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Grandchild Care, Intergenerational Transfers, and Grandparents' Labor Supply

Christine HO
Singapore Management University, christineho@smu.edu.sg

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Christine Ho

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Christine Ho[2]

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Abstract

One-fifth of children aged below five with employed mothers benefit from grandparent provided child care as their main source of daycare in the U.S. Using data from the Health and Retirement Study, we investigate how grandchild care needs relate to intergenerational transfers of time and money and grandparents' labor supply behavior. We find that grandparents with a new born grandchild are more likely to provide grandchild care while married grandparents are also more likely to be employed and provide financial help. Grandparents with grandchildren living close by provided higher time transfers while married grandmothers with resident grandchildren also worked longer hours.

JEL Codes: D13, J13, J14, J22

Keywords: Grandchild care, Intergenerational Transfers, Grandparents' Labor Supply

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[2] School of Economics, Singapore Management University, 90 Stamford Road, Singapore 178903. Tel: +65 68385173. Email: christineho@smu.edu.sg.

1. Introduction

Increasing life expectancy coupled with declining fertility rates have contributed towards the verticalization of families over the past few decades. Such increase in the number of generations simultaneously alive creates further opportunities for intergenerational support which may take the form of financial or time transfers (Bengtson, 2001; Bianchi et al., 2012; McGarry and Schoeni, 1995; Soldo and Hill, 1995). U.S. Census Bureau reports indicate that the proportion of children under 18 living with a grandparent has more than tripled from 3.2% in 1970 to 10% in 2010.[3] There are also a considerable proportion of children benefiting from grandparent provided child care even if the grandparent does not necessarily live in the same house. Survey of Income and Program Participation data shows that the proportion of children under five with employed mothers benefitting from grandparent provided child care as their main source of day care increased from 13.9% in 1988 to 19.6% in 2005 (Laughin, 2010). On average, those preschoolers were spending 24 hours per week in grandparent care.

The literature on intergenerational transfers outlines several motives for family transfers such as altruistic motive where parents care about their children's well-being (Barro, 1974; Becker, 1974), exchange motive where parents make money transfers in order to receive services such as old age care from their adult children (Bernheim et al., 1985; Cox, 1987; Cox and Rank, 1992), and warm glow motive where people get satisfaction from the act of giving (Andreoni, 1989).[4] Upward time transfers have been explored in the caregiving literature in terms of old age care provided by adult children to their elderly parents (Brown, 2005; López-Anuarbe, 2013; Pezzin and Schone, 1999; Pezzin et al., 2007, 2009). On the other hand, the literature on downward time transfers in the form of grandchild care provided by the elderly to the younger generation has mainly focused on the impacts on the parent generation.

There is general consensus in the literature that the availability of grandparent provided child care increases labor force participation of young mothers (Compton, 2013; Compton and Pollak, 2013; Del

[3] Approximately one third of grandparent headed households have no parents in the household while two thirds have at least one young parent living in the household. The median age of US grandparent caregivers is 57. The majority, 68% of grandparent caregivers are White while 29% are African-American.
[4] See Arrondel and Masson (2006) and Laferrère and Wolff (2006) for comprehensive literature reviews on motives behind family transfers.

Boca, 2002; Leibowitz et al., 1992; Sasaki, 2002; Maurer-Fazio et al., 2011; Posadas and Vidal-Fernández, 2012). On the other hand, relatively little is known about how grandchild care needs affect the economic behavior of grandparents. Ying and Marcotte (2007) find that taking in a grandchild in the household decreases labor supply of unmarried grandparents and increases labor supply of married grandmothers. Lei (2008) finds that grandmothers are likely to help their low income children by working more to provide financial help or by providing grandchild care. Ho (2013) finds that the 1996 PRWORA welfare-to-work reforms targeting low income young mothers had indirect impacts on the related grandmothers. The latter decreased grandchild care and increased net financial transfers that they make to the low income young mothers. Co-resident grandmothers also increased their labor supply.

In this paper, we explore the relationships between grandchild care needs, intergenerational transfers of time and money and grandparents' labor supply behavior. Using data from the Health and Retirement Study, we estimate multivariate models of grandchild care, financial transfers, and labor supply. We find that grandparents with a new born grandchild were more likely to provide grandchild care while married grandparents were also more likely to work and provide financial help to the younger generation. Those who lived within ten miles of their grandchildren were more likely to provide grandchild care and provided higher time transfers while married grandparents were also more likely to provide financial help and provided higher monetary transfers. Married grandmothers worked longer hours when a grandchild was resident in the household. On the other hand, single grandparents do not seem to adjust monetary transfers and labor supply by much in response to the birth of a new grandchild and family living proximity. Married grandparents living in census divisions with higher cost of formal child care also gave higher financial transfers to the parents.

We add to the relatively sparse empirical literature on grandchild care needs and grandparents' economic behavior. Understanding how grandchild care needs are correlated with grandparents' economic behavior is important from a policy perspective. Policies targeting the younger generation's work and child care decisions can have potential unpredicted repercussions on the older generation (Ho, 2013; Rozenweig and Wolpin, 1994; Schoeni, 2002). This raises not only the issue of potential crowding

out of private transfers by public transfers, but also concerns about the repercussions on the grandparent generation. At an age where one could be anticipating the enjoyment of their later years, one could be called forth to help with grandchildren which would be resource intensive for the grandparent.[5] With the increasing involvement of grandparents in the lives of their grandchildren, it becomes increasingly important to understand how grandchild care needs are related to grandparents' economic behavior.

The paper is organized as follows: in Section 2, we present our data and empirical strategy, in Section 3, we present our results on grandchild care needs and intergenerational transfers of time and money and grandparents' labor supply. We conclude in Section 4.

2. Data and Empirical Strategy

2.1. Data

We use data from the Health and Retirement Study (HRS) which is a nationally representative longitudinal study of Americans aged over 50. Respondents and their spouse are interviewed biennially. The HRS is a comprehensive dataset containing information on labor supply of the respondents, grandchild care hours, intergenerational transfers of money, as well as a pool of demographic variables related to the respondents and their adult children.

