

DISADVANTAGE AMONG CHILDREN BORN TO SINGLE MOTHERS: CAN CORESIDENT KIN HELP?

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Disadvantage among Children Born to Single Mothers: Can Coresident Kin Help?

This study investigates whether coresident kin can help limit disadvantages often faced by children born to unmarried mothers and help support their development. Using a nationally representative sample of preschool aged children born to unmarried mothers ($n = 217$) and intergenerational data from the Panel Study of Income Dynamics, we explore five factors associated with disadvantage among single mothers families—income, psychological well-being, parenting, routine and stability, and access to structured child care environments—and the link between these factors, kin coresidence, and four child outcomes important for school readiness. Findings indicate that coresiding with kin during preschool is associated with greater income (compared to families who never coresided with kin) but less routine. Children coresiding with kin during preschool also had higher verbal skills, but these skills were not due to differences in income. There were no significant associations between kin coresidence and psychological well-being, parenting, or child care arrangement, or children’s math skills, cognitive skills, or behavior.

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One of the most dramatic changes in the structure of American families over the past several decades has been the rise in nonmarital childbearing. Today, more than one-third of all children are born to unmarried mothers, and the number continues to increase (Hamilton, Martin, & Ventura, 2006). The growing prevalence of nonmarital childbearing has profoundly shaped the distribution of resources available to children. Mothers with a nonmarital birth are often younger, have higher rates of poverty, and less education than mothers with a marital birth (Driscoll et al, 1999; Sigle-Rushton & McLanahan, 2002; Thomson, Hanson, & McLanahan, 1994). These demographic differences have led to distinct patterns of advantage and disadvantage, with children born to single mothers often facing fewer opportunities and greater developmental difficulties as they grow-up than children born to married mothers (McLanahan, 2004). Given these inequalities, what is the best approach to limiting the disadvantage faced by unmarried mothers and supporting the positive development of their children?

The most common policy responses have been aimed at reducing nonmarital fertility and encouraging marriage among unwed mothers. So far, the first approach has been met with little success as nonmarital fertility rates continue to climb. Perhaps as a consequence, the second approach, promoting healthy marriage, has gained in currency. Promoting healthy marriage certainly has advantages. Married parent families generally have more resources than single mother families in the way of time, money, and social support (McLanahan & Sandefur, 1994), and marriage draws on family rather than government resources. However, marriage may not always benefit children born to single mothers (Lichter, Graefe, & Brown, 2003). Many of these children's fathers have low earnings and unstable employment (Sigle-Rushton & McLanahan, 2002), and the likelihood that their parents will later divorce is high (Graefe & Lichter, 2002). It

may be for these reasons that some researchers have found few substantial effects of marriage on children's developmental outcomes (Acs, 2007; Osborne, McLanahan & Brooks-Gunn, 2003).

Because marriage is not a panacea, an additional policy response could be to encourage kin, particularly grandparents, and unwed mothers to coreside, potentially offsetting some of the disadvantages faced by single mother families such as low income, lack of social support, and inadequate child care assistance (Chase-Lansdale, Brooks-Gunn, & Paikoff 1991). Like marriage promotion, kin-based assistance has the advantage that it does not draw from government resources. However, coresident kin's "assistance" may be a mixed blessing. For example, on one hand coresident kin could provide child care, thereby enabling mothers to pursue paid labor, earn additional income, and purchase materials that promote children's learning (Unger & Cooley, 1992). On the other hand, they could create conflict that undermines mother's psychological well-being and increases children's behavioral problems (Chase-Lansdale, Brooks-Gunn, & Zamsky 1994; Downey & Coyne 1990).

Given the steady rise in nonmarital fertility, surprisingly few studies have sought to tease out whether coresident kin alleviate or aggravate many of the disadvantages associated with nonmarital childbearing—or the subsequent effects on children's development. In this study, we aim to do just that, examining the link between a host of disadvantages often faced by single mothers families, kin coresidence, and children's behavioral and academic outcomes during the preschool years. We focus on this period, in particular, as a time when kin coresidence remains relatively common and when the developmental differences that determine children's long term development begin to emerge (Gordon, 1999; Pianta & Cox, 1999). We pursue these aims using an unmatched source of intergenerational data, the Panel Study of Income Dynamics (PSID), and a nationally representative sample of children born to single mothers.

Disadvantage among Single Parent Families and Children

Children born to single mothers are disadvantaged on a number of fronts. As noted, mothers with a nonmarital birth are often younger, have higher rates of poverty, and are less educated than mothers who give birth maritally (Driscoll et al, 1999; Sigle-Rushton & McLanahan, 2002; Thompson et al., 1994). These factors amount to fewer social, emotional, and financial resources available to unwed mothers than those available to married mothers that in turn shape the context in which children are raised (Bennett, Bloom, & Miller, 1995; McLanahan & Sandefur, 1994). This process, which often culminates in an increased risk of dropping out of high school or nonmarital pregnancy, begins with children's early behavioral and academic development during the preschool years (Duncan et al., 1998; McLanahan & Sandefur, 1994; McLeod & Kaiser, 2004). These two elements of development affect how children make the critical transition to formal schooling and set the stage for children's long-term academic success and well-being (Entwisle & Alexander, 1993; Pianta & Cox, 1999).

The link between children's academic and behavioral development during preschool (ages 3-5, before schools, teachers, and peers play leading roles) and family structure is illuminated by three theoretical perspectives (Amato, 2000; Brown, 2004; Carlson & Corcoran, 2001; Cavanagh & Huston, 2006; Osborne & McLanahan, 2007). The first, the socialization perspective, emphasizes the impact of the home learning environment and parenting on children's development, underscoring the social resources provided by parents, such as monitoring, warmth, encouragement, non authoritative discipline, and stimulation (Bornstein & Bradley, 2003; Thompson et al., 1994). Second, the stress perspective suggests that psychological distress, often resulting from economic strain, instability, or inadequate social support, can reduce mothers' psychological functioning and ability to provide the consistency

elemental to children's positive development (Amato, 2000; McLoyd, 1998). The third, the economic perspective, highlights the role of income in supporting mothers' psychological functioning, reducing instability, increasing the availability of home learning materials, and affording access to high quality neighborhoods and child care arrangements (Duncan and Brooks-Gunn, 1997; Duncan, Brooks-Gunn, Yeung, & Smith, 1998; NICHD ECCRN, 2005).

When taken together, these theories are important not only because they highlight factors underlying the developmental disadvantages of children born to single mothers. They also reveal "points of entry" by which disadvantage among single mothers might be reduced and children's healthy development be supported. As one example, increasing single mothers' financial resources might enable them to establish permanent residences, thereby eliminating the stress associated with residential mobility, buoying their psychological functioning, and bolstering their children's positive behavior (Astone & McLanahan, 1994; Bornstein & Bradley, 2003; McLoyd, 1998). Indeed, proponents of healthy marriage initiatives often argue that marriage will promote children's development in a similar way—basically by increasing household incomes, reducing maternal depression, improving mothers' physical health, and strengthening mothers' ability to practice effective parenting (Doherty et al., 2002; Horn, 2004). Of course, marriage is not an available, or desirable, option for some single mothers whose partners lack steady employment, suffer from substance abuse, or are incarcerated (Edin & Kefalas, 2005; Sigle-Rushton & McLanahan, 2002). Therefore, it is important to consider alternate sources of potential support, such as that from coresident kin.

