Age of Data: Where's Ageing?

By Alex Mihnovits

We are now living in a world where data is produced faster than ever before, in greater quantity, and on a wider range of topics.

Globally the number of household surveys increased six-fold between 1990 and 2010.[1] High demand for timely and regular evidence, including for monitoring of the Sustainable Development Goals, gave rise to production of estimates.[2] Additionally, new types of data emerged from the use of mobile phones, internet, social media apps, credit and debit cards, GPS, and so on.

In parallel technology, human ingenuity and different ways of looking, analysing and repurposing data have expanded our ability to harness this perpetually-growing asset, and to build a more detailed and varied understanding of the world, for better or for worse.

For example, through linking traditional socio-economic indicators with data on infrastructure (e.g. land use, building diversity, public spaces, etc.) and big data like call detail records (e.g. caller's social network, travel patterns, and number and duration of calls) it is possible to identify crime risk factors and to predict crime rate for an area.[3]

Information generated through social media and imagery, along with application of artificial intelligence highlight the power of data, its use and misuse as algorithms, can predict an individual's personality and preferences. According to one study, analysis of only 300 Facebook 'likes' can predict a person's personality traits more accurately than a spouse.[4] Similarly, researchers claim that machines have learned to determine a person's sexuality from photographs.[5]

This all creates an impression that it is now possible to 'piece together' an individual's life and motivations at a specific moment in time, or even map them in detail from early childhood to an older age. The corollary of this is that we can better understand the different barriers and opportunities that individuals face in various contexts.

But is it really so?

The new report by AARP and HelpAge International *Global AgeWatch Insights: the right to health for older people, right to be counted* examines health and care needs of older men and women in low- and middle-income countries (LMICs) and how health systems can respond to ensure the availability, accessibility, acceptability, and quality of health services for older people. The report also explores whether current data is helping us to better understand changing and varying health and care needs of an individual throughout life.

The Insights report finds that there are gaps in relation to evidence on health and ageing of the current cohorts of older men and women.

For example, we don't always know underlying causes of death. Globally only 9 per cent of death are registered in LMICs. More than half (56 per cent) of countries with no death registration are in Africa.[6]

Additionally, data might not always give an accurate picture of the extent of health conditions. Boerma et al. found that data on maternal mortality generated from statistical modelling by the United Nations and the Institute for Health Metrics and Evaluation differed by 35 and 55 per cent respectively from the data collected by Demographic and Health Survey.

While there are examples of modelled data that closely predicts empirical data, the accuracy of predicted estimates depends on the quality

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of underlying data, assumptions and methodological choices of the model.[7] Researchers note that "[…] statistics for indicators such as mortality associated with non-communicable disease or suicide, or monitoring access and quality of healthcare by estimates based on mortality by case data, should be interpreted with great caution for countries with poor cause of death data."[8]

Censuses, administrative data and household surveys continue to play important role within official statistics as primary sources of data on population. However, they contain limited information about health and care needs of older people, and some surveys have upper age caps that exclude older men and women above a certain age from data collection.

Ageing-specific surveys like the World Health Organization's Study on global AGEing and adult health (SAGE) and Health and Retirement Studies offer more breadth and scope, covering variety of topics.[9] For example, Longitudinal Ageing Study in India (LASI) the largest study of its kind includes Health, Economic and Social modules covering disease burden and risk factors,

functional health, cognition and mental health, health care and financing, housing and environments, work, pension and retirement, family, social network, and social welfare programs, along with collection of biomarkers.[10]

Yet these studies are rare. In 25 LMICs in Asia-Pacific less than half (10) countries conducted an ageing-specific survey.[11] Even when a specialised survey is administered there is a wide variation in what information is collected. The recent review of 51 longitudinal studies on ageing found that less than half (44 per cent) of studies included questions on cognitive function, and slightly more than half of the studies covered health and physical performance (51 per cent), and socio-economic factors (55 per cent). Information about health costs was collected only by one study.[12]

As for the 'treasure trove' of information from Facebook 'likes' and mobile phones, less than half of older people aged 75 and over own a mobile phone, and only 10 per cent of older men and women use the Internet.[13]

The above are just a few examples of challenges involved in collection and production of high quality data on

Without Good Data, Older People Cannot Realize Their Right to Health

In Africa, 34 of 40 countries that have conducted the WHO STEPS survey on non-communicable diseases have not included anyone over the age of 64. We need good quality, timely data disaggregated by sex, age, disability and other relevant characteristics to measure, understand and respond to the diverse and specific needs of older men and women, and to monitor progress on the right to health for all.

