

REGIONAL CAUSE-OF-DEATH MORTALITY in SPAIN in 1960 and 1970: A MULTIVARIATE ANALYSIS and TENTATIVE EXPLANATIONS

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Background:

In the 1960s, Spain was situated at the end of the third stage of the epidemiological transition. While life expectancy increased from 67,0 years in 1960-1 to 69,1 years in 1970-1 for men and from 71,9 to 74,7 years for women, the change in life expectancy during this period was still very much related to infant and child mortality. The declines in 0-4 year old mortality contributed 1,7 years to the increase in male and 1,5 years to the increase in female life expectancy, while there were still no large improvements in mortality at advanced ages. However, at the regional level, differences in life expectancy at birth were not strongly associated with the level of infant mortality: the correlation coefficient between the two in 1971 equalled just 0,05 for men and 0,24 for women, as some of the provinces with the lowest infant mortality also experienced high levels of old-age mortality.

Objective

This paper seeks to disentangle the mortality differences between provinces in 1960 and 1970, and in particular differences in cause-specific mortality, as this has not been done before for Spain for these two periods.

Data and method

The data we used came from various publications from the National Institute of Statistics (INE) on national and province level mortality by cause of death. Standardised death rates were calculated using the indirect method, as age-specific mortality data were only available at the national level. Using multivariate regression analysis an attempt is made to find statistical associations between the most important causes of death and a selection of exogenous variables, that include income, proportion of industrial workers, illiteracy, urbanisation and sanitary conditions. These variables were considered to have potential

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explanatory value because, while Spain underwent large economic changes during the 1960s and improvements were made in education and public health, large regional differences still remained in economic, social and sanitary conditions.

Results

The models explained between 8% (male respiratory system diseases in 1960) and 80% (male cirrhosis of the liver in 1970) of the regional variation in mortality. It was perhaps due to the persisting regional differences in sanitary conditions (no running water, no toilet, overcrowding) that in both 1960 and 1970 this composition variable explained part of the regional differences in mortality from tuberculosis, even though absolute levels in Spain as a whole were already quite low (27 and 11 per population of 100,000 in 1960 and 1970, respectively for the total population). Another important finding was that illiteracy was more important in explaining regional mortality differences among men than among women, especially with relation to old-age mortality and mortality from digestive system diseases (including cirrhosis of the liver).

Conclusion

The analysis showed that not absolute wealth appeared to explain mortality differences between Spanish provinces for the most important causes of death, but rather the existence of elementary sanitary facilities (i.e. an indication of material deprivation), illiteracy and the level of industrialisation and urbanisation.