The Role of Coresident Kin

According to some estimates, over 40 percent of unmarried mothers coreside with kin around the time of their child's birth, with many continuing to coreside for several years

thereafter (Gordon, 1999). Thus, coresident kin constitute a substantial—and overlooked—source of support. Although prior research has documented the role of coresident kin in helping single mothers with caregiving, managing domestic tasks, and meeting household financial demands, few studies have examined whether these forms of support compensate for those disadvantages linked to single mother families, such as low income and instability, or whether coresident kin, while assisting single mothers in one way, magnify other disadvantages, such as maternal psychological distress (Chase-Lansdale, et al., 1991; Chase-Lansdale et al., 1994; Furstenberg et al. 1987; Stack, 1974). Additionally, we know little about whether the presence of coresident kin is associated with children’s development. The few studies that have investigated these issues have either used local samples of African Americans or teenage mothers, looked at children during middle childhood and adolescence, or not focused exclusively on children born to single mothers (Aquilino, 1996; DeLeire & Kalil, 2002; Dunifon & Kowaleski-Jones, 2007; East & Felice, 1996; Furstenberg et al., 1987; Gordon et al., 1994).

To fill this gap, this study uses a nationally representative sample of preschool aged children born to single mothers. We develop a conceptual model (depicted in Figure 1) that integrates multiple disadvantages associated with single mother families—which we term “indicators of disadvantage”—that coresident kin could potentially offset, thereby altering the processes linking such disadvantages with children’s academic and behavioral development. These indicators of disadvantage include income, psychological distress, parenting, routine and stability, and access to structured child care environments and were selected based on insights from the socialization, stress, and economic perspectives.

[Figure 1: Conceptual Model of Study about Here]

Starting with income, many coresident grandmothers often work themselves, and can increase the availability of financial resources to children and the households in which children reside (Baydar & Brooks-Gunn, 1998). Secondly, coresident relatives, particularly grandmothers, often provide childcare and help with domestic duties (Chase-Lansdale et al., 1994; Smith, 2000), which may not only then bring a sense of routine and stability to the household, but also decrease the stresses associated with securing child care or managing a household, thereby also enhancing mother's parenting abilities and reducing psychological distress (East & Felice, 1996; Leadbeater & Bishop, 1994). Lastly, coresident grandmothers may be more knowledgeable about child development, having already been parents, and could model appropriate parenting behaviors and answer questions about children's developmental needs, thereby improving mothers' parenting and quality of the home environment (Stevens, 1984; Stevens, 1988).

Importantly, this conceptual model also accounts for the idea that kin coresidence may not be unequivocally beneficial. For example, because coresident grandmothers often play a large role in caregiving, some mothers may withdraw from parenting while others may feel uncertainty about their parenting responsibilities or parenting abilities (Barratt, Roach, & Colbert, 1991; Stevens, 1998; Wakschlag, Chase-Lansdale, & Brooks-Gunn, 1996). Coresident grandmothers and mothers sometimes also experience regular conflict (Chase-Lansdale et al., 1994), which could undermine mothers' psychological functioning and diminish the quality of the home environment. Finally, mothers may rely on coresident relatives for child care assistance rather than enroll their children in a center care arrangement, which can help make up for learning disadvantages children face at home (NICHD ECCRN, 2005; Vandell, 2004).

Additional Considerations

In addition to having a direct influence on the “indicators of disadvantage,” kin coresidence may also indirectly affect these factors by supporting maternal employment. Several studies have demonstrated that the child care and domestic assistance provided by coresident kin allows many unwed mothers the opportunity to pursue paid labor (Furstenberg et al., 1987; Gordon, Chase-Lansdale, & Brooks-Gunn, 2004; Sandfort & Hill, 1996; Unger & Cooley, 1992). The opportunity to pursue paid labor has been shown to improve child outcomes via the five indicators of disadvantage where increased labor participation can result in greater income, life satisfaction (psychological well-being), efficaciousness (parenting), life/family management skills (stability/routine), and access to more structured child care environments (e.g. center care) (Davis-Kean, 2005; McLoyd, 1998; Menaghan & Parcel, 1995, Mirowsky & Ross, 2003; NICHD Early Child Care Research Network, 1997).

Although in this discussion we considered the potential direct and indirect (through employment) role of kin coresidence on disadvantage, isolating the direct and indirect causal influence of coresidence with kin is beyond the scope of this analysis. The goal here is more modest and exploratory— to identify whether there is an association between kin coresidence, maternal employment, indicators of disadvantage, and child outcomes once we account for preexisting disadvantage (or disadvantage that predated the birth of the child). These key measures of preexisting disadvantage are maternal age and education at birth, both of which are closely linked to employment opportunities, parenting skills, and personal well-being, the likelihood that mothers coreside with kin or live on their own, and unmeasured selection factors that may contribute to both child outcomes and the indicators of disadvantage (Levine, Pollack,

& Comfort, 2004; McLanahan 2004; Rindfuss, Morgan, & Offutt, 1996; Pogarsky, Thornberry, & Lizotte, 2006).

As a final consideration, we recognize that the impact of kin coresidence may vary depending on the temporal context related to mothers' circumstances and children's development. On one hand, households where the mother had coresided around the time of the child's birth and then were on their own may be more advantageous to children because, for example, these children are more likely to experience center care. On the other hand, households where mothers coreside with kin during the preschool years may be more advantageous because their children may have greater access to material resources such as books, which are critical during the early learning stages. Thus, we compare households where mothers coresided with kin during two different periods—around the time of the child's birth, and during the preschool years, and compare them to households where mothers had married and where mothers remained single and had not coresided with kin.

METHOD

Data and Sample

This study draws on core data from the Panel Study of Income Dynamics (PSID) and auxiliary data from the first wave of the Child Development Supplement (CDS-I). The PSID is a longitudinal study comprised by a representative sample of individuals and the family members with whom they coreside (see www.psidonline.isr.umich.edu). When data collection for the PSID began in 1968, the study was originally intended to understand the dynamics of household economic growth. It has since followed participants at regular intervals, incorporating spouses,

children, and others as they entered the households of the original participants into the core sample, making it an unmatched source of intra- and intergenerational data.

In 1997, the PSID supplemented its core data collection with additional information on PSID parents and their 0-12 year old children, including detailed information on children's development, with the introduction of the Child Development Supplement (CDS-I). The advantage of the CDS-I compared to other sources of data commonly used to study single parent families, such as the Fragile Families Study, is that it contains multiple measures of preschool children's early academic skills (and its different dimensions, including achievement and cognition) in addition to measures of behavior. Fragile Families includes a singular measure of children's early academic skills, the Peabody Picture Vocabulary Test. Thus, a particular advantage of the PSID is that it has both longitudinal measurements of coresidence with kin along with detailed assessments of child development.

