Study* is used to examine the reading and math development of preschool-aged African American, Hispanic, and White children. Specifically, we explored whether early achievement gaps were evident and investigated the family and child strengths that improve children's development within the context of poverty.

Family strengths: An important source of heterogeneity within low-income families

Multiple lines of research have addressed positive outcomes among children who face hardships and developmental risks (e.g., Appleyard, Egeland, van Dulmen, & Sroufe, 2005; Gutman, Sameroff, & Cole, 2003; Liaw & Brooks-Gunn, 1994). Moreover, there is meaningful variation within many of these groups. Despite average differences between poor and nonpoor families that favor affluent households, such as higher rates of marriage (McLanahan & Sandefur, 1994) and more effective and warm parenting practices (Maccoby & Martin, 1983), numerous examples can be found of protective factors and strengths within low-income families like close, secure parent-child relationships and supportive kin networks that promote resilience and competence for children (Cote & Bornstein, 2001; Jarrett & Burton, 1999; Luthar, 1999; Masten & Coatsworth, 1998).

For over 20 years, efforts to conduct more normative developmental research with African American and Hispanic children have documented their considerable personal, social, and cultural strengths, as well as the risks imposed by discrimination, poverty, and acculturation (Chase-Lansdale, Brooks-Gunn, & Zamsky, 1994; García Coll et al., 1996; McAdoo, 2002; McLoyd, 1990; Slaughter-Defoe, Nakagawa, Takanishi, & Johnson, 1990; Spencer, Brookins, & Allen, 1985). In addition, policy-relevant research agendas have recently emphasized positive

development and strengths among children and families from ethnically and socioeconomically diverse backgrounds (Johnson et al., 2003; Moore, Chalk, Vandivere, & Scarpa, 2003; Moore, Evans, Brooks-Gunn, & Roth, 2001). In this paper, we focus on ecologically proximal characteristics that are salient for low-income children's early reading and math proficiency: household resources and familial stability, family processes that promote children's learning, and children's socioemotional and behavioral competence.

Household economic resources and family stability. Relations between family income and children's achievement have surfaced repeatedly in the extant literature. Moreover, family economic security during early childhood has shown the greatest impacts on later academic achievement and school completion (Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Duncan & Brooks-Gunn, 1997). However, family income is volatile, particularly for families in poverty (Duncan, 1998). In addition, sizable numbers of families with an employed parent struggle to make ends meet, especially families with young, minority, less educated, or single workers (Bernstein, 2004). The relation between family income and children's achievement is strongest among low-income families (Duncan et al., 1998), and recent experimental research has demonstrated that low-income children's academic engagement and social competence may be enhanced when family incomes increase (Morris & Gennetian, 2003). To examine family income fluctuations and children's cognitive achievement, we compared children whose families moved out of poverty or were able to maintain incomes above the poverty line with children whose families were below the poverty line.

Regarding family stability, several important demographic shifts in the late 1990s are relevant. The number of single-mother households has modestly declined, but still remains disproportionately high in low-income families (Acs & Nelson, 2001; Dupree & Primus, 2001).

In addition, cohabitation rates have surged, including the incidence of births and child-rearing within cohabiting-couple households, and these increases are especially evident in low-income households (Bumpass & Lu, 2000). A growing body of research has found that cohabitations are often precarious and short-lived (Bumpass & Lu, 2000).

In general, children raised by two biological parents tend to show higher levels of academic success, social competence, and educational attainment than their peers in other living arrangements (McLanahan & Sandefur, 1994). However, findings from family structure research also demonstrate the importance of the stability of any family arrangement for children's early development. Indeed, transitions *per se* may be the riskiest factor for child outcomes (Ackerman, Brown, D'Eramo, & Izard, 2002; Capaldi & Patterson, 1991; Kurdek, Fine, & Sinclair, 1994; Najman et al., 1997).

Studies increasingly reflect the ecology of low-income, multigenerational families, especially the fluidity and responsibility of kin networks (e.g., Burton & Stack, 1993, Chase-Lansdale, Gordon, Coley, Wakschlag, & Brooks-Gunn, 1999; Jarrett & Burton, 1999). For example, low-income African American and Hispanic children in single-parent households are not necessarily living with only one adult, as is typical in White and more affluent families. Instead, surrogate parenting is often provided by extended family members, such as co-parenting or assuming custodial care of children (Burton, Dilworth-Anderson, & Merriwether-deVries, 1995; Hunter, Pearson, Ialongo, & Kellam, 1998; Tienda & Angel, 1982). Positive effects of surrogate parenting could be expected for African American and Hispanic children (Johnson et al., 2003), especially if surrogate care prevents children's participation in the child welfare system. However, past ethnographic and survey research has also described how these kinship care

arrangements are often precipitated by family crises such as parental incarceration, incapacitation, or divorce (Bachman & Chase-Lansdale, in press; Burton, 1996).

Developmentalists have long maintained that young children rely on continuity in caregiving and predictability in their environment to establish a sense of trust, safety, and security (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969; Chase-Lansdale, Wakschlag, & Brooks-Gunn, 1995). Thus, in the present study, higher economic resources and stable living arrangements are investigated to determine whether these key family factors can buffer children from adverse outcomes.

Family processes that promote children's learning. A lengthy literature shows that parents' cognitively stimulating behaviors and provision of enriching learning opportunities are linked with children's early literacy development (for review, see Morrison, Bachman, & Connor, 2005). In large national data sets, cognitive stimulation or home learning have predicted preschoolers' IQ and vocabulary comprehension (Berlin, Brooks-Gunn, Spiker, & Zaslow, 1995; Johnson et al. 1993) and elementary school students' reading, mathematics, and vocabulary skills (Smith, Brooks-Gunn, & Klebanov 1997). Not only do these enriching parenting behaviors significantly predict children's language and literacy skills, they also mediate the influence of income on children's cognitive development (Linver, Brooks-Gunn, & Kohen 2002).

Ethnographic interviews of low-income families with high-achieving students have also been particularly illuminating. Clark's (1983) work with urban African American families, and Caplan, Choy, & Whitmore's (1992) interviews with Indo-Chinese refugees, both illustrate how low-income parents can monitor and support their children's school performance. For example, in Clark's research, when high-achieving adolescents were in preschool and elementary school, parents attempted to prepare children for school tasks during home conversations or while

studying, and generated activities that encouraged the child to speak, read, spell, and problem-solve. In contrast, parents of low achievers were less involved with their children's education, did not consistently provide learning opportunities in the home, and held their children responsible for academic failure.

In addition, parents' educational attainment and cognitive skills also shape children's early cognitive achievement. National trends reveal that elementary and high school children and youth from families with lower levels of parental education (high school graduation or less) consistently score lower on reading and mathematics assessments than do children whose parents completed some education after high school (NCES, 1999). Likewise, higher cognitive skills among mothers are associated with greater gains in children's early cognitive development, academic achievement, and higher quality home learning environments (Baharudin & Luster, 1998; Phillips, Brooks-Gunn, Duncan, Klebanov, & Crane, 1998). In the present study, we also examined how caregivers' academic skills and educational attainment are linked to young children's reading and math development.

Children's socioemotional and behavioral competence. Accumulating evidence has also pointed to important links between children's early reading and math development and their socioemotional and behavioral skills (for review, see Morrison, Bachman, & Connor, 2005). For example, highly reactive or impulsive children may have a more difficult time attending to activities, completing tasks, and eliciting support and assistance from others (Alexander, Entwisle, & Dauber, 1993; Eisenberg et al., 1995; McClelland, Morrison & Holmes, 2000; Murray & Kochanska, 2002). This intersection between socioemotional and cognitive skills may be particularly relevant for children in low-income households (Li-Grining, Votruba-Drzal, Bachman, & Chase-Lansdale, 2005; Raver, 2002). Poverty entails a number of financial and

familial strains that may adversely affect low-income children's socioemotional development, such as parents' psychological distress, harsh or unresponsive parenting, marital discord and disruption, residential mobility, and inconsistent family routines (Friedman & Chase-Lansdale, 2002; McLoyd, 1990) Young children's difficulties adjusting to family stressors and changes in their home environment may hold deleterious consequences for how they engage in and persist with learning opportunities. The present study highlights the socioemotional and behavioral strengths that low-income children bring to their learning environments.