The family module of the HRS asks specific questions about grandchild care and financial transfers to and from adult children. Interviews are retrospective, for example, the 2000 wave asked about hours of care and financial transfers provided altogether in 1998 and 1999. We construct our hours of care variable from the questions: "Did you … spend 100 or more hours in total (since Previous Wave Interview Month-Year/in the last two years) taking care of (grand or great-grandchildren/grandchildren)? Roughly how many hours altogether did you spend?" Our financial transfers variable is constructed from the question: "Including help with education but not shared housing ...or shared food or any deed to a

[5] There are also concerns about potential negative associations between extensive grandchild care and grandparents' health in the sociological and medical literature (Baker and Silverstein, 2008; Fuller-Thomson and Minkler, 2000; Hughes et al., 2007; Minkler and Fuller-Thomson, 2001). Reinkowski (2013) finds a positive association between occasional grandchild care and health.

house, (...in the last two years) did you … give financial help totaling $500 or more to any of your children (or grandchildren)? ...about how much was that altogether during the period ...". For married grandparents, questions on whether they provided grandchild care, whether they provided financial transfers and amount of financial transfers were asked jointly for both spouses while questions on amount of grandchild care hours provided were asked separately for each spouse.

More than 50% of those who helped with grandchild care provided information on their exact hours of grandchild care and the rest provided information in bins of 100, 200, and 500 hours in which case we impute hours as the average of the bins. Similarly, more than 87% of those who provided help financially provided information on the exact amount transferred and the rest provided information in bins of $500, $1k, $5k, and $20k in which case we impute financial transfers given as the average of the bins. Less than 1% of the sample had time or money transfers information completely missing and was dropped from the sample.

We divide the hours of grandchild care by 104 to approximate our weekly hours of grandchild care variable. We also divide financial transfers by 104 to construct our weekly financial transfers variable. All monetary values were converted to 2010 dollars using the Bureau of Labor Statistics CPI calculator.

While hours of grandchild care and net financial transfers are based on recall information, they still provide a good approximation of time devoted to grandchild care and financial transfers. After all, labor hours are also self-reported and based on recall information. For the purpose of this study, the HRS proves to be the most suitable dataset so far.[6]

We limit the sample to three generation families where the grandparents are from the original HRS cohort and the War Baby cohort such that our main respondents are born between 1931 and 1947.

[6] Other data sets such as the Panel Study of Income Dynamics allow a researcher to match parents and adult children data. Detailed information on both generations is, however, available only when they live in different households as main respondents. Moreover, transfers recorded concern transfers to and from relatives in general thereby not allowing one to pinpoint how much was given to and from parents as opposed to siblings or aunts and uncles. Datasets such as the Survey of Income and Program Participation, on the other hand, contain information on the grandparent only when the latter lives with the adult children.

Moreover, since respondents are asked specifically whether they had any new grandchild from 1998 onwards, we limit the sample period to between 1998 and 2002 inclusive, corresponding to waves 4, 5 and 6. We also limit the sample to households where the main respondent is aged below 65 which is the usual Social Security age in the USA. Our main respondents are therefore aged between 51 and 64.

We drop disabled and out of the labor force (but not retired) grandparents from the sample. We consider disability and out of the labor force status as absorbing states for our sample of grandparents. Since one of the purposes of this study is to capture the allocation of time between paid and unpaid work, we therefore exclude non labor active grandparents from our sample. Non-working grandparents in our sample thus consist of unemployed and retired grandparents[7]. We perform robustness checks where we also drop retired grandparents from the sample in our sensitivity analysis section.

Since grandmothers are generally more likely to be involved in grandchild care (Fuller-Thomson and Minkler, 2000) and the presence of a spouse may affect how grandparents respond to grandchild care (Ying and Marcotte, 2007), we split the sample between single grandmothers (1,673 observations), single grandfathers (560 observations) and married grandparents (6,577 observations). Summary statistics for our sample are reported in Table 1.

As can be seen from Table 1, single grandmothers and married grandparents were more likely to provide grandchild care as opposed to single grandfathers. 52% of single grandmothers and 50% of married grandparents provided grandchild care as opposed to 20% of single grandfathers. Among grandparents who cared for grandchildren, single grandparents provided higher hours of grandchild care as opposed to married grandparents. On average, single grandmothers provided 7.36 hours per week, single grandfathers 6.29 hours while married grandmothers provided 5.38 hours and married grandfathers 5.50 hours per week.[8]

[7] Maestas (2010) find that at least 26% of retirees go back into paid employment.
[8] We note that married grandparents could be providing some grandchild care at separate times so that the lower hours of grandchild care per married grandparent does not necessarily imply that their grandchildren were spending less time in grandparent care.

On the other hand, single grandfathers and married grandparents were slightly more likely to provide financial transfers and also provided higher financial help compared to single grandmothers. 43% of single grandfathers and 45% of married grandparents provided financial help as opposed to 39% of single grandmothers. Among those who provided financial help, on average single grandmothers provided $75 per week, single grandfathers $84.1 and married grandparents $95 per week.[9]

We consider the following variables as capturing grandchild care needs: (a) the birth of a new grandchild, (b) the presence of resident grandchild, (c) grandchildren living within 10 miles, (d) the number of grandchildren and (e) the cost of formal child care.

Approximately 30 to 40% of grandparents had a new grandchild within the past two years. Single grandmothers were more likely to have at least one grandchild resident in the household (20%) as opposed to single grandfathers (7%) and married grandparents (8%). Similarly, single grandmothers were more likely to have at least one grandchild living within 10 miles (60%) as opposed to single grandfathers (46%) and married grandparents (53%).[10]

We construct our cost of formal child care variable based on the average wage of child care workers in the census division of residence of the grandparent.[11] Parent variables are constructed by averaging across the parent generation. For example, if the grandparents have two adult children and one adult child is aged 35 while the other is aged 31, we take the average age as 33 years. For the sake of terminology, we use the terms "grandparents" and "respondents" interchangeably to denote the grandparent generation and the terms "adult children" and "parents" to denote the parent generation.

[9] We focus our study on downward transfers from the grandparent generation to the younger generations. Less than 6% of respondents received financial transfers from their adult children and only around 1.5% both received financial transfers from adult children and provided grandchild care so that it does not seem that the majority of grandparents were being paid for providing child care. This is consistent with Jendrek (1993) who finds from case data based on 114 grandparents who provide daily care that 71% were not paid for providing such care. Thus, it is not surprising that the more casual grandparents caregivers included in the HRS would also not be paid.

[10] The only measure of distance in the HRS is whether adult children (the parents) live within 10 miles of the grandparents.

[11] We do not observe census division of residence of the adult children. However, since it is unlikely that grandparents would be able to provide grandchild care to children who live too far away, using the census division of residence of the grandparents may be a good approximation.