Out of the 2,705 families selected for the CDS-I, 2,394 families (88%) and 3,563 children participated. The analytic sample for this study was restricted to the 612 participating preschool aged children (ages 3 – 5). Three other subsetting criteria were then applied. First, the 42 preschool aged children from the PSID 1997 Immigrant Sample were excluded because family history data for these children, including family structure at birth, was unavailable. Second, 19 children whose 1997 primary caregivers were someone other than their biological mothers were excluded. Finally, we include only children whose mothers were single at the time of birth. These steps resulted in a final analytic sample of 217 children that, when weighted using child-level weights, constitutes a nationally representative sample of Black and White preschool aged children born to single mothers in the early to mid- 1990's.

File Structure

Data on these children's mothers and on the households in which these mothers have resided since the child's birth come from the individual and family level files of the PSID. Mothers participating in the CDS-I were given a unique primary caregiver identifier. This identifier is used to link individual and household data to the child and mother level data contained in the CDS files.

Measures

Household Structure. Household structure was coded into one of four categories based on household composition around the time of the child's birth as well as household composition in 1997, the time when the child outcomes are measured. At birth, all children are classified as either in a single-mother only household or as living with a single mother and kin. As we will discuss below, a small number of those classified as being in a single mother only household were cohabiting with a partner. In 1997, children are classified as either in a married-parent household, single mother and living with kin household, or in a single mother only household. We combine this information on household structure at the time of the child's birth and between the birth and 1997 to create an indicator of the child's household structure history. The first category, *married*, includes all mothers who had married after the child's birth and before the 1997 interview. The second category, *kin at birth*, contains single mothers who had coresided with an adult relative around the time of the child's birth but had moved out on their own by the 1997 interview. The third category, *kin 1997*, captures single mothers who were coresiding with an adult relative at the time of the 1997 interview. The vast majority of mothers in the kin 1997 category had coresided since the time of the child's birth. However, 3 mothers moved in with

kin sometime after the child's birth. The final category, *single*, includes mothers who had never coresided with an adult relative between the time of the child's birth and 1997 interview.

Multiple steps were taken to form these categories. First, information from the supplemental Marriage History File provided the month and year of each marriage, divorce, and separation. This information, combined with information on the child's birth month and year from the CDS, allowed us to determine whether marriages and divorces/separations occurred before or after the child's birth and 1997 interview. As a next step, we then established who the head of household was for each year since the child's birth. This information came from mothers' reports of their relationship to the household head (e.g. head of household, daughter of household head, cohabiter of household head, etc...). In cases when the mother or cohabiting partner was not the head of household, it was clear that the mother was coresiding with an adult relative. In most instances, this adult relative was a parent, step-parent, or grandparent, with only a few coresiding with siblings. In cases when the mother or mother's cohabiting partner was the head of household, the presence of coresident kin was not immediately apparent. In this situation, we turned to reports on the number of adults in each household and on the relationship of these adults to one another. As it turned out, nearly all mothers who were heads of household were not coresiding with kin. There were a couple instances, however, when the head of household was a cohabiter that this strategy allowed use to detect the presence of coresident kin.

Combining information on the head of household data and mothers' marriage history data, we were able to sort mothers into one of the four categories of household structure (married, kin at birth, kin 1997, single). We chose these four categories so that we could contrast children who experience single-mother families throughout their childhood to those who lived with kin throughout their childhood to see if living with kin is associated with any advantages or

disadvantages. These categories also allow us to contrast children in single-mother households throughout childhood to those whose mothers lived with kin around the time of the child's birth and then moved out on their own and to those whose mothers married. This allows us to see whether living with kin, even for a short while, is associated with advantages (or disadvantages) when the mother eventually establishes her own household. These categories also enable us to describe differences between children born to single mothers who marry within their first few years of life and those born to single mothers that remain single.

To account for additional family structure variability (e.g. marriage, divorce, cohabitation) within the four household structure categories, three indicators were included: a binary marker for whether the mother had married and divorced / separated after the child's birth and before the 1997 interview (8 %), a binary marker for whether the mother was cohabiting in 1997 (11 %), and a binary marker for whether the mother was cohabiting around the time of child's birth (16 %). Unfortunately, the indicators of cohabitation are less precise than the marriage data because month-by-month accountings of household members were not available. Thus, our binary marker for cohabitation at the child's birth is actually a measure of whether the mother is cohabiting at the next interview, subsequent to the birth. It is possible that many partners moved out sometime after the child's birth but before that year's interview, which may explain why only 16% of our sample of nonmarital births are coded as cohabiting, when other sources estimate that 40% of nonmarital births are to cohabiting women (Bumpass & Lu, 2000).

Measures of Disadvantage. Five indicators measured in 1997 are used to index disadvantage among children born to single mothers. The first is income-to-needs. The income-to-need measure was constructed for each household by dividing total household income from all sources (as reported by the household head) by the poverty threshold for that family size.

The second is parenting, measured by the Total HOME2 Score (HOME Score). The Total HOME2 Score was measured by the Home Observation for Measurement of the Environment Short Form (HOME-SF), an adaptation of the Caldwell and Bradley HOME inventory. This instrument was designed to assess the age-appropriate level of cognitive stimulation and emotional support mothers provide their children at home. For preschool aged children, the Early Childhood version of this instrument (EC-HOME) was used. Information for the HOME was gathered from interviewer observations of the home and the Primary Caregiver-Child questionnaire. Observation ratings and questionnaire items were rescaled and summed to create a Total HOME Score. A second version of the total score, the Total HOME2 Score, was also created. This version excludes three items involving fathers, making it more appropriate for analyses of single mother households.

Third, mother's psychological well-being was measured by the K-10 Non-Specific Psychological Distress Scale (Distress Scale). The Distress Scale was designed to measure psychological well-being among individuals not experiencing serious mental illness. The questionnaire included 10 items that asked the primary caregivers how often they have experienced certain feelings of distress (e.g. depression, fatigue, nervousness, hopelessness) over the last four weeks. Response items were based on a scale of 1 – 5, with 1 indicating "*all the time*" and 5 indicating "*none of the time.*" Items were then rescored (with 1 rescored as 0 and 5 rescored as 4) and summed (Cronbach's alpha = .88). For ease of interpretation, we reverse codes these scores so that higher scores indicate greater distress.

Fourth, stability and routine is measured by the total number of meals per week mothers reported sharing with their children (as determined by the question: *How many days a week does the family sit down and eat the main meal of the day together?*) This measure is intended to tap

the degree to which mothers are able to implement regular household schedules, and therefore maintain routine and stability within the home. As such, more meals signal greater routine and stability. Of course, it is possible that sharing few meals per week (for example, every Saturday and Sunday) is a routine, weekly occurrence. Unfortunately, the PSID does not contain questions that tap routine and stability that would allow us to escape this problem entirely, and based on preliminary analyses with other measures (e.g. limits on bedtime, limits on television watching) shared meals represented the best available measure. Because this measure was not normally distributed, it was converted to ordinal categories (1 = 0, 1; 2 = 2, 3; 3 = 4, 5; 4 = 6, 7) for the multivariate analyses.

