Do Longer Lives Mean Better Health in Spain? Recent Trends in Disease-Free Life Expectancy at Age 65 Years

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Background

Chronic diseases are an important determinant of quality of life, as they cause multiple health impairments and eventually cause death. Moreover, they drive population needs of health care defining their level of utilization as well as which kind of medical interventions are required. In a context of increasing life expectancies, it is essential to know if we are increasing or decreasing our time with disease, especially among the elderly population.

In the literature there is an open debate on how increasing life expectancies have been accompanied or not by improvements in health conditions (Gruenberg, 1977; Fries, 1980; Olshansky et al., 1991; Jagger et al. 2006; Crimmins & Beltrán-Sánchez, 2010). Meaning that if the onset of the disease has not changed over time or it has improved slower than life expectancy, time with the disease has increased, or, in other words, there is an expansion in morbidity. However, if the onset of disease has moved forward to older ages more rapidly than life expectancy has risen, this leads to a compression of morbidity. Measuring healthy life expectancies is an ideal instrument to analyze the evolution of this phenomena, as they take into account morbidity and mortality at the same time, estimating the time that individuals live with a certain condition, disability or disease (Katz et al., 1983; Robine & Ritchie, 1991; Kuyu & GBDS group, 2018).

Spain is a country with one of the highest life expectancies in the world, with 80.4 years for men and 85.7 years for women in 2017 (INE, 2018), but little research has deepened in the study of health expectancies, especially in recent years. More specifically, the analysis of chronic diseases and their evolution as years of life lived with and without disease has barely been explored in the case of the elderly in Spain. In addition, Spain has the particular feature of a health system that is not centralized, and each region (autonomous community, aka CCAA in Spanish) has competences on health planning, public health and healthcare. Therefore, differences in health expectancies across regions could be derived from inequalities in health managements in each region, showing, for example, how each region has faced and recovered from the 2008 financial crisis that caused severe cuts in public health expenditures. Previous studies have shown different results on trends in healthy life expectancies, most of them based in the analysis of disability prevalence. Before 1999, Sagardui-Villamor et al. (2005) show a compression of the number of years lived with disability for both men and women, however the Ehemu group Jagger et al. (2005) show a much more stable trend for the subsequent period (1995-2003) when they take into account people with 65 years-old or more. Both studies confirm that women spent more years with disability than men as seen in other countries (Kuyu & GBDS group, 2018). Since 2006 Eurostat publishes annually healthy life expectancies

for European countries, including Spain, and they show the same trend of compression of morbidity observed before, where life expectancy without disabilities at birth continues to increase since 2006, but this is not so clear at age 65, as the estimate is very stable, and only since 2015 we can see the same trend that with total life expectancy without disabilities. In the case of a Spanish regional study about disease-free life expectancy and life expectancy without mobility limitations, Solé-Auró & Alcañiz (2015) found an expansion of morbidity in Catalonia from 1994 to 2011.

Objective

In this paper we estimate the change between 2012 and 2017 in length of life with disease and the disease-free life expectancy in Spain and Spanish regions (CCAA). We focus in the prevalence of the specific chronic diseases and health conditions of cancer, chronic back pain, diabetes, stroke and heart disease and two risk factors closely related with many health problems: hypertension and cholesterol.

Methods

Data from life tables in Spain come from the National Institute of Statistics of Spain (INE as per its Spanish acronym) and prevalence rates of disease come from the National Health Surveys (ENS as per its Spanish acronym) of 2012 and 2017.

To estimate life expectancies with disease, and disease-free life expectancies we use the Sullivan method (Sullivan, 1971). This is a method that estimates the number of expected years that an individual can live at a certain age in a healthy or unhealthy state, given that the individual experiences the same prevalence rates of disease that the population in that year. The estimation is done by using prevalence data by age groups (5 years' age groups) by sex applied to an abridged life table.

In order to keep concordance between years, we could not use all the diseases reported in each database. For example, arthrosis was excluded from the analysis, as the definition changed from 2012 to 2017. Once we estimated diseases prevalence at the level of autonomous communities in Spain, we encountered problems with data availability for some regions, as they are too small to report information for each disease. Therefore, we had to exclude Ceuta and Melilla, and we used 85 years and over as the final age interval in the life table.

