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Grandparents plus

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Grandparenting in Europe

The health and wellbeing of grandparents caring for grandchildren: The role of cumulative advantage/disadvantage

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By Karen Glaser, Giorgio Di Gessa, Anthea Tinker

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Institute of Gerontology (IOG)

The Institute of Gerontology at King's College London is one of the leading gerontological research and teaching centres worldwide. Founded in 1986, the Institute is at the vanguard of multi-disciplinary research and teaching, acting as a bridge between the social and clinical sciences. The Institute has many long-standing research and teaching collaborations including the Institute of Psychiatry, the School of Medicine, the School of Nursing and Midwifery and the School of Biomedical Sciences.

The objectives of the Institute are to:

- Engage in state of the art research into the demographic, sociological, psychological, financial and institutional processes of adult ageing.
- Provide multidisciplinary, research-led education and research training for both clinical and social scientists, including practitioners in health, social care, government and the voluntary sector.
- Engage critically with social policy issues for the benefit of older people both internationally and nationally.

The Institute's interdisciplinary nature is reflected in its broad research sponsorship base; it has received funding from UK Research Councils (i.e. ESRC, MRC, EPSRC & AHRC), from numerous charities concerned with the welfare of older people, and from government bodies (including the Department of Health and the Department for Work and Pensions). The Institute's recent research has included the study of: elder abuse; pensions and poverty; housing and technology; the health and social concerns of 'new' ageing populations; end of life care and bereavement; the demography of informal care; falls prevention among older people; and the biology of natural ageing. Current research is focused on three core areas: (i) ageing policy, health and healthcare; (ii) ageing policy & family life; and (iii) global ageing.

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This study examines international data from 10 European countries on grandparenting from SHARE (Survey of Health, Ageing and Retirement in Europe) and ELSA (English Longitudinal Study of Ageing) to address the following questions:

1. How does grandparent health and wellbeing vary by socio-economic, demographic and caring roles?
2. How is cumulative advantage/disadvantage across the life course (e.g. in terms of childhood, work, relationships, and health), in addition to socio-economic and demographic characteristics, associated with grandparent health and wellbeing? How does cumulative advantage/disadvantage interact with grandparental childcare (and other social roles) to affect grandparent health and wellbeing?
3. How do variations over time in grandparental childcare affect grandparents' own health and wellbeing? How does prior socio-economic status interact with grandparental childcare to affect grandparents' own health and wellbeing? For example, does grandparental childcare have a deleterious effect on health and wellbeing but only for those in the most vulnerable groups and at the highest care intensities? Does grandparental involvement at lower intensities have a beneficial impact on health and wellbeing?

1. Overview

Our project focuses on a previously neglected area of research: how does providing care for grandchildren impact on the health and wellbeing of grandparents? Promoting the health and wellbeing of older people is a critical policy imperative as the population ages, while social, economic and demographic changes across Europe and the U.S. point to an increasing role for grandparents in providing childcare support to families (Casper and Bryson, 1998, Gray, 2005). Despite competing pressures on older workers to remain in the workforce for longer as state pensions are delayed and to provide care to frail spouses, there are additional pressures on grandparents to provide childcare. This is thought to be due to policies encouraging more mothers into the paid workforce, increases in rates of family breakdown and single motherhood, and financial pressures on families (Aassve et al., 2012, Herlofson and Hagestad, 2012). This vital economic and social role is largely overlooked or taken for granted by policymakers, and the health impacts on older people of taking on these childcare roles are not known.

This issue affects millions of people. There are 14 million grandparents in the UK, many of working age: even among grandparents over 50, a quarter are under 60, and 40% are under 65 (Glaser et al., 2013). In Britain, 17% of grandparents with a grandchild under 16 provide intensive levels of childcare of at least ten hours a week and around one in thirty provides full-time care to, or lives with a grandchild (Wellard, 2011). Also, around 20% of grandparents provide care to a spouse or adult child, a role that at high intensities has been shown to impact adversely on health (Glaser et al., 2010, Hirst, 2005).

Although previous studies generally support the idea that grandparents provide vital support to families looking after grandchildren, it remains unclear whether caring for grandchildren may come at the cost of grandparents' own health and wellbeing. It is recognised that looking after grandchildren may be demanding, both physically and emotionally (Grinstead et al., 2003); however, provision of grandchild care may also be positively affirming and rewarding as grandparents can enjoy a closer relationship with their grandchildren (Pruchno and McKenney, 2002). Even after controlling for socio-economic and demographic characteristics, and for previous health status, the effect of grandchild care provision on grandparents' health seems to depend on its intensity, the cultural context, as well as on its stability and change. New and robust understanding of the health impact of engagement in childcare on older people will provide important evidence to enable policy makers across Europe to ensure that the role of grandparents in children's lives is better supported and any deleterious effects on health are minimised. These issues are increasingly important across health, employment, pensions, childcare, housing and social welfare policy spheres.

Our aim was to clarify how grandparental childcare (defined as time spent looking after a grandchild regardless of age) interacts with other socio-economic, demographic and health determinants to impact on the current health and wellbeing of older people. In so doing, we examined the mechanisms by which cumulative advantages and disadvantages across the life course in a number of domains (e.g. social, health and economic) and caring roles act to determine later-life health and wellbeing. As set out below, prior research suggests that grandparents with 'primary care' responsibilities for a grandchild or who undertake intensive grandparenting roles are often among the most disadvantaged and in the poorest health. However, since this is mostly drawn from cross-sectional data, it is not known whether or to what extent this is due to cumulative disadvantages throughout the life course or to the impact of grandchild care per se. A better understanding of the underlying mechanisms and causal pathways between grandchild care and grandparent health and wellbeing is needed.

Thus we used longitudinal data to investigate the long-term social, health and economic determinants of grandparents' current health status, focusing on the intervening role of grandchild care and taking complex life-course trajectories into account. Our research addresses the following objectives:

1. To investigate how grandparent health and wellbeing varies by socio-economic, demographic and caring roles.
2. To examine how cumulative advantage/disadvantage across the life course (e.g. in terms of childhood, work, relationships, and health), in addition to socio-economic and demographic characteristics, is associated with grandparent health and wellbeing. How does cumulative advantage/disadvantage interact with grandparental childcare (and other social roles) to affect grandparent health and wellbeing?
3. To investigate how variations over time in grandparental childcare affect grandparents' own health and wellbeing. How does prior socio-economic status interact with grandparental childcare to affect grandparents' own health and wellbeing? For example, does grandparental childcare have a deleterious effect on health and wellbeing but only for those in the most vulnerable groups and at the highest care intensities? Does grandparental involvement at lower intensities have a beneficial impact on health and wellbeing?

2. Background

Our project builds on a growing body of research. Researchers have become increasingly interested in grandparents in the last decade as populations age and the roles of grandparents in society, care and work have become more visible to policy makers. In the U.S., where most research has been carried out, data is routinely collected on whether grandparents have 'primary responsibility' for raising a grandchild, whereas to our knowledge, no national surveys in Europe or the U.K. collect these data save for such 'kinship care' as might be inferred from co-residence (Nandy et al., 2011). Here, distinctions can be made between 'three-generational households' (comprising grandparents and grandchildren, with at least one of their parents) and 'skipped-generation households' (consisting of grandparents and grandchildren but without the parents) (Casper and Bryson, 1998, Murphey et al., 2012, Mutchler and Baker, 2004). In the U.S. with better data, 'custodial households' can be identified where living with a grandchild is combined with a grandparent acting as primary carer, not possible in Europe (Baker and Silverstein, 2008). In any event, our interest in health and wellbeing impacts is wider than considering only co-residential households. We propose using a broad definition of grandchild care, defined as whether grandparents look after a grandchild and the number of hours of such care.

While research in this arena is bedeviled by definitional issues and data constraints, it is clear that grandparents across the world play an important role in looking after their grandchildren; for example in Britain, nearly two thirds (63%) of grandparents with grandchildren under 16 report providing care for a grandchild and 17% provide higher levels of care of at least 10 hours a week (Wellard, 2011). Increasing co-residence between grandparents and grandchildren in the U.S. (from 3% of children in 1970 living in a household headed by one or more grandparents to 7% by 2011) suggests a rise in the share of grandparents raising or helping to raise grandchildren; especially significant is the rise in skipped-generation households (Casper and Bryson, 1998, Hayslip and Kaminski, 2005, Minkler, 1999, Murphey et al., 2012, Pebley and Rudkin, 1999). Our recent work on grandparenting across Europe suggests a smaller but notable similar rise in skipped-generation households in England and Wales (Glaser et al., 2013). In the U.S. and UK reasons given for such a rise include rising levels of substance abuse, abuse or neglect of children, parental incarceration, teenage pregnancy, and homelessness, illustrating the vital social role that grandparents are playing (Goodman and Silverstein, 2001, Jendrek, 1993, Nandy et al., 2011).

Grandparents with intensive grandchild care responsibilities are thought to be among the most vulnerable groups in society with those in 'skipped-generation households' in particular more likely to fall below the poverty line (Casper and Bryson, 1998, Fuller-Thomson and Minkler, 2001, Minkler, 1999, Minkler and Fuller-Thomson, 2005, Mutchler and Baker, 2004). The greater vulnerabilities associated with intensive levels of grandparental involvement in childcare makes understanding its consequences for health and wellbeing a critical issue, yet research to date on the relationship between grandparental care and health and wellbeing is inconclusive. Many early studies were small scale, often involving convenience samples and widely varying definitions of care (Grinstead et al., 2003, Minkler, 1999). This work shows both a negative association between grandparental care and health problems and a positive relationship, with some grandparental caregivers describing better health, including weight loss, and smoking cessation (Jendrek, 1993, Minkler et al., 2000). Some studies based on nationally representative samples also find both poor physical and psychological health among grandparents with primary care responsibility for a grandchild (Minkler et al., 1997), whereas others find a higher quality of life among grandparents actively caring

for a grandchild (Breeze and Stafford, 2010, Minkler and Fuller-Thomson, 2005). Research from the UK also finds high levels of poor health and depression among grandparents raising grandchildren (Selwyn and Nandy, 2014). As grandparents with primary care responsibilities or who are co-resident with grandchildren are more likely to be from disadvantaged households (who in turn have worse health) the health differences reported in studies based on cross-sectional data may reflect variations in socio-economic status rather than in caregiving per se.

