

Risk of Parental Death Across the Life Course

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Extended Abstract for EPC 2020

Abstract

Relatively little is known about the risk of parental death across the life course, despite its importance for wellbeing. A fair amount of demographic research has described the ways in which parental transfers to adult children (and from adult children to their parents) affect economic circumstances, as well as physical and mental health. This research, however, has not considered the risk of a child having a parent alive—and, reciprocally, the risk of parental death—across adulthood. Additionally, socioeconomic differences in mortality and fertility across race/origin, nativity, educational attainment, and income likely mean that patterns of parental death vary across the U.S. population in ways that could reproduce inequality. In this paper, we fill this gap in the literature and estimate the risk of parental death across the life course using data from the 2014 Survey of Income and Program Participation (SIPP). We pay particular attention to differences in this life course pattern across key social and demographic groups.

Parental relationships remain important throughout the life course, not only during childhood. Many parents provide monetary and nonmonetary support to their adult children after

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they have left the home. For example, parents may directly transfer money to their adult children, which improves the current standard of living and employment outcomes for those receiving the resources (Semyonov & Lewin-Epstein, 2001). As the number of single-parent families and maternal employment has risen in recent decades, many adults have also enlisted the support of their parents in providing childcare in order to continue working (Goodfellow & Lavery, 2003). Parents can also provide emotional support to their children (Conney & Uhlenberg, 1992; Rossi & Rossi, 1990).

Parental relationships also involve transfers from adult children to their parents. Adult children may provide monetary transfers to their parents (e.g., Couch, Daly, & Wolf, 1999) or engage in caretaking for an aging parent (Friedman & Seltzer, 2010; Levitsky, 2014). As the population continues to age, the number of adult children providing assistance to their parents is expected to grow (Folbre 2012).

As a result, the loss of one or both parents can profoundly affect a person's life. Studies have found that the loss of a parent during adulthood can lead to increases in psychological distress and alcohol consumption, as well as declines in overall physical health (Umberson & Chen, 1994).

Despite the potential consequences of parental death across the life course, the demography of parental death remains underexplored. Indeed, there is a dearth of recent research in the United States that examines the risk of parental death across the life course (not just during childhood) and the ways in which this risk varies across demographic and socio-economic characteristics (including race, Hispanic origin, nativity, educational attainment, and income). In this paper, we use data from the 2014 Survey of Income and Program Participation (SIPP) to examine the risk of parental death.

Previous Research

Few sources of nationally representative data in the United States contain information about parental mortality. Research in Scandinavian countries has sought to establish intergenerational patterns in mortality outcomes (e.g., Martikainen & Moustgaard, 2009). However, other than clinical research conducted with small samples (e.g., Birtchnell, 1975), most existing research regarding parental mortality in the United States has relied on the

National Survey of Families and Households, which was conducted between 1987 and 1993 with a sample of roughly 13,000 adults (Marks, Jun, & Song, 2007). Research using these data has tended to focus principally on the emotional effects of parental loss, rather than identifying differences in the age at which individuals lose one or both parents, or the socioeconomic factors that might be linked to the timing of parental death.

In other words, no research to our knowledge exists that has examined parental loss in the recent U.S. context. The nation's population has continued to age and parents' age at childbirth has continued to increase (Lesthaeghe, 2010). These changes have increased the importance of understanding the risk of parental death across the life course.

Demographic and Socioeconomic Variation

Both fertility and mortality patterns vary across key groups. About 18 percent of women with biological children have their first child after turning 30, compared with roughly 31 percent of men (Monte, 2017). There are also racial/ethnic differences in the timing of first birth. In 2016, maternal age at first birth was 24.7 years for Hispanic women, 24.8 years for non-Hispanic black women, and 27.4 years for non-Hispanic white women (Martin et al., 2018). Women with higher educational attainment also tend to have children at older ages than their less educated counterparts (Preston & Hartnett, 2008). We would expect these fertility patterns to play a role in influencing differences in the timing of maternal and paternal death, as well as socioeconomic and demographic variation in age at parental death.

Moreover, disparities in mortality exist with respect to sex, race, and socioeconomic status. For example, in 2014, life expectancy for females was 81.3 years, while life expectancy for males was 76.5 years (Arias, Heron, & Xu, 2017). Until the oldest ages, black adults have higher mortality rates than white adults (Hummer, 1996; Basaran Şahin & Heiland, 2017). Research over the last half century has also documented that more educated people tend to have lower mortality risk across the life course (e.g., Kitagawa & Hauser, 1973; Hummer & Lariscy, 2011). More recent research has captured how this relationship has continued to evolve, mostly increasing, over time (Sasson, 2016; Hendi, 2017). Similarly, people with more income tend to have lower mortality risk than those with less income (Glymour et al., 2014). As with fertility, demographic and socioeconomic variation in life expectancy and

mortality risk is likely to manifest itself in the timing of parental loss.

