

# Shorter Lives with Poor Health: The Toll on Spain's Less Educated Population



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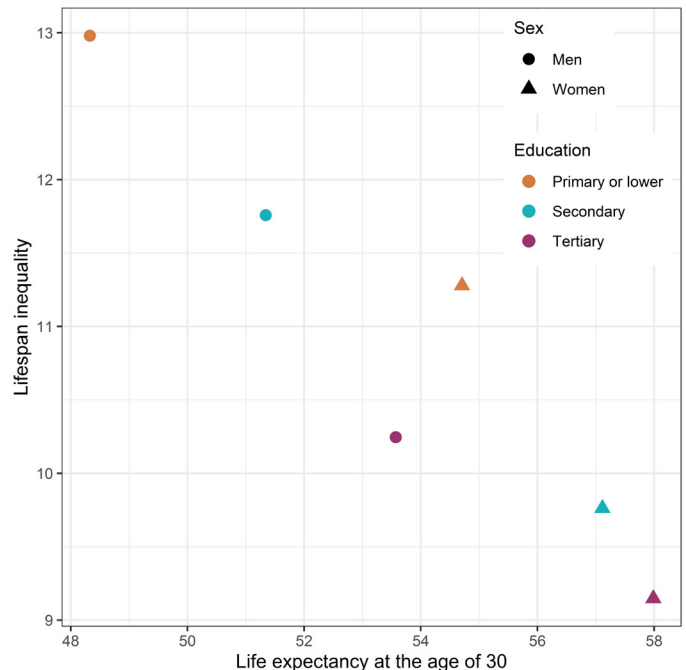
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More than three years separate life expectancy at the age of 30 in more educated groups compared with those with low levels of education. Recent decades have seen considerable advances in the longevity of the Spanish population but these improvements mask the persistence of significant inequalities in health and mortality. Socioeconomic level is a discriminating factor in the health status of individuals throughout their lives and education is one of the most frequently used indicators in studies on social inequalities in health and mortality. In addition to being an indirect variable of the socioeconomic situation, educational level largely conditions the lifestyles and health preferences of individuals as well as their use of the resources of the social and healthcare system. In this issue of *Perspectives Demogràfiques*, we discuss the present-day differences in health and mortality in Spain according to educational level. These inequalities can be summarised as a threefold penalisation of less educated individuals in comparison with those with a high educational level: lower life expectancy; b) greater inequality in age at death; and c) a smaller proportion of years with quality of life.

## Life spans and equality by educational

The influence of education in health and mortality presents a clear gradient in which low educated groups show lower life expectancy and worse health conditions when compared with high educated groups (Permanyer et al. 2018; Solé-Auró, 2020). The **first penalisation** is observed in terms of life expectancy. In Spain, from 2017 to 2019, high educated men could expect, from the age of thirty onwards, to live five years longer than those with only primary education or less (53.5 vs 48.4 years), while the difference was smaller among women with a figure of just over three years (58.0 vs 54.9 years). The role played by education is more discriminating among men because the differences between those with secondary and tertiary education are more relevant for men and less so for women. Inequalities of average life expectancy between men and women tend to decrease as educational level rises, reflecting the fact that behaviour and risk factors are more homogenous among the high educated population.

Life expectancy makes it possible to compare inequalities in survival between educational levels but it does not