To our knowledge, few studies have investigated these issues longitudinally (thereby allowing pre-existing health and socio-economic conditions to be taken into account) and most have been based on U.S. data largely using the Health and Retirement Survey (HRS) or the National Survey of Families and Households (NSFH). These studies have led to mixed results (Baker and Silverstein, 2008, Blustein et al., 2004, Hughes et al., 2007, Minkler et al., 1997, Szinovacz and Davey, 2006, Szinovacz et al., 1999). While several studies show a positive relationship between grandparental childcare and depression (Blustein et al., 2004, Minkler et al., 1997) as well as deteriorating health, greater difficulty in performing daily activities, and physical health problems such as hypertension (Hayslip and Kaminski, 2005, Hughes et al., 2007, Minkler and Fuller-Thomson, 2005) others find no major widespread health effects once previous characteristics are taken into account (Hughes et al., 2007, Szinovacz and Davey, 2006, Szinovacz et al., 1999). In particular primary care by grandmothers in the U.S. seems to be associated with poor health outcomes. For example, several studies in the U.S. show that primary caregiving grandparents (that is, those caring for and living with their grandchildren) are more likely to report depressive symptoms in comparison to those who are either providing lower levels of grandchild care or not providing grandchild care (Minkler et al., 1997). In another study, Baker and Silverstein (2008) find health prevention behaviours (for example, undertaking cholesterol and breast screenings) to be less common among grandmothers who only recently became primary caregivers; however, the effects disappear over time, suggesting adaptation after a period of adjustment (Baker and Silverstein, 2008). Hughes and colleagues (2007) also suggest that primary caregiving grandmothers (particularly those in skipped-generation households) may experience poorer health outcomes (Hughes et al., 2007). As these households are often among the poorest, the authors acknowledge that the relationship between grandparental caregiving and health and wellbeing may be different for more disadvantaged groups, a finding possibly supported by research showing rates of grandparent caregiving and co-residence to be positively associated with rates of pneumonia and influenza, but only in the poorest U.S. counties (Cohen et al., 2011). These findings suggest complex relationships between disadvantage and health and wellbeing outcomes for older people.

Moreover, the relationship between grandparental childcare and health appears to be affected by societal context. For example, in China and Taiwan, researchers did not find a negative effect of co-residence with grandchildren on grandparent health (Chen and Liu, 2012). Using data from the longitudinal China Health and Nutrition Survey, Chen and colleagues (2012) show no differences in self-rated health between co-residing or non-co-residing grandparents. Among co-residing grandparents (in skipped or three-generation households) the authors show that only grandparents providing more than 15 hours per week of grandchild care are more likely to have worse self-reported health (Chen and Liu, 2012). Using the Taiwan Longitudinal Study of Ageing, Ku and colleagues (2013) find that long-term grandparental caregivers (that is, those who provide either co-resident or non-co-resident care across at least two survey waves) are more likely to report better self-rated health and fewer depressive symptoms than non-caregivers (Ku et al., 2013).

Research focusing on the relationship between lower intensity grandparental childcare and health largely finds beneficial effects. For example, Chen and Liu (2012) in their study of the health implications of co-residing with grandchildren in China show that those who provide higher intensity levels of care (that is over 15 hours per week) experience greater health declines than those who provide lower levels of care (Chen and Liu, 2012). In a study using data from Taiwan, Tsai and colleagues (2013) also find that grandparents who care for their grandchildren in order to help their adult children are less likely to feel lonely and report fewer depressive symptoms than those not providing any grandchild care (Tsai et al., 2013). In addition, a study from Chile also shows a positive impact of grandparental childcare on health: grandfathers who provide four or more hours per week of help to grandchildren report higher levels of life satisfaction and grandmothers providing similar levels of care report fewer depressive symptoms (Grundy et al., 2012). Finally, research using cross-sectional data from SHARE shows that provision of grandchild care helps older adults to maintain better cognitive functioning: looking after a grandchild has a positive effect on verbal fluency (Arpino and Bordone, 2014). However, there are no statistically significant effects for the other measures of cognitive performance such as numeracy (Arpino and Bordone, 2014).

Researchers have also begun to examine the longer-term effects of grandparental childcare by exploring the relationship between stability and change over time in grandparental childcare and health and, once again, the evidence continues to be mixed. For instance, using the first two waves of U.S. longitudinal NSFH Szinovacz and colleagues (1999) show that grandchildren moving into the grandparents' household increases grandmothers' depressive symptoms (Szinovacz et al., 1999). Similarly, other U.S. studies also show that grandparents who take on grandchild care, and those who increase their level of caregiving, experience greater negative health effects including worsening physical and mental health in comparison to those who do not transition to grandchild care (or to higher intensity care) (Baker and Silverstein, 2008, Hughes et al., 2007). However, Ku and colleagues (2013) find that co-residing grandparents who recently started providing grandchild care experience reduced mobility limitations compared to grandparents who do not provide such care (Ku et al., 2013). Similarly, grandmothers who start or continue to provide non-intensive care (between 200 and 500 hours per year) report better self-rated health, fewer functional limitations, and fewer depressive symptoms (Hughes et al., 2007).

Thus our study contributes to our knowledge in this area in several important ways. First, we provide a detailed picture of grandparent health and wellbeing and its association with socio-economic, demographic and caring roles using nationally representative samples of grandparents in Europe based on SHARE, providing the first evidence on these issues in Europe. Second, we explore the role of cumulative advantage and disadvantage across the life course and examine whether there is empirical evidence to support the theorising around the importance of life-course trajectories in a number of domains in understanding later life health and wellbeing. Last, we use longitudinal data to take into account variations in socio-economic and health conditions over time, as well as other key important variables (including paid work), in order to understand the importance of childcare in explaining the health and wellbeing of grandparents.

Conceptual and theoretical frameworks

Our study draws on life-course and cumulative advantage/disadvantage theories to examine the relationship between grandparent involvement in family life and its consequences for health and wellbeing. The life-course approach is widely acknowledged as one of the most appropriate theoretical frameworks for examining later-life outcomes, explaining age-related transitions and life-course trajectories (Bengston et al., 1997). Within the life-course perspective, the cumulative advantage/disadvantage framework is of particular interest for examining inequalities at older ages (Crystal and Waehrer, 1996, Dannefer, 2003, O'Rand, 1996). This theory postulates that those who start out with fewer advantages will have less opportunity to accumulate resources, thus falling farther behind (Graham, 2002, O'Rand, 1996). The emphasis in much of the literature on cumulative disadvantage is on the impact of key life events (such as retirement and widowhood) as triggers for later-life poverty (Burkhauser et al., 1988, McLaughlin and Jensen, 2000). Only recently have researchers begun to examine the impact of cumulative experiences across the life course (e.g. relationship and paid work histories) on poverty at older ages (Dewilde, 2012, Sefton et al., 2011). Similarly, research on health inequalities largely examines the influence of known variables in childhood and adulthood, such as social class, on mortality and morbidity in mid and later life rather than its relationship with cumulative lifetime experiences (Davey Smith et al., 1997, Kuh et al., 2002). (An exception is research based on lifetime marital histories and mortality) (Grundy and Tomassini, 2010, Henretta, 2010, Lillard and Waite, 1995). Research which examines factors associated with continuity and change in grandparental care suggests that prior advantage/disadvantage is important. For example, Luo and colleagues using the Health and Retirement Study (HRS) find that it is the relatively disadvantaged grandparents who are more likely to start or continue co-resdential care whereas more advantaged grandparents start or continue to look after a grandchild who does not live within the household (Luo et al., 2012).

The lack of research on the impact of cumulative life experiences on later-life outcomes is due, in part, to the scarcity of datasets with continuous life histories for nationally representative samples of older people, a key advantage of SHARE and ELSA. Thus our research adds to the body of knowledge and theory in this area by examining how cumulative advantage/disadvantage reflected in life-course trajectories and current circumstances interact with grandparental care to affect grandparents' own health and wellbeing.

3. Key findings

- Providing non-intensive childcare has a positive effect on grandparents' health, even after their previous health and socio-economic status and childhood and adulthood experiences of advantage and disadvantage are taken into account.
- Around 50% of grandparents in the European countries in SHARE are providing some type of grandparental childcare at one point in time and this figure has remained relatively stable between 2004/05 (the first wave) and 2010 (the fourth wave) over time.
- Grandmothers are more likely than grandfathers to be providing childcare for grandchildren – 53% of grandmothers compared with 47% of grandfathers. 14% of grandmothers provide at least 30 hours of childcare, compared with 11% of grandfathers.
- Between baseline (that is wave 1) and wave 2, around 27% provided non-intensive childcare at both waves, and 7% continued to provide intensive childcare.
- Grandparents who do not provide grandchild care, and those who co-reside with grandchildren, are more likely to report poor health.
- Overall, grandparents who do not provide grandchild care are more likely to report poorer health than those who look after grandchildren either intensively or non-intensively. This relationship remains even when prior health status, and child and adulthood disadvantage, are taken into account.
- Conversely grandparents who provide childcare are more likely to report good health.
- Co-residence with a grandchild appears to be positively related to poor self-rated health, that is, it is those grandparents in the worst health who co-reside in multigenerational households but we are not able to distinguish between skipped and three-generation households. However, the association between poor grandparental health and co-residence disappears once we take prior health status into account.
- There is no significant association over time between either co-residing with a grandchild or looking after a grandchild in the past week and quality of life once prior health status is taken into account.
- Grandparents who provide non-intensive childcare tend to be younger, working, married, of higher socio-economic status, better educated and in good health. Grandparents who provide intensive childcare tend to be younger, not working and less educated.

SHARE 2004/05-2010

SHARE 2004/05 includes data for eleven European countries (Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain, Italy and Greece). The surveys are nationally representative longitudinal studies of persons aged 50 and over and their partners. We use the first four waves of data collected (we included all countries in the first wave with the exception of Greece). Data in SHARE is collected every 2 years. SHARE's sample size in the first wave was 29,917 people aged 50 and over (ranging from 1,707 in Denmark to 3,193 in France).