Lastly, child care was included primarily to gauge children's early learning opportunities outside of the home, but also to assess kin "assistance" within the home. Child care is estimated by a categorical measure of children's primary care arrangement. Categories include center care, relative care, maternal care, or other care arrangement (e.g. in-home care by a non-relative care, group home care). We focus on center care and relative care use.

Child Outcomes. Four indicators of child development, measured in 1997 (again, when children are between the ages of 3 and 5) are examined. The first three, the Woodcock-Johnson Psycho-Educational Battery-Revised (WJ-R) Letter-Word subtest, the WJ-R Applied Problems subtest, and the Memory for Digit Span Test, are indicators of children's academic skills. The WJ-R Letter Word and Applied Problems subtests measure achievement and the Digit Span is a test of cognition. We include these three measures (as opposed to one or two) to assess several key academic skills associated with school readiness. Each test was administered to children ages three and older.

The WJ-R is a widely used, wide-range comprehensive set of individually administered tests used for measuring cognitive abilities and achievement (again, the two subtests used in the analysis measure achievement). The test is designed to provide a normative score that shows children's abilities in comparison to national averages for children the same age. Normed scores are constructed based on children's raw test scores and ages to the nearest month. The Letter Word subtest involves identifying isolated letters and words as well as symbolic learning activities (e.g. matching a pictographic representation of a word with an actual picture of the object) and is designed to measure reading identification skills. The Applied Problems subtest includes simple math problems and calculations, and measures skill in analyzing and solving practical problems in mathematics.

The Memory for Digit Span test from the Wechsler Intelligence Scale for Children-Third Edition (WISC-III) has also been widely administered, and assesses children's concentration, attention processes, and short-term memory. In the first part of the test, the child is asked to listen and repeat a sequence of numbers spoken by an interviewer. In the second part, the child is asked to repeat them in reverse order. The sequence increases in length until the child can no longer repeat the sequence correctly. Higher Digit Span scores indicate greater memory skill.

The final indicator measures children's behavioral adjustment, and is estimated by the Behavior Problem Index (BPI) Total Score. The BPI total score is based on responses by the primary caregiver as to whether a set of 30 problem behaviors was often, sometimes, or never true of the target child. Behaviors included having sudden mood changes, anxiousness, meanness towards others, and obsessiveness. An overall Total Problems index was created by summing the individual item-level responses (Cronbach's $\alpha = .90$). Higher BPI scores imply a greater degree of behavioral problems.

Preexisting Disadvantages. Two important preexisting advantages are measured: mother's education at the time of the child's birth and mothers' age at birth. PSID individuals annually reported the number of years of education they had completed. Mother's education at birth was measured by the reported number of years of education corresponding to the year of the child's birth and then dummy coded into three categories (less than high school, high school degree, more than high school). When education data at the year of the child's birth was unavailable, education data from the nearest year following the birth was used. Mothers' age at birth was calculated by subtracting the child's age (measured in years) from mothers' reports of her age at the 1997 interview.

Other Control Variables. Finally, we include several important variables to control for associations among household structure, children's academic and behavioral outcomes, and the five measures of disadvantage. These controls include gender (1 = female, 0 = male), child's race (1 = Non-White, 0 = White), number of children under 18 living in the household (dummy variables for 1, 2, or 3 or more children), whether the mother had previously been married (1 = yes, 0 = no), whether the mother was currently employed (1 = yes, 0 = no), and the child's age measured in half-year increments. For the bivariate analysis, we also include a measure of whether any adult relative in the household was employed (1 = yes, 0 = no).

Plan of Analysis

The analytical plan includes four steps. The first step was to create the four household structure categories, which captured variation in single mother's household structure histories. These categories were then used in bivariate analyses that compared mean values of key household / maternal characteristics (maternal employment, household employment, race, child's gender, and number of children in the household) and the measures of disadvantage across

household structure, providing an overall portrait of the mothers in our sample, particularly those who had lived with kin. These bivariate models were weighted using child-level weights.

The third step examined the linkage between household structure and the indicators of disadvantage. Income-to-needs, HOME, and distress were estimated using ordinary least squared (OLS) regression, meals was estimated using ordinal logistic regression, and child care was estimated with multinomial logistic regression. For the child care models, we examined all possible reference categories but our focus was on models estimating the likelihood of being in relative care compared to center care. Models were first estimated with only the household structure variables as predictors. Control variables, family structure indicators, and measures of mother's education and age at birth were then added to the base model. Lastly, mother's employment was added to determine whether the link between household structure (particularly coresiding with kin) and the five indicators of disadvantage may be indirectly affected by mother's employment status.

As the final step, we estimated the independent effect of each variable on all four child outcomes (WJ-R Applied Problems, WJ-R Letter Word, WISC Digit Score, and Behavioral Problems). This allowed us to see whether kin coresidence was associated with preschool academic and behavior characteristics, important aspects of school readiness. We then began building a model, starting with the household structure categories, adding education and age at birth, then control variables, family structure indicators, and lastly mother's employment (again, to estimate the indirect effect of employment). Finally, we add the five indicators of disadvantage in order identify whether variation in academic and behavioral development associated with household structure could be explained by in the indicators of disadvantage.

All models were estimated using Stata. To account for missing data, we used multiple imputation, creating ten data sets using the Stata *ice* program (see Royston, 2004). Analyses were performed using the *micombine* command.

RESULTS

Household Structure Characteristics

In our sample of mothers with nonmarital births, at least 35 percent had coresided with kin, either around the time of the child's birth or up through the 1997 interview (recall that only 3 mothers in the kin 1997 category had moved in sometime after the child's birth). Moreover, this figure does not include mothers who had married by the 1997 interview. This estimate is consistent with other studies that find a significant proportion of mothers with nonmarital births coreside with kin (see Gordon 1999). Additionally, 47 percent had never coresided with a relative and 18 percent of the sample had married by the 1997 interview, although an additional 8 percent had married and then divorced or separated by 1997 (see Panel 3).

[Table 1 about Here]

Turning to the bivariate analyses, the top panel of Table 1 describes the characteristics of the mothers in our sample, the employment characteristics of the households in which they reside, and how these vary by household structure. In terms of race differences, mothers (still) living with kin in 1997 are disproportionately Non-White (75 percent) whereas mothers who married are more commonly White (68 percent). Roughly equal proportions of Non-Whites and Whites remained single or coresided with kin around the time of the child's birth. Employment in 1997 is least common among mothers living with kin in 1997 (40 percent). At the same time, the proportion of households with an employed household member is higher among those living with kin in 1997 (89 percent) than those living on their own (73 percent). These differences in

employment suggest that mothers living with kin are disadvantaged with respect to their own employment characteristics, but that they are advantaged relative to single-mother households in that at least one household member is connected to the labor force.