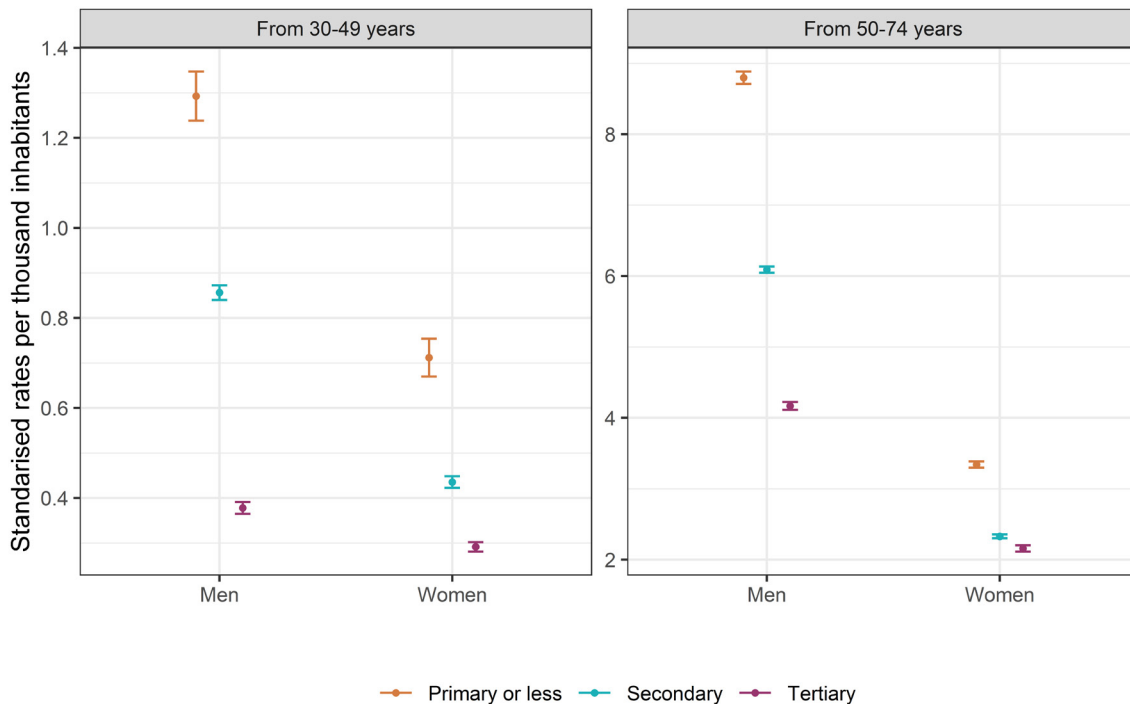


**Figure 1.** Lifespan inequality within two groups at the age of 30 by sex and educational level. Spain 2017-2019. **Nota:** The indicator of inequality within educational groups has been calculated between the ages of 30 and 94. **Source:** Authors using microdata on deaths and INE Population Figures according to educational level.

provide information about the lesser or greater equality with regard to death within each level. <sup>1</sup>In recent years, newly developed indicators, coming under the heading of life span inequality, have measured this inequality vis-à-vis death (Aburto et al. 2020). The results for Spain illustrate the **second penalisation** suffered by the less educated population, especially in the male population, as their lower life expectancy is compounded by greater differences in age at the time of death or, in other words, greater inequality among its members in terms of survival (Figure 1). Among the population with tertiary education, and also women with secondary education, life expectancy is not only higher on average but also more homogenous thus reflecting more equality in terms of survival. In Spain, internal inequality among the population with primary education or less is 27% greater for men and 23% for women compared with that observed among high educated groups.

Explanations of these inter- and intra-educational inequalities require analysing patterns of mortality by cause since they allow a first approximation to the underlying factors. This analysis is especially pertinent for the adult and mature population for two reasons: first, these are the ages with most pronounced relative differentials in risks of dying between educational groups;

and second, part of the deaths that occur at these ages are considered avoidable by means of intersectoral preventive public health policies or treatments and medical care. In Spain, from 2017 to 2019, mortality due to avoidable causes represented about 60-70% of deaths in the 30-74 age group, for both men and women. In the population aged between 30 and 49, the mortality rate for avoidable causes among less educated individuals was 3.4 times higher for men and 2.4 times higher for women than that for high educated people, while these ratios were 2.1 and 1.5 in the 50-74 age group (Figure 2). In general, the causes related with behaviour and lifestyle (for example, tobacco and/or alcohol consumption) have a higher relative incidence among men than among women. From 30 to 49 years of age, the main avoidable causes that present significant differences in mortality between low and high levels of education include lung cancer, ischaemic diseases, and traffic accidents in both sexes, in addition to suicide, other kinds of accidents and deaths related with alcohol and drug consumption among men, and cerebrovascular deaths among women. In the population aged between 50 and 74, there are significant mortality differentials between educational levels as a result inter alia of ischaemic and cerebrovascular diseases, and colorec-