Racial and ethnic achievement disparities in low-income samples

There is renewed commitment to reducing educational disparities in academic achievement, high school completion, and college attendance (Rouse, Brooks-Gunn, & McLanahan, 2005a; Jencks & Phillips, 1998), and such a spotlight has galvanized policymakers, educators, and the public to improve the futures of children (Ferguson, 2002; Minority Student Achievement Network, 2002; Rouse, Brooks-Gunn, & McLanahan, 2005b; U.S. Department of Education, 2002). Converging multidisciplinary evidence has demonstrated that these achievement gaps emerge early in children's lives, are detected across socioeconomic strata, and persist or are even exacerbated throughout children's schooling (Brooks-Gunn et al., 2003; Ferguson, 1998; Fryer & Levitt, 2004; Morrison, Bachman, & Connor, 2005; Phillips, Crouse, & Ralph, 1998).

In national samples, gaps in children's reading and mathematics skills from White-Black and White-Hispanic comparisons are evident at kindergarten entry (Fryer & Levitt, 2004, Duncan & Magnuson, 2005). Moreover, these gaps endure from elementary to high school (NCES, 1995, 1999, 2001), and appear to increase over time as Whites show steeper rates of growth than their Black and Hispanic peers (Freyer & Levitt, 2004; NCES, 2001). Some research

has demonstrated that these gaps are sizable by three years of age (Brooks-Gunn et al., 2003; Hart & Risley, 1995), and that these early disparities are strongly related to family socioeconomic characteristics and parenting practices (Brooks-Gunn & Markman, 2005; Duncan & Magnuson, 2005; Freyer & Levitt, 2004).

However, little work has examined the size and emergence of racial and ethnic achievement gaps within high-risk samples. Moreover, primary interest has been in comparisons of White children with children of color, so it is unclear how African American and Hispanic children will compare to each other in early reading and math development. Hispanic children in poverty display more positive developmental outcomes in early childhood, like better perinatal health, than Black children exposed to similar risks from economic hardship, which is commonly referred to as the "epidemiological paradox" (Flores et al., 2002; Padilla, Boardman, Hummer, & Espitia, 2002). Yet, there is a high degree of within-group variability among Hispanic samples which may influence the size and persistence of any early achievement gaps. Aggregating Hispanic children masks the diversity of country of origin, English language proficiency, and immigration status that are important for understanding patterns of student achievement (García Coll & Magnuson, 1997; Hernandez, 1999; Parke & Buriel, 1998; Portes & Zhou, 1993). For example, Hispanic families' poverty rates are disproportionately high (Aponte, 1993; Ramirez & de la Cruz, 2003) and surpass rates for African American families (Lichter & Landale, 1995), but Mexican immigrants are more likely than Puerto Rican and Cuban immigrants to experience poverty due to Mexicans' lower educational attainment and poorer English proficiency (Leyendecker & Lamb, 1999; Ramirez & de la Cruz, 2003). In contrast, the incidence of unemployment and single-parent headed households occurs more frequently among Puerto Rican than Mexican American families (Lichter & Landale, 1995). In addition, foreign born Hispanic

children tend to live in households with two married-parents, whereas native-born Hispanic children are more likely to experience single-parenthood with each successive generation (Brandon, 2002).

In the present study, the early reading and math development of African American, Hispanic, and White children in poverty are compared, with specific focus on variation within the Hispanic group due to country of origin, immigration status, and parents' English proficiency. By virtue of the fact that all preschoolers were sampled from low-income families in low-income neighborhoods, the current investigation highlights the family and child strengths that may differ across racial and ethnic groups rather than focusing primarily on economic sources of variation.

Research Aims

We pursued two major research aims: (a) to chart the emergence and size of potential early reading and math gaps among Black, Hispanic, and White children from low-income families and to examine the family characteristics that might account for those gaps; and (b) to identify the preschoolers with proficient early reading and mathematics skills and to uncover the key household resources and family and child strengths that significantly promote reading and mathematics proficiency.

Method

Participants and Procedures

Data were drawn from *Welfare, Children, and Families: A Three-City Study*, a longitudinal, multimethod investigation of the impact of federal welfare reforms on children, parents, and families (Winston et al., 1999). This study contains a household-based, cluster stratified random sample of approximately 2,400 children and their primary caregivers from low-

income neighborhoods in Boston, Chicago, and San Antonio. In households with incomes below 200 percent of the federal poverty line, interviewers randomly selected one focal child aged 0-4 or 10-14 and conducted home interviews for more than 1 ½ hours. Ninety-percent of caregivers were the children's biological mothers; the terms "mothers" and "caregivers" will be used interchangeably to refer to all female biological and surrogate parents.

Two waves of data were collected in 1999 and 2001, with an average length of 16 months elapsing between interviews. In wave 1, the screening rate was 90% and the interview completion rate was 83%, yielding a total response rate of 74%. In wave 2, the response rate was 88%. Sampling weights are utilized in all analyses so that findings are representative of children in low-income neighborhoods from these three cities.

The present sample is comprised primarily of African American (49%), Hispanic (47%), and White families (4%) with children ages 2-5 years old at wave 1. Within the Hispanic sample, approximately 41% of the mothers were foreign born, including mothers emigrating from the Dominican Republic, Mexico, and Puerto Rico. The length of time since arriving in the U.S. for foreign born Hispanic mothers was approximately 12.6 years (SD = 7.27). Sixty-seven percent of all Hispanic mothers in the sample reported proficiency in reading, writing, and speaking English.

Of the 773 children who participated at wave 1, 626 children had longitudinal data in reading or math assessments. Non-response analyses detected no demographic differences between these groups, with the exception that the sample of children with longitudinal outcome data contained a smaller proportion of caregivers with a high school degree or higher than the sample with missing data (53% vs. 66%, respectively; $p < .05$). Descriptive statistics on reading and mathematics performance for each racial and ethnic group were conducted with this initial

sample of 626 children (which is 530 cases in the weighted analyses; see Table 1). In the multivariate analyses, the sample size was reduced further (n = 482) due to attrition and missing longitudinal data on the covariates. This final analysis sample is comprised of a greater proportion of single caregivers (78%) who were about two years younger (M = 28.5) than the omitted cases from the descriptive sample (n = 144; 68% single; M age = 30.4). Across other key demographic characteristics however, the samples did not significantly differ.

Measures

Predictor Variables

Demographic characteristics. At each wave, mothers provided information on their age, focal child's age, race/ethnicity (non-Hispanic Black, Hispanic, or non-Hispanic White), and child gender (0 = *female*; 1 = *male*). The Hispanic subgroup was also characterized by maternal immigrant status (0 = *U.S. born*; 1 = *foreign born*), maternal English language proficiency (0 = *non-English language proficient*; 1 = *English language proficient*), and language administration of the child Woodcock-Johnson test at wave 2 (0 = *English*; 1 = *Spanish*).

Household characteristics. Mothers' reports of current employment and income were coded to emphasize household resources (0 = *not employed at both time points or lost employment by wave 2*; 1 = *employed at both time points or transitioned into employment by wave 2*). Likewise, income-to-needs ratios were calculated from maternal reports of household income. Income-to-needs ratios were recoded to indicate families who were stably above the poverty line at both waves or who moved out of poverty by wave 2 (1). The omitted group reflects those whose incomes were below poverty at both time points (0). We also coded for the stability in maternal care and maternal partner living arrangements experienced by children during the two time periods. Children living with their biological mother during both waves of

data collection and who did not experience a change in family structure were considered to experience a stable living arrangement (1). Children who did not live with their biological mother during both waves or who experienced a change in family structure are categorized as experiencing unstable living arrangements (0). Maternal education was coded to categorize mothers who maintained at least a high school education or higher at both time points or who acquired a high school education by the second wave of data collection (0 = *no*; 1 = *yes*). Those who maintained a GED at both time points or who acquired a GED by the second wave are included in the omitted group.