SHARE is very appropriate for studying grandparenthood as it permits a detailed comparison of the characteristics of grandparents. It also contains data on whether and how often respondents look after their grandchildren (e.g. almost daily, almost every week, almost every month or less often) and the number of hours of care provided.

4. Grandparental childcare

Around half of grandparents in SHARE are providing some type of grandchild care at any one point in time with 12% providing intensive grandchild care.

53% of grandmothers report providing childcare (either intensive or non-intensive) compared with 47% of grandfathers.

Table 1 shows the prevalence of grandparental childcare in the first two waves (2004/05 and 2006/07) of SHARE. In the survey grandparents are asked whether they regularly or occasionally look after their grandchildren without the parents' presence during the 12 months prior to interview. If they do so, they are then asked which grandchild they look after, the frequency of the task (that is, whether they do so almost daily, weekly, monthly or less often) and the number of hours of care provided.

We categorise grandparents into those providing intensive, non-intensive and no grandparental childcare (regardless of the age of the grandchildren). For the purpose of this analysis intensive is defined as the provision of childcare on a daily basis or for at least 15 hours a week – note this is somewhat arbitrary as a definition. However, the mean number of hours of care for those in this category is around 30 hours per week – equivalent to a full-time job.[1] All other types of grandparental childcare are defined as non-intensive.

Table 1 shows that around half of grandparents in SHARE are providing some type of grandchild care at any one point in time with 12% providing intensive grandchild care. There is little difference in the prevalence of care provided in 2004/05 and 2006/07 suggesting some degree of stability over time.

In addition, as expected, women are more likely than men in both waves to be providing grandparental childcare, and intensive childcare in particular.

TABLE 1: Distribution of grandparental childcare among grandparents aged 50 and over, by wave and gender

	Wave 1				Wave 2			
GP childcare	GF	GM	Total	N	GF	GM	Total	N
	%	%	%		%	%	%	
Not looking after	52.1	47.3	49.3	7,183	50.0	46.7	48.1	4,078
Non-intensive	37	38.4	37.8	5,505	39.6	39.7	39.7	3,369
Intensive	10.9	14.3	12.9	1,872	10.4	13.6	12.2	1,038
Total	**6,167**	**8,393**	**100**	**14,560**	**3,534**	**4,951**	**100**	**8,485**

Source: SHARE 2004/05; 2006/07. Countries: Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain and Italy.

[1] This is in line with the OECD definition of full-time work, being 30 usual weekly work hours in the main job. See http://www.oecd.org/employment/onlineoecdemploymentdatabase.htm#partime.

4.1. Stability and change in grandparental childcare

Table 2 shows stability and change over a two-year period (between 2004/05 and 2006/07) in grandparental childcare (although we are not able to capture any changes that may have occurred in between the waves). In the two-year period we considered, two in three grandparents are providing care in at least one wave. Around one in four grandparents continue to provide non-intensive care and around 7% provide intensive childcare at both waves. Thus, during the period considered, 48% of grandparents start or continue to provide childcare with only 17% either stopping or reducing the care provided (Table 2). This finding suggests that for many grandparents providing grandchild care remains relatively consistent over time.

TABLE 2: Stability and change in grandparental childcare over a 2-year period for grandparents aged 50 and over, by gender

	Waves 1/2 (2004/05 & 2006/7)			
GP childcare	Grandfathers	Grandmothers	Total	N
	%	%	%	
Not childcare at either wave	36.5	34.4	35.3	2,980
No care → Any care	12.0	9.6	10.6	893
Continued non-intensive care	26.1	27.2	26.7	2,259
Continued intensive care	5.1	7.8	6.7	563
Stopped care	13.5	12.3	12.8	1,083
Non-intensive → Intensive	2.9	4.0	3.5	298
Intensive → Non-intensive	3.9	4.8	4.4	374
Total	**3,518**	**4,932**	**100**	**8,450**

Source: SHARE 2004/05; 2006. Countries: Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain and Italy.

5. Grandparental childcare and health at baseline

Our study focuses on the impact of grandparental childcare on the health of grandparents aged 50 and over. There are many different ways to consider health. Health is defined here in terms of three key physical and psychological dimensions: self-rated general health, disability (that is difficulty with activities of daily living, ADLs), and depressive symptoms.

Self-rated health (SRH) is measured using a 5-point scale (excellent, very good, good, fair, or poor). From this information we create a binary indicator giving respondents a code of 1 if they report 'fair or poor' health and a 0 if they report excellent, very good or good health.

Respondents are asked a series of questions about whether they experience any difficulties with activities of daily living including: bathing, dressing, toileting, getting in or out of bed, walking across a room, and eating. If they answer 'yes' to any of these questions they are considered to have an ADL disability and are given a code of 1, otherwise they receive a code of 0.[2]

Finally, depressive symptoms are measured using the EURO-D (a well-validated instrument used to assess depressive symptomatology) (Prince et al., 1999). Using this measure information is collected on whether respondents experience any depressive symptoms such as restless sleep or being unhappy. Respondents who report 4 or more symptoms out of 12 are considered to meet the threshold for clinical depression (Dewey and Prince, 2005). Thus those who score at threshold or above are given a code of 1, all others are given a code of 0.[3]

TABLE 3: Percentage of grandparents aged 50 and over reporting selected health difficulties by grandparental childcare

		Not looking after	Non-intensive	Intensive	Total	N	Chi² test
Self-rated health fair or poor	Grandparents	37.3	23.3	31.7	31.3	14,558	<0.01
	Grandfathers	33.7	21.7	30.0	28.8	6,165	<0.01
	Grandmothers	40.2	24.5	32.7	33.1	8,393	<0.01
1 or more disabilities in daily living activities	Grandparents	14.2	6.8	6.7	10.4	14,558	<0.01
	Grandfathers	11.0	6.3	8.9	9.1	6,167	<0.01
	Grandmothers	16.8	7.1	5.5	11.5	8,391	<0.01
Depressive symptoms	Grandparents	28.2	20.9	26.3	25.2	14,472	<0.01
	Grandfathers	18.8	13.7	15.8	16.6	6,128	<0.01
	Grandmothers	35.8	26.1	32.1	31.5	8,344	<0.01
	Total N	**7,183**	**5,505**	**1,872**		**14,560**	

Source: SHARE 2004/05. Countries: Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain and Italy
Notes: All health indicators are binary indicators (that is coded 1 for a health problem and 0 if otherwise).

[2] ADL disabilities are not measured in wave 3.
[3] Depressive symptoms are not measured in wave 3.

Grandmothers are more likely to report these health problems in comparison to grandfathers.

Grandmothers providing intensive care (and those not providing any grandchild care) are particularly likely to report depressive symptoms while grandparents providing non-intensive care have the best self-reported health.

Grandparents who do not look after a grandchild are significantly more likely to report fair or poor self-rated health

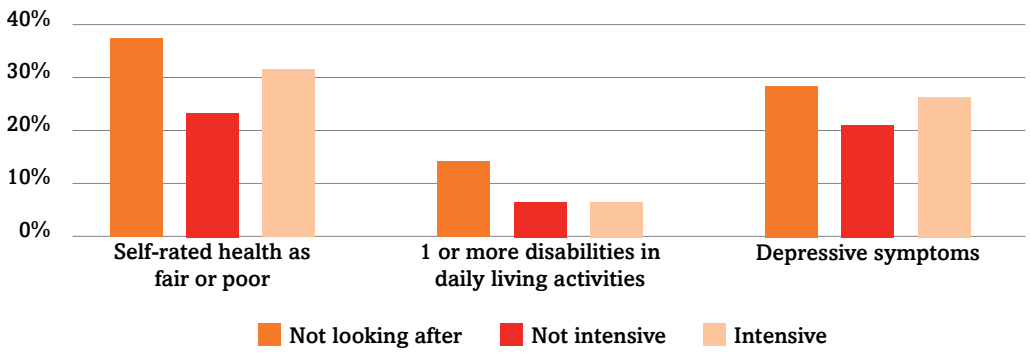
Table 3 shows the percentage of grandparents in each category of grandchild care (that is, those not looking after grandchildren, those providing non-intensive care and those providing intensive care) who report poor health (as measured by our three indicators). For example, it can be seen that 31% of all grandparents report fair or poor SRH; 10% report one or more ADL disabilities, and 25% report depressive symptoms. As expected, grandmothers are more likely to report these health problems in comparison to grandfathers. The health patterns observed in our study (and differences by gender) reflect well-documented patterns (Crimmins et al., 2011); that is, women are known to live longer but to have poorer health. For example, in Table 3 grandmothers are more likely to report worse health than grandfathers across all the indicators considered.

Grandmothers providing intensive care (and those not providing any grandchild care) are particularly likely to report depressive symptoms while grandparents providing non-intensive care have the best self-reported health.

Table 3 allows us to identify the health characteristics most associated with grandparental childcare. For example, grandparents who do not look after a grandchild are significantly more likely to report fair or poor self-rated health (37%) in comparison to the other categories, whereas those who provide non-intensive care are significantly less likely to report fair or poor self-rated health (23%). Grandparents who provide any type of grandchild care are less likely to report at least one disability (around 7%) in comparison to those who do not look after a grandchild (14%). Finally, as with self-rated general health, grandparents who are not looking after grandchildren are significantly more likely to report depressive symptoms (28%) in comparison to those providing non-intensive childcare who are significantly less likely to report such problems (21%). Such findings suggest that grandparents who are not looking after grandchildren are significantly more likely to report worse health whereas those who engage in non-intensive levels of grandchild care generally report better health.

Figure 1 shows the percentage of all grandparents (both grandfathers and grandmothers) who report poor health by each category of grandparental childcare in 2004/05 (at wave 1). The graph gives a visual summary of the data produced in tabular form for all grandparents in Table 3 (the shaded rows). Figure 1 illustrates how grandparents who are not looking after grandchildren are more likely to report poor health (across our three health measures) in comparison to those who provide some type of grandchild care. Once again, the figure shows that the prevalence of poor health is higher among those who do not look after grandchildren, suggesting that grandchild care may be protective rather than detrimental to health, as expected.

