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The long arm of childhood circumstances on health in old age: Evidence from SHARELIFE

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ABSTRACT

Socioeconomic status (SES) and health during childhood have been consistently observed to be associated with health in old age in many studies. However, the exact mechanisms behind these two associations have not yet been fully understood. The key challenge is to understand how childhood SES and health are associated. Furthermore, data on childhood factors and life course mediators are sometimes unavailable, limiting potential analyses. Using SHARELIFE data (N = 17230) we measure childhood SES and health circumstances, and examine their associations with old age health and their possible pathways via education, adult SES, behavioural risks, and labour market deprivation. We employ structural equation modelling to examine the mechanism of the long lasting impact of childhood SES and health on later life health, and how mediators partly contribute to these associations. The results show that childhood SES is substantially associated with old age health, albeit almost fully mediated by education and adult SES. Childhood health and behavioural risks have a strong effect on old age health, but they do not mediate the association between childhood SES and old age health. Childhood health in contrast retains a strong association with old age health after taking adulthood characteristics into account. This paper discusses the notion of the 'long arm of childhood', and concludes that it is a lengthy, mediated, incremental progression rather than a direct effect. Policies should certainly focus on childhood, especially when it comes to addressing childhood health conditions, but our results suggest other important entry points for improving old age health when it comes to socioeconomic determinants.

1. Introduction

Social scientists and public health researchers who are interested in understanding the determinants of health in later life are now increasingly using life course data and analytical methods to gain a better understanding of how social circumstances and health are associated, from childhood to old age. They may, for example, examine childhood SES to learn more about the fundamental social causes of adult mortality (Hayward & Gorman, 2004), based on the assumption that health in later life may be a result of complex combinations of circumstances taking place over time (Davey Smith, Ben-Shlomo, & Lynch, 2002).

This research is important because child poverty is on the rise, even in EU countries. For instance, since 2008, child poverty rates in Ireland, Croatia, Latvia, Greece and Iceland have risen by over 50% (Georgi, 2014). In addition, a recent report by UNICEF (2012) states that " . . . failure to protect children from poverty is one of the costliest mistakes a society can make. The heaviest cost of all is borne by the children themselves. But their nations must also pay a very significant price – in reduced skills and productivity, in lower levels of health and educational achievement, in increased likelihood of unemployment and welfare dependence, in the higher costs of judicial and social protection systems, and in the loss of social cohesion."

There are several scientific questions deriving from this statement: If, during childhood, individuals have already experienced less-fortunate situations (lower levels of either SES or health, or both), will their health in adulthood and old age suffer as well? Are they able to improve their health? Do they have capacity to overcome the disadvantages of low SES or poor health?

These questions incorporate the two general causal directions between SES and health, namely social causation and health selection, which might both contribute to overall health inequalities over the life course (Kröger, Pakpahan, & Hoffmann, 2015; Stavola et al., 2006; Warren, 2009). In addition, an observed association between SES and health might also be the result of common background factors that influence both SES and health

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over the life course. However, this is beyond the scope of our study (see discussion).

We adopt the life course perspective because it enables us to focus on those critical points or periods (in terms of timing and duration) when both an individual's social circumstances and their health may be actively improving or deteriorating (Graham & Power, 2004). In addition, it represents a solid foundation for understanding the structural determinants of socioeconomic inequalities and their subsequent relationship to health over time (Corna, 2013). For example, men's mortality is associated with their childhood circumstances, including family living arrangements, their mother's work status, whether they grew up in a rural or urban environment, and their parents' nativity (Hayward & Gorman, 2004).

SES is broadly defined as the relative position within a hierarchical social structure, based on wealth, prestige and power (Mueller & Parcel, 1981). We do not use the term 'status' in the sociological meaning of 'prestige' but for all three of the above resources. In this paper, we define SES as access to those resources – chiefly income, occupation and education – which are necessary to achieve and maintain good health (Shavers, 2007). We do not consider SES as separate from social class, social status, and material circumstances (Krieger, Williams, & Moss, 1997), given that these three theoretical aspects are empirically strongly interrelated. Furthermore, given that the significance of different dimensions of SES changes over the life course (Cutler, Lleras-Muney, & Vogl, 2008), we use different indicators for adulthood SES than for childhood SES. We combine income, occupation and wealth as adult SES indicators in order to see how they contribute to the explanation of pathways from childhood to health in later life.

