Are we living longer and healthier lives? Recent trends in mortality and morbidity in Spain

Aïda Solé-Auró

Ethel Percy Andrus Gerontology Center.
University of Southern California,
3715 McClintock Ave, Los Angeles, CA, USA.

RFA-IREA, Department of Econometrics, Statistics and Spanish Economy,
University of Barcelona,
Av. Diagonal 690, 08034 Barcelona, Spain.

Abstract

Evidence on trends in prevalence of disease and disability can clarify whether countries are experiencing a compression or expansion of morbidity. The prevalence of chronic diseases (heart problems, diabetes, hypertension) and risk factors (smoking and obesity) appears to have been increasing in both Europe and other developed countries indicating an expansion of morbidity as indicated by disease. It is likely that better treatment, preventive measures (such as cancer screening and treatment of cardiovascular risk factors) and increases in education levels have contributed to the declines in mortality and increases in life expectancy. It should be noted that, the increases in presence of disease appear to be less associated with disability. This paper examines whether there has been an expansion or compression of morbidity in Spain. It uses trends in mortality and morbidity from major causes of death and links of these with mortality to provide estimates of life expectancy with and without diseases and loss of functioning. The analysis uses a repeated cross-sectional Spanish health survey in 2001 and 2009 for measues of morbidity, the Spanish National Health Survey, mortality information comes from the National Statistics Institute database. Increasing survival among people with diseases can lead to a higher prevalence of diseases in the older population. Higher prevalence of health problems can lead to greater pressure on the health care system and a growing burden of disease for individuals.

Introduction

In the last few decades, social researchers have tried to understand whether the ideal of living longer and healthier lives will be accomplished. We have seen a continuing decline in mortality in many countries during the last half-century, with an increasing chance of surviving to the fourth age (Baltes & Mayer 1998). However, this living to older ages has raised the question of how healthy this longer life will be. Our society has also undergone a dramatic demographic change, with increasing worldwide population from 2.8 billion to 5.8 billion, and changing distribution of residential areas; with more than half of the world's population residing in urban areas (WHO report).

Spain is one of the European countries with the longest life expectancy, as well as the lowest mortality rates up to advanced years (HMD, 2012). Spanish mortality rates had been steady during the 1980s and the 1990s for both, men and women, but in the 2000s those rates have been declining (Figure 1); however, the mortality rates gap by gender appears to have widened (INE, 2012). Spain will have the highest proportion of elderly persons in the world by 2050, with a median age of 55 years (United Nations. Department of & Social Affairs. Population, 2002). One reason for this is that Spanish life expectancy at age 65 has been increasing by about 2 months per year; while in other countries, such as United States, Denmark or the Netherlands, the increase has been slower (Robine et al., 2008).

The prevalence of chronic diseases (e.g. heart problems, diabetes, hypertension) appears to have been increasing in both Europe and other developed countries indicating an expansion of morbidity as indicated by disease. It is likely that better treatment, preventive measures (such as cancer screening and treatment of cardiovascular risk factors) and increases in education levels have contributed to the declines in mortality and increases in life expectancy. In this paper, we examine change in the prevalence of disease and risk factors along with change in mortality for Spain. We examine several chronic conditions and two risk factors, and link this with mortality to provide estimates of life expectancy with and without

diseases. To sum up, this will examine population health and the expected life cycle of the Spanish population in this time period.

Data and Measures

Data

To answer the question about how mortality and morbidity trends interact to affect the average length of life with health problems in the Spanish population, we use cross-sectional data. The data come from a sample of adults (aged 16 and over) in two surveys: the Spanish National Health Survey (SNHS) in 2001 and the European Health Interview Survey (EHIS) in 2009. Both surveys are collected by the Spanish Ministry of Health and the National Statistical Institute in Spain (*Instituto Nacional de Estadística*, INE), but INE is responsible for the technical execution of the project (sample design, questionnaires,…). These are the only sources of microdata for Spain, which contain information on morbidity, socio-demographic variables and individual's state of health. The collection of the data was performed using personal interviews, complemented by telephone interviews when needed. Both surveys had three questionnaires: household, adults (aged 16 and over) and childhood (aged less than 16). The sample was comprised of 43,246 Spanish non-institutionalized residents (21,058 people in 2001 and 22,188 people in 2009) randomly selected aged 16 years and older (Table 1). Because mortality is not appended to the Spanish National Health Survey, mortality information came from the National Statistics Institute database.

Measures

We use three indicators of the presence of chronic diseases. Information in 2001 is reported in response to the question: "Has a doctor told you that you have any of the following conditions? Chronic medical measures include hypertension, diabetes and heart disease". In 2009, information is reported in response to the combination of two questions: 1) "Has a doctor told you that you have any of the following conditions? Chronic medical measures include hypertension, diabetes and heart disease" and 2) "Have

you had any of these conditions in the last 12 months?". We also examine indicators of weight and smoking behavior. Information on height and weight is converted into body mass index (BMI), which is categorized as obese (BMI>30) or not obese. Smoking is coded as being current smoker or not.

Results

In preparation for our analysis we examine the prevalence of the various chronic conditions in Spain in two time periods, 2001 and 2009. Table 2 shows the percentage of people with chronic conditions by age groups and gender over time. The self-reported measures include heart problems, diabetes, and hypertension. Prevalence of hypertension increased in all age-gender group over time, except for females in their sixties and seventies, where their prevalences stay the same. Diabetes increases are seen through much of the adult age range, for both males and females; however, there is a reduction in middle age. Rates of heart disease have been reduced in all ages over the eight-year period for males and females.