The second panel of Table 1 describes two disadvantages that may be associated with the decision to live with kin—age at birth and education at birth. Compared to single noncoresiding mothers, those (still) living with kin in 1997 are younger ($M = 19.83$ for kin 1997, $M = 25.56$ for single) and have lower levels of education (57 and 16 percent without a high school degrees, respectively). Those who married or lived with kin at the time of the child's birth are less educationally disadvantaged than those still living with kin in 1997. These results suggest that mothers living with kin have preexisting characteristics that could contribute to poorer child outcomes, such as being young and having low educational attainment. Living with kin might enable mothers to buffer children from these disadvantages by increasing household resources, as these mothers are more likely than single mothers living on their own to have an employed household member.

The bottom panel of Table 1 describes our five indicators of disadvantage across the four household types. These descriptive results suggest that those living with kin in 1997 have *lower* income-to-needs ratios ($M = 1.24$) than single-mothers who lived continuously on their own ($M = 1.84$). Living with relatives, either only at the child's birth or in 1997 is also associated with significantly lower quality home learning environments, measured by the HOME scores, ($M = 16.74$ for kin 1997, $M = 16.22$ for kin at birth) compared to single mothers on their own ($M = 18.97$) or single mothers who have married by 1997 ($M = 18.69$). Additionally, psychological distress is much more common among single mothers living with kin in 1997 than any of the other household structure types. The number of meals per week mothers share with the child—a

measure of household routine—is also fewest among single mothers living with kin in 1997 ($M = 3.45$) and greatest among single mothers ($M = 5.34$). Finally, anticipating that center care would result in better child outcomes because of the structured environment these arrangements can provide, mothers married by 1997 had the highest levels of center care use ($M = .28$), perhaps because (as shown in the top panel) they had the highest levels of employment while single mothers living continuously on their own had the lowest levels ($M = .10$), although these differences are not statistically significant.

By and large, it appears that coresident kin typically have very few resources to impart and may not be of much benefit to unmarried mothers or their preschool aged children. Nonetheless, the top two panels of Table 1 indicate that these mothers have many preexisting disadvantages such as less education, which we would expect to result, for example, in the lower HOME scores. As such, pooling within a broader family network may be better than trying to live on one's own. The next set of models further explores this issue by examining the association between household structure type and the five indicators of disadvantage, controlling for mother's preexisting characteristics such as age at birth and educational attainment.

Indicators of Disadvantage

The first step in this multivariate analysis was to assess associations between household structure and the indicators of disadvantage. To this base model, we then added control variables, family structure indicators, and measures of mother's education and age at birth (results not shown). Lastly, we added maternal employment to the model. Table 2 presents results from this final set of models.

On the whole, there were few significant differences between households where the mother was continuously single and households where the mother had coresided with kin, either

around the time of the birth or in 1997. Once we control for the mothers' lower levels of education, their younger age at the child's birth, their lower rates of employment, and the number of other children in the household, race, and cohabitation status, in contrast to the findings presented in Table 1, income-to-needs became significantly higher for mothers living with kin in 1997 compared to single mothers living on their own ($b = .65, p < .05$). We expected that children of single mothers might have more resources if their mothers live with kin than they would if they had lived on their own, and these results are consistent with that expectation. Importantly, this association is slightly weaker before controlling for employment, suggesting that although mothers coresiding with kin in 1997 have lower levels of employment, thereby exerting a negative effect on income, this negative effect is more than made up for by the positive direct effect of coresiding with kin.

Additionally, although our focus was on how mothers coresiding with kin compared to single mothers, we also estimated these models with married as the household structure reference category. Results from these models reveal that mothers who had married by 1997 have significantly higher income-to-needs than mothers in all three other household structure categories, especially single mothers.

[Table 2 about Here]

The results from the bivariate models predicting HOME score, psychological distress, and shared meals showed that living with kin in 1997 was associated with lower levels of well-being relative to being single on these three indicators of disadvantage. In the multivariate models that control for preexisting disadvantage, HOME scores are remain slightly lower for those living with kin and levels of psychological distress slightly higher for those living with kin in 1997 relative to those living with no kin, although these differences are no longer statistically

significant. Only shared meals continues to be significantly lower for those living with kin ($b = -1.44, p < .01$), suggesting that in more complicated households, children are less likely to share meals with their mothers. Again, reestimating these models with married as the reference category, we find that married mothers are marginally less distressed than mothers in the single and kin 1997 categories ($b = -4.05, p < .10$). Lastly, the results from these models show no significant differences in the use of center care or relative care across household structures. Moreover, models estimated with and without maternal employment showed no substantial differences. Thus, no indirect effects of maternal employment on either HOME scores, distress, shared meals, or child care arrangement were observed.

Overall, the results presented in Table 2 indicate that living with kin might improve child outcomes relative to children living with single mothers on their own because coresident kin contribute financial resources that boost the household's income-to-needs ratio. However, this advantage might also be offset by less household routine and stability. The overall effect of kin coresidence on child outcomes will be explored in the final set of analyses.

Child Academic and Behavioral Development

Table 3 presents models that use household structure, indicators of disadvantage, and control variables to predict child outcomes. Model 0 presents coefficients from models where each independent variable is entered separately. Model 1 presents coefficients with all independent variables in the model. Intermediary models were also estimated, where household structure and different combinations of independent variables were used to predict child outcomes. Because there were no changes in significance by household type between Model 0 and Model 1 for WJ-R Applied Problems, WISC Digit, and Behavioral Problems (including

intermediate models estimated with and without maternal employment) results from these intermediate models are not shown.

[Table 3 about Here]

Model 0 estimates the association between household structure and WJ-R Letter-Word scores ($M = 93.79$, $SD = 13.10$). The results show no zero-order differences in letter-word recognition by household type. Among the five indicators of disadvantage, only HOME score is a significant predictor. Turning to Model 2, once we control for preexisting factors (in particular education) living with kin is associated with significantly higher Letter-Word scores ($b = 5.94$, $p < .05$). Iteratively adding other aspects of family structure history, child's age, race, gender, the number of children in the household, maternal employment, and the five indicators of disadvantage to this model, the results indicate that the positive association between living with kin and Letter-Word scores can not be explained by income-to-needs, HOME scores, distress, shared meals, or child care arrangement, nor can it be explained by maternal employment. This is not surprising given that that living with kin is not associated with higher HOME scores (see Table 2) and HOME is the only significant predictor of Letter-Word scores ($b = 1.14$, $p < .01$). As an interesting aside, children in families where the mother had cohabited at birth had significantly lower Letter-Word scores ($b = -7.13$, $p < .05$), as did children in families where the mother had been married prior to the birth ($b = -11.41$, $p < .05$). Again, as indicated in Table 2, HOME scores could not explain these associations.

