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How mortality patterns have changed in Portugal

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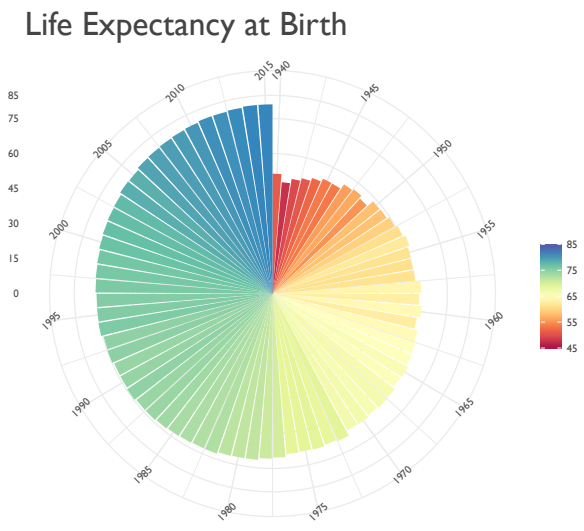
Introduction

Changes in social structures, advances in medicine and technology highly contributed to life expectancy increase across the entire world. Thus, longevity's increase occurs as a result of significant improvements in health and consequent reductions in **mortality rates**. Past high levels of mortality are now experienced later in life, suggesting that senescence is being delayed and not stretched and individuals are reaching older ages in better physiological condition (Vaupel, 2010).

Following the Human Mortality Database (HMD - http://www.mortality.org), life expectancy at birth in Portugal was, in 2015, 81.12 years (78.02 for males and 84.02 for females).

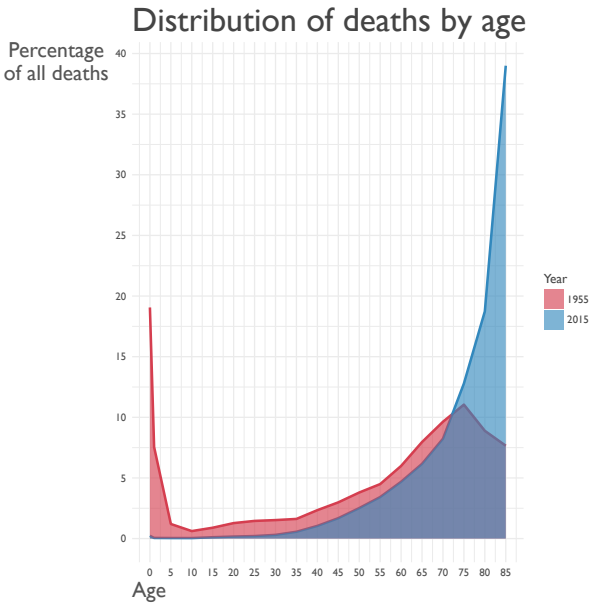
Mortality Shift and Increasing Life Expectancy



Analyzing historical trends of increasing lifespan and mortality postponement allows to understand how and why nowadays elderly population is increasing fast. **Life expectancy at birth** (left) is breaking old theorized limits (Oeppen and Vaupel, 2002) and with time every human can expect to live longer and with improved health (Vaupel, 2010). In Portugal, an individual born in 2015 could expect to live around 81 years, resulting from an almost 5-month annual average increase since 1940 (HMD, 2017).

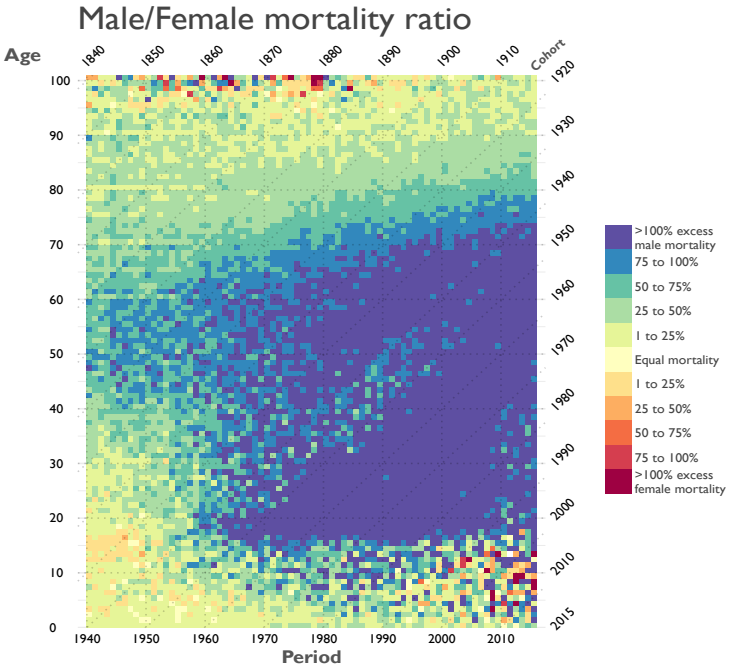
Examining the **distribution of deaths by age figure**, in 1955, Portuguese mortality was concentrated in the first year of life, representing almost 20% of all deaths. Nevertheless, excluding the first years of "turbulence" (until age 5) most part of deaths occurrence was after age 65 and the latest peak corresponded to age 75 with a share of around 10% of all deaths. This means that while at the time series beginning, 2 in 10 deaths were registered before age 5, 1 in 10 deaths corresponded to individuals in their 70s. Yet, medicine advances, increasing childcare and higher vaccination availability and appliance resulted in fast declining mortality rates.

In 2015, an irrefutable and sharp shift of mortality into older ages was recorded. Despite mortality still maintains concentrated after age 65, the biggest change occurs after age 85. This observed mortality shift boosted the pace of life expectancy increase and now most individuals don't die until their early 70s, increasing the elderly population share, and expecting to live more than 80 years. By this time, around 4 in 10 individuals die after age 85.



The Male-Female Mortality Ratio

Sex differences in mortality patterns and life expectancy vary by country and region. In most cases, men experience lower longevity than women, not only due to biological, but also to socio-environmental factors.



Yet, higher rates of disability and poor health are also assigned and recognisable by women. Portugal is not an exception and despite the observation of a collective shift of mortality to older ages, important disparities in **male-female mortality ratio patterns** can be detected (left).

From 1940 to 2015, female life expectancy increased 30.42 years while for males the increase was around 28.93 years. Generally, the male-female mortality ratio for Portugal showed higher mortality rates for males across the lifespan, especially in the 18-80 year age range but becoming sharper after 1970. Male excess mortality associated to those born in 1870-1940 cohorts (aged 40-70 in the period between 1940 and 1970) is very likely to be smoking related, while since mid 1960s young men (18-30) excess mortality can be connected with their higher risk for accidents. Despite the traditional used arguments to explain male excess mortality: excessive alcohol, tobacco and drug consumption, or even injuries (e.g., transport accidents), further research needs to be performed to provide accurate insights and following Pop-News numbers will address to this issue.

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