Estimating adult mortality from Censuses and Surveys

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Why is it important to measure mortality?

- The number of deaths is used to estimate life expectancy, which is the average number of years a person is likely to live if the conditions that exist today continue in time. It is influenced by the availability and quality of healthcare (including vaccinations), the level of economic and social development and by environmental factors.

- With the COVID-19 pandemic: there is great demand of the population to know the number of deaths and the impact of the pandemic.

- The number of deaths tell us, the living, the likelihood of dying in the country/city/neighborhood and the increase or decrease of this likelihood in time. It also indicates the gravity of the pandemic and how it is being managed.

- Countries that have been able to compile and rapidly process the information have had more resources for developing COVID-19 Action Plans and better tools to track the disease.

Data on the number of deaths by, age, sex and cause are used in 12 SDG indicators. Life expectancy is one of the three components used to measure the Human Development Index (HDI). Population estimates and projection.

The need of DATA

- **CRVS data are the gold standard for the estimation of mortality in countries. Once the capacity is installed, it is low cost, continuous in time and can be disaggregated at small territorial levels, by cause of death and other characteristics.**

- **Only 17% of the countries in the world have this gold standard high quality data for mortality, which are the countries included in the Human Mortality Database (https://www.mortality.org/): 5 countries in Asia, 1 in LAC, 2 in Oceania, 31 in Europe and 2 in North America.**

- **About 60% of countries have reported deaths data for 2020.**

- **During the COVID-19 pandemic, well functioning systems were impacted which in some places made the data situation worst. There is great need and efforts to improve CRVS systems (see the Legal Identity Agenda), also a great need of data to know the recent past and the present.**

In countries with no-gold standard CRVS systems: 1) A completeness assessment of CRVS data is needed, 2) the only source of mortality are from census and surveys or 3) there is no data at all.

Importance of Censuses and Surveys for mortality estimation

- **When estimating mortality in no-gold standard context, all data is relevant.**

- **Data from censuses and surveys are VERY helpful.**

- **We are looking at a dark room with the true value inside and each window illuminates on the value inside the room. The more window, the better we will see the value inside.**

- **In countries with death registries more than 60% complete, we apply Death Distribution Methods to estimate completeness based on the Census population.**

- **These methods provide a wide range of possibilities for the completeness adjustment and are limited for estimating completeness at the subnational level and for non-intercensal periods.**

- **So, the information from censuses and surveys are still very useful in these contexts.**

The collection of mortality data in Censuses and Surveys

- *Summary questions* on survival of children ever born, parents or siblings: indirect methods to estimate the mortality by age, very strong assumptions to have the probability of dying by age (it uses indirect demographic methods).

- *Complete* birth, siblings, parental histories: not recollected in Censuses only surveys.

- *Recent household deaths*: age, sex and month/year of dying. A direct question recommended in the *UN Principles and Recommendations for Population and Housing Censuses* (core topic in countries with low CRVS completeness).

- Detailed information on:
  - United Nations (2004). Handbook on the collection of fertility and mortality data. Available at: https://unstats.un.org/unsd/demographic/standmeth/handbooks/Handbook_Fertility_Mortality.pdf

Possibilities for measuring COVID-19 mortality

Household deaths

- **Reference period greater than 12 months (?)**

- **Include COVID-19 deaths as an additional topic or question (?) (i.e. maternal mortality)**