Cognitive stimulation. Caregivers' provision of an enriching learning environment for children was assessed by interviewer observational ratings and caregiver reports using items from the age-appropriate versions of the cognitive stimulation subscale of the Home Observation for Measurement of the Environment-Short Form (HOME-SF). This is a revised version of the original HOME (Caldwell and Bradley, 1979) that was developed for the NLSY (Center for Human Resource Research, 1993). Age-standardized total scores were transformed into standard scores with a mean of 100 and standard deviation of 15. Those participants scoring within the normal range (score ≥ 85) throughout both time points are categorized as providing a stable cognitive stimulation home environment (0 = *stable scores below 85 or moved below the normal range by wave 2, omitted group*; 1 = *stable scores ≥ 85*; 2 = *transitioned into the normal range by wave 2*).

Children's socioemotional and behavioral competence. Caregivers were administered either the 2-3 (Achenbach, 1992) or 4-18 (Achenbach, 1991) versions of the Child Behavior Checklist (CBCL) depending on the age of the focal child. The CBCL has been used extensively to assess socioemotional skills and behavior problems, and the subscale and total scores have

generally high reliability (.65 - .95; Achenbach, 1991, 1992). In the Three-City Study, standardized total behavior problem scores were obtained by converting raw scores to z-scores and collapsing across versions, with higher scores indicating more behavior problems. The reliability coefficients for the 2-3 and 4-18 year-old versions were each .95 at wave 1 and 2.

Maternal characteristics. Caregivers were also administered the Letter-Word Identification subscale of the Woodcock-Johnson Psycho-Education Battery- Revised (Woodcock & Johnson, 1989, 1990). The Spanish version of the Woodcock-Johnson, Bateria Woodcock-Munoz: Pruebas de aprovechamiento-Revisada, was administered if the caregiver reported that Spanish was her primary language (Woodcock & Munoz-Sandoval, 1996). Raw scores were converted to standard scores (M = 100, SD = 15) using the procedures and norms outlined by the developers of this measure. Caregivers' reading skills were only tested at wave 2, but given the low percentage of caregivers who increased their educational attainment between waves (<10%), this assessment is likely to represent fairly stable skill levels among the caregivers. Caregivers were administered a short-form of the Brief Symptom Inventory (BSI 18; Derogatis, 2000) which contains somatization, depression, and anxiety subscales. Respondents report on a five-point scale the degree to which they have experienced symptoms in the past 7 days (0 = *not at all*; 4 = *extremely*). In the present study, the depression subscale from wave 2 was employed (α = .93). The wave 2 Maternal Woodcock-Johnson and BSI depression scores are included primarily as controls for genetic influences in children's cognitive and socioemotional skills and for possible bias in maternal reports of children's behavior problems in the CBCL.

Outcome Variables

Children were administered two subscales from the Woodcock-Johnson Psycho-Education Battery- Revised (Woodcock & Johnson, 1989, 1990), Letter-Word Identification

(e.g., letter-sound correspondences and word decoding) and Applied Problems (e.g., counting and arithmetic). The Spanish version of the Woodcock-Johnson, Bateria Woodcock-Munoz: Pruebas de aprovechamiento-Revisada, was administered if either the child or parent reported that Spanish was the child's primary language (Woodcock & Munoz-Sandoval, 1996). Raw scores were converted to standard scores (M = 100, SD = 15) using the procedures and norms outlined by the developers of this measure. Using the publishers' standards for interpreting standard scores on the Woodcock-Johnson, scores were dichotomized to indicate at or above average (≥90) and below average (<90) performance.

Analytic Plan

Test score gaps were explored among White, African American and Hispanic children as well as models that account for the potential differences between the three groups. Additionally, to emphasize positive outcomes among low-income children, we first identified children who were scoring within the level of proficiency (≥90) or below the level of proficiency (<90) on standardized assessments of reading and math at each wave of the study. Logistic regression analyses were then performed to relate membership in the proficient or non-proficient groups to the household resources and child and family strengths. As shown in the equation below,

$$\text{Child Outcome Status}_{2i} = B_0 + B_1\text{Child Outcome Status}_{1i} + B_2\text{Demographic Characteristics}_{1i} + B_3\text{Household Characteristics}_{1,2i} + B_4\text{Cognitive Stimulation}_{1,2i} + B_5\text{Child Behavior Characteristics}_{1,2i} + B_6\text{Maternal Characteristics}_{2i} + B_7\text{Hispanic Characteristics}_{1i} + \varepsilon_i$$

children's group membership at wave 2 is predicted with a series of demographic, household, family, and child characteristics using both waves of data. Including the relevant wave 1

Woodcock-Johnson score as an independent predictor variable provided a proxy for unmeasured inherent predispositions and selection characteristics at wave 1.

Results

Low-income minority children and test score gaps

Table 1 presents the average wave 2 reading and math scores for White, African American and various subgroups of Hispanic children. No gaps in cognitive achievement were found within this sample of children from predominantly low-income families. Overall, the reading scores (White $M = 90.13$; Black $M = 93.11$; Hispanic $M = 93.19$) and math scores (White $M = 94.30$; Black $M = 89.76$; Hispanic $M = 90.50$) hover approximately two-thirds of a standard deviation below the standardized mean of 100, but they remain within the average or proficient range of the assessment. Even when Hispanic children were distinguished according to maternal immigration status, language proficiency or country of origin, no differences were revealed when comparing these subgroups to White and African American children.

Possible differences within the Hispanic sample were also explored. Hispanic children's scores did not differ by mother's immigration status. However, Hispanic children whose mothers were proficient in English scored approximately eight points or one-half standard deviation higher in math than children with non-English proficient mothers ($F(1, 604) = 5.16$, $p < .05$). These two language groups scored similarly in reading. When Hispanic subgroups were defined by both country of origin and immigrant status, a few differences in math were detected. Foreign born Dominican children ($M = 80.83$) scored lower than both U.S. born Mexican ($M = 92.11$; $F(1, 563) = 4.75$, $p < .05$) or foreign born Mexican children ($M = 94.92$; $F(1, 563) = 5.52$, $p < .05$).

Overall, there was little evidence to suggest that significant reading or math test score gaps are present among the Hispanic, African American, and White children in this low-income sample. Consequently, it was not necessary to conduct further analyses to identify sources of achievement gaps.

Descriptive statistics for child and family strengths

The next series of analyses involved identifying the children scoring within the average or proficient range in reading and mathematics. White children were excluded from these analyses due to small sample size. As shown in Table 2, the mean wave 1 reading and math scores for the total sample were within the age standardized normal range for reading (M = 98.88) and at the lower end of the normal range for math (M = 91.50). In wave 2, over half of the children attained standard scores of 90 or higher in reading and math (60% and 56% respectively), and the proficiency rates were comparable for Black and Hispanic children. However, the percentages of three to six year-old children scoring in the average range or higher at wave 2 is lower than that found in similar age groups within national samples such as the PSID (approximately 70% for reading, 67% for math; Linver, Brooks-Gunn, & Kohen, 2002).

The average age of the mothers in the sample was approximately 30 years. Nearly half of the sample had remained stably employed throughout both waves of data collection or moved into employment by wave 2. Forty-one percent of families managed to remain above poverty at both waves or moved out of poverty by wave 2 and 64% maintained stability in living arrangements. Furthermore, 41% of the total sample had graduated from high school by wave 2: the graduation rate was higher for the Black group (48%) than for the Hispanic group (33%).

The mean maternal Woodcock Johnson score (M = 89.93) for the total sample is on the border of below average and average scores. The total mean for the depression subscale is .84,

and the African American mothers reported higher levels of depressive symptomatology (M = .93) than did the Hispanic mothers (M = .75). Additionally, 73% of the total sample had cognitive subscale HOME scores at or above 85 throughout both waves and 11% increased their home literacy promotion to above 85 by wave 2.

