



The association between grandparenthood and mortality[☆]



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ABSTRACT

Few studies have so far enquired into the relationship between being a grandparent and health and mortality outcomes, and the majority of these have looked exclusively at grandparents who take over parenting responsibility for their grandchildren. This study aims to fill this gap in the knowledge of how family structure is linked to mortality by focusing on whether being a grandparent in itself is associated with mortality. Norwegian parents in the age groups 40–73 are analysed using register data that encompass the entire population. The analysis is based on discrete-time hazard models, estimated for the years 1980–2008. I find a mortality disadvantage of being a grandfather, which is particularly strong for those who become grandfathers at an early age. Controlling for characteristics of the middle generation such as sex, education and marital status does not remove the association. For men the mortality disadvantage is not influenced by the number of grandchildren or the number of sets of grandchildren. For women there is significantly higher mortality only for those who become grandmothers in their thirties or forties, who are married or who have many children. Becoming a grandmother after age 50 is associated with significantly lower mortality. At least part of these associations are likely due to selection effects, however they may also to some extent be caused by the individuals' relationship with grandchildren, and children who have become parents themselves.

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1. Introduction

There has long been a strong research interest in the effect of family structure on mortality. The majority of these studies have inquired into the effect of marital status, but lately there has also been a growing interest in the effect of the number of children and even the characteristics of the children. These studies have generally found a protective effect of parenthood (e.g. Grundy and Tomassini, 2006; Grundy, 2009; Grundy and Kravdal, 2010), an effect which is even stronger if the children are highly educated (Zimmer et al., 2007; Friedman and Mare, 2010; Torssander, 2013). Those studies that have done analysis stratified by sex have usually found similar results for men and women, especially in

Scandinavia. This article adds to the literature on the importance of family relations for health and mortality by addressing the possible influence of having grandchildren, which is a key life event that most people experience. In a world of changing family patterns with, among other things, more childlessness, especially among men, and therefore probably a rise in people who do not become grandparents; as well as those who do become grandparents being more likely to see their grandchildren reach adulthood, more knowledge of the links between grandparenthood and health and mortality are called for.

Any association between grandparenthood and health may be due to selection effects. For example, the likelihood of becoming a grandparent, as well as the timing, depends on number of children, age at first birth and the sex of the children as well as their marital status, education, health and personality. These factors may also affect or be associated with the parents' health and mortality.

Having grandchildren may also have a direct impact on mortality. According to some studies, most grandparents describe the grandparent role as rewarding and “contributing enormously to their quality of life” (Clarke and Roberts, 2004; Ross et al., 2005). Interaction with grandchildren often occurs in the form of childcare. By looking after the grandchildren the grandparents not only reap the benefits of their role, they may also strengthen the tie with their own children. On the other hand, if the grandparents take on

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too much responsibility for the upbringing of their grandchildren it can have negative consequences for their health. Besides, the presence of grandchildren may make the children less able to provide the support that their parents may need.

The studies that have so far looked at the effect of grandchildren on health or general wellbeing have mainly focused on childcare, and the majority of these focus on US grandparents who have taken on parenting responsibilities for their grandchildren (Glaser et al., 2010). These studies mainly find that custodial grandparents have worse self-reported health, more functional limitations and more depressive symptoms than other grandparents (e.g. Grinstead et al., 2003). However, taking on parenting responsibilities is very rare among Norwegian grandparents. The few other studies that exist focus on comparing grandparents who provide some care to their grandchildren to those who do not. Grundy et al. (2012) report that grandfathers who help grandchildren for four or more hours per week have a higher level of life satisfaction and grandmothers who help for four or more hours per week are less likely to be depressed than those who provide no help. Hughes et al. (2007) find that grandmothers who babysit grandchildren have a better reported health such as fewer functional limitations and less depressive symptoms, and are more likely to exercise. They find no significant effects for grandfathers.

So far no studies on the association between grandparenthood and health have used a dataset covering a whole population nor have there been any inquiries into the possible link between being a grandparent and mortality. The goal of this study is to explore the relationship between having grandchildren and longevity in a Nordic setting, using register data that include the entire Norwegian population. The analysis is based on discrete-time hazard models, estimated for the years 1980–2008 for women and men in the age groups 40–73 who have at least one child themselves. Obviously, several factors affect both an individual's mortality and the number of grandchildren he or she has. These include the number of children the individual has and how old these children are, which in turn are partly determined by the individual's age, education and marital status. Additionally, their children's fertility is influenced by *their* sex (with more men remaining childless), education and a number of other characteristics, which may also have a more direct impact on the health and mortality of the older generation. I take such potentially confounding factors into account.