**Figure 2.** Standardised mortality rates from preventable causes by age group, sex, and educational level. Spain 2017-19. **Note:** Standardised figures using European Standard Population 2013. **Source:** Authors, using microdata on deaths by cause of death and INE Population Figures according to educational level.

<sup>1</sup>Two populations can have relatively similar life expectancies, for example 75 years but, in one population, deaths in the mortality table cluster around this age while, in the other, they are more disperse, which means that the distribution of life expectancy is more equitable in the former than in the latter.

<sup>2</sup>Using data from Avoidable Mortality: OECD/Eurostat lists of preventable and treatable causes of death (version of November 2019).

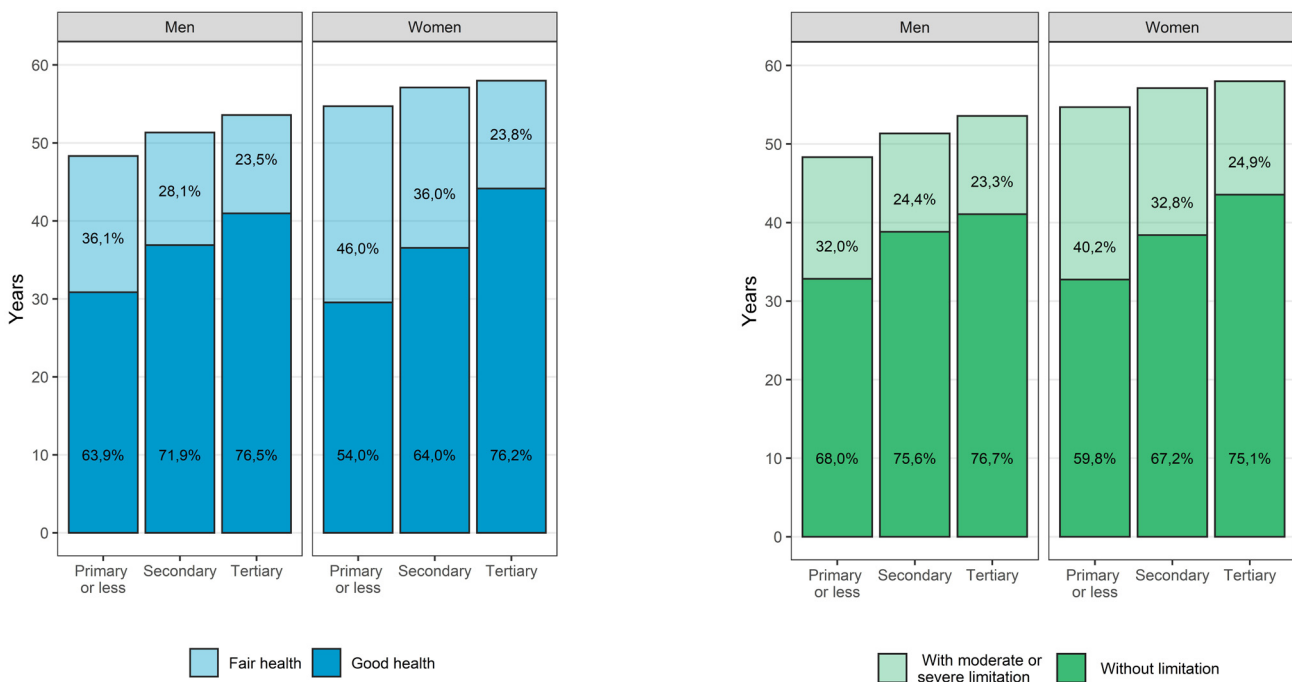
tal cancer in both sexes, as well as lung and liver cancer in men, and uterine cancer in women. The relationship between higher education and lower avoidable mortality presents a significant exception with lung cancer in women aged from 50 to 74, since smoking first became widespread among the more educated women while, in more recent cohorts, the highest figures are to be found among less educated women.