2.2. Estimation Strategy

We use random effects tobit to estimate censored outcome equations (hours of grandchild care, financial transfers and hours of work) and random effects probit to estimate discrete outcome equations (provide grandchild care, provide financial assistance and employment). Grandchild care needs variables are included as dummy variables for whether the grandparent had any new grandchild, whether any grandchild resident, whether any grandchild lives within 10 miles and second order polynomials in number of grandchildren and cost of formal child care. Controls for the parent generation include second order polynomials in average age, education, marital status, and whether female. Controls for grandparent generation include second order polynomials in age, wage[12], work experience and education (for both grandparents when married), unearned income, wealth, number of children and dummy variables for whether in good health and whether any grandparent is of black ethnicity. We also include age and an age step function for age 62 (the early Social Security age) and age 65 (the usual Social Security age) to control for potential Social Security incentives. All regressions include a full set of time and census division dummies and standard errors are block bootstrapped.

2.3. Potential Issues

Since we are focusing on a sample of grandparents, our analysis is focused on caring for additional grandchildren aged below two and existing grandchildren rather than for caring for the first grandchild.[13] In addition, due to the potentially endogenous nature of grandchild care needs variables, we interpret our main results as a series of correlations rather than argue for causality. The birth of a new grandchild and the number of grandchildren could be positively correlated with grandchild care since expectations of help from the grandparents may increase fertility. Similarly, living proximity may be correlated with

[12] When the grandparent is not working, we impute the wage as the last wage earned. Labor supply regressions based on only the sample of working grandparents yielded similar results as reported in this study.

[13] We are grateful to an anonymous reviewer for pointing this out. Around 3% of respondents in the HRS had their first grandchild during our sample period.

grandchild care since grandparents who are more likely to help with grandchild care may also be more willing to live close by.

In Section 3.2 below, we attempt to control for unobserved heterogeneity in a more robust way by exploiting variations across the parent generation and controlling for family (grandparent) fixed effects, thereby allowing for a correlation between grandchild care needs variables and the unobserved error component.

3. Grandchild Care Needs and Grandparents' Economic Behavior

3.1. Baseline Results

We present our baseline results for intergenerational transfers of time in Table 2. We report marginal effects on the probability of providing grandchild care and the hours of grandchild care provided for single grandmothers in columns (1) and (2), single grandfathers in columns (3) and (4) and married grandparents in columns (5) to (7).

From column (1) we see that single grandmothers are 8.9% more likely to provide grandchild care when they have a new grandchild. Similarly, as can be seen from column (5), married grandparents are 10.2% more likely to provide grandchild care when they have a new grandchild. Single grandfathers also seem more likely to provide grandchild care in column (3) although the marginal effect is not statistically significant at the 10% level. From column (4), single grandfathers provided on average 0.77 additional hours of grandchild care when they had a new grandchild significant at the 10% level. Single grandmothers also provided higher hours of grandchild care of around 0.84 additional hours per week in column (2). From columns (6) and (7), although married grandparents with a new grandchild provided higher hours of grandchild care, the effect is not statistically significant at the 10% level. Thus, it seems that grandparents, especially single grandmothers, were more likely to provide grandchild care and provided higher hours of care when they had a new grandchild. Similarly, the number of grandchildren was positively related to both the probability and the hours of grandchild care provided especially for single grandmothers and married grandparents.

Family living proximity also seems positively related to both the probability and the hours of grandchild care provided by all grandparents. Grandparents with a grandchild resident were 36 to 38% more likely to provide grandchild care while those with at least one grandchild living within ten miles were 15 to 31% more likely to provide grandchild care. Similarly, grandparents with grandchildren resident or living within ten miles also provided between 0.7 to 1.7 additional hours of grandchild care per week.

Cost of formal child care on the other hand, was positively associated with hours of grandchild care provided by married grandparents with the marginal effect being statistically significant at the 10% level only for married grandfathers. Single grandmothers do not seem to be adjusting their grandchild care provision while single grandfathers seem to provide lower hours of grandchild care when facing higher cost of formal child care although the effect is not statistically significant at the 10% level.

One possible interpretation of the results is that the presence of a new grandchild and the number of grandchildren directly increase child care needs and therefore time transfers from the grandparents. Similarly, family living proximity makes it easier to provide grandchild care, e.g., by reducing travelling time and thereby also enabling higher time transfers from the grandparents. Moreover families living together tend to be on average poorer with average grandparent wealth of $194k as opposed to $454k for those who live more than 10 miles away. Thus, for those families, grandparent provided child care seems to be an important source of child care.

We report our estimated marginal effects on probability of giving financial help and the amount of financial transfers in Table 3. The relationships between grandchild care needs and single grandparents' financial transfers seem mostly inconclusive due to the high standard errors. On the other hand, as can be seen from column (5), married grandparents seem 7% more likely to provide financial help when they have a new grandchild and provided around $8.63 more per week. Those with more grandchildren also provided higher monetary transfers.

Married grandparents with grandchildren living within 10 miles were also more likely to provide financial help by around 4.4% and on average provided $7.97 more per week with both effects being

statistically significant at the 5% level. On the other hand, our results are inconclusive when the grandparents live together with grandchildren. While the marginal effects on the probability of providing financial help and amount of financial help are positive, they are statistically insignificant at the 10% level. It could also be that grandparents with resident grandchildren provide more in-kind transfers such as shared housing or food which is not captured by our financial transfers variable.[14]

Higher cost of formal child care is also positively related to both the probability of providing financial help and the amount transferred by married grandparents. A $1 increase in hourly cost of formal child care is related to a 50% increase in the probability of married grandparent helping out financially. From column (6), we also get an increase of around $118 in financial transfers from the grandparents, significant at the 1% level.[15]

Other noteworthy results are that grandparents, especially single grandmothers and married grandparents, tend to make higher time and money transfers when they have more daughters and lower transfers when the parent generation is married which is consistent with the findings of Lei (2008).

We report marginal effects on the probability of being employed and weekly work hours in Table 4. As expected, age and health status are important determinants of labor supply. Labor supply is negatively correlated with age and positively related to being in good health except for single grandfathers where the marginal effects on labor supply is statistically insignificant.

The relationship between grandchild care needs and labor supply of single grandparents seem mostly inconclusive given the large standard errors. The only notable exception is the positive relationship between single grandmothers' labor hours and the number of grandchildren, statistically

[14] Similar regressions performed on the amount of financial assistance that married grandparents received from parents showed an increase of $12.6 per week significant at the 5% level when the grandchild is resident in the grandparent household. This suggests that parents potentially gave higher monetary transfers to grandparents when living together. Approximately 5% of married grandparents with a resident grandchild received positive financial transfers from parents suggesting that the effect was applicable to a very small proportion of co-resident families.