Reestimating these same models using the same process to predict Woodcock-Johnson Applied Problems scores ($M = 93.79$, $SD = 18.72$), the results show no differences by household structure type in either the zero-order or full model, although the coefficients followed a similar pattern: children living with kin in 1997 had higher Applied Problems than children in other

household categories. This is also true of models estimating Digit Scores ($M = 4.59$, $SD = 2.66$). Models estimating Behavioral Problems ($M = 8.44$, $SD = 4.96$) showed no significant differences either, but the coefficient for *kin 1997* was higher than for other household groups. There were no significant differences in child outcomes between children in continuously single households and children in households where the mother had married. Again, children in families where the mother was cohabiting in 1997 or had previously married have significantly lower WJ-R Applied Problem Scores ($b = -12.13$, $p < .05$; $b = 14.55$, $p < .05$), and children in families cohabiting in 1997 have significantly more behavioral problems ($b = 2.53$, $p < .05$).

DISCUSSION

This study contributes to debates on how to help children born to single mothers by examining the role of coresident kin, which relative to the recent debates on marriage and nonmarital childbearing, has gained little attention (Chase-Lansdale et al., 1991). We study children during the preschool years, a critical period when the impact of coresident kin in children's lives could significantly affect—both positively and negatively—how children develop, and focus on those developmental outcomes associated with school readiness: behavior and academic skills.

Examining a nationally representative sample of children to women with nonmarital births and employing rich intergenerational data, our results suggest that kin coresidence is most common among the youngest and least educated unmarried mothers—essentially those who are most disadvantaged at the time of the nonmarital birth. Moreover, these women live in households with lower than average income-to-needs ratios, the lowest HOME scores, highest levels of psychological distress, and fewest shared meals, all of which suggest that the kin who coreside with unmarried mothers do not themselves have many resources. Yet, once we control

for mother's education and age at birth, and other factors such as number of children in the household, race, and cohabitation status, living with kin is associated with higher income-to-needs ratios relative to living unmarried without kin. Thus, despite their few resources, living with kin may put unmarried mothers in a better financial situation than they would be had they lived on their own. Indeed, after modeling the association between household structure and income-to-needs with and without maternal employment, most of the effect of coresiding with kin during the preschool years was not due to mothers' labor force participation, but rather due to the financial contributions, however modest, of coresident kin.

Furthermore, coresiding with kin may offset certain developmental disadvantages for children associated with nonmarital childbearing. Compared to children in families where the mother had never coresided, children in families where the mother was (still) coresiding in 1997 had higher Letter-Word Scores. There were no significant differences between household structure categories in children's Behavioral Problems, Applied Problems and Digit scores. Moreover, coresident kin did not have a significant negative impact on children's development.

Unfortunately, our results could not identify the specific factors associated with kin coresidence that supported children's language skills. Only income-to-needs was significantly higher among 1997 coresiding families compared to continuously single families, yet somewhat surprisingly—given what is known about the link between income and child outcomes—income-to-needs was not significantly associated with children's outcomes, net of mother, household, and child characteristics (Duncan et al., 1998). (This may have been due to the limited range on this variable in our sample of unmarried mothers). Conversely, there was significantly less routine (e.g. shared meals) in 1997 coresident households, but again, this was not negatively

associated with children's outcomes. Our analysis also did not provide evidence that the link between coresiding with kin and children's Letter Word scores was due to mother's employment.

It is possible that children coresiding with kin had higher Letter-Word scores because they may have enjoyed greater interaction with an adult relative (something our data did not allow us to explore), which during the preschool years can promote children's language skills through day-to-day conversation and activities (Bornstein & Bradley, 2003). This may not be true, conversely, in cohabiting or step families, where mothers' partners are often not highly involved with their non biological children (Hofferth & Anderson, 2003; Hofferth et al., 2007). Indeed, children in cohabiting families in our sample, particularly those cohabiting during children's preschool years, fared poorly compared to children in non-cohabiting families. Even the children in our sample whose mothers had married did not fare particularly better than the children in continuously single mother households, despite higher income-to-needs ratios. Thus, repartnering may not always be beneficial to children born to unwed mothers (Graefe & Lichter, 2002), and in many cases, coresiding with kin may prove more favorable.

Of course, because this study was not designed to draw causal inferences, we cannot make the case that coresident kin directly contribute to children's developmental outcomes. Despite the inability to infer causality, our results provide insight into potential advantages and disadvantages associated with kin coresidence, the characteristics of mothers who coreside, and the developmental outcomes associated with coresiding with kin during children's preschool years. Moreover, although our sample was small and does not adequately represent Latinas, in comparison to prior research, the use of a nationally representative sample containing both older and White mothers marks an advantage of this study and step toward understanding the role that coresident kin play in the lives of children born to unmarried mothers. Having established this

basic understanding, future studies could then draw on larger (and more ethnically diverse) samples in combination with statistical techniques that go further toward determining the causal mechanisms linking kin coresidence with children's development. We should note, however, that other available data with larger samples of single mothers do not provide the same depth of data on different dimensions of school readiness and early child development as the PSID.

As rates of nonmarital childbearing continue to rise and policy makers continue to explore practical strategies for reducing the disadvantage often faced by unwed mothers and their children, the results from this study suggest that policies and programs targeting coresiding households should be given more consideration. Certainly, coresiding with kin presents familiar challenges for unmarried mothers and their children because such kin, as with the partners of many mothers with nonmarital births, often have few resources, as this study has shown. For this reason, *mandatory* residence requirements, such as those under welfare reform requiring teenaged unmarried mothers to coreside with kin, may not always benefit young mothers. Nonetheless, taken in combination with other approaches, supporting the needs of these coresiding families, and in some cases even encouraging mothers to coreside with kin, may prove to be a sensible and low-cost supplement to current healthy marriage initiatives (Chase-Lansdale et al., 1991).

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Table 1. Means of Key Maternal, Child, and Household Characteristics, and Indicators of Disadvantage by Household Structure Categories ($n = 217$)

