Cause-specific Mortality: “Deaths of Despair” in Spain

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** Presenter
Outline

• Background
• Data and methods
• Results
• Conclusions
• Future Research
Background

- After increasing for decades, life expectancy in the **US** as a whole began to marginally decline around 2014. The decline was driven in part by a surge of “Deaths of despair” (HMD; Case and Deaton, 2015, 2017).

Among **midlife NH Whites** mortality has been increasing since the late 1990s, especially due to increases in suicide, drug and alcohol poisonings, and chronic liver diseases and cirrhosis.

Increases in deaths of despair were by far the largest for those with the **least education** (≤ High School).
Drug, Alcohol and Suicide Mortality, white non-Hispanics 50–54

- Men, high school or less
- Women, high school or less
- Men, BA or more
- Women, BA or more
Background

  — Low level of education
  — Economic insecurity
  — Living in deprived areas
  — Marriage and child outcomes
  — (Bad) health
  — Widespread availability of opioids

• Does this narrative apply to Spain?
Aim

• To examine trends in all-cause and cause-specific mortality ("deaths of despair") in Spain, from 1980 to 2019, by gender and age.
• To quantify educational differences for the years for which such data are available (2017-19).
Methods: Data sources & Study Population

• Data trends on all-cause and cause específic mortality were derived from:
  - Deaths at age 25-64 (all-age, single age, 25-44, 45-64)
  - Stratification by gender and education*

• *Educational attainment data from 2017-2019
  - **Low** (less than secondary education)
  - **Middle** (secondary education and intermediate vocational training)
  - **High** (higher vocational training and university)
Methods: Data sources & Analysis


• Standardized mortality rates per 10,000 population, using the 2013 European Standard Population.

• Confidence Intervals (CI’s) 95% for educational differences
Methods: Classification Causes of Death

5-groups of causes of death

- Alcohol-related
- Drug-related
- Suicide
- Other Natural
- Other External

Deaths of Despair

The cause-of-death groupings are an adaption from the works by Case and Deaton (2015, 2017) and Allik et al. (2020). See Extra Slide for more detail.
RESULTS: Age-standardised mortality rates for Spanish men and women aged 25-64, 1980-2019
RESULTS: Age-standardised mortality rates for Spanish men and women aged 45-64, 1980-2019

The graphs illustrate the mortality rates per 10,000 for each gender from 1980 to 2015. The mortality rates include alcohol-related, drug-related, and suicide deaths. The data shows a decrease in mortality rates over the years, with the percentage of deaths due to these factors also declining.
Educational inequalities in deaths of despair, men and woman aged 25-64, 2017-2019
Conclusions

• In Spain, we do not see the same pattern than in the US. Possible explanation – generous safety net (family and, to a lesser extent, state)? But lack of improvement in suicide is a concern.

• Overall, mortality rates are substantially higher in men than in woman (gender differences), with little change over time.

• There are educational inequalities in deaths of despair, especially levels among low-educated men are worrisome. Among women, suicide and alcohol deaths among low educated are relatively high.

• Reduction of premature deaths (alcohol, suicide, and drugs) among low-educated, especially young adults should clearly be an important public-health priority.
Future research

• The COVID-19 pandemic can be considered a major stressful event that could affect the mental health and the well-being of the population. Therefore, future studies should monitor the trends in these specific and perhaps other “deaths of despair” that may have been a consequence of the pandemic.
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Conflict of Interest

• The authors declare no conflict of interest.
References


Thank You!
Extra slides
Case and Deaton 2017

Drug, alcohol and suicide mortality, men and women ages 50-54

Deaths per 100,000

Year

1990

2000

2010

FRA

GER

USW

SWE

UK

CAN

AUS
## Classification of main causes of death

<table>
<thead>
<tr>
<th></th>
<th>ICD-9 codes</th>
<th>ICD-10 codes</th>
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<tbody>
<tr>
<td>Alcohol</td>
<td>291, 303, 305.0, 357.5, 425.5, 535.3, 571(excluding 571.6), E860</td>
<td>F10, G31.2, G62.1, I42.6, K29.2, K70, K73, K74.0, K74.2, K74.6, K86.0, X45</td>
</tr>
<tr>
<td>Drugs</td>
<td>292, 304, 305.2-305.9, E850-E858</td>
<td>F11-F16, F18-F19, X40-X44</td>
</tr>
<tr>
<td>Suicide</td>
<td>E950-E959, E980-E989</td>
<td>X60-X84, Y10-Y34, Y87.0, Y87.2</td>
</tr>
</tbody>
</table>

Note: The cause-of-death groupings are an adaption from the works by Case and Deaton (2015; 2017) and Allik et al. (2020). Main difference is that we have tried to quantify the contribution of alcohol and drugs to overall mortality patterns and improve comparison across ICD classifications.