The association of child and family strengths and children's reading and math proficiency

This study examined the influence of various child and family strengths on the positive developmental trajectories in early reading and mathematics skills among a sample of low-income, minority children. Tables 3 and 4 present the odds ratios from the logistic regression models predicting membership in the reading and math proficient groups versus the below average groups. The White sample was also omitted from these multivariate analyses due to inadequate sample size on the covariates; country of origin dummies were also not included due to sample size constraints.

The continuous wave 1 reading and math scores were predictive of proficiency outcomes in wave 2. Children with higher scores in reading and math at wave 1 were significantly more likely to score within the average range or higher in wave 2. Demographic characteristics, such as maternal age and child gender, were not predictive of reading and math proficiency. However, a weak association between child gender and math outcomes emerged favoring girls. Notably, race/ethnicity was not a significant predictor of reading or math proficiency at wave 2 in any of the models. Additionally, children of U.S. born mothers were significantly more likely to score in the proficient range in mathematics than children of foreign born mothers, but both groups scored similarly in reading. Children whose mothers were proficient in English were as likely to score in the average range for reading as their peers with non-English proficient mothers. However, children with English proficient mothers were three times more likely to score at or

above average in mathematics than children with non-English proficient mothers. No reading or math differences emerged between Hispanic children who were administered the Woodcock-Johnson achievement tests in English or Spanish.

Household characteristics such as maternal employment or education were not predictive of reading or mathematic scores at wave 2. However, children in families who remained above poverty for both waves or moved out of poverty by wave 2 were over twice as likely to be in the proficient group in reading, but not math, relative to children who remained stably below poverty or who moved into poverty by wave 2. Also, the stability of children's living arrangements was a significant predictor of both reading and math proficiency. Children in more stable family environments in which the mother was the primary caregiver and there were fewer partnership transitions were nearly twice as likely to achieve proficiency in reading and mathematics as children who experienced maternal partnership or caregiver changes. After controlling for other important factors such as the cognitive stimulation and child behavior problems, the relationship between stable living arrangements and math scores weakened.

Children in families who obtained HOME scores at or above 85 throughout both waves were approximately twice as likely to achieve proficiency in both reading and mathematics as children experiencing stably below average or decreases to below average levels in home literacy promotion. However, the relationship between reading proficiency and HOME scores was reduced after controlling for maternal Woodcock-Johnson and depression scores. Increases in parents' cognitive stimulation to average levels were also associated with children's proficiency in reading and math compared to the children with below average HOME scores at wave 2. Neither maternal reading skills nor depression were associated with children's reading or math scores at wave 2.

Regarding children's strengths, caregivers who reported that children had lower levels of child behavior problems at wave 1 had children who were significantly more likely to be in the proficient group in reading by wave 2, than children with higher levels of behavior problems. Moreover, children who evidenced fewer behavior problems over time were also more likely to be reading proficiently at wave 2 than children whose behavior problems increased between waves. Although a similar pattern of associations were detected between children's socioemotional skills and mathematics proficiency, these relationships were not statistically significant.

Discussion

The purpose of the present study was to examine the role of child and family strengths in promoting early reading and math proficiency and in narrowing achievement gaps for low-income minority children. Substantial numbers of children in low-income families were indeed displaying reading and math competence during the preschool years, even though these numbers were somewhat lower than those found in national samples (e.g., Linver et al., 2002). In fact, 56-60% of children were scoring at or above average in reading and mathematics by 3 to 6 years of age. Moreover, early test score gaps were not evident among the White, African American, and Hispanic children in the sample. Few differences emerged within the Hispanic sample, and separating the Hispanic children according to immigration status, language proficiency, and country of origin did not reveal differences among the various Hispanic subgroups and the White or African American groups. Although several studies using national samples have documented racial/ethnic gaps among young children (Brooks-Gunn et al., 2003; Duncan & Magnuson, 2005; Jencks & Phillips, 1998), relatively few studies have focused on test score gaps within large

representative samples of low-income families. In addition, more research is needed on the emergence of racial/ethnic gaps among very young children.

What are the central reasons that no achievement gaps were evident? The shared social environment experienced by children living in similar, low-income, urban neighborhoods may wield considerable influence (Brooks-Gunn, Duncan, & Aber, 1997; Parke & Buriel, 1998). Latino children in urban environments often face similar contextual influences to those experienced by African American children, such as poverty (Duncan, Brooks-Gunn, & Klebanov, 1994), housing segregation (Massey, Gross & Shibuya, 1994; Quillian, 1999; Krivo, & Peterson, 1996), and segregated schools (Jencks & Phillips, 1998). Furthermore, ethnographic research indicates that White families sharing low-income neighborhoods with Black and Latino families often feel disadvantaged because of lack of access to programs primarily directed toward helping minority children (Burton, Swanson, Hardaway, & Krom, 2003). This shared context of poverty, disadvantage and low resources common to all three groups may translate to similar cognitive developmental trajectories in reading and math.

Although over half the children scored proficiently (≥90), we call attention to the finding that their mean scores were, on average, two thirds of a standard deviation below the mean of the test (M = 100). We initially intended to look at those children scoring within the level of proficiency (score 90-110), as well as those who were excelling (score ≥ 110), but very few children were scoring at this superior level. Approximately 65 children (11%) scored above 110 in reading and math, in contrast to 25% in norming samples. Thus, we have illustrated a gap between low-income children and their more affluent counterparts. Moreover, prior research has shown that even within low-income samples, racial/ethnic gaps emerge within the early years of elementary school (Alexander & Entwisle, 1988). It will be important to follow the children in

the *Three-City Study* through the transition to school to see whether gaps emerge later in their development.

When accounting for the many child and family factors that contribute to children's proficiency in early reading and math skills, we again found no racial/ethnic differences in the likelihood of African American and Hispanic children scoring at or above average. Even after controlling for Hispanic subgroup characteristics, such as maternal immigration status and language proficiency, no differences between the African American and Hispanic samples emerged. However, Hispanic children with U.S. born mothers or English proficient mothers were significantly more likely to score proficiently in mathematics than Hispanic children with foreign born or non-English proficient mothers. In contrast, these maternal immigration and English proficiency characteristics were not associated with children's reading skills. It may be that teaching children early mathematical concepts and arithmetic strategies requires more technical or specific language than immigrant mothers have yet acquired.

Children's proficient or below average cognitive achievement was partially related to family factors such as household economic resources and the stability of living arrangements. Families who remained stably above poverty or moved out of poverty were more likely to have children who were proficient in reading but not in mathematics. It is unclear why this discrepancy was detected. Cognitive stimulation at home tends to focus more on reading and language than on mathematics instruction (Morrison, Bachman, & Connor, 2005). Thus, it is possible that any additional time, consistency, and material resources afforded by increases in family income may foster greater gains in children's reading acquisition.

Stability in family structure and having of the biological mother as the primary caregiver during children's early development were important for children's learning, whereas separations

or disruptions in the family's living arrangements had negative implications for children's early reading and math development. Recent work has shown that risks associated with family instability increase as multiple changes take place, similar to a cumulative risk effect (Ackerman et al., 2002; Adam, 2004). Since low-income children encounter disproportionately more changes in their home environment, future research examining how multiple transitions and familial instability influence parenting quality and additional aspects of children's development among families in poverty is warranted.

Within this low-income sample, caregivers' provision of learning opportunities was also associated with children's cognitive achievement. Indeed, both stable levels of literacy enrichment, as well as increases in cognitive stimulation, were associated with children's reading and math proficiency. Although large-scale, parent-focused interventions have met with limited success in improving children's cognitive achievement, (Magnuson & Duncan, 2004; St. Pierre & Layzer, 1999), smaller programs targeting specific literacy-promoting activities, such as shared book reading, have been effective at improving low-income children's early language and literacy skills (Payne, Whitehurst, & Angell, 1994). However, caregivers' educational attainment and literacy skills were not potent sources of variation. It may be that more proximal processes in the model are partially mediating these associations.