	Single	Kin at Birth	Kin 1997	Married	Total
<i>Mother / Child / HH Chars</i>					
Race (non-White)	.50 _{ab} (.50)	.52 _{ab} (.50)	.75 _a (.44)	.32 _b (.47)	.51 (.50)
Gender (female)	.50 _a (.50)	.48 _a (.50)	.43 _a (.50)	.52 _a (.50)	.49 (.50)
# Children in Household	2.13 _{ab} (1.11)	1.89 _b (.90)	2.60 _a (1.12)	1.87 _b (.63)	2.10 (1.03)
Mother Employed	.71 _{ab} (.45)	.54 _{bc} (.50)	.40 _c (.49)	.85 _a (.32)	.65 (.47)
HH Member Employed	.73 _{bc} (.46)	.66 _c (.32)	.89 _{ab} (.74)	1.00 _a (0.00)	.77 (.20)
<i>Preexisting Disadvantages</i>					
Age at Birth	25.56 _a (6.15)	20.59 _b (3.04)	19.83 _b (4.37)	20.73 _b (3.92)	22.86 (5.65)
Education at Birth (< HS)	.16 _b (.37)	.31 _{ab} (.46)	.57 _a (.49)	.16 _b (.36)	.25 (.43)
High School Degree	.52 _{ab} (.50)	.50 _{ab} (.50)	.22 _b (.43)	.65 _a (.48)	.50 (.50)
More than High School	.32 _a (.47)	.19 _a (.39)	.19 _a (.40)	.20 _a (.40)	.25 (.43)
<i>Family Structure History</i>					
Cohabiting at Birth	.22 _{ab} (.41)	.08 _{ab} (.27)	.02 _b (.13)	.20 _a (.40)	.16 (.37)
Cohabiting in 1997	.15 _a (.35)	.18 _a (.38)	.00 _b (.06)	--- (.39)	.11 (.31)
Previously Married	.15 _a (.36)	.00 _b (.06)	.00 _b (.00)	.19 _a (.39)	.11 (.31)
Divorced / Separated	.16 _a (.36)	.03 _b (.18)	.00 _b (.00)	.00 _b (.00)	.08 (.27)
<i>Indicators of Disadvantage</i>					
Income-to-Needs	1.84 _b (1.96)	1.31 _{bc} (1.23)	1.24 _c (.91)	2.98 _a (1.44)	1.85 (1.72)
HOME Score	18.98 _a (2.45)	17.22 _b (3.21)	16.74 _c (2.88)	18.68 _{ab} (2.42)	18.24 (2.83)
Distress	6.96 _b (6.69)	7.03 _b (6.59)	12.56 _a (12.88)	5.11 _b (4.10)	7.35 (7.88)
# Shared Meals / Week	5.34 _a (1.65)	4.56 _{ab} (2.57)	3.45 _c (2.61)	4.08 _{bc} (2.54)	4.68 (2.30)
Child Care (center care)	.11 _a (.31)	.19 _a (.40)	.22 _a (.41)	.28 _a (.45)	.17 (.38)
Relative Care	.26 _b (.44)	.58 _a (.49)	.51 _a (.50)	.40 _{ab} (.50)	.39 (.49)
Other Care	.40 _a (.50)	.06 _b (.22)	.03 _b (.17)	.11 _b (.32)	.22 (.44)
Maternal Care	.22 _a (.42)	.17 _a (.38)	.24 _a (.23)	.20 _a (.40)	.22 (.41)
<i>Weighted Proportion</i>					
	.47 (.40)	.20 (.38)	.15 (.35)	.18 (.38)	1.00 ---

Note: HH = house hold. HS = high school. Standard deviations in parenthesis. Different subscripts indicate significant differences in means ($p < .05$) across household composition groups, as determined by one-way ANOVA. *A* represents the highest mean level, with *B*, *C* indicating means in descending order. Coefficients with the same subscript do not significantly differ. Means estimated using child-level weight.

Table 2. Results from Multivariate Regressions Predicting Indicators of Disadvantage ($n = 217$)

	Income-Needs	HOME Score	Distress	Shared Meals	Rel. (Center)
<i>HH Structure (single)</i>					
Kin 1997	.65* (.32)	-.13 (.55)	.25 (2.17)	-1.44*** (.42)	.36 (.64)
Married	1.74*** (.33)	-.37 (.59)	-3.80+ (2.09)	-.72+ (.43)	.84 (.67)
Kin at Birth	.21 (.34)	-.08 (.55)	-.52 (1.70)	-.40 (.42)	-.12 (.59)
<i>Preexisting Disadvantages</i>					
Age at Birth	.04+ (.02)	.03 (.04)	-.06 (.15)	.01 (.03)	.04 (.05)
High School (< HS)	.38 (.25)	1.84*** (.45)	-3.65* (1.67)	.00 (.32)	-.48 (.49)
More than HS	.59+ (.32)	2.88*** (.57)	-4.82* (2.17)	.06 (.42)	.78 (.64)
<i>Mother, Child, HH Chars</i>					
Child's Age	.34** (.13)	.00 (.22)	-.32 (.84)	-.24 (.16)	-.10 (.26)
Mom Race (non-White)	-.03 (.29)	-1.67** (.51)	.87 (1.82)	-.51 (.40)	-.52 (.67)
Gender (female)	-.07 (.21)	.27 (.37)	-.23 (1.40)	-.17 (.27)	.50 (.42)
Two Kids (one child)	-.44+ (.25)	-.44 (.45)	1.68 (1.66)	-.29 (.32)	1.14* (.49)
Three Kids	-.90** (.28)	-.67 (.51)	1.40 (2.09)	.02 (.38)	.88 (.56)
Mother Employed	.52* (.23)	-.04 (.41)	.88 (1.53)	-.69* (.30)	.09 (.47)
<i>Family Structure History</i>					
Previously Married	.09 (.53)	1.61+ (.95)	.12 (3.30)	-.22 (.16)	-1.65 (1.19)
Divorced / Separated	-.23 (.52)	-1.43 (.94)	-.02 (2.87)	-.60 (.65)	1.64 (1.31)
Cohabiting at Birth	.16 (.33)	.97+ (.61)	.84 (2.78)	.11 (.46)	-.63 (.77)
Cohabiting in 1997	1.31*** (.36)	-.03 (.66)	-3.39 (2.18)	-.43 (.45)	1.81* (.87)
<i>Intercept</i>	-1.44 (.83)	17.35 (1.46)	12.11 (5.52)	---	---

Note: HH = household. HS = high school. Standard errors in parenthesis. Income-to-needs, HOME score, and distress estimated using OLS regression. Center care estimated using multinomial logistic regression. Results reflect relative risk of being in relative care vs. center care. Results for relative risk of other care and maternal care vs. center care not shown. Relative risk of other care and maternal care vs. center care did not significantly vary by household structure. Meals per week estimated using ordered logistic regression. Results presented as odds ratios. + $p < 0.10$. * $p < 0.05$. ** $p < 0.01$. *** $p < .001$

Table 3. Multivariate Models Estimating Association Between Household Structure, Measures of Disadvantage, and Child Outcomes ($n = 217$)