[15] The effects on financial transfers need to be interpreted with a grain of salt. It is possible that the cost of formal child care is correlated with average prices in the census division of residence. While we have controlled for wages of the grandparents and included census division fixed effects in our regressions, it could still be that the higher financial transfers that grandparents are making are related to higher correlated costs such as education expenses.

significant at the 5% level in column (2). Taking into consideration the fact that single grandmothers were also increasing the hours of grandchild care in column (2) of Table 2, it seems that single grandmothers were decreasing their leisure time in order to help out with grandchildren.

Married grandparents, especially grandmothers, seem to be adjusting their labor supply in the face of grandchild care needs. Married grandmothers with a new grandchild were 1.4% more likely to be working in column (5) of Table 4 while married grandfathers were 2% more likely to be working in column (7). On the other hand, the latter were also working 0.5 hours less per week in column (8).

As can be seen from column (6) of Table 4, married grandmothers with more grandchildren were working fewer hours. This effect is statistically significant at the 5% level. One can think of the birth of a new grandchild as a temporary shock which increases both the need for time and money transfers simultaneously. Thus, one possible interpretation is that the grandmother sacrifices her leisure time for the new baby. On the other hand, when the grandchildren are big enough to require lower around the clock care but still need a fixed stream of child care, the grandmother may be willing to make longer term work arrangements and give up 20 minutes of her labor time per week for each grandchild. With more grandchildren, there may also be greater economies of scale of looking after several of them such that the grandmother would be more willing to decrease her labor hours in order to care for the grandchildren.

While married grandmothers are on average less likely to be employed when they have a resident grandchild as can be seen from column (5), those who choose to work increase their labor hours by around 2 hours per week.[16] One can think of a situation where grandmother and mother are deciding on who will be the main caregiver and who will help out with family finances. If the grandmother becomes the main caregiver, then she is less likely to work. On the other hand, if the grandmother is not the main caregiver and works, then she has to work longer hours to provide for the family.

The opposite holds when there is a grandchild within 10 miles: married grandmothers are on average more likely to work while those who choose to work decrease their labor supply by around 0.9

[16] This result is qualitatively consistent with the findings of Ying and Marcotte (2007) for three generation families.

hours per week significant at the 5% level. The grandmother is less likely to be the main caregiver when the grandchildren are non-resident and therefore there is a higher probability that the grandmother works. However, she may still get involved in some grandchild care and therefore decreases her hours of work slightly when the grandchild lives close by.

To sum up our results, it seems that grandchild care needs as measured by the birth of a new grandchild and family living proximity are strongly positively related to the time transfers provided by the grandparent generation. Similarly, those factors were also positively related to financial transfers made by married grandparents. In addition, the cost of formal child care was also positively related to married grandparents' financial transfers towards the younger generation. On the other hand, it seems that single grandmothers were potentially decreasing their leisure time in order to help take care of grandchildren. Married grandmothers also adjusted their labor supply in the face of grandchild care needs while grandfathers do not seem to adjust their labor supply by much.

3.2 Sensitivity Analysis

We performed sensitivity analysis by (i) including those above age 65 in the sample, and (ii) considering only non-retired grandparents. The results were very similar to our baseline results and are presented in Appendix Tables A1 to A3.

Given the potentially endogenous nature of grandchild care needs variables, the results presented so far can be interpreted as a series of relationships or correlations between grandchild care needs and grandparents' economic behavior. For instance, grandparents who take in a grandchild in their household may also be inherently more willing to take care of grandchildren, thereby yielding a positive correlation between the error term in the hours of grandchild care equation and the dummy variable for whether one has resident grandchildren. Our estimated marginal impacts would therefore be overestimated.[17]

We therefore attempt to control for unobserved heterogeneity in a more rigorous way by exploiting differences across adult children (the parents) and controlling for grandparent fixed effects. To this

[17] Ying and Marcotte (2007) do not find evidence that the decision to take in a grandchild in the household is endogenous to grandparents' labor supply.

purpose, we reshape our data into a parent sample such that for families where the grandparents have *n* adult children, we would have *n* observations for that family in a given year. We exploit information available in the HRS about which adult child benefitted from grandchild care as well as how much financial transfers each adult child received.[18] We perform ordinary least squares regressions with grandparent fixed effects. Grandchild care needs variables are therefore allowed to be correlated with the grandparent fixed effects while variations across adult children are useful for identification purposes.

We present estimated marginal effects on the probabilities that an adult child receives grandchild care and financial help and amount of money received in Table 5. As can be seen from Table 5, parents in families with a single grandmother or married grandparents were more likely to receive grandchild care and financial help when they had a new child or when they lived close to the grandparents. On the other hand, parents in families with a single grandfather were more likely to receive grandchild care help but there is no indication that they would receive higher financial help in the face of grandchild care needs.

4. Conclusion and Discussion

Grandchild care needs seem strongly related to time transfers made by all grandparents. Moreover, monetary transfers made by married grandparents were also significantly associated with grandchild care needs. In particular, grandparents with a new born grandchild seem more likely to provide grandchild care while married grandparents were also more likely to be employed and provide financial help. Grandparents with grandchildren living close by provided higher time transfers while married grandmothers with resident grandchildren also worked longer hours.

Even though the Health and Retirement Study is a comprehensive dataset containing information on both grandparent and parent generation as well as intergenerational transfers, our study has several limitations. First, since the HRS is a nationally representative dataset of Americans aged above 50, our results cannot be extrapolated to younger grandparents. In addition, our analysis is limited to caring for

[18] We do not observe hours of grandchild care separately for each adult child but only which adult child benefited from grandchild care. On the other hand, financial transfers are observed separately for each adult child in the HRS.

additional grandchildren aged below two and existing grandchildren rather than for caring for the first grandchild, which implies that our sample of grandparents could have already made major time allocation adjustments when they first became a grandparent.[19]

With the increased involvement of grandparents in the lives of their grandchildren, understanding how grandchild care needs are related to the grandparents' economic behavior is becoming increasingly important. Future policies may have to take into account grandchild care as a major source of child care. Cardia and Ng (2003) argue for the subsidization of grandparent provided child care when the grandparent is retired so that the younger generation can devote more time to the labor market. Ho (2012) argues for subsidization of formal child care so that the elderly may devote more time to the labor market. Whether to subsidize grandparent child care or formal child care or both remains an under researched question that would depend on which generation should work longer in addition to issues related to child care quality. We believe that the answer to such a question would be a quantitative one which could potentially be answered by jointly designing welfare for the intergenerational family (Ho & Pavoni, 2012). Given longer life expectancies and increasing female labor participation, future research on the suitability of grandparent provided child care as both a source of child care for working mothers and a form of post-retirement labor for grandparents would be relevant for future policy.