Our question is: By what mechanisms do childhood SES and childhood health affect old age health? The effects of childhood SES in the long run originate in two related mechanisms: economic capital and human capital formation. Economic capital refers to one's material resources, such as income and assets, used to procure further social status, while human capital refers to one's knowledge and skills, also used to gain social status (Lui, Chung, Wallace, & Aneshensel, 2014). Meanwhile, the effects of childhood health are the result of the development of various well-being indicators – be they cognitive, motoric or linguistic – which have a long lasting impact on health trajectories until old age (Haas, 2006). There are a number of ways in which childhood circumstances can have a lasting impact. First, people with material and social disadvantages in childhood may retain their lower SES in early adulthood, which can have a negative influence on old age health status. Second, poorer children perform less well educationally than better-off children, which in turn could place them in a less favourable situation regarding the acquisition of health-related behaviours and knowledge in old age. Third, children who are exposed to various diseases may suffer negative consequences for their physical and cognitive functioning, thus limiting their chances of acquiring an adequate education and good old age health. Fourth, low childhood SES is detrimental to adult health because of the unfavourable unhealthy environmental exposure associated with inadequate SES. Childhood is important because this is when patterns of physical, emotional and cognitive development are established (Berndt & Fors, 2016).

Numerous studies consistently show that disadvantageous social and economic conditions during childhood are associated with poor health in later life, such as cardiovascular disease and mental health (Agahi, Shaw, & Fors, 2014; Bartley, 2004; Fors, Lennartsson, & Lundberg, 2009; Galobardes, Smith, & Lynch, 2006; Herd, 2016; Kalil, Duncan, & Ziol-Guest, 2016; Kelly-Irving et al., 2013; Kendig, Loh, O'Loughlin, Byles, & Nazroo, 2015; Lundberg, 1993; Poulton et al., 2002; Tubeuf, Jusot, & Bricard, 2012). In particular, Galobardes et al. (2006) conclude that individuals with lower SES during both childhood and adulthood were at elevated risk of developing cardiovascular disease. A recent study by Agahi et al. (2014) concludes that childhood SES is associated with the earlier onset and faster progression of functional health problems such as mobility limitations in mid-life and old age. Examining, on the other hand, the link between childhood health and later life, Latham (2015) concludes that individuals who experienced childhood health problems (childhood disability) may have an increased risk of depressive symptoms in later life.

We contribute to the literature investigating the long arm of childhood by using data on SES and health in childhood, adulthood and old age. We use measurement models for childhood SES and health to account for measurement error in these conditions, addressing a potential downward bias in the association between childhood, adulthood and old age indicators. Given that, for older individuals, childhood experiences took place many decades ago, measurement error is of particular importance, as our study uses retrospective data regarding childhood circumstances. In their literature review, Juneau, Benmarhnia, Poulin, Côté, & Potvin (2015) point out that published estimates of agreement with historical records range from 53,7% to 80%, which is a considerable variation. This means that the loss of accuracy ranges from 20% to 50%, and it is therefore advisable to account for measurement error. In addition, we consider the total effect of both childhood SES and health on old age health – that is, not only their direct effects, but also the ones that pass through various intervening variables.

We use self-rated health in old age as our outcome variable, since it gives a picture of individuals' general health status that goes beyond the simple interpretation of single health conditions (Bowling, 2005). It is a holistic and comprehensive representation of health that captures state of well-being and predicts mortality (Hardy, Acciai, & Reyes, 2014; Idler & Benyamini, 1997). In fact, some studies report that self-rated health retains some predictive power for mortality even after large sets of objective indicators are adjusted for (Jylhä, 2009). However, we are also aware that self-rated health may not perfectly capture objective differences in health conditions between individuals, since it is subjectively measured. Instead, it could reflect differences in reporting behaviour (Jürges, 2007; Kaplan & Baron-Epel, 2003). Therefore, in Appendix D, we use grip strength as an objective health measure in old age. It is both indicative of overall muscle and physical functioning and predicts mortality (Cooper et al., 2011).

We explore and test the associations between childhood circumstances and old age health using a set of childhood SES and health indicators, applying it in multiple European countries. To be more specific, this study tests the hypotheses exploring which pathways of childhood SES and health have a lasting impact on health in old age, and investigates the extent to which these associations can be attributed to differences in education, adult SES (occupation, income and wealth), behavioural risks (smoking and physical activities) and labour market deprivation.

2. Data and method

The data we use is based on SHARELIFE, i.e. the third wave (2008/2009) of the Survey of Health Ageing and Retirement in Europe (SHARE), which is a European household panel survey. SHARE collects micro-data on the health and SES of individuals aged 50 and over across 15 European countries, and captures the mechanisms of economic, health and social factors shaping older people's living conditions (Börsch-Supan et al., 2013). The survey was designed to be comparable across countries and was harmonised with The Health and Retirement Study (HRS) and The English of Longitudinal Study of Aging (ELSA). The SHARELIFE questionnaire covers many important areas of the respondents' life