	Woodcock-Johnson Letter-Word			Woodcock Johnson Applied Problems		
	Model 0 (B, p -value <)	Model 1 (B, p -value <)	Model 1 (B, p -value <)	Model 0 (B, p -value <)	Model 1 (B, p -value <)	Model 1 (B, p -value <)
<i>HH Structure (single)</i>						
Kin 1997	3.64 (.15)	5.94* (.05)	-1.30 (.72)	-1.30 (.72)	1.52 (.70)	1.52 (.70)
Married	2.73 (.35)	2.04 (.55)	2.72 (.48)	2.72 (.48)	-2.41 (.62)	-2.41 (.62)
Kin around Birth	3.10 (.22)	4.20 (.17)	-1.36 (.72)	-1.36 (.72)	-1.16 (.97)	-1.16 (.97)
<i>Disadvantage</i>						
Income-to-Needs	.78 (.20)	.04 (.95)	.89 (.28)	.89 (.28)	-.33 (.73)	-.33 (.73)
HOME Score	1.05*** (.001)	1.14** (.01)	2.18*** (.001)	2.18*** (.001)	1.41** (.01)	1.41** (.01)
Distress	-.19 (.17)	-.00 (.99)	-.43* (.03)	-.43* (.03)	-.14 (.54)	-.14 (.54)
Meals per wk (1-2)						
Meals (2-3 per wk)	-.16 (.96)	.85 (.80)	-1.51 (.74)	-1.51 (.74)	1.10 (.81)	1.10 (.81)
Meals (4-5 per wk)	4.90 (.18)	5.56 (.14)	4.63 (.32)	4.63 (.32)	2.45 (.59)	2.45 (.59)
Meals (6-7 per wk)	1.00 (.74)	2.69 (.40)	1.44 (.74)	1.44 (.74)	.56 (.90)	.56 (.90)
Child Care (center)						
Relative	1.45 (.55)	.92 (.71)	.48 (.89)	.48 (.89)	.90 (.80)	.90 (.80)
Mother	-1.00 (.72)	2.64 (.38)	-.58 (.88)	-.58 (.88)	1.10 (.78)	1.10 (.78)
Other Care	2.26 (.47)	1.63 (.61)	4.54 (.34)	4.54 (.34)	1.88 (.69)	1.88 (.69)
<i>Preexisting Disadvantages</i>						
High School (no hs)	2.27 (.30)	-.22 (.93)	6.68* (.03)	6.68* (.03)	2.18 (.52)	2.18 (.52)
More than HS	6.76** (.01)	3.58 (.26)	14.61*** (.001)	14.61*** (.001)	9.86* (.02)	9.86* (.02)
Age at Birth	.00 (.99)	.19 (.42)	.23 (.36)	.23 (.36)	.10 (.75)	.10 (.75)
<i>FS History</i>						
Previously Married	-6.97+ (.09)	-11.41* (.02)	-3.48 (.55)	-3.48 (.55)	-14.55* (.03)	-14.55* (.03)
Cohabit Birth	-4.68 (.12)	-7.13* (.02)	5.49 (.32)	5.49 (.32)	-.11 (.98)	-.11 (.98)
Cohabit 1997	-2.38 (.58)	-1.50 (.73)	-10.97* (.02)	-10.97* (.02)	-12.13* (.02)	-12.13* (.02)
Married-Div/Sep	-2.40 (.61)	4.10 (.41)	2.51 (.74)	2.51 (.74)	-.01 (.99)	-.01 (.99)
<i>Control Variables</i>						
Child's Age	---	---	---	---	---	---
Mom's Race	-.97 (.68)	-.78 (.78)	-10.48** (.01)	-10.48** (.01)	-10.35** (.01)	-10.35** (.01)
Gender	-4.20* (.03)	-3.33+ (.08)	-2.42 (.40)	-2.42 (.40)	.02 (.99)	.02 (.99)
Two Kids in Household	-1.88 (.40)	1.01 (.66)	-7.34* (.02)	-7.34* (.02)	-2.88 (.37)	-2.88 (.37)
Three Kids in Household	-4.14+ (.09)	-1.41 (.59)	-7.38* (.04)	-7.38* (.04)	-4.03 (.31)	-4.03 (.31)
Mother Employed	3.62+ (.07)	3.55 (.12)	2.55 (.37)	2.55 (.37)	.20 (.95)	.20 (.95)
<i>Intercept</i>		66.72			75.04	

Notes: HH = household. HS = high school. Model 0 estimates each independent variable separately. Model 1 represents full model. Child's age not estimated because WJ-R score normed based on child's raw test scores and age to the nearest month. + $p < 0.10$. * $p < 0.05$. ** $p < 0.01$. *** $p < .001$.

Table 3 continued. Multivariate Models Estimating Association Between Household Structure, Measures of Disadvantage, and Child Outcomes ($n = 217$)

	Behavior Problems Index Total Score			WISC Digit Score		
	Model 0 (B, p -value <)	Model 1 (B, p -value <)	Model 0 (B, p -value <)	Model 1 (B, p -value <)	Model 0 (B, p -value <)	Model 1 (B, p -value <)
<i>HH Structure (single)</i>						
Kin 1997	.90 (.38)	1.07 (.37)	-.02 (.98)	.40 (.46)		
Married	-.64 (.52)	-.21 (.87)	.08 (.88)	.28 (.66)		
Kin at Birth	.50 (.60)	.36 (.73)	-.37 (.46)	.33 (.55)		
<i>Disadvantage</i>						
Income-to-Needs	-.07 (.73)	.25 (.37)	.24* (.03)	.08 (.48)		
HOME Score	-.37*** (.001)	-.32* (.03)	.09 (.13)	.14+ (.06)		
Distress	.15** (.01)	.12* (.05)	-.00 (.96)	.03 (.25)		
Shared Meals (1-2 week)						
2-3 Meals	-.49 (.69)	.00 (.99)	.79 (.21)	.71 (.23)		
4-5 Meals	-.72 (.57)	.39 (.77)	.06 (.93)	.26 (.71)		
6-7 Meals	.06 (.96)	.77 (.54)	.08 (.90)	.56 (.32)		
Child Care (center)						
Relative	-.61 (.51)	-.98 (.30)	-.33 (.52)	-.28 (.55)		
Mother	-.02 (.98)	-1.15 (.31)	-1.14* (.04)	-.46 (.37)		
Other Care	.39 (.73)	.85 (.48)	.09 (.62)	-.11 (.85)		
<i>Preexisting Disadvantages</i>						
Age at Birth	-.07 (.28)	-.01 (.93)	.03 (.43)	-.01 (.77)		
High School (no hs)	-1.32+ (.10)	-.12 (.89)	.31 (.48)	.20 (.66)		
More than High School	-2.01* (.03)	-.15 (.90)	1.30* (.02)	.45 (.44)		
<i>FS History</i>						
Previously Married	-1.43 (.36)	-1.54 (.40)	-.34 (.68)	-.40 (.66)		
Cohabit Birth	.80 (.50)	1.18 (.36)	.15 (.80)	.06 (.92)		
Cohabit 1997	2.10+ (.07)	2.53* (.05)	-.43 (.50)	-.37 (.56)		
Married-Div/Sep	1.16 (.48)	.14 (.94)	.54 (.54)	1.23 (.16)		
<i>Control Variables</i>						
Child's Age	-.05 (.90)	.10 (.82)	1.66*** (.001)	1.49*** (.00)		
Mom's Race	-.55 (.51)	-1.50 (.16)	1.15** (.01)	.78 (.12)		
Gender	-.30 (.67)	-.36 (.63)	-.04 (.92)	-.12 (.73)		
Two Kids in Household	1.12 (.14)	1.16 (.20)	-.17 (.70)	.05 (.91)		
Three Kids in Household	.73 (.42)	.53 (.60)	-.11 (.82)	.06 (.90)		
Mother Employed	-1.08 (.14)	-1.21 (.16)	.08 (.83)	-.07 (.86)		
<i>Intercept</i>		13.43		-5.72		

Notes: HH = household. HS = high school. Model 0 estimates each independent variable separately. Model 1 represents full model.

+ $p < 0.10$. * $p < 0.05$. ** $p < 0.01$. *** $p < .001$

Figure 1. Conceptual Model of Study



