The Health Benefits of Grandchildren

Robert Plotnick
University of Washington
plotnick@u.washington.edu

Joseph Price
Brigham Young University
jpp6@byu.edu.

Abstract

Grandchildren are a source of joy to the elderly and may also affect the health of their grandparents. This impact may come through several channels. Grandchildren may inform their grandparents of needed lifestyle changes (often in a much more effective way than their parents can). Grandchildren also provide a source of motivation for grandparents to maintain their health so that they can enjoy future interactions with their grandchildren. Negative effects of grandchildren on health may arise if grandparents consume less, including less health care, to expand their bequests or if they receive fewer money and time transfers from their adult children because of the demands of raising their own families.

We use the Health and Retirement Survey and OLS, logit and fixed effect models to examine whether elderly persons with grandchildren have systematically different indicators of health than otherwise similar persons without grandchildren.

(JEL) J14, I12, J13

The number of people over age 62 in the United States is expected to double over the next 30 years from 40 million to 80 million. This group will use an ever increasing share of the enormous amount spent on health care each year.[1] Considerable attention has been given to how to best care for the elderly while keeping costs under control. One important contribution of social scientists to this discussion is their analyses of the many social factors that affect individuals' health status. Such factors include personal and family characteristics, current and past health-related behaviors, access to and ability to pay for health services, health care policies, and characteristics of the social context (cites).

This enormous stream of research has largely overlooked the possible impact on elders' health status of an important family characteristic: their grandchildren. Yet grandchildren may positively affect the health and well-being of their grandparents for a number of reasons. For example, grandchildren provide direct enjoyment to their grandparents. This may come through positive interactions or by grandparents observing and hearing about the accomplishments of their progeny. Grandchildren provide an added incentive to adopt healthy behaviors since the grandparents can look forward to future interactions with their grandchildren, thus increasing the value of future health stocks. Grandchildren may also encourage grandparents to change their behavior in ways that might be inappropriate or ineffective when coming from adult children.

Grandchildren may have negative impacts on their grandparents' health, as well. For instance, if grandchildren intensify the bequest motive, grandparents may consume less, including less health care, to increase their estate. Or conflict with parents over how best to raise the next generation may create stress and, in severe cases, lead parents to

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[1] Health expenditures were $1.9 trillion in 2004 and are projected to be $2.9 trillion in 2010 (http://www.census.gov/prod/2006pubs/07statab/health.pdf accessed 23 July 2007).

reduce contact with the grandparents, thereby reducing assistance that positively affects

health, such as helping grandparents comply with medication schedules.

This paper examines whether an elderly person with grandchildren has higher

levels of health than a similar individual without grandchildren. We use information from

the Health and Retirement Survey (HRS) to examine nine health and mental health

indicators: self-rated health, depression, loneliness, obesity, medical expenditures, days

spent in the hospital, frequency of exercise, and current smoking or use of alcohol. We use

OLS and logit regressions to determine if there is a statistically significant association

between having grandchildren and each health indicator, net of other factors. We exploit

the panel nature of the HRS by also estimating individual fixed effect models.

Grandparents, Grandchildren, and Health

Nearly all research examining the impact of grandchildren on their grandparents'

health has focused on the consequences of grandparents taking on increased child-care

roles. These studies note many reasons why caring for one's grandchildren may lead to

worse health among the elderly, including reduced time for self-care, exercise, and going

to the doctor (Roe, Minkler, Saunders, and Thomson 1996), stressed-induced smoking

(Waldrop and Weber 2001), less time for socializing with peers (Pruchno 1999), and

increased financial distress when work hours must be reduced (Minkler and Roe 1996).

Consistent with this reasoning, Minkler and Fuller-Thomson (1999) find that being a

custodial grandparent is associated with increased likelihood of poor health, as measured

by limitations of activities of daily life.[2]

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[2] The authors note the difficulty in interpreting their results as a causal impact, since those grandparents with physical limitations have a lower opportunity cost of caring for kids because of their lower prospects in the labor market.

Hughes, Waite, LaPierre, and Luo (2006) use a sample of men and women aged 50-80 from the HRS to assess the impact of childcare on the health of the grandparent. Unlike many previous studies, they find no evidence of widespread consequences of caring for one's grandchildren. They do find a positive impact for grandmothers who baby-sit. Their analysis exploits the panel nature of the HRS to examine the impact of changes in care-giving status . They do not address the issue of selection into the care-giving status. Selection may arise if unobservable factors that influence a grandparent's decision to care for the grandchildren also have a direct impact on health).

