Maternal Education, Changing Family Circumstances, and Child Development in the U.S. and U.K.

PAA 2015 Abstract
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Introduction

Around the world, children's socioeconomic and family environments have striking implications for their healthy development and opportunities for social mobility. Socioeconomic (SES) inequality in the health of children is present at birth for virtually every marker of health, and increases throughout childhood (Adler et al. 1994; Currie and Stabile 2003; Finch 2003). A parallel body of research reveals the family as a crucial site for the socialization and development of children, documenting the effects of family structure, stability and interpersonal relationships on child health and wellbeing (e.g., Amato 2005; Bernardi et al. 2013; Sigle-Rushton and McLanahan 2004). While both socioeconomic status and family life have important independent effects on children, social change in recent decades has increased the association between these two dimensions of children's environments. Parents with low levels of education and earnings are less likely to have children within a marital union and more likely to end their unions than parents with more resources (McLanahan and Percheski 2008). These changes have implications for the family environments in which children grow up and, ultimately, for children's health.

While existing research reveals important associations between SES and the family setting, and between each of these dimensions and child health, most work examines family structure and family relationships in isolation to one another and at particular points in time, precluding a comprehensive understanding of the family environment over time and its contribution to the degree of socioeconomic inequality in child health. This paper will use data from two nationally representative birth cohort studies that follow children from birth through middle childhood—the American *Fragile Families and Child Wellbeing Study* (FFS), and the British *Millennium Cohort Study* (MCS)—to achieve two goals. Specifically, we will use latent class trajectory analysis to: 1) construct longitudinal measures of family income, family structure and stability, and parent-child relationships throughout early and middle childhood, that account for the duration and stability of that circumstance, and 2) to examine the extent to which these trajectories explain the socioeconomic gradient in children's well-being. The appearance of health inequality so early in life has important implications for patterns over the life course and across generations—child health affects educational achievement and attainment, earnings and labor force participation in adulthood, and the association between parents' and children's socioeconomic status (Conley and Bennett 2000; Jackson 2009; Palloni 2006). It is important, therefore, to understand the pathways implicated in the intergenerational reproduction of disadvantage.

Background

Socioeconomic Status, Family Structure/Relationships and Child Well-Being

Around the world, adults with higher levels of education and income experience better health than those below them (Link and Phelan 1995; Marmot et al. 1991). In addition to serving as an important facilitator of social mobility, education and income afford access to less tangible benefits, including high-quality information, services (e.g., housing; health care) and social networks (DiMaggio and Mohr 1985; Petersen et al. 2000). While much research on the socioeconomic gradient in health has focused on adults, growing evidence also reveals persistent inequality among children. Children in highly educated and high-income families have better health than those with fewer resources to draw from (Case, Lubotsky and Paxson 2002; Finch 2003).

A vast literature simultaneously documents short and long-term associations between family structure/relationships and child wellbeing (e.g., Bernardi 2013; McLanahan, Tach and Schneider 2013). Children who live apart from one of their biological parents are less likely than their peers to graduate from high school and college (Brown 2004; Cherlin et al. 1991; McLanahan and Sandefur 1994), more likely to be unemployed, and more likely to become teen parents (Kiernan and Hobcraft 1997; Wu 1996). They also exhibit more withdrawn, anxious and aggressive behaviors in early and middle childhood (Amato 2001; Chase-Lansdale, Cherlin and Kiernan 1995; Jekielek 1998; McCulloch et al. 2000). Children raised apart from a biological parent are more likely to smoke, drink heavily and use drugs (Amato 2001; Estaugh and Power, 1991), and a growing body of work suggests that they are more likely to report asthma and to experience accidents and injuries (Bramlett and Blumberg 2007; McMunn et al. 2001).

Whereas family structure is a good marker of the resources available to children, family stability and relationships provide a more proximate marker of the content of children's family life. Single motherhood is associated with lower levels of social support and higher levels of stress, making it harder for mothers to supervise and to engage in activities with their children (Meadows et al. 2008). Strong parent-child relationships, as indicated by parents' time, monitoring and closeness with their children, reduce children's exposure to physical health risks and facilitate healthy cognitive development (e.g., Ackard et al. 2006, Barnes et al. 2000). Single motherhood is also associated with high levels of family instability, as mothers form new partnerships and as 'social' fathers enter and leave the household. While these new partnerships may improve the quality of the relationship between parents in the household, relationships between parents and children may become strained as children compete with social fathers for mothers' time and experience divided loyalties between social and biological fathers.