Figure 1: Health indicators by grandparental childcare: SHARE 2004/05



However, Table 3 and Figure 1 above only provide information on the relationship between grandparental childcare and the health measures considered at one point in time. They also do not take into account other factors which are associated with both grandparental childcare and health such as age, educational level and other socio-economic factors.

We can see the close relationship between selected demographic and socio-economic characteristics and grandparental childcare in Table 4. The percentage is shown by key demographic and socio-economic characteristics, thus allowing us to identify those most associated with grandparental childcare. The characteristics considered include gender and age, educational level, main activity status, wealth, marital status, living arrangements and social engagement. All of these characteristics have previously been shown to be associated with grandparental childcare as well as with health (Hughes et al., 2007).

TABLE 4: Distribution of grandparental care by demographic and socio-economic characteristics of grandparents aged 50 and over (row percentages)

	Not looking after			Non-intensive			Intensive				
	GF	GM	Tot	GF	GM	Tot	GF	GM	Tot	Total N	P value
50-59	43.5	28.6	34.2	44.7	53	49.9	11.8	18.4	15.9	3,637	
60-69	41.3	33.5	37.0	45	47.2	46.2	13.7	19.3	16.8	5,371	<0.01
70-79	61.7	66.0	64	29.2	25.3	27.1	9.1	8.7	8.9	4,033	
80+	86.2	92.6	90.2	10.9	6.0	7.8	2.9	1.4	2.0	1,517	
Education: low	56.9	52.9	54.4	30.7	32.0	31.5	12.4	15.1	14.1	8,144	
Education: medium	49.9	40.1	44.7	40.6	46.5	43.8	9.5	13.4	11.6	4,019	<0.01
Education: high	44.3	35.5	40.2	46.3	52.2	49.1	9.4	12.3	10.8	2,423	
Retired	55.1	55.6	55.4	33.5	32.5	33	11.4	11.9	11.6	8,371	
In paid work	43.3	28.1	35.4	47.8	58.2	53.2	8.9	13.7	11.4	2,823	<0.01
Other	48.9	45.6	46.0	39.2	36.6	36.9	11.9	17.8	17.1	3,362	
Higher wealth quintiles	50.2	44.2	46.8	38.5	41.0	39.9	11.3	14.8	13.3	11,262	<0.01
Lowest wealth quintile	62.3	57.8	59.4	28.4	30.0	29.4	9.3	12.2	11.2	2,800	
Widowed or Divorced	73.4	61.7	64.4	22.8	27.8	26.7	3.7	10.4	8.9	3,667	<0.01
Married	48.8	39.9	44.3	39.2	43.8	41.5	12.0	16.3	14.2	10,892	
Live alone	76.4	61.1	66.1	20.9	28.5	26.8	2.7	8.4	7.1	2,798	
With spouse	48.9	41.5	45.1	40.0	44.0	42.1	11.1	14.5	12.8	9,428	<0.01
With adult child	52.4	42.3	46.6	34.0	37.8	36.2	13.6	19.9	17.2	1,971	
With grandchild	46.2	44.3	44.9	26.1	18.8	21.2	27.7	36.9	33.9	363	
No participation in social activities	56.4	50.1	52.7	32.0	35.1	33.8	11.6	14.8	13.5	10,663	<0.01
Participation in social activities	40.4	37.6	38.9	50.4	49.5	49.9	9.2	12.9	11.2	3,769	
Total N	**3,214**	**3,969**	**7,183**	**2,280**	**3,225**	**1,199**	**673**	**1,199**	**1,872**	**14,560**	
(percentages)	**52.1**	**47.3**	**49.3**	**37**	**38.4**	**37.8**	**10.9**	**14.3**	**12.9**	**100**	

Source: SHARE 2004/05. Countries: Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain and Italy

Grandparents in the highest educational category are significantly more likely to be providing non-intensive grandparental childcare.

Grandparents in paid work are significantly more likely to be providing non-intensive grandchild care.

Grandparents in the lowest wealth quintile are significantly less likely to be providing non-intensive grandparental childcare.

Overall, Table 4 shows that there is a significant relationship between looking after grandchildren and socio-economic and demographic characteristics that reflect socio-economic advantage, which in turn are also associated with good health. Starting with age, it is noticeable that the youngest age group (ages 50-59) shows the highest percentage of grandchild care (whether intensive or non-intensive): 50% providing non-intensive grandchild care and 16% providing intensive care compared to those in the older age groups. For instance, grandparents in the oldest age group, those aged 80 and over, are significantly less likely than those in the younger age groups to be providing non-intensive or intensive grandchild care (8 and 2% respectively among grandparents aged 80 and over).

We categorise grandparents into three educational groups using the International Standard Classification of Education (ISCED-97) where a low educational level is defined as being below a secondary education, and a high level refers to a university education or above (http://www.uis.unesco.org/). We can see that grandparents in the highest educational category are significantly more likely to be providing grandparental childcare: 50% of grandparents in this category are providing non-intensive grandparental childcare in comparison to 32% of grandparents in the lowest educational category. However, those in the lowest educational group are significantly more likely to be providing intensive grandparental childcare (that is 14% in comparison to 11% among grandparents in the highest educational group).

Economic activity status is determined using grandparents' self-reports of their status based on a series of pre-defined categories. Those who identified themselves as being either employed or self-employed are considered to be in paid work. Those who identified themselves as unemployed, permanently sick or disabled, a homemaker or other are in our 'other' category (which may also include those who gave up work to care for a grandchild). The remaining group consists of the retired. Table 4 shows that grandparents in paid work are significantly more likely to be providing non-intensive grandchild care (53%) in comparison to those in the other categories with grandparents in the 'other' category being more likely to provide intensive grandchild care (17%).

We use the wealth measure available in the harmonised dataset created by the RAND Corporation (a research and not-for-profit organisation, for further details see www.mmicdata.rand.org/meta/). The wealth measures in the dataset produced by RAND are a combination of the net values of properties, non-housing financial wealth and business assets. Table 4 shows that grandparents in the lowest quintile (that is, in the bottom 20% of wealth) are significantly less likely to be providing non-intensive grandparental childcare (29%) in comparison to 40% for grandparents in the other wealth quintiles.

Married grandparents are significantly more likely to be providing grandparental childcare.

Those who co-reside with at least one grandchild are significantly more likely to report looking after a grandchild intensively while those who live with their spouse or partner are significantly more likely to engage in non-intensive grandchild care.

Grandparents who participate in social activities are also significantly more likely to provide non-intensive grandchild care.

Grandparental childcare at lower intensity levels is more likely to be associated with more favourable socio-economic characteristics.

The availability of spouses and kin are also important factors in determining who provides grandchild care. We categorised grandparents by marital status: the widowed or divorced in comparison to the married group (the few cohabitors are in this latter group). As expected from previous work, married grandparents are significantly more likely to be providing grandparental childcare (whether non-intensive or intensive) in comparison to the widowed and divorced.

As co-resident grandparents are also more likely to provide a wide range of support we also consider living arrangements. We created a 4-category indicator to capture this dimension, distinguishing grandparents who live alone, from those with at least one adult child at home (but no grandchildren), with grandchildren at home (whether or not their own children are present), or in other types of living arrangements (that is, mostly living with just with their spouses[4]). We can see in Table 4 that, as one would expect, those who co-reside with at least one grandchild are significantly more likely to report looking after a grandchild intensively in comparison to the other groups, but that those who live with their spouse or partner are significantly more likely to engage in non-intensive grandchild care.

As individuals who are generally more socially engaged may also be more likely to be involved in family activities, we also examine participation in social activities. We define such participation in terms of non-kin related activities such as organised voluntary work; attendance at training courses; and involvement in political or religious organisations; or sport, social or other kinds of clubs. We categorise grandparents as being engaged in social activities if they participate in at least one of these activities almost every week or more often. We find that grandparents who participate in social activities are also significantly more likely to provide non-intensive grandchild care in comparison to those who do not (that is, 50 and 34% respectively).

Such findings reinforce earlier work which has shown that in Europe grandparental childcare at lower intensity levels is more likely to be associated with more favourable socio-economic characteristics (Glaser et al., 2013). However, such characteristics are also, of course, associated with better health as can be seen in Table 5.

[4] In SHARE 96% of grandparents in other types of living arrangements are living with their spouse.

Table 5 shows the percentage of grandparents aged 50 and over who report selected health difficulties. The percentage is shown by the same socio-economic and demographic characteristics presented in Table 4, thus allowing us to identify those most associated with poor health. Thus we are able to investigate those characteristics most associated with poor health among grandparents.

