

Abstract HMD 2019 conference for potential keynote lecture

The role of smoking, alcohol and obesity in past and future mortality levels and trends in Europe

Fanny Janssen, University of Groningen, The Netherlands

In my lecture I hope to present the close-to-final outcomes of the research project “Smoking, alcohol and obesity – ingredients for improved and robust mortality projections” funded by the Netherlands Organization for Scientific Research (NWO).

Estimates of future mortality often prove inaccurate, as conventional extrapolative mortality projection methods do not capture (i) the impact of lifestyle ‘epidemics’, different over time, between men and women, across countries and generations; and (ii) the two dynamics that drive the changes in the age-at-death distribution: mortality delay and mortality compression.

Aim of the research project was to estimate the impact of the smoking, alcohol and obesity ‘epidemics’ on current mortality levels and past mortality trends, and to project all-cause mortality taking into account the impact of lifestyle ‘epidemics’, mortality delay and compression, and also the mortality experience in other countries.

For this purpose we used (i) all-cause mortality data from the Human Mortality Database, (ii) lung cancer mortality data from the WHO mortality database to indirectly estimate smoking-attributable mortality, (iii) alcohol-attributable mortality data from the Global Burden of Disease Study (ages 20-64) supplemented with cause-specific mortality data from the Human Cause of Death Database and the WHO mortality database, and (iv) obesity prevalence data from the NCD Risk Factor Collaboration study to estimate obesity-attributable mortality.

The impact of the lifestyle ‘epidemics’ on mortality levels and trends will be illustrated by age-standardised lifestyle-specific attributable mortality fractions and rates, and potential gains in life expectancy (PGL). In addition, past trends in age-standardised all-cause mortality and non-lifestyle-attributable mortality will be compared.

The projection of all-cause mortality entails the separate projecting of lifestyle-specific attributable mortality and remaining mortality. Firstly, smoking-, alcohol- and obesity-attributable mortality will be separately projected using a novel approach that takes into account the wave pattern of epidemics (obesity) and/or the importance of the cohort dimension (smoking and alcohol, respectively). Secondly, remaining mortality will be projected thereby taking into account the mortality experience in other countries and past trends in mortality delay.