Very recent changes in life expectancy in Spain: men are getting closer*

Juan Manuel García González,[1*]

[1]Department of Sociology, Universidad Pablo de Olavide, Spain

*To whom correspondence should be addressed: jmgargon@upo.es

Abstract

Introduction and framework. As in other countries, life expectancy in Spain has risen steadily during last century. From 1910 to 2014, life expectancy at birth rose from 40.9 (42.0, females; 39.7, males) to 82.9 years (85.6; 80.1), and life expectancy at 65 rose from 10.2 (10.5; 9.8) to 21.1 years (22.9; 19.0). The life expectancy at birth and at 65 years-old gap between sexes has widened through time but, in very recent years, this widening has stopped and the gap is narrowing ostentatiously: progress is faster in men than in women. In this paper we try to explain a) why this gap is getting shorter, and b) what is happening at 65 years old, both in the period 1980-2014.

Data. Data on causes of death in Spain in the period 1980-2014, from Spanish National Statistics Institute (INE), and Spanish period life tables in 1980-2012, from Human Mortality Database, and 2013-2014, from INE.

Method. Decomposition of differences in life expectancy by sex and age, and by causes of death.

Results and preliminary conclusions. The gap between males and females has been narrowing during last 20 years, basically due to better improvements in male mortality in the age range from 0 to 75 years old. In epidemiological terms, changes in mortality in the main groups of causes of death have been favorable to women, but this trend has been changing through time.

*This research is supported by an I+D+i Research Project, Ministry of Economy and Competitiviness, Ref. CSO2014-57410-JIN. Asimilacin laboral e integracion social en flujos migratorios Sur-Sur y Sur-Norte. El caso de Amrica Latina y el Caribe, granted to the University of Salamanca.

Introduction

As in any demographically advanced country, life expectancy at every age in Spain has risen steadily during last 100 years. From 1910 to 2014, life expectancy at birth rose from 40.9 (42.0, for women; 39.7, for men) to 82.9 years (85.6, women; 80.1, men); and life expectancy at 65 rose from 10.2 (10.5, women; 9.8, men) to 21.1 years (22.9, women; 19.0, men).

At the beginning of the 20th century, it was mainly due to improvements in infant mortality and decline in infectious diseases mortality, whereas at the end of the century and the beginning of the 21th, the rise has been mainly due to improvements in mortality at advanced ages and the so called cardiovascular revolution.

These patterns have been usually favorable to women, so life expectancy gap between sexes has widened through time. But in very recent years, this widening has stopped and the gap is narrowing ostentatiously. Progress is faster in men than in women. In this paper we try to explain a) why this gap is getting short at birth and b) what is happening at 65 years old, by analyzing changes in mortality and in the epidemiological pattern by sex and age. I focus in the period 1980-2014.

I adopt and expansionist theoretical framework [1] [2]. I assume that Spanish mortality is reaching a compression of morbidity status and is following the three classical events of the current stage of mortality transition in advanced countries: rectangularization of survivors curve, compression of mortality at advanced ages, and shifting mortality at progressively more advanced ages.

Data and methods

Data

I use data two kinds of data. Firstly, data on mortality by causes of death in Spain in the period 1980-2014 from Instituto Nacional de Estadstica (INE Spanish National Statistics Institute) [3], and Spanish period life tables in 1980-2012 [4], from Human Mortality Database (HMD), and 2013-2014 [5], from INE. Secondly, population data: population exposure-to-risk in the period 1980-2013 [6], from HMD, and 2014, from INE [7].

Methods

I use the decomposition method of differences in life expectancy by sex and age [8], and by causes of death [9] [10].

Preliminary results

Whereas life expectancy at birth and at 65 years old is steadily rising, gap between male and female has been narrowing during last 20 years, basically due to better improvements in male mortality in the age range from 0 to 75 years old; meanwhile, survival rates are better for females from 75 years old.

In epidemiological terms, changes in mortality in the main groups of causes of death have been favorable to women, but this trend has been changing through time. In 1980, difference in life expectancy at birth is due to circulatory system diseases (30 %), neoplasms (23 %) and external causes (17 %). In 2009, when the reduction of differences is a fact, difference is due to neoplasms (40 %), circulatory system diseases (20 %) and respiratory system diseases (15 %) [differences in life expectancy at 65 years old are slightly different]. The shortening in the gap at life expectancy at birth during last 20 years is attributable to a decrease in external causes and

circulatory system diseases male mortality (70 %); meanwhile, at life expectancy at 65 years old is due to a decrease in respiratory systems diseases and circulatory system diseases male mortality (84 %).

We are currently working on the decomposition of differences in life expectancy by cause of death and age together.

References

[1] Oeppen, J., & Vaupel, J. W. (2002). Broken limits to life expectancy. Science, 296(5570), 1029-1031.

[2] Vallin, J., & Meslé, F. (2009). The segmented trend line of highest life expectancies. Population and Development Review, 35(1), 159-187.

[3] Instituto Nacional de Estadstica. Spain. Mortality by cause of death. 1980-2014.

[4] Human Mortality Database. Spain. Period life tables. 1980-2012.

[5] Human Mortality Database. Spain. Population exposure-to-risk. 1980-2013.

[6] Instituto Nacional de Estadística. Spain. Life tables. 2013-2014.

[7] Instituto Nacional de Estadística. Spain. Population exposure-to-risk. 2014.

[8] Andreev, E. M., Shkolnikov, V. M., & Begun, A. Z. (2002). Algorithm for decomposition of differences between aggregate demographic measures and its application to life expectancies, healthy life expectancies, parity-progression ratios and total fertility rates. Demographic Research, 7(14), 499-522.

[9] Arriaga, E. E. (1984). Measuring and explaining the change in life expectancies. Demography, 21(1), 83-96.

[10] Nusselder, W. J., & Looman, C. W. (2004). Decomposition of differences in health expectancy by cause. Demography, 41(2), 315-334.