TABLE 5: Percentage of grandparents aged 50 and over reporting selected health difficulties by demographic and socio-economic characteristics

	Self-rated health as fair or poor				1 or more disabilities in daily living activities				Depressive symptoms				
	GF	GM	Tot	P value	GF	GM	Tot	P value	GF	GM	Tot	P value	Total N
50-59	22.0	23.5	22.9		7.1	5.5	6.1		15.9	29.7	24.5		3,655
60-69	25.0	29.5	27.5	<0.01	6.3	7.0	6.7	<0.01	13.5	28.0	21.6	<0.01	5,402
70-79	34.3	40.2	37.5		9.9	14.1	12.2		18.2	33.7	26.6		4,052
80+	42.9	51.5	48.2		22.6	33.6	29.4		25.4	42.9	36.2		1,518
Education: low	32.7	39.3	36.8		11.3	14.2	13.1		20.2	36.4	30.4		8,150
Education: medium	28.3	27.1	27.7	<0.01	8.0	7.9	7.9	<0.01	14.4	25.6	20.4	<0.01	4,042
Education: high	20.3	16.9	18.7		5.4	6.0	5.7		11.3	21.2	16.0		2,433
Retired	31.6	35.5	33.5		10.0	13.9	11.8		17.0	30.5	23.4		8,402
In paid work	13.5	11.7	12.5	<0.01	4.5	2.3	3.4	<0.01	10.2	22.0	16.4	<0.01	2,834
Other	48.7	40.5	41.5		14.7	12.7	12.9		32.8	37.8	37.2		3,377
Higher wealth quintiles	26.5	29.6	28.3	<0.01	8.0	9.4	8.8	<0.01	14.8	28.9	22.6	<0.01	11,325
Lowest wealth quintile	38.5	44.9	42.7		13.7	18.4	16.7		25.3	41.1	35.6		2,807
Widowed or Divorced	30.9	40.5	38.4	<0.01	13.4	17.2	16.3	<0.01	23.4	38.4	35.0	<0.01	3,677
Married	28.5	29.3	28.9		8.4	8.5	8.5		15.5	28.1	21.9		10,951
Live alone	29.4	38.9	36.7		13.4	16.5	15.8		22.8	37.1	33.9		2,801
Lives with spouse	28.6	28.8	28.7	<0.01	8.4	8.9	8.7	<0.01	14.9	26.8	21.0	<0.01	9,470
With adult child	29.3	36.5	33.4		9.0	11.2	10.3		21.4	38.9	31.5		1,987
With grandchild	31.7	51.2	44.7		12.2	18.7	16.5		14.8	43.2	33.6		371
No participation in social activities	32.4	36.3	34.7	<0.01	10.4	12.7	11.8	<0.01	18.6	34.1	27.7	<0.01	10,697
Participation in social activities	18.7	22.2	20.7		5.0	6.2	5.7		10.9	23.8	18		3,786
Total N	**1,784**	**2,792**	**4,576**		**563**	**965**	**1,528**		**1,018**	**2,645**	**3,663**		**14,560**
(percentages)	**28.8**	**33.1**	**31.3**		**9.1**	**11.5**	**10.4**		**16.6**	**31.6**	**25.2**		**100**

Source: SHARE 2004/05. Countries: Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain and Italy
Notes: All health indicators are binary indicators (that is coded 1 for a health problem and 0 if otherwise).

As expected, grandparents in the youngest age group, that is between 50-59, are significantly less likely to report poor health than their counterparts in the older age groups (whether self-reported fair or poor health, one or more ADL difficulties, or depressive symptoms). For instance, among grandparents aged 50-59 23% report fair or poor self-rated health, 6% report ADL disabilities, and 25% report depressive symptoms; this compares to 48, 29 and 36% respectively of grandparents in the oldest age group, that is aged 80 and over.

Grandparents in the highest educational group are also significantly less likely to report health problems: 19% report fair or poor self-rated health, 6% report ADL difficulties and 16% report depressive symptoms in contrast to 37, 13 and 30% respectively of their counterparts in the lowest educational group.

As expected those in paid work are significantly less likely to report poor health: 13% report fair or poor self-rated health, 3% report ADL disabilities and 16% report depressive symptoms in comparison to 34, 12 and 23% respectively of their retired counterparts.

As expected grandparents in the lowest wealth quintile are more likely to report poor health. For example, 17% of grandparents in the lowest wealth quintile report at least one ADL disability in comparison to 9% of their counterparts in the other wealth quintiles.

Turning to marital status and living arrangements we see that, as expected, married grandparents are less likely to report poor health and those living alone or with a spouse are also less likely to report poor health. Finally, those living with a grandchild are significantly more likely to report poor health in comparison to those living with a spouse or with an adult child only.

6. Investigating grandparental childcare and health over time

Our analysis shows that providing non-intensive childcare has a positive effect on grandparental health, even after baseline health and socio economic status is taken into account.

Our analysis shows that providing non-intensive childcare has a positive effect on grandparental health, even after baseline health and socio-economic status is taken into account.

Previous analyses provide a description of the relationship between grandparental childcare and health at one point in time only (that is at wave 1 or at baseline). Our findings from this baseline European data show that grandparents who engage in lower intensity grandchild care are significantly less likely to report poor health. However, previous work has also shown that grandparental childcare is associated with more favourable demographic and socio-economic characteristics (such as higher education, being in paid work and reporting greater wealth) which in turn is related to better health.

Thus we need to investigate the relationship between grandchild care and health while taking these other demographic and socio-economic characteristics into account. Moreover, it may be that those who are already in better health are more likely to take on grandparental childcare. Thus our focus is on examining the longitudinal relationship between grandparental childcare and health while taking earlier health status into account.

In order to investigate whether the relationship between grandparental childcare and health is due to childcare per se or to other demographic and socio-economic characteristics (such as age and educational level which are also associated with health), or to prior health status, we use logistic regression models. Such analyses enable us to investigate those factors that are significantly related to our measures of poor health at follow-up.

Our analyses of the impact of grandparental childcare consist of two steps. First, we assess the impact of grandparental childcare provision at wave 2 on self-rated health at both waves 3 and 4 (that is both 2 and 4 years later),[5] and on disabilities in daily living activities as well as depressive symptoms at wave 4, controlling for baseline health, as well as for the demographic and socio-economic factors discussed above (in addition, we also include number of grandchildren, age of the youngest grandchild, and indicators for the different countries, as previous work has found these characteristics to also be related to health). Second, we investigate longitudinal associations between stability and change in grandchild care between baseline and wave 2, and SRH, ADL disability and depressive symptoms at follow-up (that is at waves 3 and 4), controlling for the same baseline characteristics as described above.

Thus our modelling strategy consists of investigating the longitudinal relationship between grandparental childcare; socio-economic and demographic characteristics; and health outcome as measured at baseline on SRH, ADL difficulties and depressive symptoms at follow-up. Our analyses are restricted to grandparents with

[5] We consider socio-economic characteristics at wave 1 and grandchild care at wave 2 rather than at wave 1 (as both are significantly associated) in order to control for selection bias.

complete data on all the characteristics considered.

The main findings of the logistic regression analyses are presented in Table 6. In all the models we report the 'odds ratio' of the explanatory variable (or grandparent characteristic) relative to the reference category, 95% confidence intervals for each of the odds ratios, and levels of significance. Each odds ratio represents the effects of a given explanatory variable on the odds of providing grandparental childcare. When the odds ratio is larger than one there is a positive relationship between the explanatory variable and the outcome, and when the odds ratio is smaller there is a negative association. The confidence interval tells us the level of uncertainty around the odds ratio; if it crosses 1 it means that there is no significant relationship. For example in Table 6 (the first model in the table) looking at the indicator for SRH at baseline, the odds of reporting poor or fair SRH at Wave 3 (4 years later) is 6.78 times higher for those reporting fair or poor health at baseline than for those who reported excellent, very good or good health, taking into account all the other characteristics in the model. As the confidence interval does not cross 1 this indicates that the odds ratio of 6.78 reflects a statistically significant difference between those who rate their health as fair or poor versus those who do not at follow-up. Similarly for disabilities and depressive symptoms, the largest predictor of health outcomes at later waves is initial health status at baseline.

TABLE 6: Odds Ratios from Logistic Regressions of Health Measures on Grandparental Childcare, Co-residence with Grandchildren, Other Demographic and Socio-economic Characteristics, and Prior Health

Baseline Characteristics	Self-rated health W3		Self-rated health W4		1 or more disabilities in daily living activities W4		Depressive Symptoms W4	
	OR	95% CIs	OR	95% CIs	OR	95% CIs	OR	95% CIs
SRH fair/poor	6.78**	5.60-8.21	5.17**	4.47-5.97				
1+ ADL disabilities					5.76**	4.64-7.15		
Depressive symptoms							4.71**	4.10-5.41
Non-intensive childcare[a]	0.82*	0.69-0.97	0.84*	0.74-0.97	0.81*	0.66-0.99	0.91	0.76-1.10
Intensive childcare	0.76*	0.62-0.94	0.87	0.69-1.10	0.83	0.63-1.10	0.85	0.69-1.07
Living alone[b]	1.09	0.90-1.30	1.05	0.91-1.22	1.42**	1.18-1.72	0.86	0.74-1.01
With adult children	0.87	0.71-1.07	1.01	0.82-1.23	1.30*	1.00-1.68	1.11	0.89-1.38
With grandchild	1.78*	1.13-2.78	1.39	0.87-2.21	1.53	0.86-2.72	1.06	0.62-1.81
Number Observations	**6,315**		**5,456**		**5,455**		**5,401**	

Source: SHARE 2004/05. Countries: Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain and Italy
Notes: All health indicators are binary (that is coded 1 for a health problem and 0 if otherwise). The reference categories for our key explanatory variables are: a) not providing any grandchild care at wave2 and b) living with a spouse or with a spouse and others at wave 1. In addition to these variables and prior health status our models also included the variables presented in Tables 4 and 5 (that is, gender, age, education, main activity status, wealth, and social engagement) as well as number of grandchildren, age of the youngest grandchild and separate binary indicators for each of the countries. The reference categories for these latter variables are as follows: i) male; ii) age 50-59; iii) low education; iv) retired; v) lowest wealth quintile; vi) not participating in social activities, and vii) France. Number of grandchildren and age of youngest grandchild are both continuous variables. *, **: significant at the 0.05 and 0.0l levels, respectively

Even when baseline health and socio-economic status is taken into account, looking after grandchildren is significantly less likely to be associated with poor health.

Overall, Table 6 shows that even when baseline health and socio-economic status is taken into account, looking after grandchildren is significantly less likely to be associated with poor health. For example, it can be seen that grandparents who provide non-intensive grandchild care report 18% lower odds of fair or poor SRH 2 years later at wave 3 or 16% lower odds at wave 4. Similarly, grandparents providing non-intensive grandchild care report 19% lower odds of ADL disabilities at wave 4 – four years later. There is no significant association between looking after a grandchild and depressive symptoms at follow-up (Table 6). Intensive grandparental childcare is only shown to have a positive effect on health at the 2-year follow-up.

With respect to living arrangements, grandparents who live with a grandchild report 78% higher odds of fair or poor health at the 2-year follow-up. It is difficult to interpret this finding as the numbers of grandparents co-residing with grandchildren is too small to distinguish those who live with grandchildren only (in skipped-generation households) from those who live with both their children and grandchildren (in three-generation households).[6] As most grandparents in SHARE who live with a grandchild are in households where their children are also present, it may be that the poor health reported among grandparents is a result of those with pre-existing health problems moving in with their children because they need help (rather than because they are providing help). Overall, the findings in Table 6 suggest that grandparental childcare, and in particular non-intensive care, may be beneficial for health.