Children's initial socioemotional and behavioral competence, as well as fewer behavior problems over time, were also associated with improved literacy skills, particularly for reading. Thus, among children with higher levels of behavior problems, difficulties in reading acquisition were evident. Raver (2002) has argued that children with emotional difficulties are likely to "lose-out" academically because emotionally negative or disruptive children get less positive feedback from parents, teachers, and peers. This may also affect their ability to focus on tasks

and compromise the amount of instruction they receive. In order to improve and sustain low-income children's positive developmental trajectories, more avenues should be pursued for the provision of supportive mental health and educational services.

Limitations

Several limitations should be noted when reviewing these findings. Multiple indicators were used to identify meaningful variation within the group of Hispanic preschoolers, but additional characteristics may be operating that are not captured in the data. For example, acculturation, circular migration patterns, and generational status are important factors that may reveal other differences within the Hispanic group, as well as differences between the Hispanic subgroups and other racial/ethnic groups (Shields & Behrman, 2004; Ispa et al., 2004; Fuligni, 2001). Additionally, the small size of the White sample may also limit the power for detecting gaps in comparisons with African American and Hispanic preschoolers. However, the size of the White group is a noteworthy consequence of the random sampling design in low-income neighborhoods, which have experienced the exodus of White families in recent decades (Quillan, 1999; Wilson, 1987).

In addition, the lagged regression models employed in the analyses include children's reading and math scores at Wave 1 as a strong step toward controlling for pre-existing differences due to unmeasured genetic contributions and past home environment experiences. Still, our statistical models do not fully control for unmeasured characteristics of children and caregivers that might be correlated with changes in children's developmental trajectories. Similarly, the analyses cannot control for time-varying characteristics of children that might be linked with stability and change in household or maternal characteristics (Chase-Lansdale et al., 2003; Cain, 1975).

In conclusion, the present study represents an additional step toward better understanding issues of competence and risk within representative samples of low-income, Hispanic and African American preschoolers. We view this paper as part of the renewed research commitment toward increasing the educational opportunities of low-income, minority children. In addition, the present findings demonstrate the variability within these groups, and the importance of children's socioemotional development and family strengths for early cognitive achievement. Moreover, as policy concerns mount regarding the academic performance and high drop-out rates of the growing Hispanic student population in the United States (NCES, 1995), additional research on young Hispanic children representing various immigration histories is essential.

References

Achenbach, T. M. (1991). *Manual for the Child Behavior Checklist/4-18 and 1991 Profile*. Burlington, VT: University of Vermont Department of Psychiatry.

Achenbach, T. M. (1992). *Manual for the Child Behavior Checklist/2-3 and 1992 Profile*. Burlington, VT: University of Vermont Department of Psychiatry.

Ackerman, B. P., Brown, E. D., D'Eramo, K. S., & Izard, C. E. (2002). Maternal relationship instability and the school behavior of children from disadvantaged families. *Developmental Psychology, 38,* 694-704.

Acs, G., & Nelson, S. (June, 2001). *"Honey, I'm home." Changes in living arrangements in the late 1990s.* New Federalism: National Survey of America's Families. Series B, no. B-38.

Adam, E. K. (2004). Beyond quality: Parental and residential stability and children's adjustment. *Current Directions in Psychological Science, 13,* 210-213.

Ainsworth, M. D., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment*. Hillsdale, NJ: Erlbaum.

Alexander, K., & Entwisle, D. (1988). Achievement in the first 2 years of school: Patterns and processes. *Monographs of the Society for Research in Child Development, 53*(2).

Alexander, K., Entwisle, D. & Dauber, S. (1993). First-grade classroom behavior: Its short- and long-term consequences for school performance. *Child Development, 64*, 801-814.

Aponte, R. (1993). Hispanic families in poverty: Diversity, context, and interpretation. *Families in Society*, *36,* 527-537.

Appleyard, K., Egeland, G., van Dulmen, M. H. M., & Sroufe, A. (2005). When more is not better: The role of cumulative risk in child behavior outcomes. *Journal of Child Psychology & Psychiatry, 46,* 235-245.

Bachman, H. J., & Chase-Lansdale, P. L. (in press). Custodial grandmothers' physical, mental, and economic well-being: Comparisons of primary caregivers from low-income neighborhoods. *Family Relations*.

Baharudin, R., & Luster, T. (1998). Factors related to the quality of the home environment and children's achievement. *Journal of Family Issues 19,* 375-403.

Berlin, L. J, Brooks-Gunn, J., Spiker, D., Zaslow, M. J. (1995). Examining observational measures of emotional support and cognitive stimulation in Black and White mothers of preschoolers. *Journal of Family Issues, 16,* 664-686.

Bernstein, J. (2004). The low-wage labor market: Trends and policy implications. In A. Booth & A. C. Crouter (Eds.), *Work-family challenges for low-income parents and their children* (pp. 3-34). Mahwah, NJ: Lawrence Erlbaum.

Bowlby, J. (1969). *Attachment and loss* (Vol. 1): *Attachment*. New York, NY: Basic Books.

Brandon, P. (2002). The living arrangements of children in immigrant families in the United States. *International Migration Review, 36,* 416-436.

Brody, G. H, & Flor, D. L. (1997). Maternal psychological functioning, family processes, and child adjustment in rural, single-parent, African American families. *Developmental Psychology, 33,* 1000-1011.

Brooks-Gunn, J., Duncan, G. J., & Aber, J. L. (1997). *Neighborhood poverty: Context and consequences for children*. New York: Russell Sage Foundation.

Brooks-Gunn, J., Klebanov, P. K., Smith, J., Duncan, G. J., & Lee, K. (2003). The Black-White test score gap in young children: Contributions of test and family characteristics. *Applied Developmental Sciences, 7,* 239-252.

Brooks-Gunn, J., & Markman, L. B. (2005). The contribution of parenting to ethnic and racial

gaps in school readiness. *The Future of Children, 15*, 139-168.

Bumpass, L., & Lu, H-H. (2000). Trends in cohabitation and implications for children's family contexts in the United States. *Population Studies, 54,* 29-41.

Burton, L. M. (1996). Age norms, the timing of family role transitions, and intergenerational caregiving among aging African American women. *The Gerontologist, 36,* 199-208.

Burton, L. M., Dilworth-Anderson, P., & Merriwether-deVries, C. (1995). Context and surrogate parenting among contemporary grandparents. *Marriage and Family Review, 20,* 349-366.

Burton, L. M., & Stack, C. B. (1993). Conscripting kin: Reflections on family, generation, and culture. In P. A. Cowan, D. Field, D. A. Hansen, A. Skolnick, & G. E. Swanson (Eds.), *Family, self, and society: Toward a new agenda for family research* (pp.103-113). Hillsdale, NJ: Lawrence Erlbaum.

Burton, L. M., Swanson, D., Hardaway, C., & Krom, L. (2003, April). *'Slipping out of darkness:' Ethnography, child development, and racial awareness in low income white and inter-racial families.* Paper presented at the Society for Research in Child Development, Tampa, Fl.

Cain, G. G. (1975). Regression and selection models to improve nonexperimental comparisons. In C. A. Bennett and A. A. Lumsdaine (Eds.), *Evaluation and experiment: Some critical issues in assessing social programs* (pp. 297-317). New York: Academic Press.

Caldwell, B. M., & Bradley, R. H. (1979). *Home Observation for Measurement of the Environment.* Little Rock, AR: Center for Child Development and Education, University of Arkansas.

Campbell, F. A., Pungello, E. P., Miller-Johnson, S., Burchinal, M., & Ramey, C. T. (2001). The

development of cognitive and academic abilities: Growth curves from an early childhood educational experiment. *Developmental Psychology, 37,* 231-242.

Capaldi, D. M., & Patterson, G. R. (1991). Relation of parental transitions to boys' adjustment problems: I. A linear hypothesis. II. Mothers at risk for transitions and unskilled parenting. *Developmental Psychology, 27(3),* 489-504.