### Inequality in health

The inequalities in mortality presented as the first and second penalisations are just the tip of the iceberg of a much broader set of socioeconomic inequalities in health. Individuals' perceptions of their own health also present a clear gradient according to educational level as the less educated groups suffer a **third penalisation** deriving from a greater prevalence of conditions of self-perceived poor health and limitations in engaging in activities (Figure 3). Unlike what is observed in the case of mortality, the role played by educational level is more discriminatory for women as the average number of years they can expect to live in good or very good health after the age of 30 is 29.5 years for the less educated among them and 44.2 years for those with higher education (more than 14 years' difference, or 50% more), while these values are 30.9

and 41.0 years for men (ten years' difference, and 33% more for the high educated among them). Other health indicators, such as life expectancy without moderate or severe limitations when carrying out daily activities, present a gradient by educational level similar to that for self-perceived state of health. After the age of 30, men with lower levels of education have a life expectancy free of limitations that is eight years less than that of more educated men while, for women, this difference is close to 11 years. If current conditions of health and mortality in the Spanish population were to continue, inequalities between educational groups with regard to quality of life, personal autonomy, and dependence would be highly significant. Hence, women with low levels of education would only enjoy good health or very good health for a little more than half the years of life remaining to them after turning thirty while those with higher levels of education would perceive their health as good for three quarters of their lives.

The gender paradox in health can be seen when the population is analysed as a whole since women live longer but in worse health conditions. Nevertheless, this dichotomy between mortality and morbidity becomes more nuanced when educational level is taken into account since the percentage of years of life in



**Figure 3.** Life expectancy in good health and without limitations at the age of 30 by sex and level of education. Spain 2017-2019. **Source:** Authors, using microdata on deaths, Population Figures by educational level, the 2017 National health Survey, and INE's 2020 European Health Survey in Spain.

good health or without limitations is similar for men and women among the high educated population, despite the fact that women live longer. By contrast, for the population with a lower educational level and, to a lesser extent, for those with secondary education, the extra years of life for women compared with men are years of only fair or bad health. In this sense, the generational change associated with the progressive attainment of greater longevity by increasingly well-educated women might contribute, in the coming decades, to an improvement in the health conditions of the female population as a whole and a reduction in the health gaps between men and women.

## Conclusions and perspectives

In this issue of *Perspectives Demogràfiques* we have analysed the socioeconomic inequalities in health and mortality in Spain from ascertaining the triple penalty suffered by the population with lower educational levels compared with the high educated population. However, when interpreting the results, it should be borne in mind that this study has used data from a specific period, measuring what these inequalities would be if current patterns of health and mortality of the Spanish population were to continue into the future. Moreover, a further factor to be considered is that health also has an effect on education because the health conditions of some individuals determine their educational achievements.

In the coming years, rising educational levels of the older population, associated with generational change, and especially among women, will play a positive role in the aggregate health and mortality levels of the population. Yet, this change must be accompanied by policies that are designed to mitigate inequalities between and within the different socio-economic groups, especially when the still-existing scope for improvement is taken into account, for example by tackling the factors underlying avoidable mortality. These factors are related with habits and lifestyles, working conditions, status, what is known as *health literacy*, use of the health system, and other questions. They refer to the major social and economic inequalities that exist in our society. The need to implement policies that address their root causes will be even more pressing because of the social and economic effects of COVID-19.

### Citation

Aburto, J. M.; Villavicencio, F.; Basellini, U.; Kjærsgaard, S.; Vaupel, J. W. (2020) "Dynamics of life expectancy and life span equality". *Proceedings of the National Academy of Sciences*, 117 (10): 5250-5259 (DOI: 10.1073/pnas.1915884117).

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