

Grandparent, Parent and Child Coresidence: Links with Child Health

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Over the last several decades, large demographic shifts (decreased marriage, increased divorce and non-marital fertility) and increasing longevity have resulted in a greater reliance on multigenerational bonds (Bengtson, 2001; Mare, 2011). As a result, children are more likely to spend time in a three-generation family household, in which a grandparent, parent and child coreside. The share of children in three-generation family households grew from 6% in 2001, to 8% in 2011 (U.S. Census Bureau, 2011), and nearly 25% of U.S. children live in a three-generation household in early childhood (Pilkauskas & Martinson, 2014). Yet little research has explored whether three-generation coresidence in early childhood is linked with child health, an important component of school readiness, as disparities in health outcomes in early childhood have long term implications for intergenerational mobility and poverty.

Understanding whether three-generation coresidence in early childhood is associated with child health is important for several reasons. Three-generation coresidence is most common during early childhood (Fields, 2003), and disparities in early childhood can have long lasting effects (Duncan et al., 2007). Prior to school entry, families play a particularly significant role in child development (Demo & Cox, 2000), and grandparent coresidence may influence that development if their presence affects the economic or parental resources available for the child that in turn affect child health (Dunifon, 2013). Three-generation households are also more prevalent among poor and minority households – where health disparities are largest (Census, 2008; Kreider and Fields, 2005).

This study investigates the associations between three-generation coresidence during early childhood and child health using the Early Childhood Longitudinal Study - Birth Cohort (ECLS-B). Unlike most prior research which has focused on disadvantaged populations, this paper uses longitudinal, nationally representative data on children in three-generation households. This study addresses the following questions: 1) Is living in a three-generation family household in early childhood associated with child health (overall health, psychomotor skills & obesity) at the start of kindergarten? 2) Are these associations moderated by maternal race/ethnicity or nativity? And 3) what role does income or health insurance play in explaining these links? Prior research has noted the importance of race/ethnicity and nativity in both the prevalence of coresidence and health disparities, but also the links between three-generation households and child socioemotional wellbeing. Similarly, health insurance and income are important predictors of health, and they are likely to affect the associations between coresidence and child health.

Theoretical Framework

Coresident grandparents may affect child health directly through their interactions with the child or indirectly through the parents of the child (Dunifon, 2013). Grandparents may provide instrumental support (e.g. financial, childcare) or emotional resources that improve the wellbeing of children and parents (Linver, Brooks-Gunn & Kohen, 2002). Grandparents may directly improve child health by playing with the child, taking the child to the park, or providing healthy food to eat. Equally, grandparents might indirectly influence children by improving the wellbeing of parents (Stack, 1974). If grandparents provide instrumental support, say through finances, or by doing household chores, parents may have more money and time to invest in healthy foods, exercise or activities with the child that might promote health.

Although there are many reasons to believe that grandparent coresidence would improve child health, their presence could also be a drain on household resources. Grandparents may directly hinder child health if they engage in less physical play, or if they provide unhealthy food (or too much food) for children. For example, if grandparents allow more TV watching, children may not engage in more health promoting activities. A coresident grandparent may also indirectly hinder child health by affecting parental or household resources. If a grandparent is in poor financial or physical health, parents may need to provide the grandparent with economic or time resources that would have otherwise been available for the child, resulting in poorer child health outcomes.

In sum, grandparents may indirectly or directly influence child health, and whether that influence will be positive or negative is not clear. Another important consideration is selection of individuals into three-generation households. Families that select into coresidence may differ on a variety of child, parental or grandparental characteristics. On the one hand, factors that select families into coresidence are likely to be associated with poorer child health. In particular, low-income is linked with increased likelihood of coresidence (Cohen & Casper, 2002) and with poorer health outcomes. On the other hand, cultural factors, norms, or the importance of family, may select families into coresidence (Baca Zinn & Wells, 2000), which could be linked with improved child health and wellbeing.

Prior Literature

Although the literature on three-generation coresidence and child cognitive and socioemotional wellbeing is large (e.g. Deleire & Kalil, 2002; Augustine & Raley, 2013; Mollborn, Fomby & Dennis, 2011, 2012; Dunifon & Kowaleski-Jones, 2007; Pilkauskas, 2014a; Foster & Kalil, 2007; Pittman & Boswell, 2008), to date, only two studies have investigated links with child health. Pope et al. (1993), using a sample of low birth weight children with young mothers, found no links between coresidence and child health, whereas a study of low-income families found improved motor development among children in three-generation households (Black & Nitz, 1996). Related research has found that coresidence is linked with lower rates of breastfeeding and shorter duration of breastfeeding (Pilkauskas, 2014b). This study expands on these prior studies to investigate multiple indicators of child health and to use recent nationally representative data on children.

A related literature on family structure more generally and child wellbeing has found that children who live with both biological parents generally fare best, as compared to children in other living arrangements (e.g. Brown, 2004; McLanahan & Sandefur, 1994), but even this literature has largely overlooked child health. Research has found that children in single-mother and step families have poorer health than those who live with two biological parents (Amato & Keith, 1991; Cherlin & Furstenberg, 1994; McLanahan & Sandefur, 1994), but these studies have not investigated coresidence with a grandparent. More recent research, found that child health in custodial grandparent households or in foster care was particularly poor relative to other households (Ziol-Guest & Dunifon, 2014), but again three-generation households were not studied. This is an oversight as three-generation coresidence has been increasing over time, and as our population ages, is likely to become more common.