Caplan, N., Choy, M., & Whitmore, J. (1992). Indochinese refugee families and academic achievement. *Scientific American, February,* 36-42.

Center for Human Resource Research (1993). *NLSY Child Handbook Revised Edition: A Guide to the 1986-1990 National Longitudinal Survey of Youth Child Data.* Columbus, OH: The Ohio State University.

Chase-Lansdale, P. L., Brooks-Gunn, J., & Zamsky, E. S. (1994). Young African American multigenerational families in poverty: Quality of mothering and grandmothering. *Child Development, 65,* 373-393.

Chase-Lansdale, P. L., Gordon, R. A., Coley, R. L., Wakschlag, L. S., & Brooks-Gunn, J. (1999). Young African-American multigenerational families in poverty: The contexts, exchanges, and processes of their lives. In E. M Hetherington (Ed.), *Coping with divorce, single parenting, and remarriage: A risk and resiliency perspective* (pp. 165-192). Mahwah, NJ: Lawrence Erlbaum Associates.

Chase-Lansdale, P. L., Moffitt, R. A., Lohman, B. J., Cherlin, A. J., Coley, R. L., Pittman, L. D., Roff, J., and Votruba-Drzal, E. (2003). Mothers' transitions from welfare to work and the well-being of preschoolers and adolescents. *Science, 299*(5612), 1548-1552.

Chase-Lansdale, P. L., Wakschlag, L. S., & Brooks-Gunn, J. (1995). A psychological perspective on the development of caring in children and youth: The role of the family. *Journal of Adolescence, 18,* 515-556.

Clark, R. (1983). *Family life and school achievement: Why poor Black children succeed or fail*. Chicago: The University of Chicago Press.

Cote, L. R., & Bornstein, M. H. (2001). Mother-infant interaction and acculturation: II. Behavioural coherence and correspondence in Japanese American and South American families. *International Journal of Behavioral Development, 25,* 564-576.

Derogatis, L.R. (2000). Brief Symptom Inventory 18, Administration, Scoring, and Procedures Manual. Minneapolis, MN: National Computer Systems.

Duncan, G. (1998). The volatility of family income over the life course. In P. Baltes, D. Featherman, and R. M. Lerner (Eds.), *Life-span development and behavior, Vol. 9*. (pp. 317-358). Chur, Switzerland: Harwood Academic Publishers.

Duncan, G., & Brooks-Gunn, J. (1997). *The consequences of growing up poor*. New York, NY: The Russell Sage Foundation.

Duncan, G., Brooks-Gunn, J., & Klebanov, P. (1994). Economic deprivation and early-childhood development. *Child Development, 62,* 296-318.

Duncan, G. J., & Magnuson, K. A. (2005). Can family socioeconomic resources account for racial and ethnic test score gaps? *The Future of Children, 15*, 35-54.

Duncan, G. J., Yeung, W. J., Brooks-Gunn, J., & Smith, J. R. (1998). How much does childhood poverty affect the life chances of children? *American Sociological Review, 63*, 406-423.

Dupree, A., & Primus, W. (June, 2001). *Declining share of children lived with single mothers in the late 1990s*. Washington, D. C.: Center on Budget and Policy Priorities.

Eisenberg, N., Fabes, R., Murphy, B., Maszk, P., Smith, M., & Karbon, M. (1995). The role of emotionality and regulation in children's social functioning: A longitudinal study. *Child Development, 66,* 1360-1384.

Ferguson, R. F. (1998). Teachers' perceptions and expectation and the Black-White test score gap. In C. Jencks and M. Phillips (Eds.), *The Black-White test score gap.* (pp. 273-317). Washington, D. C.: Brookings.

Ferguson, R. F. (2002). *What doesn't meet the eye: Understanding and addressing racial disparities in high-achieving suburban schools*. Naperville, IL: North Central Regional Educational Laboratory (NCREL).

Flores, G., Fuentes-Afflick, E., Barbot, O., Carter-Pokras, O., Claudio, L., & Lara, M. (2002). The health of Latino children: Urgent priorities, unanswered questions, and a research agenda. *JAMA, 288*, 82-89.

Friedman, R.J., & Chase-Lansdale, P.L. (2002). Chronic Adversities. In Rutter, M. & Taylor, E. (Eds), *Child and Adolescent Psychiatry, Fourth Edition* (pp. 261-276). London: Blackwell Publishing.

Fryer, Jr., R. G., & Levitt, S. D. (2004). Understanding the Black-White test score gap in the first two years of school. *The Review of Economics and Statistics, 86*, 447-464.

Fuligni, A. J. (2001). A comparative longitudinal approach to acculturation among children from immigrant families. *Harvard Educational Review, 71,* 566-578.

García Coll, C., Lamberty, G., Jenkins, R., McAdoo, H. P. Crnic, K., Lamberty, G., et al. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development, 67,*1891-1914.

García Coll, C., & Magnuson, K. (1997). The psychological experience of immigration: A

developmental perspective. In A. Booth, A. C. Crouter, & N. Landale (Eds.), *Immigration and the family: Research and policy on U.S. immigrants* (pp. 91-132). Mahwah, NJ: Lawrence Erlbaum.

Gennetian, L. A., & Miller, C. (2002). Children and welfare reform: A view from an experimental welfare program in Minnesota. *Child Development, 73,* 601-620.

Gutman, L. M., Sameroff, A. J., & Cole, R. (2003). Academic growth curve trajectories from 1st grade to 12th grade: Effects of multiple social factors and preschool child factors. *Developmental Psychology, 39,* 777-790.

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children.* Baltimore, MD: Paul H. Brookes Publishing Co.

Hernandez, D. (Ed.), (1999). *Children of immigrants: Health, adjustment and public assistance.* Washington, D.C.: National Academy Press.

Hunter, A., Pearson, J., Ialongo, N., & Kellam, S. (1998). Parenting alone to multiple caregivers: Child care and parenting arrangements in Black and White urban families. *Family Relations, 47,* 343-353.

Huston, A. C., Duncan, G. J., Granger, R., Bos, J., McLoyd, V., Mistry, R., et al. (2001). Work-based antipoverty programs for parents can enhance the school performance and social behavior of children. *Child Development, 72,* 318-336.

Ispa, J. M., Fine, M. A., Halgunseth, L. C., Harper, S., Robinson, J. Boyce, L., Brooks-Gunn, J., & Brady-Smith, C. (2004). Maternal intrusiveness, maternal warmth, and mother-toddler relationship outcomes: Variations across low-income ethnic and acculturation groups. *Child Development, 75,* 1613-1631.

Jackson, A. P., Brooks-Gunn, J., Huang, C.-C., & Glassman, M. (2000). Single mothers in low

wage jobs: Financial strain, parenting, and preschoolers' outcomes. *Child Development, 71,* 1409-1423.

Jarrett, R. L., & Burton, L. M. (1999). Dynamic dimensions of family structure in low-income African American families: Emergent themes in qualitative research. *Journal of Comparative Family Studies, 30*, 177-187.

Jencks, C., & Phillips, M. (1998). *The Black-White test score gap.* Washington, D.C.: Brookings.

Johnson, D. J., Jaeger, E., Randolph, S. M., Cauce, A. M., Ward, J., & National Institute of Child Health and Human Development Early Child Care Research Network. (2003). Studying the effects of early child care experiences on the development of children of color in the United States: Toward a more inclusive research agenda. *Child Development, 74,* 1227-1244.

Johnson, D. L., Swank, P., Howie, V. M., Baldwin, C. D., Owen, M., & Luttman, D. (1993). Does HOME add to prediction of child intelligence over and above SES? *The Journal of Genetic Psychology, 154,* 33-40.

Krivo, L. J. & Peterson, R. D. (1996). Extremely disadvantaged neighborhoods and urban crime. *Social Forces, 75,* 619-648.

Kurdek, L. A., Fine, M. A., & Sinclair, R. J. (1994). The relation between parenting transitions and adjustment in young adolescents: A multisample investigation. *Journal of Early Adolescence, 14,* 412-432.