The majority of grandparents in the HRS, do not have major childcare responsibilities for grandchildren. However, there are several reasons why grandchildren may influence their grandparents' health beyond the possible impact of caring for the child.

From a psychological perspective the post-retirement years are viewed as a period of reflection in which an individual receives satisfaction from decisions made earlier in life. Grandchildren are an important part of this life-analysis and grandparents derive utility from observing and hearing about the accomplishments of their progeny.[3] Thus, having grandchildren could lead to increased health (particularly mental health) even for elders with limited or no contact with their grandchildren. It is likely that the impact is greater when there is a greater level of contact, either in person or by telephone, mail or e-mail.

Grandchildren also provide grandparents an additional reason to be active and involved in the lives of others. This involvement comes in the form of child-care or regularly spending time together. Grandchildren can also expand their grandparents' involvement in the community as the grandparent is included in school activities and other

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[3] This is consistent with the biological goal of genetic fitness in which individuals try to maximize the number and strength of their offspring (Cox 2007).

social events that include the grandchild. Many grandparents report that this type of

interaction with their grandchildren has led them to have more active and healthier lives

(Waldrop and Weber 2001).

Becker (1993) argues that more educated individuals will adopt healthier behaviors

because they have higher levels of consumption to look forward to. A parallel argument

may be true for elders with grandchildren. Grandchildren provide an additional form of

future pleasure and prospects of enjoyable interactions. Given the physical limitations that

elders often face for other forms of consumption (i.e. traveling, active recreation, certain

foods), the benefit of such interactions may be relatively high for many grandparents.

Grandchildren may also influence their grandparent's health behavior by directly

transferring information, or indirect transferring it via the parents. For example, they may

convey information learned in school about the importance of exercise, proper nutrition,

and the dangers of smoking and exhort their grandparents to change their behaviors

accordingly.[4] Children may be especially uninhibited or blunt in seeking to influence their

grandparents since they are not as reticent as social convention dictates in telling other

people (especially their grandparents) what they should or shouldn't do.

Grandchildren may, conversely, have negative effects on their grandparents' health

via several mechanisms. As noted above, providing day care for one's grandchildren may

have adverse health consequences. Adverse health consequences may also result if the

grandparent assumes primary care-giving responsibilities because the parent(s) is abusive,

otherwise dysfunctional or incarcerated.

Grandparents may consume less, including less health care, for two reasons. If

grandchildren intensify the bequest motive, grandparents will save more to increase their

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[4] This mechanism of influence is similar to Field's (2005) finding that as individuals receive more education, the likelihood that their parents will quit smoking increases.

estates. Second, grandparents may receive fewer transfers of money and time from their adult children, who are likely to devote more resources to their own families when they become parents and as they have more children. Indeed, financial transfers may flow downward.

Conflict with their own children over how best to raise the next generation may create family tension and stress and, in severe cases, lead to reduced contact between parents and grandparents. Less contact will tend to reduce parental assistance that positively affects grandparents' health. For example, parents may help grandparents comply with medication schedules, drive them to clinics, monitor their health conditions, identify health problems while they are minor and treated more easily and at lower cost and, if a grandparent requires hospitalization or other intensive care, monitor the quality of care and advocate on the grandparent's behalf to health care and insurance providers. Reduced contact between parents and grandparents may also occur if a grandchild has severe, chronic health problems that require significant parental time.

Data and Variables

The Health and Retirement Survey is a federally funded, ongoing panel study that started in 1992. It re-interviews subjects biannually, with proxy interviews after death. Hispanics, blacks, and Florida residents are over-sampled.

Initially the HRS included persons born during the 1931-1941 period (and their spouses, if married, regardless of age). In 1993 the AHEAD (Assets and Health Dynamics among the Oldest Old) survey started collecting data on persons born in 1923 or earlier. In 1998 HRS and AHEAD data were merged with a single interview schedule and two complementary samples were added that included persons born between 1924 and 1930 and between 1942 and 1947. The expanded HRS is representative of all persons over 50

years of age in the United States in 1998 and includes more than 22,000 persons. This study uses information from the first six waves of the HRS.