The data presented in table 3 shows the prevalence of smoking and obesity by age group and sex in the eight-year time period. Rates of smoking have been reduced over time in all age group for males, but females have experienced an increase at older ages. Obesity levels experienced a reduction for females at all ages, and males have increased their rates until age 60 and after that, there are slight reductions.

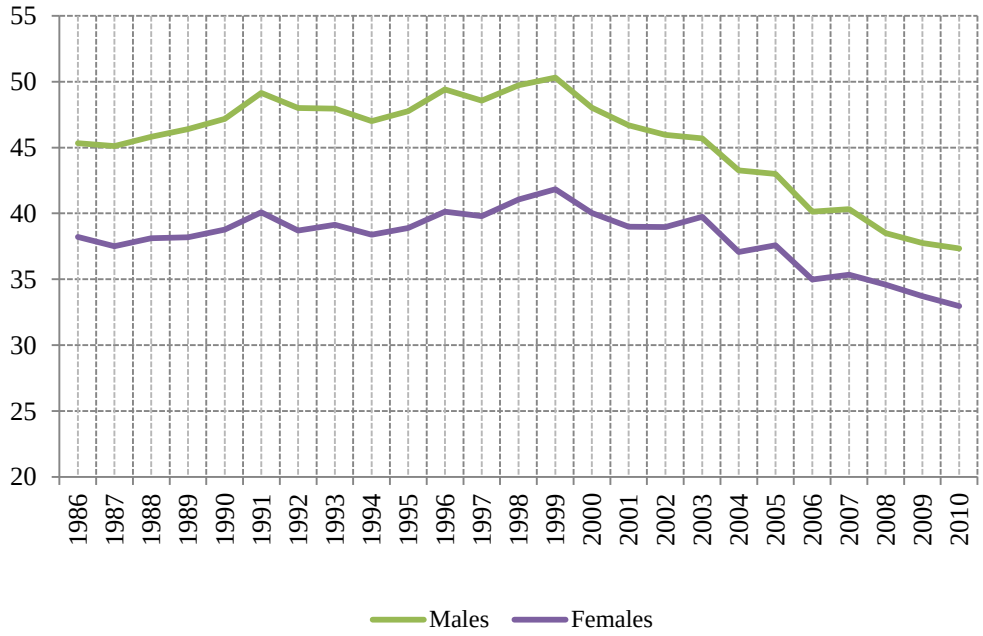
Conclusion

Increasing survival among people with diseases can lead to a higher prevalence of diseases in the older population. Higher prevalence of health problems can lead to a higher pressure on the health care system and growing burden of disease for individuals.

One of the limitations of this study is that longitudinal data are not available in Spain, and investigation of disease incidence is not possible.

Figures

Figure 1. Age-specific death rates per 100,000 population in Spain by gender



Source: INE, 2012. Deaths per 1000 inhabitants.

Tables

Table 1: Sample ages 16+ sizes in 2001 and 2009.

	2001	2009
Total (N)	21,058	22,188
Men	10,216	10,045
Women	10,842	12,143

Source: ENS 2001 and EHS 2009

Table 2: Prevalence of diseases by age and sex in Spain. Individuals aged 16+

Age	Hypertension				Diabetes				Heart disease			
	Men		Women		Men		Women		Men		Women	
	2001	2009	2001	2009	2001	2009	2001	2009	2001	2009	2001	2009
16-29	0.9	1.4	1.1	1.8	0.7	0.3	0.5	0.6	0.4	0.3	0.6	0.1
30-39	2.6	3.7	2.1	3.3	0.7	0.8	0.8	1.1	0.5	0.3	0.7	0.3
40-49	8.5	9.8	9.4	7.3	2.9	2.5	2.4	1.2	2.6	1.0	1.7	0.7
50-59	19.0	22.6	22.4	21.6	7.5	8.9	7.3	5.8	5.0	3.7	4.2	1.5
60-69	26.9	37.9	40.3	39.5	12.6	14.4	13.1	11.8	13.9	8.0	14.5	4.7
70-79	35.1	46.1	43.0	52.2	16.8	20.7	18.4	18.7	17.9	12.0	17.3	11.2
80+	29.9	41.8	37.1	55.7	15.7	18.2	14.2	17.9	19.2	16.5	21.5	12.1

Source: Spanish National Health Survey, 2001; European Health Survey, 2009. Survey weights are used in this table.

Table 3: Prevalence of risk factors by age and sex in Spain. Individuals aged 16+

Age	Smoking				Obese (bmi>30)			
	Men		Women		Men		Women	
	2001	2009	2001	2009	2001	2009	2001	2009
16-29	40.8	32.6	37.3	26.6	9.9	11.4	9.1	7.9
30-39	50.8	37.1	42.3	26.7	14.3	16.9	13.5	13.2
40-49	48.3	38.3	33.0	32.1	16.9	22.0	19.7	16.4
50-59	40.0	34.0	14.6	21.6	20.7	23.9	33.0	22.4
60-69	28.1	19.7	4.1	9.0	26.0	28.0	40.6	30.1
70-79	15.2	15.1	1.3	3.3	27.2	25.9	51.0	38.6
80+	11.7	4.4	0.7	1.4	33.2	30.9	55.8	37.9

Source: Spanish National Health Survey, 2001; European Health Survey, 2009. Survey weights are used in this table.