Leyendecker, B., & Lamb, M. E. (1999). Latino families. In M. E. Lamb (Ed.), *Parenting and Child Development in "Nontraditional" Families* (pp. 247- 262). Newark, NJ: Lawrence Erlbaum.

Li-Grining, C. P., Votruba-Drzal, E., Bachman, H. J., & Chase-Lansdale, P. L. (2005). *Welfare*

reform and preschoolers: Are certain children at risk? Manuscript in preparation.

Liaw, F., & Brooks-Gunn, J. (1994). Cumulative familial risks and low-birthweight children's cognitive and behavioral development. *Journal of Clinical Child Psychology, 23,* 360-372.

Lichter, D., & Landale, N. (1995). Parental work, family structure, and poverty among Latino children. *Journal of Marriage and the Family, 57,* 346-354.

Linver, M, Brooks-Gunn, J., & Kohen, D. (2002). Family processes as pathways from income to young children's development. *Developmental Psychology, 38,* 719-734.

Love, J. M., Kisker, E. E., Ross, C. M., Schochet, P. Z., Brooks-Gunn, J., Paulsell, D., et al. (June, 2002). Making a difference in the lives of infants and toddlers and their families: The impacts of Early Head Start. Princeton NJ: Mathematica Policy Research, Inc.

Luthar, S. S. (1999). *Poverty and children's adjustment*. Thousand Oaks, CA: Sage.

Luthar, S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*, 543-562.

Maccoby, E., & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In E. M. Hetherington (Ed.), *Handbook of Child Psychology, Vol. 4., Socialization, Personality and Social Development* (4th Ed.). New York, NY: Wiley.

Magnuson, K., & Duncan, G. (2004). Parent- vs child-based intervention strategies for promoting children's well-being. In A. Kalil and T. DeLeire (Eds.), *Family investments in children's potential* (pp. 209-236). Mahwah, NJ: Lawrence Erlbaum.

Massey, D. S., Gross, A.B. & Shibuya, K. (1994). Migration, segregation, and the geographic concentration of poverty. *American Sociological Review, 59,* 425-445.

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and

unfavorable environments. *American Psychologist, 53*, 205-220.

McAdoo, H. P. (Ed.). (2002). *Black children: Social, educational, and parental environments* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

McClelland, M., Morrison, F. J., & Holmes, D. (2000). Children at risk for early academic problems: The role of learning-related social skills. *Early Childhood Research Quarterly, 15,* 307-329.

McLanahan, S., & Sandefur, G. (1994). *Growing up with a single parent: What hurts, what helps.* Cambridge, MA: Harvard University Press.

McLoyd, V. C. (1990). The impact of economic hardship on black families and children: Psychological distress, parenting, and socioemotional development. *Child Development*, *61*, 311-346.

Minority Student Achievement Network (2002). Retrieved July 11, 2005, from http://www.msanetwork.org/

Moore, K. A., Chalk, R., Vandivere, S. & Scarpa, J. (2003). Measuring family strengths. *Indicators, 2,* 71-104.

Moore, K. A., Evans, V. J., Brooks-Gunn, J., & Roth, J. (2001). What are good child outcomes? In A. Thornton (Ed.), *The well-being of children and families: Research and data needs* (pp. 59-84). Ann Arbor, MI: The University of Michigan Press.

Morris, P. A., & Gennetian, L. A. (2003). Identifying the effects of income on children's development using experimental data. *Journal of Marriage and Family, 65*, 716-729.

Morrison, F. J., Bachman, H. J., & Connor, C. M. (2005). *Improving literacy in America: Guidelines from research.* Yale University Press: New Haven, CT.

Murray, K., & Kochanska, G. (2002). Effortful control: Factor structure and relation to

externalizing and internalizing behaviors. *Journal of Abnormal Child Psychology, 30,* 503-514.

Najman, J. M., Behrens, B. C., Andersen, M., Bor, W., O'Callaghan, M., & Williams, G. (1997). Impact of family type and family quality on child behavior problems: A longitudinal study. *Journal of the American Academy of Child and Adolescent Psychiatry, 36(10),* 1357-1365.

National Center for Educational Statistics. (2001). *Educational achievement and Black-White inequality* (NCES Statistical Analysis Report No. 2001-061). Jessup, MD: U.S. Department of Education.

National Center for Education Statistics. (1999). *NAEP 1999 trends in academic progress: Three decades of student performance* (NCES Statistical Analysis Report No. 2000-469). Jessup, MD: U.S. Department of Education.

National Center for Education Statistics. (1995). *The Condition of Education, v. 4: The educational progress of Hispanic students* (NCES Statistical Analysis Report No. 95-767). Jessup, MD: U.S. Department of Education.

Padilla,Y., Boardman, J., Hummer, R., & Espitia, M. (2002). Is the Mexican American "epidemiologic paradox" advantage at birth maintained through early childhood? *Social Forces*, *80,* 1101-1123.

Parke, R. D., & Buriel, R. (1998). Socialization in the family: Ethnic and ecological perspectives. In W. Damon (Ed.), *Handbook of Child Psychology* (pp. 490-532). New York: Wiley.

Payne, A. C., Whitehurst, G. J., & Angell, A. L. (1994). The role of home literacy environment in the development of language ability in preschool children from low-income families. *Early Childhood Research Quarterly*, *9*, 427-440.

Phillips, M., Brooks-Gunn, J., Duncan, G. J., Klebanov, P., & Crane, J. (1998). Family background, parenting practices, and the Black-White test score gap. In C. Jencks and M. Phillips (Eds.), *The Black-White test score gap.* (pp. 103-145). Washington, D. C.: Brookings.

Phillips, M., Crouse, J., & Ralph, J. (1998). Does the black-white test score gap widen after children enter school? In C. Jencks and M. Phillips (Eds.), *The Black-White test score gap.* (pp. 229-272). Washington, D. C.: Brookings.

Portes, A., & Zhou, M. (1993). The new second generation: Segmented assimilation and its variants. *Annals of the American Academy of Political and Social Science, 530,* 74-96.

Quillian, L. (1999). Migration patterns and the growth of high-poverty neighborhoods, 1970-1990. *American Journal of Sociology, 105,* 1-37.

Ramirez, R. R., & de la Cruz, G. P. (June 2003). *The Hispanic population in the United States: March 2002.* Current Population Reports (P20-545). U.S. Census Bureau: Washington D.C.

Raver, C. C. (2002). Emotions matter: Making the case for the role of young children's emotional development for early school readiness. *SRCD Policy Report, 16 (3),* 1-20.

Rouse, C., Brooks-Gunn, J., & McLanahan, S. (2005a). School readiness: Closing racial and ethnic gaps. *The Future of Children, 15,* Princeton University and The Brookings Institution.

Rouse, C., Brooks-Gunn, J., & McLanahan, S. (2005b). Introducing the issue. *The Future of Children, 15,* 5-14.

Shields, M. K., & Behrman, R. E. (2004). Children of immigrant families. *The Future of Children, 14,* The David and Lucile Packard Foundation.

Slaughter-Defoe, D. T., Nakagawa, K., Takanishi, R., & Johnson, D. J. (1990). Toward cultural/ecological perspectives on schooling and achievement in African- and Asian-American children. *Child Development, 61*, 363-383.

Smith, J. R., Brooks-Gunn, J., & Klebanov, P. (1997). Consequences of living in poverty for young children's cognitive and verbal ability and early school achievement. In G. J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of growing up poor* (pp. 132-189). New York, NY: Russell Sage.

Spencer, M. B., Brookins, G. K., Allen, W. R. (1985). *Beginnings: the social and affective development of Black children*. Hillsdale, N.J.: Lawrence Erlbaum.

St. Pierre, R.G., & Layzer, J.I. (1999). Using home visits for multiple purposes: The Comprehensive Child Development Program. *Future of Children, 9,* 134-151.

Tienda, M., & Angel, R. (1982). Headship and household composition among Blacks, Hispanics, and other Whites. *Social Forces, 61,* 508-531.