Table 7 presents results from our second strategy involving the investigation of associations between stability and change in grandparental childcare between baseline and wave 2 (that is, allowing us to examine the consequences of longer-term grandparental care), and health at follow-up (waves 3 and 4) once wave 1 socio-economic, demographic, and health characteristics are taken into account. Table 7 shows that grandparents who do not provide any grandchild care at either wave are more likely to report poor or fair SRH at wave 4 (and ADL disabilities also at wave 4) compared to those who continued to look after their grandchildren non-intensively at baseline and wave 2. For example, among grandparents who do not provide grandchild care at either wave the odds of experiencing poor or fair self-rated health at follow-up (either at wave 3 or 4) is 26% higher than for those providing non-intensive grandchild care at both waves. Conversely, for grandparents who provide non-intensive grandchild care at both waves the odds of experiencing poor or fair self-rated health at follow-up is 21% lower in comparison to those who do not provide care at either wave. Thus, as in Table 6 there is a consistent association over time between lower levels of grandparental care and better health.

[6] Only 371 grandparents in SHARE coreside with a grandchild, ranging from 3 in Switzerland to 109 in Spain. Thus the numbers are too small to adequately distinguish those in three and skipped-generation households.

TABLE 7: Odds Ratios from Logistic Regressions of Health Measures on Grandparental Childcare and Change, Co-residence with Grandchildren, Other Demographic and Socio-economic Characteristics, and Prior Health

	Self-rated health W3		Self-rated health W4		1 or more disabilities in daily living activities W4		Depressive symptoms W4	
	OR	95% CIs	OR	95% CIs	OR	95% CIs	OR	95% CIs
Baseline characteristics								
Self-rated health fair or poor	6.76**	5.58-8.18	5.15**	4.46-5.95				
1 or more disabilities in daily living activities					5.84**	4.70-7.26		
Depressive symptoms							4.72**	4.11-5.42
Living alone[a]	1.08	0.90-1.29	1.04	0.90-1.21	1.41**	1.16-1.70	0.86	0.74-1.01
With adult children	0.87	0.71-1.06	1	0.82-1.22	1.32*	1.02-1.70	1.1	0.88-1.36
With grandchild	1.81*	1.15-2.85	1.41	0.89-2.25	1.56	0.88-2.77	1.06	0.62-1.81
Stability and Change in grandchild care[b]								
No care at either wave	1.26*	1.01-1.57	1.24*	1.03-1.49	1.36*	1.03-1.80	1.13	0.93-1.38
No care → Any care	1.02	0.82-1.26	1.04	0.87-1.25	1.07	0.71-1.62	1.05	0.82-1.35
Continued Intensive	0.86	0.66-1.13	0.96	0.73-1.26	0.98	0.67-1.42	0.97	0.73-1.28
Stopped Care	1.12	0.91-1.38	1.13	0.93-1.38	1.1	0.81-1.49	1.13	0.87-1.48
Non-intensive → Intensive	0.92	0.68-1.26	1.08	0.76-1.54	1.05	0.64-1.72	0.79	0.54-1.16
Intensive → Non-intensive	0.92	0.71-1.20	1.21	0.88-1.67	1.19	0.75-1.87	1.32	0.94-1.85
Number Observations	**6,303**		**5,442**		**5,441**		**5,388**	

Source: SHARE 2004/05. Countries: Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain and Italy
Notes: All health indicators are binary (that is coded 1 for a health problem and 0 if otherwise). The reference categories for our key explanatory variables are: a) living with a spouse or with a spouse and others at baseline and b) providing non-intensive grandparental childcare at both waves. In addition to these variables and prior health status our models also included the variables presented in Table 6 (that is, gender, age, education, main activity status, wealth, and social engagement) as well as number of grandchildren, age of the youngest grandchild and separate binary indicators for each of the countries. The reference categories for these latter variables are as follows: i) male; ii) age 50-59; iii) low education; iv) retired; v) lowest wealth quintile; vi) not participating in social activities, and vii) France. Number of grandchildren and age of youngest grandchild are both continuous variables. *, **: significant at the 0.05 and 0.0l levels, respectively.

7. Life histories and grandparental childcare

A key aim of our study is to examine how cumulative advantage and disadvantage is associated with grandparent health and wellbeing. As described above cumulative advantage/disadvantage theory is an influential theoretical framework in social gerontology which focuses on the importance of different life experiences for setting trajectories which in turn determine later life outcomes (Crystal and Waehrer, 1996, Dannefer, 2003, O'Rand, 1996). However to date, with few exceptions, the impact of long-term experiences on later-life outcomes has received little empirical investigation (Grundy and Holt, 2000, Henretta, 2010). This is largely due to the scarcity of longitudinal and life-history data for large, nationally representative samples of older people. A unique feature of our study is the detailed life-history information collected which enables us to explore the relationship between different life experiences and grandparents' current health and wellbeing. For example, we are able to capture cumulative life experiences such as time spent in institutional care and in poor health as children, and with ill-health and disability as adults, as well as periods of unemployment, experiences of divorce, and widowhood. Such an analysis provides us with a better understanding of the cumulative impact of life-course trajectories on health outcomes among grandparents.

We consider several key indicators of circumstances in childhood and adulthood. With respect to childhood we look at respondents' reports of circumstances at age 10: a) whether they report either both, one or neither parent in the household; b) whether they report any household amenities (i.e. toilet; hot water; bath; and central heating); c) their parent's occupation (high, medium, low skilled or agricultural occupation); d) whether they report experiencing parental difficulties (that is parents with mental health or alcohol problems); d) the number of books in the household; and e) whether they report poor or fair self-rated health, or any serious health conditions (i.e. epilepsy, psychiatric problem, diabetes, heart problems, leukaemia, and cancer). In adulthood, we consider: a) whether respondents experienced more than one marital union, b) the percentage of their lives spent in paid work; c) the number of periods of ill health; and d) whether they had ever suffered hunger or an adverse event (that is, being evacuated during the war; or having lived in prisoner of war camp, labour/ concentration camp, prison, psychiatric hospital, or as an inpatient in a TB institution or being homeless).

Table 8 shows the distribution of grandparental care by each life-history category. Overall, it shows that non-intensive grandparental childcare is positively associated with socio-economic advantage in childhood and adulthood, whereas intensive grandparental childcare shows a negative relationship. For example, grandparents with no amenities in their house at age 10 are significantly more likely to engage in intensive grandparental childcare in later life whereas those with all 4 amenities described above are significantly more likely to engage in non-intensive grandparental childcare. Similarly, grandparents who report having no books in their home at age 10 are also significantly more likely to report intensive grandparental childcare in later life than those who had 10-100 books, whereas those who report having over 100 books are significantly more likely to report non-intensive childcare in later life.

TABLE 8: Distribution of grandparental care by life history characteristics of grandparents aged 50 and over (row percentages)

	Life history characteristics	Not looking after	Non-intensive	Intensive	Total N	P value
At age 10/ during Childhood	Both parents in household	44.9	41.4	13.7	7,031	
	Only 1 parent in household	47.7	36.7	15.6	870	<0.01
	No parents in household	54.7	35.6	9.7	247	
	All 4 amenities in household	35.7	57.2	7.1	975	
	1-3 amenities in household	41.5	44.3	14.2	4,718	<0.01
	None of these household amenities	56.4	28.3	15.3	2,588	
	Occupation of main breadwinner: High skill	38.9	51.9	9.2	644	
	Medium skill	42.4	45.1	12.5	1,409	<0.01
	Low skill	45.0	39.8	15.2	3,829	
	Skilled agricultural worker	50.6	35.9	13.5	2,068	
	Experience parental difficulties	45.6	40.9	13.5	7,415	0.3
	with mental health/alcohol issues	44.4	40.2	15.4	876	
	101 books or more in HH	35.1	56.9	8.1	904	
	10-100 books in HH	40.1	47.3	12.6	3,289	<0.01
	None or few books in HH	52.3	31.9	15.8	4,029	
	SRH > good	45.3	40.9	13.7	7,500	0.45
	SRH as fair or poor	47.7	39	13.4	808	
	No serious health conditions	45.6	40.7	13.7	8,082	0.5
	Serious health conditions	41.4	44.5	14.1	191	
Adulthood	Only 1 marital union	44.4	41.1	14.5	7,277	<0.01
	2 or more marital unions	53.0	38.9	8.1	842	
	Worked at least 75% of life	43.4	44.4	12.2	4,920	
	Worked 1-74% of life	45.7	38.6	15.7	2,467	<0.01
	Never worked	56.1	27.8	16.1	978	
	1 or no periods of ill health	45.0	41.3	13.7	7,736	<0.01
	2+ periods of ill health	53.0	33.2	13.8	572	
	Never suffered hunger	44.4	41.8	13.8	7,417	<0.01
	Has suffered hunger	54.9	32.0	13.1	887	
	No experience adverse events	45.3	41.0	13.7	7,371	0.33
	Experienced adverse events	47.8	38.9	13.3	951	
	Total N	**3,831**	**3,418**	**1,142**	**8,391**	
	(percentages)	**45.7**	**40.7**	**13.6**	**100**	

Source: SHARE 2004/05. Countries: Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain and Italy

Table 9 uses the same life-history categories in Table 8 to present the percentage of grandparents aged 50 and over reporting selected health difficulties by these characteristics. It shows that, as expected, socio-economic and health disadvantages in both childhood and adulthood remain associated with poor health in later life. For example, grandparents with no amenities in their homes at age 10 are significantly more likely to report poor health in later life compared to those who had these amenities. Similarly, grandparents who experienced health conditions as a child are significantly more likely to report poor health in later life in comparison to those who have not experienced such conditions.

As life-history characteristics are associated with both grandparental care and health in later life it may be that the effect of grandparental childcare on health is not due childcare per se but to these earlier characteristics. We investigate this association using multivariable analysis in the next section.

