Poverty and transitions in health in later life☆

Maja Adena [c, a], Michal Myck [a, b, *]

[a] Centre for Economic Analysis (CenEA), Szczecin, Poland
[b] DIW, Berlin, Germany
[c] WZB, Berlin, Germany

ARTICLE INFO

ABSTRACT

Using a sample of Europeans aged 50+ from 12 countries in the Survey of Health, Ageing and Retirement in Europe (SHARE), we analyse the role of poor material conditions as a determinant of changes in health over a four- to five-year period. We find that poverty defined with respect to relative income has no effect on changes in health. However, broader measures of poor material conditions, such as subjective poverty or low wealth, significantly increase the probability of transition to poor health among the healthy and reduce the chance of recovery from poor health over the time interval analysed. In addition to this, the subjective measure of poverty has a significant effect on mortality, increasing it by 65% among men and by 68% among those aged 50—64. Material conditions affect health among older people. We suggest that if attempts to reduce poverty in later life and corresponding policy targets are to focus on the relevant measures, they should take into account broader definitions of poverty than those based only on relative incomes.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

In the developed world, demographic trends have made poverty in later life a central concern for policymakers. This population ageing is accompanied by worries about the financial sustainability of pension systems and systems of old-age income support. Ensuring the current and future stability of these systems comes at the cost of inability to guarantee adequate pensions and material safety nets for all individuals. Thus, changing population structures are increasingly exacerbating the trade-off between current income and future pension provisions (OECD, 1998; European Commission, 2012). Naturally, in most discussions of poverty, improving individuals' material circumstances is not only an objective on its own but also a way to improve the quality of life. Health is clearly one of the most important aspects of quality of life in general, and is particularly crucial for policies related to ageing. Better health implies direct improvements in older people's welfare and also translates into potential savings on health expenditure, the size of which will grow as the proportion of older people increases in the coming decades.

There is growing evidence that poverty is correlated with outcomes at later stages in life, in particular with physical and mental health (Dahl and Birkelund, 1997; Huisman et al., 2003) as well as broader aspects such as life satisfaction and happiness (Adena and

Myck, 2013). Kok et al. (2008) show that low levels of wealth and education are positively correlated with poor general health and with some specific health outcomes such as heart attacks and diabetes, while Delavande and Rohwedder (2011) find correlations between poverty and the self-assessed probability of earlier death. Loss of employment has been shown to affect both mental health and mortality (Clark and Oswald, 1994; Morris et al., 1994). Haan and Myck (2009) have also demonstrated dual causality between health and employment in the joint model of risks. Poor material conditions are thus very likely to be correlated with poor health, but the complexity of the relationship makes identifying the role of poverty extremely difficult (Adams et al., 2003). Although the epidemiological literature devotes considerable attention to the relationship between socio-economic inequalities and health (e.g. Hahn et al., 1995; Mackenbach et al., 1997; Singh-Manoux et al., 2003; Demakakos et al., 2008), the link between material circumstances and broader life-quality outcomes in older age is still relatively poorly understood.

Since Grossman's seminal contribution (1972), the economic literature has adopted an approach in which health is treated as a stock of human capital that produces healthy time. The stock of health can be increased by making investments in health and depreciates with age. The relationship between health and various economic outcomes, such as employment and material well-being, is thus extremely complex. Good health can, on the one hand, increase employment opportunities and productivity and with them lifetime resources. On the other hand, material resources facilitate higher investment in health stock through medical treatment, care and other aspects of a healthy lifestyle, while other aspects of human capital such as education contribute to better health by improving the individual's efficiency in "producing" good health. Financial resources are thus very likely to be strongly correlated with health. This may be particularly the case if, as the Grossman model suggests, the shadow price of health grows with age due to increased depreciation of health stock in later life. This depreciation can only be slowed down by increased investment, which in turn implies that limited material resources should be reflected in a more rapid deterioration in health.