Socioeconomic Status and Family Structure/Relationships

Over the last several decades, socioeconomic status and the family environment have become more strongly associated with one another, beyond their independent associations with child well-being. Family organization has changed substantially, resulting in increasing marital disruption (McLanahan and Percheski 2008). These changes have not occurred uniformly across the population, concentrating most heavily among poorly educated and low-income families (Ellwood and Jencks 2004). Because the perceived costs to waiting for highly paid partners or delaying motherhood to pursue education varies by SES, single motherhood and divorce is most pronounced among women who are poorly educated and members of disadvantaged racial/ethnic groups (Edin and Kefalas 2005; Loughran 2002; Martin 2004). The disproportionate concentration of single motherhood and family instability among low-SES families has implications for children. Reduced family resources may decrease the quality of family processes, leading to lower social support, increased stress, declines in mothers' and children's mental health, and a reduction in the time mothers spend performing activities with and supervising children (Meadows et al. 2008).

Existing research suggests that the presence of two parents, stable unions and positive family relationships are conducive to good health, and that family structure, stability and relationships are coexisting, rather than competing, determinants of child wellbeing. Moreover, socioeconomic status affects family life, suggesting that it may play an important role in explaining socioeconomic inequality in child well-being. To date, however, most research has examined the several dimensions of family life in isolation of one another and at particular points in time. In addition, existing work does not examine the role of the family setting in explaining socioeconomic inequality in child well-being. We use longitudinal data and latent class analysis to identify the most prevalent trajectories of

family types throughout early and middle childhood, to link these trajectories to child well-being, and to examine their role in mediating the gradient. A key contribution of our approach is to account for the growing complexity of family forms as children age, to consider relationships between parents and children, and to examine patterns in two countries.

Data

Our analysis is based on two surveys: the Fragile Families and Child Wellbeing Study (FFS) in the United States, and the Millennium Cohort Study (MCS) in the United Kingdom. Both birth cohort studies are representative of national populations, both contain rich longitudinal information on children's family environments, health and development, and both oversample disadvantaged and ethnic minority families. Most of the information needed for the analysis is available in both the FFS and the MCS. The FFS follows approximately 5,000 children born between 1998 and 2000 in large U.S. cities, including a large oversample of births to unmarried parents. Mothers, and most fathers, were interviewed in the hospital soon after birth, with additional interviews at ages one, three, five and nine. When weighted, FFS data are representative of births in cities with populations over 200,000. A key component of the FFS study design was the use of a hospital-based sampling frame. By starting at the hospital, the FFS was able to obtain higher response rates than studies that sample from birth records and that interview mothers in their homes.

The MCS is the fourth of Britain's national birth cohort studies. The first wave of the MCS took place during 2001-2002 and included 18,552 families and 18,818 cohort children. Information was first collected from parents when their children were nine months old, with follow-up interviews with the main caregiver (usually the mother) at ages three, five, and seven. We use data through age seven. The sample design included an overrepresentation of families living in areas with high proportions of child poverty or ethnic minority populations.

Examining these questions in both the U.S. and the U.K. is instructive, given the similarities in the socioeconomic profiles of the two countries, despite differences in their population composition and social policies. Though the U.K. has more generous policies related to the provision of health care, family assistance and social housing (Gornick and Myers 2005; Hills 2007), strong socioeconomic gradients in children's health exist in both countries (Banks et al. 2003). In addition, both the U.S. and the U.K. have experienced similar economic and demographic changes during the past several decades. The two societies share patterns of family formation, with levels of non-marital birth and divorce that are higher in the U.S. but also high in the U.K. (Haskey 1996, 1997); both countries also exhibit a strong socioeconomic and racial/ethnic patterning to family structure. The two countries also share trends in social inequality: income inequality is higher in the U.S. (e.g., Banks et al. 2003) but levels in both societies are high and have increased over the last several decades. Little work examines whether findings observed among children in the U.S. can be replicated among children of a similar age in Great Britain, however. Cross-sectional research shows that children's academic achievement is strongly predicted by family structure and economic resources in both populations (Cherlin et al. 1991; Joshi et al. 1999; McCulloch et al. 2000).