Dependent variables. We analyze nine outcome variables. All are drawn from the HRS files created by RAND, which provide comparable measures across all waves in which the measure is available. Some variables change between the first and other survey waves by asking about the last two years instead of the last year. We include dummy variables for each wave to account for these changes as well as year effects.

Four directly indicate respondents' health. Current self-reported general health status is coded as excellent, very good, good, fair, or poor on a 1 to 5 scale. Larger values indicate worse health. Three additional objective measures that serve as good proxies for health are depression, feelings of loneliness, and obesity. We code depression as a dummy variable based on eight questions from the Center for Epidemiologic Studies Depression (CESD) scale. Persons who gave responses indicative of depression on three or more questions are classified as depressed. Loneliness is a dummy variable equal to one for persons who answered "yes" when asked if they were lonely. Obesity is a dummy variable equal to one for persons with a body-mass index greater than 30.

We examine two measures of health services use – total medical expenditures in the past year and number of nights spent in a hospital over the last two years. e We also examine three dummy variable indicators of health behavior – whether the respondent regularly exercises (0 for regular exercise, 1 if not), currently smokes (1 for smokers) and currently uses alcohol (1 for users).

Our coding choices mean that a higher value represents a worse outcome for all nine dependent variables. Thus, a negative coefficient on the variable for having grandchildren implies that grandchildren are associated with **better** health.

Explanatory variables. The key explanatory variables in our analysis are whether an individual has grandchildren and how many grandchildren he or she has. We extend our analysis to look at whether the individual has a grandchild living within 10 miles and whether the individual spends at least 100 hours each year caring for the grandchild (which has the been the focus of most of the past research on grandchildren).

The 1992 wave of the HRS reports the number of children the respondent has and, for each child, the number of children he or she has. All subsequent waves ask respondents how many grandchildren they have as well as how many grandchildren have been born in the last two years. In addition, each wave reports whether there are any children that live within 10 miles and which children they are. Knowing whether the child that lives within 10 miles has a grandchild will not be clear unless the child already had children in 1992 or the child is an only child.

Our empirical models include personal and family background characteristics likely to be associated with health outcomes. The dummy variable for gender equals one for females. There are race and ethnicity dummies for black, white Hispanic, and other race. White non-Hispanic is the omitted category. The dummies for religious affiliation are for being Protestant, Catholic, Jewish, or other, with no religion as the omitted category. We code education with dummy variables for graduating college and for completing high school but not college. The omitted category is not completing high school. There are dummy variables for being a veteran, for whether English is the first language, and for being born in the U.S. Current marital status dummies are coded as divorced, widowed, partnered, and never married, with married as the omitted category. Health status as a child is self-assessed retrospectively using the standard five point scale. Linear variables include age, number of own children, and wealth (in 2002 dollars).

There are two types of individuals that have no grandchildren: those who never had children and those who had children but whose children have not yet had children. Our analysis focuses on the second group.[5]

The sample includes all respondents and their spouses, if present, who provided information that establishes whether they have children and, if so, are grandparents. We use observations only for waves when an individual was at least 60 years old. The total sample includes 48,954 potential person-year observations in which individuals report their number of grandchildren. Of these person-year observations, 7.4 percent show no grandchildren. The sample contains information on 17,484 unique individuals. Of these, 9.4 percent never report having grandchildren. All results are based on unweighted data.

Analytic Methods

We first estimate the cross-sectional health differences between otherwise similar people who differ in whether they have a grandchild, or in the number of grandchildren, controlling for major personal and family characteristics. The models take the form:

$$y_i = \alpha + \beta X_i + \gamma G_i + \varepsilon_i$$

where y is the outcome, X is a vector of personal and family background characteristics, and G is either the dummy for having grandchildren or the number of grandchildren. We use OLS for three outcomes – general health status, medical expenses and days in hospital – and logit for the six qualitative outcomes.

We present four nested models for all outcomes. Model A simply includes G. Model B adds dummies for gender, race/ethnicity, religion, whether English is the first language, being born in the U.S. and survey wave as well as age, age squared, and self

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[5] Including childless elderly does not change the findings.

rated health as a child. Model C adds the dummies for education and current marital

status.[6] Model D adds wealth to model C.[7]

In these cross-sectional analyses the identifying assumption is that the

unobservable factors that led a person to have grandchildren at a certain age do not have a

direct impact on the individual's current health status. This is somewhat plausible, given

that the birth of a grandchild depends not only on the individual's fertility decisions but

also those of their children. In the simplest case, two people who each have one married

child may differ in whether they have grandchildren for reasons completely unrelated to

their own fertility decisions or health status (e.g. fertility decisions or health problems of

the child's spouse).