[19] In an attempt to analyze time allocations relationships with a first grandchild, we performed similar analysis as in our baseline models by also including respondents with children but without grandchildren in the sample. We distinguish between having a first grandchild as opposed to additional grandchildren by including a dummy variable taking value one if respondents had their first grandchild and zero otherwise, and another dummy variable taking value one if respondents had an additional grandchild and zero otherwise. We find that first time grandparents were between 2% to 27% more likely to provide grandchild care and on average provided 0.4 to 1 additional hours of grandchild care. The effects were statistically significant for married grandparents. Similarly, grandparents with an additional grandchild were 8% to 14% more likely to provide grandchild care and on average provided 0.27 to 1 hour of additional grandchild care hours. The effects were statistically significant at the 5% level for all grandparents. Single grandmothers with a first grandchild were more 5% likely to be employed while single and married grandfathers with an additional grandchild were also more likely to be employed by 6% and 1.5% respectively. We found no statistically significant impacts on labor hours. Full tables are available upon request.

Table 1 Summary Statistics

	Single				Married			
	Grandmother		Grandfather		Grandmother		Grandfather	
	Mean	*SE*	*Mean*	*SE*	*Mean*	*SE*	*Mean*	*SE*
Provide grandchild care	0.52	(0.50)	0.20	(0.40)	0.50	(0.50)	0.50	(0.50)
Hours of grandchild care	7.36	(9.42)	6.29	(11.0)	5.38	(8.68)	5.50	(9.00)
Provide financial help	0.39	(0.49)	0.43	(0.50)	0.45	(0.50)	0.45	(0.50)
Financial transfers	75.0	(197)	84.1	(193)	95.0	(297)	95.0	(297)
Employed[a]	0.77	(0.42)	0.68	(0.47)	0.77	(0.42)	0.71	(0.45)
Hours of work	36.9	(11.5)	41.5	(15.1)	35.2	(12.8)	42.0	(14.2)
Grandchild care needs								
New grandkid	0.30	(0.46)	0.35	(0.48)	0.39	(0.49)	0.39	(0.49)
Resident grandkid	0.20	(0.40)	0.07	(0.26)	0.08	(0.28)	0.08	(0.28)
Grandkid within 10 miles	0.60	(0.49)	0.46	(0.50)	0.53	(0.50)	0.53	(0.50)
No. of grandchildren	5.47	(4.32)	4.69	(3.84)	5.19	(4.23)	5.19	(4.23)
Cost of formal care	10.6	(0.66)	10.5	(0.68)	10.6	(0.68)	10.6	(0.68)
Parent								
Age	34.7	(5.14)	31.3	(5.89)	33.0	(5.12)	33.0	(5.12)
Married	0.51	(0.33)	0.49	(0.33)	0.59	(0.30)	0.59	(0.30)
Female	0.48	(0.31)	0.45	(0.30)	0.47	(0.28)	0.47	(0.28)
Years of schooling	12.9	(2.12)	12.4	(2.39)	13.3	(1.96)	13.3	(1.96)
Grandparent								
Unearned income	289	(968)	355	(598)	712	(1370)	712	(1370)
Wealth ($'000)	159	(311)	196	(360)	447	(1259)	447	(1259)
No. of children[b]	3.81	(2.16)	4.03	(2.73)	3.93	(2.07)	3.93	(2.07)
Black	0.32	(0.47)	0.21	(0.41)	0.13	(0.33)	0.13	(0.33)
Age	59.8	(3.24)	59.7	(3.35)	57.7	(4.71)	60.9	(4.57)
Good health	0.78	(0.42)	0.75	(0.43)	0.85	(0.36)	0.81	(0.39)
Wage	12.5	(8.15)	15.4	(10.3)	13.1	(9.71)	18.0	(12.7)
Work experience	32.5	(10.2)	38.3	(8.57)	30.1	(10.3)	40.7	(7.44)
Years of schooling	12.5	(2.57)	11.8	(2.71)	12.6	(2.40)	12.6	(2.88)
No. of observations	1,673		560		6,577		6,577	

Note: Hours of grandchild care and financial transfers reported as bi-annual amounts in the HRS have been converted into approximate weekly amounts. All dollar amounts were converted to 2010 dollars using the Bureau of Labor Statistics CPI calculator.

[a] We dropped observations where the main respondents were aged above the social security age of 65 as well as disabled and out of the labor force grandparents from our sample. When included, the employment rates were lower with 58% of grandmothers and 52% of grandfathers working for pay.

[b] The number of children are consistent with Table 5 in McGarry and Schoeni (1995) who report an average of 4 children their HRS sample of respondents with children.

Table 2 Grandchild Care Needs and Time Transfers

	Single Grandmother		Single Grandfather		Married Grandparents		
	Provide Care	Hours	Provide Care	Hours	Provide Care	Grandma Hours	Grandpa Hours
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Grandchild care needs							
New grandkid	0.089*	0.840**	0.090	0.772†	0.102**	0.112	0.132
	(0.036)	(0.292)	(0.069)	(0.398)	(0.022)	(0.106)	(0.107)
Resident grandkid	0.380**	0.772†	0.386*	1.047	0.365**	1.768**	1.679**
	(0.053)	(0.451)	(0.180)	(0.911)	(0.033)	(0.356)	(0.448)
Grandkid within 10 miles	0.218**	1.506**	0.159**	0.962**	0.315**	1.550**	1.605**
	(0.049)	(0.356)	(0.061)	(0.366)	(0.024)	(0.122)	(0.127)
No. of grandchildren	0.040**	0.200†	0.004	0.087	0.021**	0.092**	0.102**
	(0.015)	(0.115)	(0.021)	(0.115)	(0.008)	(0.032)	(0.038)
Cost of formal care	-0.100	0.372	-0.451	-6.186	0.122	2.432	4.424†
	(0.716)	(5.648)	(1.282)	(6.084)	(0.354)	(2.378)	(2.584)
Parent							
Age	-0.009	-0.077	0.008	0.004	0.019*	0.092	0.120†
	(0.021)	(0.125)	(0.040)	(0.106)	(0.009)	(0.062)	(0.072)
Married	-0.114	-1.218*	-0.019	-0.472	-0.135**	-0.678**	-0.707**
	(0.085)	(0.493)	(0.077)	(0.562)	(0.048)	(0.228)	(0.241)
Female	0.293**	1.485**	0.107	0.668	0.184**	0.280	0.322
	(0.096)	(0.480)	(0.068)	(0.583)	(0.038)	(0.246)	(0.242)
Grandparent							
Wealth	0.011	-0.260	-0.180	-0.750	0.001	0.098	0.121
	(0.190)	(1.340)	(0.430)	(0.890)	(0.025)	(0.123)	(0.132)
No. of children	-0.045	-0.233	-0.045	-0.166	-0.092**	-0.488**	-0.456**
	(0.029)	(0.178)	(0.034)	(0.164)	(0.018)	(0.065)	(0.098)
Black	0.065	0.245	0.042	-0.176	0.013	-0.126	-0.142
	(0.053)	(0.417)	(0.091)	(0.343)	(0.048)	(0.217)	(0.221)
Age	-0.002	0.031	0.003	0.006	0.017**	0.092**	0.039†
	(0.013)	(0.780)	(0.015)	(0.070)	(0.003)	(0.022)	(0.020)
Good health	0.011	-0.141	-0.045	-0.372	-0.027	-0.091	-0.005
	(0.055)	(0.372)	(0.075)	(0.514)	(0.038)	(0.157)	(0.148)
Wage	-0.002	-0.020	0.009	0.030	-0.003	-0.044**	-0.047**
	(0.008)	(0.036)	(0.011)	(0.028)	(0.003)	(0.011)	(0.014)
No. of observations	1,673		560		6,577		