The public debate concerning material conditions in later life continues to focus on income-based "old-age poverty", although there are a number of important reasons, related to Grossman's theory, why this measure is likely to be a poor approximation of material well-being — particularly among older people. Deterioration in health in the Grossman model can be slowed down by health investments out of the resources remaining in individuals' "full wealth". Limitations in these resources restrict investments and lead to faster deterioration in health. Among older individuals, current income may capture only a fraction of the resources at their disposal. Thus we consider a wealth-based poverty measure as potentially more appropriate in this context than an income-based measure. At the same time, numerous other aspects of life, such as disabilities, mobility limitations and support through social networks are not taken into account in income comparisons, and they may significantly affect the level of resources available for health improvements conditional on the current level of income. Therefore the third measure of material resources we consider is a broad subjective assessment of individual material conditions.

An additional problem in analysing the relationship between health and material conditions is how to measure the other side of the equation. "Good health" can be expressed through a number of measures that differ in their degree of objectivity. These range from subjective health assessment (Lindeboom and van Doorslaer, 2004; Kalwij and Vermeulen, 2008) to mortality, and also include a long list of intermediate measures covering number of illnesses, number of symptoms of poor health, functional limitations, number of hospital stays and other variables.

It is thus clear, in our view, that more research is required to improve the understanding of the factors determining material well-being as well as the relationship between material well-being and key aspects of older individuals' quality of life. This paper provides a detailed analysis of the relationship between health and different measures of material well-being for the population aged 50+. For this purpose, we use data from the Survey of Health, Ageing and Retirement in Europe (SHARE) for 12 European countries — Austria, Belgium, the Czech Republic, Denmark, France, Germany, Italy, the Netherlands, Poland, Spain, Sweden and Switzerland. We take advantage of the longitudinal dimension of the data to examine the effect of material circumstances on deterioration (or improvement) in several measures of health. The data cover the period from 2006 to 2012 and rely primarily on information from Waves 2 and 4 of the survey. Given the above discussion, in this paper we take a broad spectrum of measures of health ranging from self-assessed health, through measures related to symptoms of poor health and functional limitations in activities of daily living, to the most objective measure, namely mortality. Transitions in these measures of health are examined conditional on three different measures of poor material conditions — income-based relative poverty, self-declared difficult material conditions, and poverty as reflected by occupying a low relative position in the assets distribution.

2. SHARE data and sample statistics

The analysis in this paper focuses on transitions in health status between Waves 2 and 4 of the SHARE survey (Börsch-Supan and Jürges, 2005; Schröder, 2011; Malter and Börsch-Supan, 2013a, 2013b). Transitions are examined as binary changes from good to bad health states (or vice versa), conditional on being in the good (or the bad) state in the initial period (Wave 2). We thus analyse determinants of the following transition probability in the case of transition from good to bad states:

$$P(y_{W4} = 1 | y_{W2} = 0) = G(\beta' X_{W2} + \gamma \Pi_{W2}) \tag{1}$$

where $y_{W2} = 0$ stands for being in the good health state in Wave 2 and $y_{W4} = 1$ indicates being in the bad state in Wave 4. X_{W2} is a vector of controls measured at the time of Wave 2 and Π_{W2} is a poverty measure defined at the time of Wave 2. Function $G(\cdot)$, which in our estimations is the logistic function, takes values between 0 and 1. In the case of transition from bad to good states, the empirical specification takes the following form:

$$P(y_{W4} = 0 | y_{W2} = 1) = G(\beta' X_{W2} + \gamma \Pi_{W2}). \tag{2}$$

We use data from Waves 2 and 4 of SHARE collected in 12 countries. Wave 2 interviews were conducted in 2006 and 2007, while Wave 4 took place between 2010 and 2012. The average time between the two interviews was 4 years and 3 months. As we show in Table 1, the Wave 2 sample for the analysed countries includes information on 28,042 individuals aged 50+. The number of interviews repeated in Wave 4 is 17,325 (sample T). Additionally, we have information that 1423 individuals died between Wave 2 and Wave 4 (sample D).

2.1. Health measures

We examine four binary outcomes measuring the health status of respondents. The first measure is subjective self-assessed health status (SAH), which treats individuals as unhealthy if they declare