Current paper

In this paper, we examine the risk of parental death across the life course. Building on our earlier analyses (Scherer & Kreider, 2019), we start by describing the risk of losing either parent and both parents for the U.S. population overall. We then turn to population heterogeneity, specifically, on differences by race/origin, nativity, educational attainment, and income.

Although our primary motivation is to address these substantive questions, we also pay close attention to data quality, evaluating the quality of respondent data and the relative merits of different imputation strategies. This examination helps to highlight the robustness of our results and to inform future efforts to collect parental death information in major social surveys.

Data and Methods

Data

The SIPP is a nationally representative panel survey administered by the U.S. Census Bureau that collects information on a variety of socioeconomic factors. The 2014 panel followed households for four years, collecting information on an annual basis from an initial sample of roughly 30,000 households regarding a variety of topics relating to economic well-being, family dynamics, education, and wealth.

The 2014 SIPP included a series of questions regarding parental mortality. These questions asked whether respondents biological parents were still alive at the time of the survey, as well as the year of death for those parents that were deceased.¹ In this analysis, we use responses to questions regarding whether respondents parents were still alive, the year of

¹Individuals with adoptive parents or stepparents were still asked these questions about their biological parents. It is not possible to limit our analysis to those individuals with two known biological parents, as this information is not collected as a part of the SIPP.

parental death, and socioeconomic and demographic characteristics. We focus on differences by sex, race/origin, nativity, and socioeconomic status (education and poverty status).

To address cases in which respondents did not report when their parent(s) died, we use a range of strategies.² First, we use imputed data available in the restricted-use and public-use versions of the 2014 SIPP. In these files, variables are fully allocated and imputed using response information from individuals with similar characteristics through hotdeck procedures (see U.S. Census Bureau, 2018 and Andridge & Little, 2010). As a result, every individual in all interviewed households has a value for these variables. Second, we re-impute these missing values through a multiple imputation framework. This approach will take into account the uncertainty related to imputed values of missing data and test the sensitivity of our results to alternative imputation procedures.

Third, we use an indirect method for determining parental age when it is not reported. The SIPP asks respondents to report their biological parents' year of birth. We combine these data with estimates from the National Health Interview Survey Linked Mortality File (NHIS-LMF) and/or National Longitudinal Mortality Study (NLMS) and Centers for Disease Control (CDC) mortality data to create a cohort-by-sex-by-race-by-education-specific estimate of age at death for parents. We then use this information to construct an estimated age at death, which we add to the parent's birth year to assign a year of parental death. During this process, we will evaluate the quality of parental birth year information available in the 2014 SIPP and adjust our strategy accordingly.

Analytic Strategy

This paper will use a number of estimation strategies to capture the risk of parental death across age. We start with a nonparametric approach to examine, separately, the risk of losing one's first parent and the risk of losing both parents. We plot separate Kaplan-Meier curves

²Indeed, while data for questions regarding the year of parental death were collected during each year of the 2014 SIPP Panel, and released for the first interview (wave) of the panel, they were not released in subsequent waves due to concerns surrounding data quality stemming from high rates of nonresponse. For more information, see <https://www.census.gov/programs-surveys/sipp/tech-documentation/user-notes/2014-usernotes/2014w1-parent-mortality.html>

across age for each of four outcomes: maternal death, paternal death, first parent death, and both parent death.

We then turn to semiparametric piecewise exponential models that allow us to estimate the hazard function. These models allow the hazard to vary across *a priori* specified age intervals, but assume that the baseline hazard is constant within each of these age intervals. Specifically, this model takes the following form:

$$\lambda_{ij} = \lambda_j \exp\{\mathbf{X}_{ij}\beta\}$$

Where λ_{ij} is the i^{th} individual's hazard during interval j , λ_j is the baseline hazard in interval j (assumed to be constant), and \mathbf{X}_{ij} is a vector of covariates.³ The Kaplan-Meier plots and other descriptive statistics will help to inform how to define the age intervals used in these models.⁴ To examine variation by race, ethnicity, and socioeconomic status, additional models will be stratified by these characteristics.

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³As the U.S. Census Bureau only released data regarding year of parental death for the first wave of the 2014 SIPP, all covariates will be time-invariant.

⁴Time permitting, following other work (e.g., Gaydos, 2015), we will develop a weighting strategy for cases in which there is more than one person in a household that shares a parent.

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