Extended abstract for:

Longer lives and healthy ageing? Sweden in a European comparison

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Background

Life expectancy among in Europe has increased over a long period of time. Globally, Europe and Japan have the highest proportion of the population aged 65 or over. According to Eurostat, the proportion of European older people (65 years and above) is predicted to increase from 17% in 2010 to 30% in 2060 (1). Statistics Sweden estimated the proportion of Swedish older people to increase from 17% in 2000 to 25% in 2050 (2), as a consequence of decreasing fertility and increasing life expectancy. It is a common belief that higher life expectancy reflects healthy ageing process, however, increasing life expectancy by adding extra years to life does not always indicate a healthy ageing process of adding life without disability to the extra years. This concept of "compression of morbidity" to the later part of life, which was postulated by Fries in 1980, proposed that the age of onset of major chronic diseases and disability has been delayed alongside the improvement of life expectancy in developed countries in the last decades (3, 4). The Global Burden of Disease Study estimates in 2013, however, showed that healthy life expectancy varies significantly between countries, and in many countries, the extra years of life were characterized by increased years with disability (5).

Disability-free life expectancy (DFLE) is one of the most common measures of "healthy ageing", which is a composite indicator of mortality and morbidity. The DFLE is defined as the mean length of time that individuals could live without disability if they maintain their current health conditions. Since 1985, the World Health Organization (WHO) has recommended using the DFLE as an important indicator for assessing the achievement of regional "Health for All" goals in Europe. The DFLE is commonly calculated using the Sullivan method, which is based on the age-specific prevalence of disability and standard period life table. The Sullivan method differentiates between years of remaining life free of any activity limitations and those with at least one activity limitation (6). However, many of the published researches, including the statistics in the Global Burden of Disease study, are incomparable, as researchers have used a wide variety of instruments to measure and categorize disability. The scientific and cross-country comparable evidence whether European populations are living longer without morbidity, functional disability or activity limitations and therefore age successfully are yet to be fully established. In this study, we aim to explore whether Swedes above age 50, in the last ten years, experienced an increasing disability-free life expectancy (DFLE?) Are the trends the same in European countries with other welfare regimes?

Methods

Data source

We used cross-national longitudinal data from the Survey of Health, Ageing and Retirement in Europe (SHARE) (7), which focuses on older population aged 50 and in 20 European countries, ranging from Scandinavian to Mediterranean countries. SHARE is a unique longitudinal data that contains information on demographic, economic, health and social factors that describes older population's living conditions in Europe. This information includes individual life circumstances such as self-reported health, psychological wellbeing, physical measures and biomarkers, as well as information on socio-economic, social support and social network. To date, SHARE has collected more than 100,000 individuals data across the participating countries since 2004/2005 (baseline wave 1) and five-panel waves in 2006 (wave 2), 2008 (wave 3/SHARELIFE), 2010/2011 (wave 4), 2013 (wave 5) and 2015 (wave 6). Details of study design for SHARE are described elsewhere (8).

One of the advantages of using the SHARE data is the possibility to compare the living situations and health outcomes among the European older population in countries with different welfare regimes (9).

Study population

We focused on older population aged 50 years and over, in ten SHARE countries (Austria, Belgium, Denmark, France, Germany, Italy, Netherlands, Spain, Sweden and Switzerland) where the Wave 2 and Wave 5 of SHARE data are available. These countries will be grouped into four geographic regions based on their geographic, cultural proximity and welfare systems: Northern Europe-Scandinavian (Denmark, Sweden), Western Europe (Austria, France, Germany, Switzerland, Belgium, the Netherlands) and Southern Europe (Italy, Spain, Greece).

Variables and operational definitions

Disability will be measured based on responses to six questions on limitations of basic activities of daily living (ADL) (dressing including putting on shoes and socks, walking across a room, bathing or showering, eating such as cutting the food, getting in or out bed, and using toilet including getting up or down). Responses to these questions will be combined and dichotomized into no ADL limitation and with at least one ADL limitation.

Statistical analysis

We estimated the prevalence of disability, based on the ADL scale, for each age group (50-54, 55-59, …, and 80+ years) stratified by sex. The person-years of the life table for each age group were multiplied by the age-specific prevalence of disability. The analyses resulted in the total number of remaining life years (total life expectancy/TLE), were differentiated into the years lived with (life expectancy with disability/LED) and without disability (disability-free life expectancy/DFLE) as proposed in the Sullivan method (6). Further, we calculated the difference in DFLE within and between countries. The differences in DFLE between countries in SHARE Wave 2 and Wave 5 were analyzed to assess if the DFLEs converged or diverged over time. All analyses of the SHARE data will be weighted to take into account the age and gender distribution in each country. The weights were generated from official statistics, usually a micro-census by the country's national statistical office, and are available in the SHARE data. All analyses will be done in STATA version 13 (StataCorp Texas, 2014).