Note: Marginal effects from random effects models reported for selected variables. We report marginal effects associate with grandmother's age, good health, and wage for married grandparents. Standard errors (in parentheses) block bootstrapped. All regressions include a full set of time and census division dummies. †significant at 10%, *significant at 5% and **significant at 1%.

Table 3 Grandchild Care Needs and Money Transfers

	Single Grandmother		Single Grandfather		Married Grandparents	
	Provide Money	Amount	Provide Money	Amount	Provide Money	Amount
	(1)	(2)	(3)	(4)	(5)	(6)
Grandchild care needs						
New grandkid	0.019	-0.223	-0.014	0.936	0.072**	8.635**
	(0.041)	(5.113)	(0.099)	(4.749)	(0.019)	(2.569)
Resident grandkid	0.048	5.697	0.081	7.282	0.047	2.618
	(0.043)	(6.524)	(0.195)	(19.35)	(0.042)	(4.027)
Grandkid within 10 miles	0.022	-1.353	-0.009	-3.890	0.044*	7.974*
	(0.040)	(4.047)	(0.070)	(6.264)	(0.020)	(3.804)
No. of grandchildren	-0.016	-1.683	-0.027	-1.527	0.009	1.568†
	(0.010)	(1.663)	(0.029)	(2.720)	(0.006)	(0.872)
Cost of formal care	-0.094	-65.29	-1.962	-160.1	0.503†	117.7**
	(0.603)	(76.33)	(1.386)	(110.6)	(0.277)	(66.51)
Parent						
Age	-0.029†	-4.011†	-0.051	-7.320*	-0.005	-0.018
	(0.016)	(2.250)	(0.045)	(3.591)	(0.006)	(1.008)
Married	-0.187**	-18.54*	0.015	-15.26	-0.264**	-36.99**
	(0.059)	(8.411)	(0.183)	(12.76)	(0.039)	(4.573)
Female	0.106*	7.261	-0.135	-3.839	0.029	15.50**
	(0.053)	(8.141)	(0.196)	(15.48)	(0.040)	(5.662)
Grandparent						
Wealth	0.245*	38.54*	0.001**	64.15*	0.079**	22.72*
	(0.120)	(15.14)	(0.003)	(27.50)	(0.026)	(10.18)
No. of children	0.021	1.285	-0.045	-5.672	0.007	0.597
	(0.020)	(2.646)	(0.046)	(3.974)	(0.010)	(1.821)
Black	-0.009	-5.677	0.058	-9.039	-0.014	-1.966
	(0.042)	(4.565)	(0.134)	(12.57)	(0.027)	(4.622)
Age	0.007	-0.680	0.006	2.625	-0.005†	-0.486
	(0.009)	(0.831)	(0.020)	(2.607)	(0.003)	(0.649)
Good health	0.030	4.535	-0.024	1.518	-0.040	-7.725†
	(0.037)	(4.642)	(0.132)	(9.423)	(0.026)	(4.451)
Wage	0.011*	1.327*	0.017†	0.649	0.012**	1.212**
	(0.005)	(0.639)	(0.010)	(0.919)	(0.002)	(0.282)
No. of observations	1,673		560		6,577	

Note: Marginal effects from random effects models reported for selected variables. We report marginal effects associate with grandmother's age, good health, and wage for married grandparents. Standard errors (in parentheses) block bootstrapped. All regressions include a full set of time and census division dummies. †significant at 10%, *significant at 5% and **significant at 1%.

Table 4 Grandchild Care Needs and Grandparents' Labor Supply

	Single Grandmother		Single Grandfather		Married Grandmother		Married Grandfather	
	Employed	Work Hours	Employed	Work Hours	Employed	Work Hours	Employed	Work Hours
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Grandchild care needs								
New grandkid	0.015	-0.166	0.082	-0.262	0.014†	0.279	0.020†	-0.529*
	(0.017)	(0.517)	(0.058)	(1.320)	(0.008)	(0.295)	(0.012)	(0.223)
Resident grandkid	0.005	-0.682	-0.097	0.660	-0.048†	2.244**	-0.001	-0.797
	(0.024)	(1.052)	(0.189)	(2.823)	(0.028)	(0.646)	(0.029)	(0.765)
Grandkid within 10 miles	0.020	-0.951	0.089	-2.315	0.032**	-0.863*	0.022	0.510
	(0.021)	(0.743)	(0.070)	(1.690)	(0.011)	(0.410)	(0.015)	(0.359)
No. of grandchildren	-0.010	0.488*	0.031	0.073	-0.008	-0.292*	-0.007	-0.150
	(0.014)	(0.241)	(0.057)	(0.585)	(0.007)	(0.133)	(0.008)	(0.131)
Cost of formal care	0.117	4.278	-0.149	-11.47	0.308	-3.774	-0.253	1.282
	(0.616)	(10.08)	(2.036)	(24.79)	(0.348)	(4.840)	(0.412)	(5.127)
Parent								
Age	-0.001	-0.066	-0.025	-0.348	0.001	-0.047	0.015	0.082
	(0.025)	(0.375)	(0.062)	(0.513)	(0.009)	(0.146)	(0.013)	(0.146)
Married	-0.011	0.080	0.150	-4.843	-0.006	0.632	-0.012	0.762
	(0.040)	(0.977)	(0.132)	(4.187)	(0.017)	(0.858)	(0.029)	(0.874)
Female	-0.003	1.262	0.126	5.887†	-0.011	0.447	0.042	-0.760
	(0.033)	(1.379)	(0.190)	(3.470)	(0.015)	(0.936)	(0.028)	(0.939)
Grandparent								
Wealth	-0.140	0.810	0.200	12.06	-0.020	-0.591	0.022	-0.109
	(0.160)	(2.770)	(0.340)	(8.560)	(0.048)	(0.377)	(0.055)	(0.573)
No. of children	0.044	-0.352	-0.065	0.337	0.070**	0.583†	0.012	0.395†
	(0.028)	(0.457)	(0.096)	(1.041)	(0.018)	(0.329)	(0.019)	(0.243)
Black	-0.096*	-1.504	0.071	-4.339*	0.014	-0.132	-0.003	-1.526*
	(0.046)	(1.031)	(0.097)	(2.173)	(0.012)	(0.588)	(0.030)	(0.755)
Age	-0.026**	-0.181	-0.072**	-0.257	-0.015**	-0.367**	-0.052**	-0.750**
	(0.007)	(0.170)	(0.027)	(0.289)	(0.002)	(0.068)	(0.006)	(0.123)
Good health	0.215**	1.466†	0.042	-1.427	0.123**	1.011*	0.192**	1.658**
	(0.050)	(0.840)	(0.093)	(1.903)	(0.026)	(0.473)	(0.030)	(0.596)
Wage	-0.011†	0.369*	0.003	-0.069	0.005*	0.104	-0.008**	0.040
	(0.007)	(0.148)	(0.013)	(0.212)	(0.002)	(0.064)	(0.002)	(0.045)
No. of observations	1,673		560		6,577		6,577	

