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Postponement of senescence – results from the Survey of Health, Ageing and Retirement in Europe (SHARE)

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Short abstract

Old age mortality has been postponed to higher ages. However, the consequences of longer lives will depend on whether poor health is also being postponed. The objective of this study was to investigate secular changes in different health measures using data from the Survey of Health, Ageing and Retirement in Europe (SHARE), representing ten European countries. SHARE is an ongoing multi-national longitudinal survey of persons aged 50 and older. SHARE started in 2004-2005 and the latest wave was collected in 2013. Comparing individuals from countries who participated in the first wave (n=24,192) and the latest wave (n=46,762), we found a significant improvement in cognitive function over the 8-9-year period. However, there was no difference in the proportion of limitations with activities of daily living (ADL) and instrumental activities of daily living (IADL). This study confirms improvements in cognitive function during the last decade among middle aged and elderly Europeans.

Introduction

Old age mortality has been postponed to higher ages (1); however, whether there is a postponement of health problems similar to the postponement of mortality is not yet clear. In this study, we investigate potential differences in the postponement of senescence for two waves of Europeans aged 50+ participating in SHARE 8-9 years apart. We focus on traditional health measures known to show an age-related decline encompassing tests of cognitive and physical functioning.

Methods

Study population

SHARE is a multi-national longitudinal survey of people aged 50 and above and their spouses/partners (independent of age) examining health, economic and social factors associated with ageing (2). In this study, we used data for respondents aged 50 and above from wave 1, conducted in 2004-2005, and wave 5, conducted in 2011. Ten European countries, which were part of both waves, were included: Denmark, Sweden, Austria, Germany, Netherlands, France, Switzerland, Belgium, Italy and Spain.

Cognitive function

Cognitive functioning was assessed as a composite of three individual tests. The specific measures included a fluency task, which involved the number of animals an individual could name in one minute, and immediate and delayed recall of a 10-item list. The cognitive composite score (CCS) was defined as the sum of the three standardized components. This was calculated by standardizing each single test to the mean and standard deviation (SD) of the values of the 50-54 year olds in the total study population before summing them into the CCS. If a person had more than one missing component the sum was coded as missing. To facilitate comparison across age groups and to virtually eliminate negative values, the cognitive score was linearly transformed to have a mean of 50 and an SD of 10 in the youngest age group (50-54 years).

Physical functioning

Grip strength was assessed as the maximum score out of four trials (two measurements per hand), recorded with a handheld dynamometer (3). Self-reported measures of activities of daily living (ADL) were assessed by six tasks: dressing, bathing/showering, eating, cutting up food, walking across a room, and using the toilet. If all items could be performed independently the ADL was coded as no limitation and if not, it was coded as having limitation. The instrumental activities of daily living (IADL) were assessed by seven tasks: using a map, preparing a hot meal, shopping for groceries, making telephone calls, taking medications, doing work around the house or garden and handling finances. If all items could be performed independently the IADL was coded as no limitation and if not, it was coded as having limitation.

