Coresident Grandparents' Mortality Risk and Racial-Ethnic Variations

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Abstract

As the American population is aging rapidly, grandparents who live with and care for their grandchildren has emerged as a particularly vulnerable group since the 1990s. Many of them have spent an extended period of time (3 years or more) providing primary care to their grandchildren. Researchers and policy makers are increasingly concerned about the additional economic and health effects of living with and caring for grandchildren on grandparents who are coping with otherwise normal aging challenges. This study examines the association between coresident grandparenting and mortality with a focus on racial-ethnic heterogeneity. To overcome the limitation of insufficient sample size for racial-ethnic minorities, we will link person records from the restricted Census 2000 long-form sample (about 20% of all the U.S. residents) to their vital records from the Census Numident file. We will perform separate survival analyses for white, black, Hispanic, and Asian coresident grandfathers and grandmothers.

Background

In America, it used to be unconventional for grandparents to live with grandchildren in the same households. Coresident grandparents did not attract much academic or public attention until the late 1990s when the Census Bureau estimated that the number of children under age 18 living in grandparent-maintained households increased from 2.3 million in 1980 to 3.9 million in 1997 (Bryson and Casper 1999) due to such factors as increases in poverty, single parenthood, drug abuse, child abuse and neglect, and incarceration (Minkler 1999). Concerned about this trend, the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 required the Census Bureau to collect data on caregiving grandparents (Simmons and Dye 2001). Later estimates showed that the number of grandparents living with their grandchildren increased by 22% from 5.8 million in 2000 to 7 million in 2011-2013 (Florian and Casper 2015; Livingston 2013).

Aside from their rising number, coresident grandparents are shouldering the burden of providing care to their grandchildren. It was estimated that in 2011, for example, more than 2.7 million coresident grandparents were primary caregivers to their grandchildren, and more than half of them spent 3 years or more doing so (Livingston 2013). Living with and caring for grandchildren affect grandparents' physical health, psychosocial health, and economic condition in various ways (Chen and Liu 2012; Luo et al. 2012; Minkler and Fuller-Thomson 2001; Minkler et al. 1997). Previous research has suggested that coresident grandparents are more likely to be women and racial/ethnic minorities, to have lower educational attainment, and to live in poverty, compared with grandparents who do not live with their grandchildren (Bryson and Casper 1999; Ellis and Simmons 2014; Fuller-Thomson, Minkler and Driver 1997; Livingston 2013; Minkler and Fuller-Thomson 2000, 2005; Simmons and Dye 2001). Therefore, living with and providing care to grandchildren may pose additional economic and health challenges to aging grandparents.

The increased prevalence of grandparenting has prompted population aging and health researchers to investigate the health impacts of living with and caring for grandchildren on grandparents. In the U.S., earlier studies reported negative health effects of caring for grandchildren. In particular, extensive and custodial grandparenting has been associated with poor health outcomes including elevated depressive symptoms (Blustein, Chan and Guanais 2004; Minkler et al. 1997), declined life satisfaction (Szinovacz, DeViney and Atkinson 1999), and more functional limitations (Minkler and Fuller-Thomson 2001), although these health disadvantages may have been preexisting (Arpino and Bordone 2014; Hughes et al. 2007). Recent research has suggested that the health implications of grandparenting vary by demographic characteristics such as gender (Ellwardt, Hank and Mendes de Leon 2021) and race-ethnicity (Choi 2020).

Choi (2020) used data from the 1998-2014 waves of the Health and Retirement Study (HRS) to examine the association between grandparenting and mortality with a focus on racial-ethnic variations. Combining information about caregiving intensity and living arrangements, she distinguished four types of grandparenting including casual non-coresident, intensive non-coresident, skipped-generation, and multigenerational grandparenting, aside from non-caregiving grandparents. Compared with non-caregivers, she found that intensive non-coresident grandparenting was associated with lower mortality risk, and that neither skipped-generation grandparenting nor multigenerational grandparenting was associated with higher mortality risks. These overall patterns masked important racial-ethnic heterogeneity. After interacting grandparenting with race-ethnicity, she found that intensive non-coresident and multigenerational grandparenting were associated with lower mortality risks among white

grandparents but higher mortality risks among black grandparents. She also found no association between any type of grandparenting with mortality among Hispanic grandparents.

Ellwardt et al. (2021) analyzed the HRS data for a slightly longer period (1992-2014). Unlike Choi's study, however, Ellwardt et al. focused on grandparenthood, regardless of caregiving status, and compared grandparents (having at least one grandchild) against non-grandparents. They also focused on gender variation instead of racial-ethnic differences. They found no association between being a grandparent and mortality risk in men or women. Only among women who were younger than 65 years or who were married did they find significantly elevated mortality risks for grandparents than non-grandparents.