Preliminary results

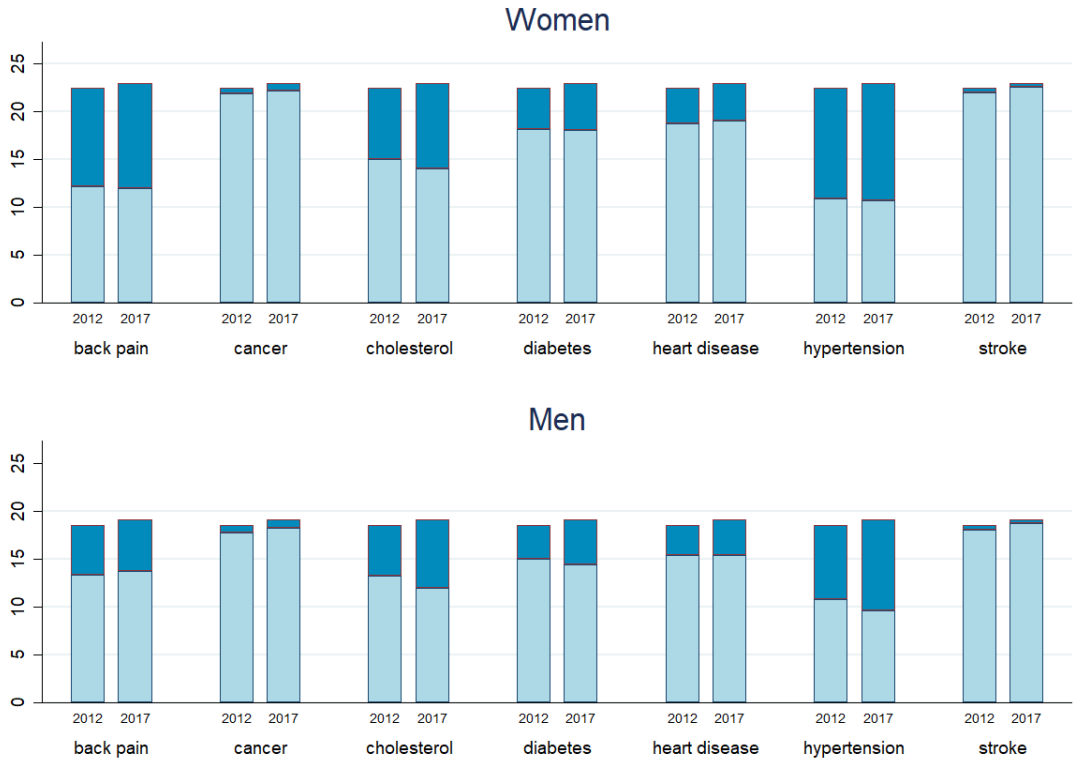
Here we analyze results of life expectancies with and without disease for Spain in 2012 and 2017. Figure 1 summarizes results showing the change in life expectancy without and with disease for women and men. First, we can see how life expectancy at age 65 has increased over the 5-year period, for both men and women, where men have increased their life expectancy a little bit more than women (0.6 years compared to 0.5 years for women). Results for each disease are diverse and differ also by sex. Having hypertension is the most prevalent risk factor we observe here, meaning that people will spent around

half of the time left at age 65 with it, being more important for women in both years. This is similar in the case of back pain for women, as well, although it is much less important for men. On the contrary, cholesterol, diabetes, heart disease and cancer are conditions that men spent more years with them than women.

The number of years with disease have increased for all diseases during this period, with the exception of stroke for men, and in any case the change has happened in a very different manner for each disease. While living with cholesterol has increased in 1.5 years for women, and almost 2 years for men, living with cancer has only increased 0.3 years for women and 0.05 years for men. In relative terms, it has also increased the percentage of life expectancy living with disease for all the health conditions explored here, again, with the exception of stroke for men. This means that during this period an expansion of morbidity has occurred for both elderly women and men for almost all diseases.

In the final paper we will extend the analysis for specific Spanish regions in order to study more carefully inequalities across the territory.

Figure 1. Life expectancy living without and with disease at age 65 for women and men in Spain, 2012 and 2017.



Note: light blue refers to years of life expectancy without disease, and dark blue refers to years with disease or risk factor.

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