TABLE 9: Percentage of grandparents aged 50 and over reporting selected health difficulties by life history characteristics

		Self-rated health as fair or poor		1 or more disabilities in daily living activities		Depressive symptoms		
	Life History	Tot	p	Tot	p	Tot	p	Total N
At age 10/ during Childhood	Both parents in household	28.2		8.9		24.7		7,059
	Only 1 parent in household	32.4	<0.01	10.2	0.29	25.6	0.08	872
	No parents in household	33.5		10.9		30.9		248
	All 4 amenities in household	14.4		4.9		16.6		978
	1-3 amenities in household	27.1	<0.01	8.2	<0.01	24.3	<0.01	4,737
	None of these household amenities	37.2		12.3		29.4		2,597
	Occupation of main breadwinner: High skill	18.9		6.0		18.0		650
	Medium skill	23.9	<0.01	7.3	<0.01	22.2	<0.01	1,412
	Low skill	31.3		9.6		27.1		3,848
	Skilled agricultural worker	30.4		10.3		24.8		2,072
	Experience parental difficulties	28.5	0.15	9.1	0.82	24.2	<0.01	7,415
	with mental health/alcohol issues	30.8		9.3		31.8		876
	101 books or more in household	18.2		6.0		18.7		910
	10-100 books in household	22.5	<0.01	6.9	<0.01	20.5	<0.01	3,297
	None or few books in household	36.4		11.7		30.0		4,046
	SRH > good	27.7	<0.01	8.9	<0.01	24.2	<0.01	7,500
	SRH as fair or poor	39.1		11.1		32.4		808
	No serious health conditions	28.3	<0.01	9.0	0.06	24.5	<0.01	8,082
	Serious health conditions	45.3		13.0		47.1		191
Adulthood	Only 1 marital union	29.2	0.05	9.2	0.85	25.0	0.72	7,302
	2 or more marital unions	25.9		9.4		24.4		848
	Worked at least 75% of life	22.6		7.0		18.6		4,937
	Worked 1-74% of life	35.5	<0.01	11.5	<0.01	32.5	<0.01	2,476
	Never worked	43.3		14.6		39.0		985
	1 or no periods of ill health	26.7	<0.01	8.3	<0.01	23.8	<0.01	7,736
	2+ periods of ill health	56.9		21.3		41.2		572
	Never suffered hunger	26.9	<0.01	8.4	<0.01	24.0	<0.01	7,417
	Has suffered hunger	44.9		14.7		33.7		887
	No experience adverse events	27.8	<0.01	8.7	<0.01	24.6	<0.01	7,371
	Experienced adverse events	36.4		13.3		28.5		951
	Total N	**2,434**		**781**		**2,110**		**8,425**
	(percentages)	**28.9**		**9.3**		**25.1**		**100**

Source: SHARE. Countries: Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain and Italy.
Notes: All health indicators are binary (that is coded 1 for a health problem and 0 if otherwise).

8. Findings from the multivariable analysis: grandparental childcare and health

The relationship between grandparental childcare and health remains even when taking into account childhood and adulthood advantage/disadvantage.

Our analysis shows that, even when childhood and adulthood experiences of advantage and disadvantage are taken into account, there is a positive relationship between provision of childcare for grandchildren and health outcomes.

Section 7 showed significant associations between life-history characteristics and later-life grandparental childcare and health. While it was previously acknowledged that the relationship between health and caregiving may reflect prior variations in socio-economic status and health, rather than being the consequences of childcare provision per se, few studies have examined this link using a cumulative advantage/disadvantage framework. In this section we examine whether the generally positive relationship between grandparental childcare and health seen in Section 6 is affected by the introduction of life-history characteristics reflecting past advantage or disadvantage. Thus the logistic regression model in Table 10 is similar to that in Table 6 but includes the addition of life-history characteristics in order to take into account grandparents' cumulative experience across the life course.

Table 10 shows that grandchild care – both intensive and non-intensive – is positively related to good health over time: grandparents who provide non-intensive grandparental childcare report lower odds of fair or poor health both 2 and 4 years later (and those who provide intensive grandparental childcare also report lower odds of fair or poor health 2 years later) than those who are not providing any type of grandchild care (the reference group). Co-residence with grandchildren continues to show a positive effect on poor or fair self-rated health (SHR) at wave 3. All models include the number of grandchildren and the age of the youngest grandchild; there is no significant relationship between these indicators and subsequent health. Overall, the relationship between grandparental childcare and health remains even when taking into account childhood and adulthood advantage/disadvantage. It can also be seen that both childhood and adulthood health histories continue to have an effect on later life grandparent health. Finally, the other associations are as expected, that is younger grandparents, those with higher educational levels and in the higher wealth quintiles at wave 1 are less likely to report poor health (not shown).

TABLE 10: Odds Ratios from Logistic Regressions of Health Measures on Grandparental Childcare, Co-residence with Grandchildren, Life History, Other Demographic and Socio-economic Characteristics, and Prior Health

	Self-rated health W3		Self-rated health W4		1 or more disabilities in daily living activities W4		Depressive symptoms W4	
Baseline Characteristics	OR	95% CIs	OR	95% CIs	OR	95% CIs	OR	95% CIs
SRH fair/poor	6.16**	5.08-7.46	4.56**	3.89-5.34				
1+ ADL disabilities					5.35**	4.13-6.94		
Depressive symptoms							4.58**	3.97-5.28
Living alone[a]	1.1	0.92-1.31	1.06	0.89-1.27	1.48**	1.20-1.82	0.88	0.75-1.04
Living with adult children	0.9	0.73-1.10	1.07	0.87-1.32	1.39*	1.07-1.80	1.18	0.93-1.49
Living with grandchild	1.81*	1.11-2.94	1.19	0.74-1.90	1.53	0.81-2.89	1.07	0.60-1.90
Non-intensive childcare[b]	0.82*	0.69-0.96	0.84*	0.72-0.97	0.86	0.68-1.09	0.93	0.78-1.12
Intensive childcare	0.77*	0.62-0.95	0.85	0.66-1.08	0.87	0.64-1.18	0.84	0.67-1.07
Life History Characteristics								
Childhood								
SRH<good at age of 10	1.62**	1.38-1.90	1.32*	1.04-1.67	1.27	0.96-1.69	1.49**	1.20-1.84
Serious health conditions	1.15	0.77-1.69	2.11**	1.45-3.09	1.49	0.89-2.50	2.11**	1.39-3.21
Adulthood								
2+ periods of ill health	2.60**	1.90-3.55	2.20**	1.68-2.88	1.98**	1.41-2.78	1.21	0.95-1.54
Constant	0.59	0.34-1.01	0.48**	0.28-0.81	0.07**	0.03-0.14	0.24**	0.14-0.40
Number Observations	**5,956**		**4,761**		**4,759**		**4,718**	

Source: SHARE. Countries: Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain and Italy.
Notes: All health indicators are binary (that is coded 1 for a health problem and 0 if otherwise). The reference categories for our key explanatory variables are: a) not providing any grandchild care at wave 2 and b) living with a spouse or with a spouse and others, at wave1. In addition to these variables and health status at baseline our models also included the variables presented in Table 6 (that is, gender, age, education, main activity status, wealth, and social engagement) as well as number of grandchildren, age of the youngest grandchild and separate binary indicators for each of the countries. The reference categories for these variables are described in the notes to Table 6. In addition, we also included selected life history characteristics such as household amenities, the breadwinner's occupation, the number of books in household, SRH and serious health conditions all in childhood at age 10, as well as adulthood characteristics including the percentage of life spent in paid work, periods of ill health and the experience of hunger and/or an adverse event. The reference categories for these life history characteristics are as follows: i) 1-3 household amenities (versus at least one amenity or no amenities in the household); ii) the breadwinner's high skilled occupation (versus medium, low and skilled agricultural occupations); iii) more than 100 books in the household (versus none or few or 10-100 books); iv) poor or fair self-rated health; vi) no serious health conditions; vii) worked more than 75 per cent of their life (versus 1-74% or never worked); viii) 1 period of ill health or less, and vii) never suffered hunger or an adverse event. *, **: significant at the 0.05 and 0.0l levels, respectively

9. Quality of life and grandparental childcare: English Longitudinal Study of Ageing

Our analysis using ELSA data finds that higher intensity grandchild care is associated with poorer health for grandparents while lower intensity grandchild care is associated with better health. However once prior health is taken into account, these associations disappear.

Our analysis using ELSA data finds that higher intensity grandchild care is associated with poorer health for grandparents while lower intensity grandchild care is associated with better health. However once prior health is taken into account, these associations disappear.

We also use the English Longitudinal Study of Ageing (ELSA) to examine the relationship between grandparental childcare and quality of life. ELSA, like SHARE, collects data on health and socio-economic circumstances at each wave. In addition, it also collects information on quality of life (QoL) using the CASP-19. This is a widely-used measure of wellbeing developed for older people and spanning four domains: control, autonomy, self-realisation and pleasure (Howel, 2012, Hyde et al., 2003, Netuveli et al., 2006).

Previous work has investigated cross-sectional and longitudinal differences in CASP-19 scores for selected characteristics using ELSA. These studies have all highlighted the importance of health and socio-economic circumstances. For example, research by Netuveli and colleagues (2006) found a relationship between financial hardships, functionally limiting disease and QoL at wave 1. Work on changes in QoL between waves 1 and 2 shows that health improvements (for example, with respect to depression, pain, etc) are significantly related to improvements in QoL (Howel, 2012).

Earlier work has also shown a positive relationship between looking after a grandchild in the past week (the only direct measure of grandparental childcare available in ELSA) and QoL (Breeze and Stafford, 2010). Thus grandparents who looked after a grandchild in the past week are significantly more likely to report higher quality of life scores. Here we investigate whether this relationship persists over time once prior quality of life is controlled for. As QoL is a continuous measure we use linear regression to examine the longitudinal association between grandparental co-residence and grandchild care in the past week and quality of life at follow-up across three waves of ELSA.

ELSA 2002/03-2006/2007

ELSA is a nationally representative longitudinal study of persons aged 50 and over and their partners. We use the first three waves of data collected. ELSA's has information on close to 12,000 people in England.