Statistical analysis

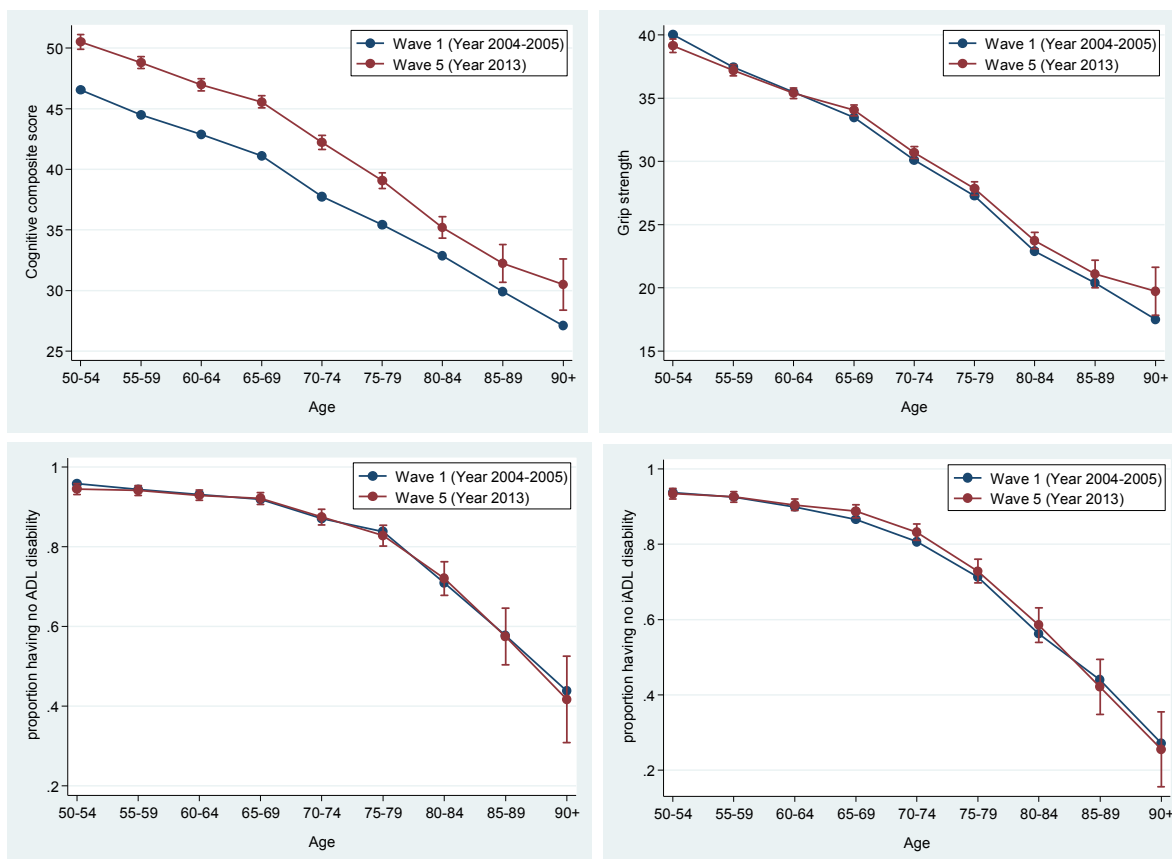
We compared cognitive and physical functioning between waves 1 and 5 in SHARE using regression models. Linear regressions estimated mean differences and 95% confidence intervals (CIs) for the CCS and for grip strength, whereas ADL and IADL were compared between waves using a binominal regression model estimating absolute differences in prevalence of having no disabilities. In all analyses, we included the calibrated cross-sectional individual weights provided by SHARE.

Results

People in wave 5 performed better than people in wave 1 in cognitive functioning. The average of the CCS was significantly higher in wave 5 than in wave 1 (mean increase 3.97, 95% CI 3.37-4.57; figure 1). Although the improvement was significant in all age groups it diminished with increasing age. Grip strength values ranged from 1 to 92 kilograms (mean 34.1 ± 12.1 kg) (table 2). Grip strength was on average similar for waves 1 and 5 (mean increase 0.03; 95% CI -0.16; 0.22), but we noted an age-specific improvement ($p < 0.001$). A small impairment in grip strength was present for the youngest age group, whereas a slight increase was registered for older individuals (aged 65+) (figure 1). The proportions of people having no ADL disabilities were similar in waves 1 and 5

(figure 1) and there was no overall age-specific improvement ($p = 0.647$). For IADL, there was a small overall improvement between waves; however, this improvement was only significant at the ages 65-74 (figure 1).

Figure 1 - Cognitive function, grip strength, activities of daily living (ADL) scores and instrumental activities of daily living (IADL) scores for wave 1 (2004-2005) and wave 5 (2013) of the Survey of Health, Ageing and Retirement in Europe (SHARE)



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