Unobservable characteristics may influence both whether an elderly person has

grandchildren and her health status. For example, a woman with a poorer health

endowment may have experienced an increased risk of miscarriage and thus a delay in

childbearing or a reduced number of children and have poorer health when elderly.

We address omitted variable bias by using the longitudinal nature of the HRS to

estimate person fixed effect models. The model is:

$$y_i \ = \ \alpha \ + \ \beta X_i \ + \ \gamma G_i \ + P_i + \ \varepsilon_i$$

where P_i is the person fixed effect. In future work we will estimate propensity score and

instrumental variables models as alternative adjustments for omitted variable bias.

In this study fixed effect models require time-varying explanatory variables, so the

specifications are parsimonious. Model A is as before. Model B adds age, age squared,

current marital status, and survey wave. Model C extends B by adding current wealth.

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[6] It also adds veteran status since this, too, is a choice variable.
[7] We do not include current income because it may well depend on current health. Such dependence is less
likely for current wealth, which is accrued over the life cycle, but findings from model D need to be regarded
cautiously.

The fixed effect model also allows us to test the impact of having a grandchild move within (beyond) 10 miles of the grandparent. While it is possible that such a move may be prompted by a negative (positive) health shock experienced by the grandparent, we can compare this impact with that of having a child without children moving within (beyond) 10 miles as a check.

Results

Table 1 provides summary statistics of the outcome variables, the key explanatory variables, and other covariates separately based on whether the individual currently has any grandchildren. The first panel shows that individuals with grandchildren have lower levels of self-reported health and are more likely to be obese, yet have fewer medical expenses, but more days spent in the hospital. In terms of health behaviors, individuals with grandchildren are less likely to exercise vigorously at least three times per week, smoke more and use alcohol less. These differences are all significant at the 1 percent level, except for medical expenses (p < .10). There are no significant differences in the two mental health indicators or days in hospital. The mean number of grandchildren is 6.4.

The third panel shows that individuals with and without grandchildren differ along a number of observable dimensions that are likely to affect their health, use of medical care and health related behavior. Most notably, individuals with grandchildren are more likely to be female and Protestant and to have more children. They are less likely to have graduated from college and to be cohabiting, divorced or never married. They also have substantially less wealth.

To be contimued…

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Table 1: Means of Dependent and Explanatory Variables for Persons with and Without Grandchildren

	Has Grandchildren?	
Outcomes	**No**	**Yes**
Self-rate general health (1-5)	1.83	1.92**
Depression (CESD score > 2)	.223	.228
Lonely	.184	.177
Obese (BMI ≥ 30)	.205	.223*
Total medical expenses in past 2 years (in $1,000s)	16.3	14.9#
Hospital days in past 2 years	2.58	2.77
Does not exercise vigorously at least 3 times a week	.592	.617**
Currently smokes	.129	.142*
Currently uses alcohol	.492	.443**
Variables of Interest		
Has at least one grandchild	0	1
Number of grandchildren	0	6.37
Has children within 10 miles	.451	.575**
Spent 100+ hours caring for grandchildren	0	.298
Other Covariates		
Age	69.6	69.8
Female	.493	.544**
Black	.156	.147
White Hispanic	.062	.064
Other race	.025	.022
Protestant	.608	.656**
Catholic	.263	.271
Jewish	.046	.023**
Other religion	.013	.008**
No religion	.071	.041**
Born in the US	.869	.911**
English not first language	.065	.061
Self-rated health as a child (1-5)	1.88	1.85
Completed high school	.506	.543**
Completed college	.271	.145**
Veteran	.318	.289**
Number of children	2.34	3.70**
Currently cohabiting	.027	.017**
Currently divorced	.123	.084**
Currently widowed	.235	.229

Never married	.010	.006**
Wealth (in $1000s)	436	321**
N	3,609	45,345

** = significant at .01; * = significant at .05; # = significant at .10; two-tail t-test

Notes: N = 48,954. Summary statistics pooled across 1992-2002 waves of the HRS. Many individuals contribute multiple observations to this table. The omitted categories for race, religion, education and marital status, are non-Hispanic white, no religion, did not complete high school, and married. Age is required to be at least 60 for all observations.