Results

We carried out a total of 23,938 respondents aged 50+ in wave 2 and 46,023 respondents in wave 5 with mean age (±SD) of 65.8 years (±10.1) and of 67 years (±11), respectively. Overall, the prevalence of disability varied from 6.5% to 13.2% in wave 2 and from 5.9% to 15.1% in wave 5, as shown in Figure 1. Switzerland and Sweden were countries with the lowest prevalence of disability, and the highest was Belgium. The prevalence of disability increased with age. Though women had higher life expectancy, they were more prevalent to report the disability compared to men. The relative differences of DFLE between Swedes women and men increased until age 70, afterward the differences decreased. Similar trends observed in most of SHARE countries, except in Belgium, Italy and Spain in which older men had extra years of life with disability than older women aged 70 and above.

References

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Figure 1. Prevalence of basic activity daily living among men and women in the 10 SHARE countries within wave 2 and wave 5.

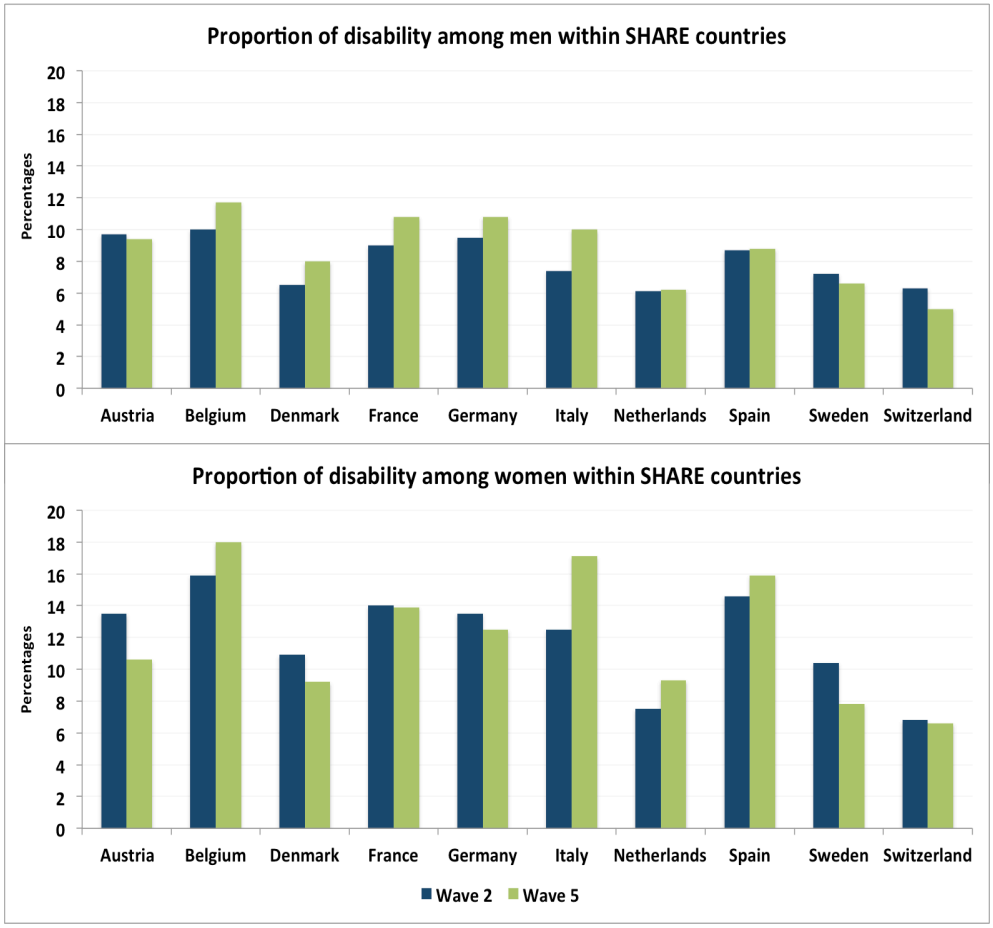

Figure 2. Relative differences between men and women in each age group for total LE (light bar) and DFLE (dark bar) in the 10 SHARE countries for wave 2 and wave 5.