These studies are subject to several data limitations of the HRS sample design. Despite being oversampled, blacks and Hispanics together account for less than a quarter of the HRS sample. The insufficient sample sizes of blacks and Hispanics make it difficult to reliably estimate the associations between grandparenting and mortality. It is also difficult to examine potential heterogeneity with respect to caregiving intensity and living arrangements even for white grandparents. In Choi's (2020) analysis of the HRS data, for example, only 3.7% of white grandparents (n = 396) provided care to their grandchildren in multigenerational households, and another 1.49% (n = 159) were caregivers in skipped-generational households, making regression estimates unreliable after adjusting for a host of control variables. As for Asians and other racial-ethnic minorities, they are simply too small in terms of sample size to be analyzed.

From a theoretical perspective, different racial-ethnic groups have different family norms, cultural expectations, and economic survival strategies with respect to grandparenting. Overall, black, Hispanic, and Asian grandparents are more likely to provide casual and intensive care to their grandchildren than non-Hispanic white grandparents (Silverstein and Lee 2016). White grandparents usually avoid interference with parents' authority over their children (Casper and Bianchi 2002). In contrast, rooted in a tradition of surrogate parenting, black grandparents are culturally accustomed to take a stronger, more authoritative role in providing support and discipline to their grandchildren (Jimenez 2002). Hispanic and Asian Americans are more likely to embrace multigenerational living and intergenerational caregiving for extended family solidarity and cultural obligations known as familism and filial piety, respectively (Casper et al. 2016; Glick and Van Hook 2002).

Within each racial-ethnic group, it is important to further consider gender differences because grandparenthood itself is a gendered experience. Women are typically expected to act as kin-keepers in multigenerational households and be responsible for eldercare and childcare, whereas men are expected to only fill the gap in the absence of able women (Leopold and Skopek 2014). In accordance with these gendered norms, the obligations and burdens of providing care to grandchildren often fall disproportionately on grandmothers (Xu 2019; Železna 2018). Even among Hispanics, for example, Silverstein and Lee (2016) found that grandmothers were more heavily involved in grandchild care than grandfathers.

Research Aims and Hypotheses

This study aims to examine the long-term association between coresident grandparenting measured in 2000 and mortality risk during a follow-up period of 18 years, with a focus on racial-ethnic variations in this association. Drawing on large samples of Census and administrative record data, we will focus on four racial-ethnic groups including non-Hispanic

whites, blacks, Hispanics, and Asians. Within each racial-ethnic group, we will take into account the gendered grandparenthood and caregiving burden by distinguishing between grandfathers and grandmothers. For racial-ethnic minorities, we will also consider immigration status which reflect variations in cultural norms and family economic circumference, thereby affecting the household structure for coresident grandparents (Casper et al. 2016).

Many potential pathways link intergenerational caregiving to grandparents' health; some are positive, whereas others are negative. On one hand, grandparents experience role strain (Goode 1960) when they are unable to fulfill the obligations of intergenerational caregiving due to limited resources or inadequate coping strategies. The role strain of intergenerational caregiving takes many forms, ranging from physical to psychological and from relational to financial. On the other hand, according to the role enhancement theory (Moen, Robison and Dempster-McClain 1995), providing care to grandchildren may promote grandparents' emotional, psychological, and social well-being, which in turn are protective against biological health risks. Similar to previous research (Arpino and Bordone 2014; Ates 2017; Di Gessa, Glaser and Tinker 2016a, 2016b; Fuller-Thomson et al. 1997; Hilbrand et al. 2017a; Hilbrand et al. 2017b; Kenny, King and Hall 2014; Minkler and Fuller-Thomson 2001, 2005), we hypothesize a nonlinear relationship between coresident grandparents' involvement in grandchild care and their mortality risk.

Hypothesis 1: Coresident grandparents derive health benefits and hence reduced mortality risk from providing casual or supplementary care to grandchildren.

Hypothesis 2: Health benefits would be outweighed by caregiving burdens if coresident grandparents spend an extended period of time as the primary caregivers, leading to increased mortality risk.

To the extent that Hispanics and Asians are more culturally accustomed to multigenerational co-residence and intergenerational support, we expect that:

Hypothesis 3: Hispanic and Asian coresident grandparents experience lower mortality risks when they provide care to grandchildren.

Hypothesis 4: Less acculturated (e.g., first-generation immigrants) Hispanic and Asian coresident grandparents experience lower mortality risks when they provide care to grandchildren, compared with their more acculturated peers.

Research Plan

Data and Sample

There are two main data sources in this study: the Census 2000 long-form sample and the Social Security Administration's Numerical Identification file (SSA Numident). The former captures basic demographic and socioeconomic information for about 17% of all residents in the U.S. as of the 2000 Decennial Census. More importantly, as required by the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, three questions were included in the Census 2000 long form to collect information about coresident grandparents and their caregiving experience.