U.S. Department of Education. (2002). *The No Child Left Behind of 2001: Executive Summary*. http://www.ed.gov/nclb/overview/intro/execsumm.pdf

Wilson, W. J. (1987). *The truly disadvantaged: The inner city, the underclass, and public policy*. Chicago: The University of Chicago Press.

Winston, P., Angel, R., Burton, L., Chase-Lansdale, P.L., Cherlin, A., Moffitt, R., & Wilson, W.J. (1999). *Welfare, Children, and Families: A Three-City Study, Overview and Design Report.* Baltimore: Johns Hopkins University, available at www.jhu.edu/~welfare

Woodcock, R. W., & Johnson, M. B. (1989). *Woodcock-Johnson Psycho-Educational Battery-Revised*. Itasca, IL: Riverside Publishing.

Woodcock, R. W., & Johnson, M. B. (1990). *Woodcock-Johnson Psycho-Educational Battery-*

Revised. Itasca, IL: Riverside Publishing.

Woodcock, R. W. & Munoz-Sandoval, A. F. (1996). *Bateria Woodcock-Munoz: Pruebas de aprovechamiento-Revisada*. Itasca, IL: Riverside Publishing.

Author Note

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Table 1

Wave 2 means and standard deviations for reading and math by race/ethnicity subgroups

	Reading					Math				
	n	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	*n*	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
White	21	90.13 (11.85)				21	94.30 (20.28)			
Black	256	93.11 (14.04)				256	89.76 (18.04)			
Hispanic	251	93.19 (12.46)				250	90.50 (17.23)			
Hispanic U.S. Born	148		92.88 (12.10)			146		91.42 (17.69)		
Hispanic Foreign Born	103		93.73 (13.04)			104		89.31 (16.58)		
Hispanic English Proficient	168			93.92		167			93.08[a]	

		(11.98)		(16.47)
Hispanic Non-English Proficient	83	91.72	83	85.30[a]
		(13.34)		(17.65)
Foreign Born Dominican	23	90.67	24	80.83[b]
		(12.59)		(18.61)
U.S. Born Mexican	119	93.67	118	92.11[bc]
		(12.16)		(16.33)
Foreign Born Mexican	40	92.38	40	94.92[c]
		(11.00)		(15.75)
U.S. Born Puerto Rican	21	91.06	21	87.08
		(11.28)		(24.03)
Foreign Born Puerto Rican	17	97.70	17	88.93
		(14.97)		(13.66)
Other	32	93.30	30	89.14
		(14.57)		(15.54)

Notes. Shared superscripts indicate a difference at $p < .05$.

Table 2

Means and standard deviations for reading, math, and family and child strengths

	Total[a]	Black	Hispanic
	Mean (SD)	Mean (SD)	Mean (SD)
Letter Word Above 90 Wave 2	.60 (.49)	.61 (.49)	.58 (.49)
Applied Problems Above 90 Wave 2	.56 (.50)	.56 (.50)	.56 (.50)
Letter Word Score Wave 1	98.88 (14.75)	98.41 (16.12)	99.37 (13.22)
Applied Problems Score Wave 1	91.50 (17.55)	89.24 (19.03)	93.82 (15.57)
Demographic Characteristics			
Maternal Age	29.68 (9.34)	30.00 (10.80)	29.35 (7.56)
Male Child	.51 (.50)	.55 (.50)	.47 (.50)
Household Characteristics			
Employed	.49 (.50)	.52 (.50)	.45 (.50)
Above Poverty	.41 (.49)	.40 (.49)	.43 (.50)
Stable Living Arrangement	.64 (.48)	.61 (.49)	.68 (.47)
High School Education	.41 (.49)	.48 (.50)	.33 (.47)
Cognitive Stimulation			
Stable HOME above 85	.73 (.44)	.76 (.43)	.71 (.45)
Into HOME above 85	.11 (.31)	.11 (.31)	.11 (.31)
Child Behavior Characteristics			
CBCL Wave 1	-.03 (1.01)	.05 (1.08)	-.11 (.93)
Change in CBCL	-.15 (1.08)	.04 (1.15)	-.36 (.96)
Maternal Characteristics			

Maternal Woodcock-Johnson	89.93 (14.41)	87.33 (14.53)	92.64 (13.81)
Maternal Depression	.84 (.85)	.93 (.85)	.75 (.84)
Hispanic Characteristics			
Foreign Born			.41 (.49)
English Proficient			.67 (.47)
Child Woodcock Johnson in Spanish			.14 (.34)

Notes. [a] Total reflects Black and Hispanic subgroups; Whites are excluded from these analyses.

Table 3

Logistic regression examining the influence of individual, demographic and family characteristics on reading

	Reading							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Letter Word Wave 1	1.04**	1.04**	1.04**	1.03**	1.03*	1.03*	1.03*	1.03*
Demographic Characteristics								
Maternal Age	0.97	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Male Child	1.10	1.00	1.03	1.01	0.95	0.95	0.99	0.96
Hispanic	0.92	0.83	0.92	0.67	0.60	0.63	0.68	0.59
Household Characteristics								
Employed		0.60	0.62	0.68	0.67	0.67	0.66	0.67
Above Poverty		2.32*	2.27*	2.11†	2.15†	2.18*	2.15†	2.15†
Stable Living Arrangement		2.96**	2.82**	2.79**	2.68**	2.72**	2.77**	2.69**
High School Education		1.20	1.05	0.99	0.89	0.90	0.88	0.89
Cognitive Stimulation								
Stable HOME above 85			2.50*	2.47*	.2.35†	2.36†	2.18†	2.39†

Into HOME above 85	3.12†	3.44†	3.34†	3.32†	3.18†	3.40†
Child Behavior Characteristics						
CBCL Wave 1		0.61**	0.63*	0.62*	0.61**	0.63*
Change in CBCL		0.52**	0.55**	0.55**	0.55**	0.55**
Maternal Characteristics						
Maternal Woodcock-Johnson			1.02	1.02	1.02	1.02
Maternal Depression			0.96	0.96	0.95	0.96
Hispanic Characteristics						
Foreign Born				0.84		
English Proficient					1.61	
Child Woodcock Johnson in Spanish						1.19

Notes. Odds ratios are presented. † $p < .10$, * $p < .05$, ** $p < .01$.

Table 4

Logistic regressions examining the influence of individual, demographic and family characteristics on math

	Math							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Applied Problems Wave 1	1.06**	1.06**	1.06**	1.06**	1.06**	1.06**	1.06**	1.06**
Demographic Characteristics								
Maternal Age	1.00	1.02	1.02	1.02	1.01	1.01	1.01	1.01
Male Child	0.60	0.60	0.58†	0.59†	0.57†	0.58†	0.58†	0.56†
Hispanic	0.75	0.79	0.83	0.75	0.69	0.96	0.90	0.76
Household Characteristics								
Employed		1.29	1.32	1.38	1.37	1.37	1.40	1.44
Above Poverty		1.09	1.07	1.02	1.01	1.06	1.02	1.02
Stable Living Arrangement		2.12*	2.02*	1.88†	1.82†	1.81†	1.89†	1.82†
High School Education		1.66	1.46	1.37	1.26	1.37	1.24	1.20
Cognitive Stimulation								
Stable HOME above 85			2.99**	2.93*	2.81*	2.94*	2.66*	2.67*
Into HOME above 85			3.23*	3.34*	3.25†	2.99†	3.22†	3.12†

Child Behavior Characteristics					
CBCL Wave 1	0.72	0.75	0.71†	0.71†	0.74
Change in CBCL	0.81	0.86	0.85	0.84	0.85
Maternal Characteristics					
Maternal Woodcock-Johnson		1.02	1.02	1.02	1.02
Maternal Depression		0.92	0.90	0.92	0.91
Hispanic Characteristics					
Foreign Born			0.39*		
English Proficient				3.05*	
Child Woodcock Johnson in Spanish					0.41

Notes. Odds ratios are presented. † $p < .10$, * $p < .05$, ** $p < .01$.