Note: Marginal effects from random effects models reported for selected variables. Standard errors (in parentheses) block bootstrapped. All regressions include a full set of time and census division dummies. †significant at 10%, *significant at 5% and **significant at 1%.

Table 5 Grandchild Care Needs and Parents' Transfer Receipt

	Parent with Single Grandmother			Parent with Single Grandfather			Parent with Married Grandparents		
	Receive Care	Receive Money	Amount Received	Receive Care	Receive Money	Amount Received	Receive Care	Receive Money	Amount Received
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
New grandkid	0.078**	0.058**	-0.353	0.007	-0.005	-3.929	0.017	0.041**	-0.351
	(0.025)	(0.021)	(0.890)	(0.027)	(0.037)	(5.875)	(0.011)	(0.009)	(1.311)
Resident grandkid	0.189**	0.047†	5.456	0.164*	0.012	-10.38	0.289**	0.048*	1.214
	(0.037)	(0.026)	(4.649)	(0.071)	(0.058)	(9.236)	(0.026)	(0.023)	(1.205)
Grandkid within 10 miles	0.106**	0.052**	2.649*	0.080**	0.020	-4.671	0.139**	0.038**	0.122
	(0.021)	(0.014)	(1.217)	(0.030)	(0.029)	(5.011)	(0.010)	(0.008)	(1.137)
No. of grandchildren	0.032**	0.030**	-0.150	0.036**	-0.003	-1.329	0.033**	0.012*	2.358†
	(0.012)	(0.010)	(0.736)	(0.013)	(0.019)	(2.059)	(0.006)	(0.005)	(1.350)
Cost of formal care	-0.038	-0.170	-29.21	0.524	-0.571	-79.54	0.329*	0.169	25.38
	(0.404)	(0.260)	(44.30)	(0.401)	(0.461)	(52.17)	(0.155)	(0.120)	(20.04)
No. of observations	4,130			1,232			16,200		

Note: Ordinary least squares regressions with grandparent fixed effects. For the sake of terminology, we still denote grandchild care needs variables as new grandkid, resident grandkid, grandkid within 10 miles and no. of grandchildren except that those variables are now at the parent level instead of the grandparent level. In particular, new grandkid is a dummy variable taking value 1 if the parent has a new child and zero otherwise, resident grandkid is a dummy variable for whether parent and child live with the grandparent, grandkid within 10 miles is a dummy variable for whether parent and child live within 10 miles of the grandparent and no. of grandchildren denote the number of children that the parent has. Standard errors (in parentheses) clustered at grandparent level. All regressions include a full set of time and census division dummies. †significant at 10%, *significant at 5% and **significant at 1%.

Appendix: Sensitivity Analysis

Table A1 Sensitivity Analysis - Grandchild Care Needs and Time Transfers

A. Including above 65	Single Grandmother		Single Grandfather		Married Grandparents		
	Provide Care	Hours	Provide Care	Hours	Provide Care	Grandma Hours	Grandpa Hours
	(A1)	(A2)	(A3)	(A4)	(A5)	(A6)	(A7)
New grandkid	0.082*	0.661*	0.095**	0.649*	0.084**	0.181*	0.200†
	(0.040)	(0.302)	(0.034)	(0.270)	(0.024)	(0.092)	(0.106)
Resident grandkid	0.387**	0.883*	0.311**	1.279†	0.392**	1.899**	1.952**
	(0.045)	(0.376)	(0.120)	(0.665)	(0.027)	(0.386)	(0.319)
Grandkid within 10 miles	0.191**	1.217**	0.141**	0.856**	0.279**	1.354**	1.353**
	(0.040)	(0.219)	(0.039)	(0.222)	(0.017)	(0.126)	(0.127)
No. of grandchildren	0.021*	0.082	0.004	0.071	0.027**	0.115**	0.119**
	(0.010)	(0.055)	(0.012)	(0.054)	(0.006)	(0.038)	(0.032)
Cost of formal care	-0.043	0.024	0.708	-8.174	-0.042	1.058	1.456
	(0.519)	(4.326)	(0.618)	(5.438)	(0.290)	(1.306)	(1.625)
No. of observations	2,810		895		9,224		
B. Non-retired	Single Grandmother		Single Grandfather		Married Grandparents		
	Provide Care	Hours	Provide Care	Hours	Provide Care	Grandma Hours	Grandpa Hours
	(B1)	(B2)	(B3)	(B4)	(B5)	(B6)	(B7)
New grandkid	0.125*	1.071**	0.139*	0.780	0.096**	0.086	0.124
	(0.049)	(0.353)	(0.071)	(0.553)	(0.029)	(0.115)	(0.104)
Resident grandkid	0.322**	0.142	0.472	1.130	0.430**	1.917**	2.017**
	(0.053)	(0.518)	(0.299)	(1.340)	(0.043)	(0.447)	(0.356)
Grandkid within 10 miles	0.253**	1.833**	0.199*	1.227†	0.354**	1.445**	1.531**
	(0.061)	(0.411)	(0.086)	(0.666)	(0.034)	(0.160)	(0.165)
No. of grandchildren	0.031*	0.165	0.0004	-0.001	0.038**	0.110**	0.116*
	(0.016)	(0.115)	(0.038)	(0.106)	(0.012)	(0.040)	(0.046)
Cost of formal care	-0.176	4.374	-1.909	-7.939	-0.040	3.130	4.117†
	(0.803)	(5.074)	(2.389)	(10.65)	(0.435)	(2.598)	(2.502)
No. of observations	1,333		392		4,946		

Note: Marginal effects from random effects models reported for selected variables. Standard errors (in parentheses) block bootstrapped. All regressions include a full set of time and census division dummies. †significant at 10%, *significant at 5% and **significant at 1%.