Measures

Socioeconomic Status. Our focal measure of SES will be maternal education, which remains relatively fixed over the adult life course and is therefore less likely to be predicted by the dimensions of family circumstances we consider. In the United States, maternal education separates mothers with less than a high school education, a high school diploma, some college, and a college diploma or higher. In the United Kingdom, we use a comparable measure, separating mothers with

no qualifications; Ordinary Level examinations (typically school leaving qualifications taken at age 16); A-level college entrance exams and vocational equivalents; and university degrees.

We will examine several dimensions of family life to understand the respective contribution of family income, family structure and stability, and parent-child relationships to the size of the educational gradient.

Family Income. At each age we will measure family income, measured using household poverty ratios (adjusted for household size and the number of children). In each sample we distinguish among low, middle and high-income categories.

Family Structure and Relationships. A key goal of this work is to construct trajectories of family environments by measuring family structure, stability and relationships from early through middle childhood. To measure *family structure* at each age, we will measure the marital status of the mother (married, cohabiting and single). To measure *family stability,* we will measure the number of partnership changes between waves, using that information to create "stable" and "unstable" categories at each age. Finally, to measure *parent-child relationships,* we use two scales: in analyses of children's cognitive development, one indicating the home learning environment (frequency of reading to child and teaching him/her songs and nursery rhymes), and one indicating the use of negative discipline in the home. We will use these scales to create categories indicating the frequency of activities.

Child Well-Being. We examine several measures of children's well-being available in both surveys: parents' reports of children's overall health , children's internalizing and externalizing behavior problems (measured at ages 3 and older), and children's cognitive development, based on the British Ability Scales Naming Vocabulary Test (MCS) and the Peabody Picture Vocabulary Test (FFS).

Other Variables. We will also measure several variables correlated with both family environments and child well-being, including maternal race/ethnicity, child sex, the number of children in the household, and mothers' age at the time of the child's birth.

Analysis

The analysis will proceed in several steps. First, we will use the measures described above to develop a rich measure of the family setting throughout early and middle childhood that includes family structure, family stability and the content of family relationships (between parents, and between parents and children), using latent variable techniques. We will use latent class growth analysis (LCGA) to identify trajectory classes of family types. In conventional growth curve modeling, the assumption is that all individuals are drawn from a single population and one growth parameter estimates all individuals' trajectories. LCGA relaxes that assumption, permitting several groups of individuals (latent classes) to have distinct growth parameters (Muthén 2001, 2004). The method identifies a latent categorical variable, C, that consists of a limited number of trajectory classes. Each latent class is represented by the intercept, I, and slope, S. We use this modeling strategy to find the best-fitting number of trajectories of combined family structure and family relationships. To determine the best-fitting number of latent class trajectories, we rely on substantive knowledge from previous research on family structure and relationships as well as three statistical criteria: the Bayesian Information Criterion (BIC), Entropy, and the Lo-Mendell-Rubin (LMR) likelihood ratio test (Celeux and Soromenho 1996; Lo, Mendell, and Rubin 2001; Raftery 1996).

After describing the evolution of family circumstances throughout early and middle childhood, we will use regression analysis to examine the relationship between maternal education and each family type. Are children in low-SES families, for example, more likely to experience increasing family instability and negative discipline from parents with age than their higher-SES peers? Next, we will link these trajectories to children's well-being. Finally, we will examine the mediating role of the family trajectories in explaining the socioeconomic gradient in children's well-being at ages 7 (MCS) and 9 (FFS).

Conclusion

We will use high-quality data to move beyond a cross-sectional and unidimensional account of children's family environments, providing a complex description of the associations among family structure, stability, interpersonal relationships and child health, and evaluating the contribution of the family environment to the socioeconomic gradient in child health. Our approach will reveal key childhood pathways through which inequality is transmitted across generations.

Timeline

We have finished data preparation and management for each survey and are in the process of constructing trajectories of family circumstances. We will have a full draft by early spring 2015.

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