

Increasing longevity and decreasing gender mortality differentials: new perspectives from a study on Italian cohorts

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Introduction

The change of survival patterns at different periods of life has demonstrated that Italy finds itself in a relatively advantageous position among countries with low mortality. Information for 2006 indicates that men and women can count on a life expectancy at birth of 78.4 and 84.0 years respectively. The recent change of survival patterns at birth brings out the first signs of a reversal in the trend for the gap between the two sexes. Until the 1980s this gap had continued to widen in favour of women, but recently there has been a lessening in this advantage: from 6.9 years in 1979 to about 5.6 years in 2006, and 5.3 years according to the provisional estimates for 2008. Indeed, if we consider survival patterns at the age of 60 the gap between men and women remains constant over time, while actually increasing from 70 upwards. This means that the reduction in mortality among the elderly still increasingly favours women.

These behaviours are the result of a profound change in the age profile of male supermortality, or a mortality disadvantage that affects men rather than women at different periods of life. We may have a better understanding of the phenomenon if we study the mortality of the various cohorts, as this will allow us to understand how the modifications in mortality by age are the result of changes in the mortality models of the successive cohorts. Taking into account the causes of death in this analysis contributes significantly to a better understanding of the complex dynamics of survival and makes clearer the mechanisms that have determined these modifications. In fact, what emerges in Italy today was already evident from the mortality models of Western European countries and the United States, and draws attention to modifications in behaviours and life-styles in the advanced societies, and in their underlying risk factors.

The first aim of this work is to identify the reasons for the ongoing changes, with reference to the change in cause-of-death model from the cohorts that are gradually entering adult and old age. The final goal is to use the information obtained to predict the mortality of future cohorts. The results may help us understand what are the determinants of future survival patterns, knowledge of which will be useful for identifying the possible spin-offs on the health and social security services in the future.

Data

Before studying future survival trends, the first step of the work is to collect time-series of data on mortality by age and cause-of-death of the Italian cohorts born between 1900 and 1950. This has been done, following a multi-source approach, taking and integrating data (age-specific mortality rates) from different domains (HMD, University of Rome and Istat), in order to include the largest possible number of cohorts for study.

Methods

The work presents the main output of some mortality projections for 2050 in Italy. The projections are carried out following a deterministic approach, using alternative models such as, for example, the the Age-Period-Cohort model, and a variant of the Lee Carter model.

Results

The first analysis of past changes and recent trends in mortality has brought out clearly how the closing of the gap between male and female survival in the last decade is due to the differential decline (stronger for men than women) in all the main causes of death in young and adult age up to 75. In these periods gender differentials tend to be reduced thanks to men having a more favourable dynamic than women for circulatory system and, still more, cancers (Caselli and Egidi, in press). The particular trend in the causes that contribute to closing the gap between the two genders also emphasizes the effect on mortality of the history of the successive cohorts in the course of time: the gap between the cohorts born during or just before the second world war narrowed, as they benefited in the post-war period from a higher level of education, greater wellbeing and, in general, greater attention to more healthy lifestyles. These conditions were effective in offsetting some of the risks of death that had most penalized men, but that now are starting to disadvantage women, who have begun to adopt behaviours more similar to men of their age. Analysis of the output of mortality projections can confirm and add new information to these first indications.