The SSA Numident captures all interactions individuals have with the SSA related to Social Security Numbers (SSNs), including SSN applications, claim records, requested changes

to SSN information, and death information, among others (Finlay and Genadek 2021). The Census Bureau obtains SSA Numident data from SSA and processes quarterly updates from SSA transaction records to create a person-level data file to improve the quality of Census Bureau surveys and decennial census data. This processed file is known as the Census Numident. We currently have access to the Census Numident file 2018 which includes every SSN holder from 1936, when SSNs were created and issued, to December 2018, although we will restrict our sample to those who were alive as of the Census 2000. We may have access to updated Numident file soon.

We will analyze the restricted person-level data from the Census 2000 long-form sample and the Numident file 2018 within the Federal Statistical Restricted Data Centers (FSRDCs) in New York and Boston. Both data sets are part of the Census Longitudinal Infrastructure Project (CLIP) which assigns a unique, anonymous identifier, called Protected Identification Key to all individuals in the datasets available to the Census Bureau. Because the same person is assigned the same PIK across datasets, researchers can link person records over time and across survey and administrative records using PIKs. In this study, we have linked coresident grandparents from the Census 2000 long form to their death records from the Numident. To be comparable with previous research using survey data (Choi 2020; Ellwardt et al. 2021), we will exclude the individuals who were under age 50 as of Census 2000 because they might be too young to be grandparents or to die of natural causes.

Key Measures

The outcome of interest in this study is all-cause mortality. The mortality information (including reported month, day, and year of death if deceased) included in the Numident is collected by SSA for the purpose of administering the Old-Age, Survivors, and Disability Insurance program, commonly known as the "Social Security" program. Mortality information in the Numident is collected through multiple sources including first-party reports of death from family members and representatives, verified third-party reports from friends, state government offices, the Centers for Medicare and Medicaid Services, and Department of Veterans Affairs, and the Internal Revenue Service (Finlay and Genadek 2021). Using vital statistics from the CDC (including the restricted-use National Death Index), the primary source of mortality data for the U.S. as the benchmark, Finlay and Genadek (2021) concluded that the Census Numident is a high-quality and timely (as fine as weekly) source of data to study all-cause mortality. For survival analysis, we will measure duration to death from April 1 of 2000, the Census Day. Duration to death was right-censored on December 31 of 2018 if a person was still alive by then. In sensitivity analysis, we will also measure duration to death from each person's 50th birthday to adjust for left-censoring since we restrict the sample to those who were 50 years or older as of the Census 2000.

The key independent of interest is coresident grandparenting. In the Census 2000 long-form sample, three questions were asked of all people aged 15 and over about their coresident grandparenting experience. The first question asked if the person was the grandparent of any grandchildren under 18 who were living in the same house. Those who answered "yes" were then asked if they were "currently responsible for most of the basic needs of one or more of these grandchildren." Grandparents who answered "yes" were further asked how long they had had this responsibility. The response categories included "less than 6 months," "6 to 11 months," "1 or 2 years," "3 or 4 years," and "5 years or more." Combining responses to these three questions,

we can categorize grandparenting styles such as non-coresident grandparents, coresident non-caregivers, short-term, medium-term, and long-term coresident grandparenting.

Other important independent variables include acculturation and living arrangement. We will measure coresident grandparents' acculturation status by using several variables from the Census 2000 long-form including citizenship status, English ability, and language spoken at home. We will measure living arrangement by using such variables as relationship to the household head, marital status, and number of adults in the household. We will control for demographic and socioeconomic characteristics such as baseline age, educational attainment, employment status, and household income.

Grandparents who are unhealthy may be unwilling and less capable to care for their grandchildren than their healthier peers. We will adjust for potential health selection into caregiving by using several Census 2000 long-form variables including self-reported disability status, limitations in physical mobility and mental capacity, and difficulty in ability to work at a job or business. We will implement two adjustment strategies. First, we can control for these variables in survival regression models. Second, we can restrict the sample to persons who were disability-free and had no difficulty in physical mobility, mental capacity, and ability to work.

Methods

We will conduct survival analyses to examine the association between coresident grandparenting and mortality. We will construct two analytical samples, each of which has its own reference group for comparison in survival analyses. The first analytical sample includes everyone who was 50 years or older in Census 2000, regardless of whether they were coresident grandparents or not. We will use those who were not coresident grandparents as the reference group for comparison. The second analytical sample is restricted to coresident grandparents only and we will use those who were not caregivers for their grandchildren as the reference group.

We will employ Kaplan-Meier estimator to describe survival curves and estimate unadjusted median survival times for different grandparent subgroups. We will estimate Cox proportional-hazard models and Gompertz models to formally test the association between grandparenting and mortality after adjusting for demographic characteristics, socioeconomic conditions, and disability status at the 2000 baseline.

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