Models are estimated separately for women and men throughout the analysis, as it is plausible that effects of grandchildren (and variations therein) differ between the sexes. First, I estimate models for all women and all men. In the next step, I consider the possibility of interaction effects by stratifying according to a few characteristics of the (potential) grandparent and his or her children: the number of children (primarily because this makes it easier to test whether inclusion of controls for children's characteristics matter), age, marital status and education, age at becoming a grandparent, and whether he or she is a maternal grandparent. As explained below, the literature suggests that such conditioning effects may exist.

2. Background

2.1. Possible causal effects

A protective effect of grandchildren seems quite plausible. A German study concludes that 92% of the grandparents consider their grandchildren to be either important or very important to them (Mahne and Motel-Klingebiel, 2012). Similarly, a UK study concludes that for 15 percent of grandparents the relationship with their grandchildren is the most important relationship in

their life, and for 70 percent it is one of the most important (Clarke and Roberts, 2004). Elderly without grandchildren are less likely to be able to name persons who make them happy, and grandparents are also somewhat less lonely (Pashos, 2009 quoted in Pashos, 2010). Moreover, grandparents are more likely to be very satisfied with life (Powdthavee, 2011). Furthermore, grandparenthood may contribute positively to the feeling of purpose in life which is an important factor for having a satisfying old age (Rowe and Kahn, 1997). Older grandchildren are also often seen to provide emotional support (Armstrong, 2005).

Another possible type of reward from grandparenthood is that involvement with grandchildren, or even just their birth, may lead to increased contact with the children (Régnier-Lolier, 2006; Fischer, 1981) and closer emotional relationships with them (Golish, 2000). One study also finds that children who had children themselves live closer to their parents (Lundholm and Malmberg, 2009). Indeed, Friedman et al. (2008) contend that grandparents invest in grandchildren as a means of strengthening their bonds with their children rather than in order to gain a stronger bond to their grandchildren *per se*.

It could also be hypothesised that grandchildren are a source of help and care for ageing grandparents, through providing either care and assistance or financial support. However, the evidence is rather mixed. On the one hand, some studies suggest that grandchildren step in to provide care in times of particular need. For example, Esbensen et al. (2004) find in a study of Danish elderly who had recently been diagnosed with cancer that 24 percent received help from their grandchildren. On the other hand, a survey showed that in Denmark and Sweden respectively, only 0.6 percent and 3.8 percent of adults aged 50 and older received financial support from their grandchildren, and around 3% received non-monetary transfers (Attias-Donfut et al., 2005). Similarly, Hoff (2007) finds that only 1 percent of grandchildren provide instrumental assistance to their grandparents aged 62–85. Overall, there is little evidence that grandchildren in Europe provide care for their grandparents (Glaser et al., 2010).

There might also be some negative effects of grandparenthood. For example, children who have children of their own might have less time to help their elderly parents. However, the majority of women in the US and UK who are caring for children are more likely to help their parents than those who are not helping children (Grundy and Henretta, 2006). Having grandchildren can also mean additional worry, and if the parents expect grandparents to provide extensive childcare it can also be detrimental to their quality of life, especially if the parents take them for granted, or if they become primary caregivers (e.g. Coall and Hertwig, 2010; Clarke and Roberts, 2004). It might also be that becoming a grandparent influences how people perceive themselves, for example making them feel older.

Given the number of grandchildren, one may speculate whether the number of “sets” of grandchildren, i.e. the number of children who themselves have children, has some impact as well. In particular, a grandparent may want to provide some grandparental support to all his or her children – by helping with childcare or just showing interest in their child(ren). Then, the involvement will be stronger if the individual has two children, each of whom has one child, than if he or she has one child who has two children. My analysis will focus largely on the number of grandchildren, but some attention will also be paid to the number of sets of grandchildren.

2.2. Selective influences

A relationship between number of grandchildren and mortality may reflect the fact that several individual and societal

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