Data, Measures & Methods

Data come from the Early Childhood Longitudinal Study – Birth Cohort (ECLS-B) a nationally-representative sample of children who were born in 2001. Data were collected when

children were approximately 9 months old, 2 years old, 4 years old and at the start of kindergarten. Interviews were conducted with mothers, fathers and children. Approximately 10,700 children were interviewed at the 9 month survey and by the 4 year interview, roughly 8,950 children remained. Of the remaining children, the ECLS-B took an 85% sample for the kindergarten interview resulting in approximately 6,850 interviews at kindergarten.

Three-generation family households. To capture any three-generation coresidence in early childhood, coresidence is coded as 1 if the child lived with his or her own parent(s) and at least one grandparent (a grandmother, grandfather or both) at any of the first three survey waves (9 months, 2 years, or 4 years). Coresidence at kindergarten is not included to ensure proper time ordering of the analyses.

Overall Health. A measure of overall health is assessed using a measure where the respondent was asked to report on the overall health of the child on a 5-point Likert scale (1="poor" to 5="excellent"). The measure is dichotomized to indicate 1 if the child was in excellent health or 0 otherwise. This measure is generally coded as an indicator of poor or fair health (e.g. Case, Lubotsky & Paxson, 2002); however, very few children were rated as having poor or fair health (less than 200) resulting in samples that were too small for the subgroup analyses, so an indicator of excellent health is utilized.

Gross and fine motor skills. A direct child psychomotor assessment was administered to measure gross and fine motor skills using an ECLS-B modified version of the Early Screening Inventory - Revised (Ketchie, Lang, Brush & Kirstein, 2003). Gross motor items were assessed using 6 measures focused on larger muscle group development (arms, legs). The gross motor items provide information on skills such as balancing on one foot, hopping, skipping, and walking backwards. Fine motor skills were assessed by building a gate with wooden blocks and a task designed to assess children's ability to manipulate objects by copying forms. Children were rated as pass (1) or fail (0) on each measure and those scores are then summed and standardized so that higher scores reflect greater gross motor skills ($\alpha=.62$) or greater fine motor skills ($\alpha=.66$).

Obesity. The measure of obesity was constructed based on the child's body mass index percentile using information collected by the interviewers. Percentiles were calculated using data from the 2000 Center for Disease Control (CDC) growth charts and were adjusted by gender, height, weight and age of the child in months. As per CDC recommendations, children who were at or above the 95 percentile for weight are coded as obese. Percentiles were defined against a fixed base year therefore more than 5% of the sample can be obese.

Moderators/Mediators. Analyses are run stratifying by race/ethnicity and nativity. Race/ethnicity is coded as non-Hispanic Black, non-Hispanic White, Hispanic, Asian-American/Pacific Islander, American Indian/Alaskan Native, or other. Mother's nativity (or immigrant status) is coded as 1 if she was not born in the US. Indicators of health insurance include Medicaid or private insurance and multiple measures of income are assessed including poverty and income. Health insurance and poverty will be analyzed both as moderating and mediating characteristics.

Controls. An extensive set of controls are included in the analyses: mother's age, time varying measures of relationships status (to capture both transitions and types), maternal education, mother's employment prior to the birth and whether the mother received Women, Infants and Children assistance, number of siblings, the number of residential moves between the 9 month and 4 year interview, region of the country, urban residence, child gender, low birth-weight,

premature birth, a measure of the age of the child in months at the kindergarten survey wave, whether the mother’s parents were living together when she was 16, a measure of whether the mother’s parents received AFDC when she grew up, a measure of maternal grandmother’s education, and measures of whether the maternal grandmother or grandfather ever had a major depressive episode.

Ordinary least squares regression models (or logistic regressions for binary outcomes) with extensive demographic controls are used to assess the associations between three-generation coresidence (from 9 months to age 4) and child health (at kindergarten). All analyses are weighted using ECLS-B constructed replicate weights that adjusted for oversampling and attrition. Analyses are stratified by race/ethnicity and nativity and Chow tests are conducted to test whether findings for demographic group were significantly different from each other (e.g. Black versus White).

Preliminary Results

Table 1 shows the results from models regressing health outcomes on three-generation coresidence. The findings indicate that three-generation coresidence is associated with fewer gross motor skills, lower odds of being in excellent health and higher odds of obesity but there is heterogeneity by race/ethnicity. Future analyses will study differences by maternal nativity and consider the role of health insurance and income in explaining these differences.

Table 1: Main Effects Coefficients for Three-Generation Coresidence and Child Health

	All	Black	White	Hispanic	Asian
Gross Motor	-0.10* (0.04)	-0.13 (0.08)	-0.08 (0.08)	-0.09 (0.08)	-0.11 (0.08)
Fine Motor	-0.02 (0.05)	-0.03 (0.12)	-0.11 (0.07)	0.17* (0.08)	-0.18* (0.08)
Excellent Health (Odds Ratio)	0.80+ (-1.99)	0.81 (-1.12)	0.69+ (-1.81)	0.93 (-0.38)	1.00 (-0.01)
Obese (Odds Ratio)	1.56** (3.48)	1.67* (2.55)	1.67* (2.08)	1.17 (0.76)	1.72+ (1.74)

Note: Standard errors in parentheses/t-statistics for odds ratios. All regressions are weighted using replicate weights (WKR0). All N's are unweighted and rounded to the nearest 50 per NCES requirements. Models include full set of controls not shown here.

** p<.01, * p<.05, + p<.10

Many children live in three-generation households, especially in early childhood, and as the population ages, three-generation living arrangements are likely to continue to increase in prevalence. Children’s ability to participate in school can be impacted by poor health (Currie, 2005), which has long-term implications for their economic wellbeing. Understanding whether (and how) three-generation living arrangements are linked with the health of young children is key to crafting policy and interventions aimed at improving the health children.