Data collection	• Remove upper-age caps that exclude older people from surveys. • Develop a life-course framework for statistics on ageing to guide national data collection. • Invest in capacity-building in national statistical offices, especially in low and middle-income countries, to produce quality data on ageing, health and older people. • Collect data directly from older people, including through cross-sectional and longitudinal surveys on ageing.
Analysis	• Develop guidelines for consistent analysis and reporting of data by age, sex and disability.
Reporting	• Promote wider reporting of data collected across different data tools. • Remove unnecessary restrictions on access to microdata while respecting privacy and confidentiality of respondents. • Strengthen efforts for timely and regular publication of survey results.
Use	• Ensure detailed data by sex, age and disability is included in national health plans to inform policy and programme implementation. • Improve coverage and quality of data on births and deaths (CRVS) to ensure health policy and practice are well informed.

Better Data

ageing and older people. Inadequate data has implications.

The gaps and issues described earlier results in production of statistics on health and ageing that provide only a narrow and partial understanding of ageing, and cannot therefore, adequately inform policy at national levels. In this instance data itself becomes a further barrier to the inclusion of older men and women in policy and program response.

So what can be done? There are a number of ways to improve collection, analysis, reporting and use of primary and secondary data on ageing and older people at global, national and local levels. (see infographic)

One solution is development of national conceptual and analytical framework for ageing related statistics over the life course. For example, Statistics Canada's ageing framework guides review of data and analysis of ageing produced internally and externally.[14] It help to identify merging ageing issues and future data needs, as well as data gaps, and required improvements in data collection and analysis.

In March 2018 the UN Statistical Commission established the Titchfield Group.[15] A voluntary group of national statistical offices that aims to develop standardised tools and methods for producing statistics on ageing and age-disaggregated data. The Group represents an important step and another concrete solution towards better data on ageing. ◆

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1. UN Secretary-General's Independent Expert Advisory Group on the Data Revolution for Sustainable Development, A Wold that Counts. Mobilising the Data Revolution for Sustainable Development, 2014.

2. Boerma T et al., Monitoring country progress and achievements by making global predictions: is the tail wagging the dog?, The Lancet 392:10147, 2018, pp.607609, DOI:https://doi.org/10.1016/S0140-6736(18)30586-5

3. Oliver Nuria, 'Crime, cities and data', SD Talks Special Series on Data for Sustainable Development, https://vimeo.com/222496211, http://interscity.org/advanced-school/presentations/Nuria_Oliver_crime_cities_data.pdf

4. Quenqua D, Facebook knows you better than anyone else, The New York Times, January 19 2015. https://www.nytimes.com/2015/01/20/science/facebook-knows-you-better-than-anyone-else.html

5. Lewis P, I was shocked it was so easy: meet the professor who says facial recognition can tell if you are gay, The Guardian, 7 July 2018. https://www.theguardian.com/technology/2018/jul/07/artificial-intelligence-can-tell-your-sexuality-politics-surveillance-paul-lewis

6. World Health Organization, World health statistics 2012, Geneva, World Health Organization, 2012

7. Leach-Kemon K and Gall J, Why estimate?, 27 August, 2018. Institute for Health Metrics and Evaluation, http://www.healthdata.org/acting-data/why-estimate

8. Boerma T et al. 2018.

9. Gateway to global aging data, https://g2aging.org/?section=surveyOverview

10. Arokiasamy P, Longitudinal Ageing Study in India (LASI), presented at the Titchfield Group meeting on age and age disaggregated data, 26-27 June, 2018, https://gss.civilservice.gov.uk/wp-content/uploads/2018/07/Annex-D-Longitudinal-Ageing-Study-in-India-.pdf

11. Teerawichitchainan B. and Knodel JK, Data mapping on ageing in Asia and the Pacific: analytical report. Chiang Mai, HelpAge International, 2015.

12. Stanziano D C et al., A review of selected longitudinal studies on aging: past findings and future directions, Journal of the American Geriatrics Society 2010 October; 58(Suppl 2): S292-S297. DOI:10.1111/j.1532-5415.2010.02936x

13. International Telecommunication Union, Measuring the information society report 2016, Geneva. International Telecommunication Union 2016.

14. Lebel A, Ensuring relevance for statistics on population ageing: the workshop in support of the establishment of the Titchfield City Group on ageing and age-disaggregated data, August 23 2017, Winchester UK. https://gss.civilservice.gov.uk/archive/wp-content/uploads/2017/09/Parallel-4-Making-the-most-of-existing-data-sources-Andre-Lebel-Room-202.pptx

15. UNDESA, Statistics Commission endorses new Titchfield City Group on Ageing, https://www.un.org/development/desa/ageing/news/2018/03/title-statistics-commission-endorses-new-titchfield-city-group-on-ageing/

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