ELSA, like SHARE, collects a wealth of health and socio-economic information. It is a better source for information on quality of life as more respondents completed this module in ELSA than in SHARE. However, ELSA has more limited information on grandparents in family life. Using this data source we can only identify whether a grandparent is living with a grandchild and whether a grandparent has looked after a grandchild in the last week (and if so, for how many hours).

Table 11 presents mean CASP-19 scores by selected grandparent characteristics (focusing on cross-sectional data from wave 1 only). CASP-19 consists of 19 items which are used to create an overall summary score; scores range from 0 to 57. Higher scores indicate greater wellbeing. Table 11 shows that mean CASP-19 scores are significantly lower for grandparents who live with a grandchild in comparison to those who do not, indicating worse QoL. In contrast, CASP-19 scores are significantly higher among those who have looked after a grandchild in the last week in comparison to those who have not, indicating better QoL scores. Such findings suggest that, as other studies have stated, higher intensity grandchild care is more likely to be associated with poorer health whereas lower intensity grandchild care is more likely to be associated with better health.

TABLE 11: Mean CASP-19 scores by co-residence with grandchild and whether looked after grandchild in last week, wave 1

Grandparent Characteristics	Mean	SD	Range (0-57)	N	Sign. test
Living arrangements					F value= 19.92**
Not live with grandchild	42.12	8.65	Jul-57	5692	
Live with grandchild	38.84	10.29	Oct-56	144	
Grandchild care					
Not looking after grandchild in last week	41.96	8.78	Jul-57	5434	F value = 6.88**
Look after grandchild in last week	43.16	7.82	15-57	402	

Source: ELSA 2002/3. Note: ** < and *<.05. Data are weighted using the cross-sectional Wave 1 weight

Table 12 presents results of two different linear regression models. Model 1 looks at the relationship between CASP-19 scores at Wave 3 and living with a grandchild adjusting for gender and age only at baseline.[7] In this table and Table 13 we present unstandardised regression coefficients which estimate the effect of each unit increase in the select category on QoL score. For example, being in the lowest wealth tertile reduces QoL scores by 1.4 units. This model shows that when only gender and age are taken into account, living with a grandchild significantly reduces grandparents' QoL by around 2 units. Model 2 looks at the same relationship but includes other socio-economic and demographic characteristics at baseline. Most important is the inclusion of QoL at baseline. Once these factors are controlled for the longitudinal association between living with a grandchild and QoL is no longer statistically significant.

It is not possible to use ELSA data to more fully explore the effects on health over time of providing grandchild care because the questions used in the survey are insufficiently detailed and do not enable us to build a clear picture of care provision of care provision over time.

TABLE 12: Linear Regression of Quality of Life at Wave 3 on Co-residence with Grandchildren, Other Demographic and Socio-economic Characteristics, and Prior Quality of Life

	Model 1		Model 2	
Baseline characteristics	Coefficient	SE	Coefficient	SE
Intercept	6.29	6.36	-0.98	5.13
Female[a]	0.07	0.29	0.24	0.22
Age	1.13**	0.19	0.44**	0.15
Age squared	-0.01**	0	-0.00**	0
Lowest wealth tertile			-1.35**	0.29
Middle wealth tertile[b]			-0.81**	0.27
Number of grandchildren			-0.07	0.65
CASP-19			0.70**	0.01
Living with a grandchild[c]	-2.14*	0.98	0.94	0.87
Adjusted R-square	0.02			0.5
N	3543			3149

Source: ELSA 2002/3, 2004/5, 2006/7.
Notes: **<.01. and *<.05. Data weighted using longitudinal weight for 3 waves. Reference categories are: a) male; b) highest wealth tertile; c) not coresiding with a grandchild (at wave 2). Number of grandchildren and CASP-19 are continuous variables.

[7] Age and age squared are included in the model (rather than age as separate dummy variables) as there is a non-linear relationship between age and quality of life: better at younger ages and worse at older ages

Table 13 presents a similar analysis for the relationship between QoL and looking after a grandchild in the past week. Model 1, which once again only adjusts for gender and age, shows a positive association over time between looking after a grandchild and QoL. For instance, looking after a grandchild significantly increases QoL by 2.2 units when only gender and age are taken into account. However, once other factors are introduced into the model (Model 2) the relationship between looking after a grandchild and QoL is no longer significant.

Overall, these results show no significant association over time between either co-residing with a grandchild or looking after a grandchild in the past week and QoL once prior health status is taken into account.

TABLE 13: Linear Regression of Quality of Life on Looking After Grandchildren in the Past week, Other Demographic and Socio-economic Characteristics, and Prior Quality of Life

	Model 1		Model 2	
Baseline characteristics	Coefficient	SE	Coefficient	SE
Intercept	6	6.36	-0.99	5.13
Female[a]	0	0.29	0.23	0.22
Age	1.13**	0.19	0.44**	0.15
Age squared	-0.01**	0	-0.00**	0
Lowest wealth quintile			-1.32**	0.29
Middle wealth quintile[b]			-0.80**	0.27
Number of grandchildren			0.33	0.54
CASP-19			0.70**	0.01
Looking after a grandchild in the past week[c]	2.48**	0.87	0.32	0.69
Adjusted R-square	0.02		0.5	
N	3543		3149	

Source: ELSA 2002/3, 2004/5, 2006/7.
Notes: **<.01. and *<.05. Data weighted using longitudinal weight for 3 waves. Reference categories are: a) male; b) highest wealth tertile; c) not coresiding with a grandchild. Number of grandchildren and CASP-19 are continuous variables.

10. Conclusion

Overall, our evidence suggests a positive relationship between grandparental childcare and health over time using SHARE.

Once prior health status and life-course circumstances are taken into account, grandparental childcare (and in particular non-intensive grandchild care) still shows a positive relationship with health in SHARE.

Overall, our evidence suggests a positive relationship between grandparental childcare and health over time using SHARE. While cross-sectional analyses show that those who are not looking after grandchildren, and those who are looking after grandchildren intensively, are more likely to report poor health in comparison to those who look after grandchildren non-intensively, longitudinal analyses show that those who provide grandchild care (particularly those providing non-intensive childcare) are significantly less likely to report poor health. Our findings using SHARE support recent work in China and Taiwan that also suggests that providing grandchild care at lower intensity levels is positively related to health.

A key focus of our study was an examination of the link between grandparental childcare and health taking into account prior health status as well as socio-economic circumstances across the life course. As our cross-sectional analyses using SHARE show that those in more disadvantaged circumstances are more likely to end up providing intensive grandchild care, it was necessary to rule out that the association between grandparental childcare and health was due to this earlier disadvantage rather than to grandchild care per se. However, once prior health status and life-course circumstances are taken into account, grandparental childcare (and in particular non-intensive grandchild care) still shows a positive relationship with health in SHARE. This finding points to the need for public policy to support the role of grandparents as caregivers for their grandchildren, at non-intensive levels. At the moment the informal caring role of grandparents especially grandmothers is largely hidden. There is a need for better recognition of this vital role across different policy domains, including pensions and retirement, childcare, housing and social security. Policies to support active ageing need to explicitly recognise and value older people's involvement in their grandchildren's lives, both for the benefit of children, their families and wider families, but also because of the benefits for older people's health and wellbeing.

The difference between our results and work from the U.S., which shows a negative impact of grandparental childcare on health, is most likely due to the measure of grandchild care used. In the U.S., as previously discussed, most studies focus on higher intensity levels of care, for example, grandparents who are 'primary caregivers' for their grandchildren. Evidence from China also suggests that grandparents who provide higher intensity levels of care (that is, grandparents who co-reside with their grandchildren and provide 15 or more hours of care per week) are more likely to experience health declines.

In addition, although in our analysis of SHARE we take into account prior health status and earlier socio-economic circumstances, several important indicators are missing which are also likely to affect who provides care. For example, we do not have a measure of the quality of the relationship between grandparents, their children and grandchildren. This is likely to affect which grandparent is selected to look after grandchildren, which in turn is likely to be related to health in later life.

In our cross-sectional examination of ELSA we find that living with a grandchild is negatively associated with quality of life, whereas looking after a grandchild in the past week shows a positive relationship. However, in longitudinal analyses once prior quality of life is taken into account the relationship between these two measures and grandparental health is no longer significant.

Key to our study is how grandparental childcare is measured. To answer our questions datasets need to collect information on the availability of kin (for example, on children and grandchildren) as well as on transfers between kin (for example, providing care to grandchildren). While SHARE provides detailed information for many European countries on the frequency and nature of grandparental childcare, the data on such transfers in ELSA is limited.

Overall, in the UK it is surprising how little we continue to know about the family lives of older people. Critical to understanding support in later life is a clear picture of the characteristics of children and other close relatives (Hermalin, 2000). Few British data sets provide information or details about the children, grandchildren and other relatives of older parents (Grundy et al., 1999, Henretta et al., 2001). Moreover, without detailed information on children (e.g. whether they live close by, are married, employed, and have children of their own), it is difficult to determine the influence of kin on support. For example, in ELSA other than age and sex we know little else about respondents' children. In addition, while we know whether respondents in ELSA have grandchildren, we know little else about them (for example, their ages and whether they live close by). Moreover in the UK, unlike in the U.S., we do not know whether grandparents are primary caregivers for their grandchildren (kinship carers).

In addition, information is urgently needed on detailed transfers between older people and their kin: relatively little is known about who helps whom in families in the UK and how. For example, while ELSA collects information on whether the respondent has looked after someone in the past week (that is, the 'active provision of care'), and more recently in Wave 4 information on receipt of care, no information is collected on routine transfers (for example, on whether respondents regularly or frequently look after grandchildren). Thus, our measures of grandparental childcare in ELSA are limited to co-residence with a grandchild and to whether or not grandparents have looked after a grandchild in the past week. More specific measures, such as those available in SHARE and in other datasets such as the U.S. Health and Retirement Survey (HRS) (on which both SHARE and ELSA are modelled) are critical for a better understanding of the relationship between grandparental childcare and health.

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