Best practice in life expectancy gender gaps: a moving concept

France Meslé and Jacques Vallin

Institut national d’études démographiques (INED)
What is the best-practice for life expectancy gender gap?

• The smallest gap?
• The gap corresponding to the biological differences between females and males?
• The gap corresponding to the best health behaviours for both sexes?
• Does it change with the level of life expectancy?
• What is it possible to learn from HMD data, using the concept of best practice in life expectancy?
I. Best and worst practices in life expectancy
Best-practice in life expectancy

• A seminal paper by Oeppen and Vaupel (2002)

• Revisited by Vallin and Meslé (2009)

From a straight to a broken line, but a useful concept to follow and forecast mortality trends
First looking at females
Best female life expectancy in HMD

Life expectancy at birth

Females
What about males?
Worst practice: an operational concept?

• Much more difficult because data are not available for all countries of the world
• And availability is very much correlated with life expectancy levels
• Looking at HMD data
Worst performers in HMD
Life expectancy at birth

Females

Males
Best and worst practice in gender gap?

Two different measures:

- the largest and smallest gaps between females and males within a country $i$:

$$\max (e_{0F}(i) - e_{0M}(i))$$

$$\min (e_{0F}(i) - e_{0M}(i))$$

- the differences between female and male maximums and minimums:

$$\max (e_{0F}) - \max(e_{0M})$$

$$\min (e_{0F}) - \min(e_{0M})$$
Maximum and minimum gap observed in a country.
Maximum and minimum gap observed in a country (2)
Maximum and minimum gap observed in a country

Gender gap (in years)

- **Maximum gap**
  - 1915 France
  - 1942 Finland
  - 1959-2014 Russia**

- **Minimum gap**
  - 1872 Sweden
  - 1900 E&W
  - 1950 Finland
  - 1972 Bulgaria
  - 1992 Greece
Gender gap between highest LE and lowest LE

- 1915: Spa-F - Fra-M
- 1936: Spa-F - Spa-M
- 1940: Spa-F - Fin-M
- 1944: Fra-F - Fin-M
- 1974-14: Rus-F - Rus-M
- 1980-04: Jap-F - Jap-M

Lowest LE

Highest LE
Gender gap and female life expectancy level

Gender gap (in years)

Female life expectancy (in years)
Distinguishing Eastern Europe

Gender gap (in years) vs. Female life expectancy (in years)

- 1900
- 1950
- 1970
- 2013

Female life expectancy (in years)
The shift of ages responsible for the gender gap

**MAXIMUM**

- **E&W 1900:** 48.2-44.3=3.9
- **Finland 1950:** 67.9-60.4=7.5
- **Russia 2014:** 76.5-65.3=11.2

**MINIMUM**

- **Italy 1900:** 41.8-41.6=0.2
- **Ireland 1950:** 66.7-64.5=2.2
- **Sweden 2014:** 84.0-80.3=3.7
Life expectancy at age 60: Best and Worst
Gender gaps in life expectancy at age 60

A: within a country
B: between best or worst performers
Gender gap and female e60 level
Life expectancy at age 80: Best and Worst
Gender gaps in life expectancy at age 80

A: within a country
B: between best or worst performers
Gender gap and female e80 level
A general overview of HMD data confirms the steady increase of gender differences in life expectancy until the end of the 20\textsuperscript{th} century:

- Maximum and minimum differences increased
- Differences between best and worst performers increased as well

Shift of ages responsible for increasing gap. The higher the life expectancy, the higher contributing ages

In the past low life expectancies were associated with small gender gaps while today they are associated with largest gaps

Within the HMD universe, poorest health contexts were specially unfavorable to women while today they are more unfavorable to men
Conclusion (2)

- Historical trends don’t show any indication of a golden standard for gender gaps in life expectancy
- Since the late 19th century, the fall of infectious diseases followed by the cardiovascular revolution induced an increase in differences
- Only recently the gap decreased thanks to changes in male behaviour (smoking, etc.), especially at working ages
- In countries which have just entered a new stage of health transition, related to aging and degenerative diseases, there is a gap widening at old age (e80). Once again women are showing the way...
- We are probably very far from reaching an equilibrium point, only depending on biological differences.