Table A2 – Sensitivity Analysis Grandchild Care Needs and Money Transfers

A. Including above 65	Single Grandmother		Single Grandfather		Married Grandparents	
	Provide Money	Amount	Provide Money	Amount	Provide Money	Amount
	(A1)	(A2)	(A3)	(A4)	(A5)	(A6)
New grandkid	0.042†	0.286	-0.044	-2.235	0.068**	8.610**
	(0.023)	(3.941)	(0.047)	(5.563)	(0.014)	(2.478)
Resident grandkid	0.020	2.456	0.058	8.088	0.020	1.021
	(0.036)	(3.997)	(0.110)	(12.873)	(0.029)	(4.522)
Grandkid within 10 miles	0.007	0.513	-0.012	-5.009	0.043*	6.963*
	(0.023)	(3.438)	(0.068)	(5.528)	(0.017)	(2.912)
No. of grandchildren	0.001	0.379	-0.008	-0.935	0.010*	1.991†
	(0.007)	(1.120)	(0.020)	(1.731)	(0.005)	(1.085)
Cost of formal care	0.125	6.717	-1.094	-86.35	0.358	182.6**
	(0.351)	(63.11)	(0.744)	(84.15)	(0.266)	(61.59)
No. of observations	2,810		895		9,224	

B. Non-retired	Single Grandmother		Single Grandfather		Married Grandparents	
	Provide Money	Amount	Provide Money	Amount	Provide Money	Amount
	(B1)	(B2)	(B3)	(B4)	(B5)	(B6)
New grandkid	0.034	3.470	-0.003	0.128	0.104**	15.84**
	(0.040)	(4.957)	(0.088)	(4.977)	(0.021)	(2.579)
Resident grandkid	0.045	3.776	0.011	15.79	0.064†	6.560
	(0.054)	(6.228)	(0.247)	(22.60)	(0.035)	(4.877)
Grandkid within 10 miles	0.006	-2.009	0.035	-11.57†	0.035	5.874
	(0.050)	(5.027)	(0.119)	(6.654)	(0.023)	(5.012)
No. of grandchildren	-0.007	-0.938	-0.051	-3.509	-0.002	-0.846
	(0.010)	(1.760)	(0.034)	(2.581)	(0.006)	(0.907)
Cost of formal care	-0.261	-89.74	-2.345	-186.9*	0.681	189.8*
	(0.628)	(125.1)	(1.810)	(83.03)	(0.438)	(92.30)
No. of observations	1,333		392		4,946	

Note: Marginal effects from random effects models reported for selected variables. Standard errors (in parentheses) block bootstrapped. All regressions include a full set of time and census division dummies. †significant at 10%, *significant at 5% and **significant at 1%.

Table A3 Sensitivity - Analysis Grandchild Care Needs and Grandparents' Labor Supply

A. Including above 65	Single Grandmother		Single Grandfather		Married Grandmother		Married Grandfather	
	Employed (A1)	Work Hours (A2)	Employed (A3)	Work Hours (A4)	Employed (A5)	Work Hours (A6)	Employed (A7)	Work Hours (A8)
New grandkid	0.025	0.086	0.086	-0.166	0.021*	0.020	0.015	-0.655*
	(0.034)	(0.596)	(0.073)	(0.518)	(0.011)	(0.236)	(0.020)	(0.330)
Resident grandkid	0.062	0.129	-0.066	-0.682	-0.066*	2.155**	-0.005	-0.880
	(0.046)	(0.891)	(0.203)	(1.052)	(0.030)	(0.577)	(0.038)	(0.857)
Grandkid within 10 miles	0.053	-1.406†	0.089	-0.951	0.056**	-0.615†	0.027	0.566
	(0.048)	(0.842)	(0.093)	(0.743)	(0.012)	(0.337)	(0.019)	(0.373)
No. of grandchildren	-0.020	0.084	0.051†	0.488*	-0.005	-0.222*	-0.004	0.002
	(0.016)	(0.239)	(0.027)	(0.241)	(0.007)	(0.094)	(0.007)	(0.130)
Cost of formal care	0.094	-2.753	-0.210	4.278	0.369	-0.581	-0.135	-3.724
	(0.732)	(10.41)	(1.361)	(10.08)	(0.350)	(4.487)	(0.398)	(4.201)
No. of observations	2,810		895		9,224		9,224	

B. Non-retired	Single Grandmother		Single Grandfather		Married Grandmother		Married Grandfather	
	Employed (B1)	Work Hours (B2)	Employed (B3)	Work Hours (B4)	Employed (B5)	Work Hours (B6)	Employed (B7)	Work Hours (B8)
New grandkid	-[a]	-0.166	-[b]	-0.262	0.003	-0.188	0.001	-0.361
		(0.571)		(1.356)	(0.003)	(0.331)	(0.002)	(0.364)
Resident grandkid	-	-0.682	-	0.660	0.001	1.985**	-0.001	-0.594
		(0.852)		(3.314)	(0.003)	(0.681)	(0.003)	(0.754)
Grandkid within 10 miles	-	-0.951	-	-2.315	0.001	-0.620	0.001	0.561
		(0.833)		(1.686)	(0.002)	(0.384)	(0.002)	(0.426)
No. of grandchildren	-	0.492*	-	0.072	0.0004	-0.140	0.001	-0.101
		(0.250)		(0.602)	(0.001)	(0.110)	(0.001)	(0.123)
Cost of formal care	-	4.286	-	-11.52	0.065	0.073	-0.041	-3.645
		(11.65)		(30.82)	(0.073)	(5.311)	(0.077)	(5.840)
No. of observations	1,333		392		4,946		4,946	

Note: Marginal effects from random effects models reported for selected variables. Standard errors (in parentheses) block bootstrapped. All regressions include a full set of time and census division dummies. †significant at 10%, *significant at 5% and **significant at 1%.

[a] For non-retired single grandmothers, the marginal effects of grandchild care needs variables on employment were very close to zero and statistically insignificant. There were only 47 observations for non-working and non-retired single grandmothers.

[b] For non-retired single grandfathers, the likelihood function for employment was not concave. There were only 14 observations for non-working and non-retired single grandfathers.

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