- **How to adjust for underestimation at older ages in the context of COVID-19?**
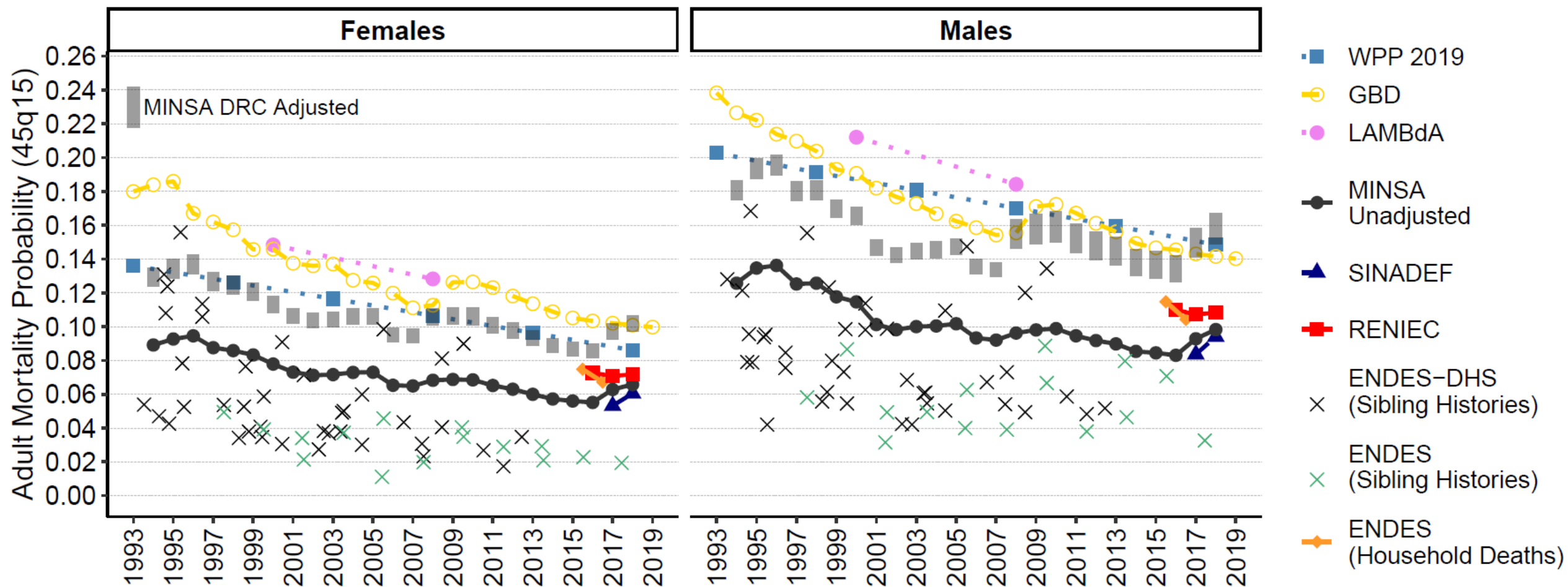
Orphanhood question

- **Include the date of death of the parent that had died (?)**

- **Include the age of the parent that had died (?)**

- **Include a reference period (?) (i.e. record only if died from 2018 to 2022)**

- **How to correct for the bias of multiple counting of the same parent (?).**

- **Include COVID-19 related question (?)**

Adjiwanou, Vissého, Nurul Alam, Leontine Alkema, Gershim Asiki, Ayaga Bawah, Donatien Béguy, Valeria Cetorelli, et al. 2020. "Measuring Excess Mortality During the COVID-19 Pandemic in Low- and Lower-middle Income Countries: The Need for Mobile Phone Surveys." SocArXiv. May 19. doi:10.31235/osf.io/4bu3q.

Advantages of the question and possibilities for adjusting HH deaths data

- **It is a well-established question, very useful for having direct mortality estimates by age and sex. Already recommended by the UN as a core Census question in countries with low CRVS completeness and by the WHO guide for measuring maternal mortality in Censuses.**

- **The advantages are not only to the estimation of mortality at the national level, but subnational level, urban/rural and hh socioeconomic characteristics.**

- **Same numerator and denominator, the disaggregation for the mentioned characteristics are more challenging to estimate using the other questions or incomplete CRVS data. HH deaths is an important tool to evaluate CRVS quality and to estimate mortality in countries with no data.**

- **Methods to adjust HH deaths: A data evaluation is needed like any source of data! It can be adjusted removing unipersonal households from the denominator, adjusting the old age mortality, among other things.**

Example: Peru MINSA adjusted using SEG

Thank you!

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