Global dementia cases set to triple by 2050 unless countries address risk factors

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The number of adults (aged 40 years and older) living with dementia worldwide is expected to nearly triple, from an estimated 57 million in 2019 to 153 million in 2050, due primarily to population growth and

population ageing. The Global Burden of Disease study is the first to provide forecasting estimates for 204 countries worldwide, and is published in *The Lancet Public Health*.

The study also looks at four risk factors for dementia—smoking, obesity, high blood sugar, and low education—and highlights the impact they will have on future trends. For example, improvements in global education access are projected to reduce dementia prevalence by 6·2 million cases worldwide by 2050. But this will be countered by anticipated trends in obesity, high blood sugar, and smoking, which are expected to result in an additional 6·8 million dementia cases.

The authors highlight the urgent need to rollout locally tailored interventions that reduce risk factor exposure, alongside research to discover effective disease-modifying treatments and new modifiable risk factors to reduce the future burden of disease."Our study offers improved forecasts for dementia on a global scale as well as the country-level, giving policy makers and public health experts new insights to understand the drivers of these increases, based on the best available data", says lead author Emma Nichols from the Institute for Health Metrics and Evaluation (IHME) at the University of Washington, U.S.. "These estimates can be used by national governments to make sure resources and support are available for individuals, caregivers, and health systems globally."

She continues, "At the same time, we need to focus more on prevention and control of risk factors before they result in dementia. Even modest advances in preventing dementia or delaying its progression would pay remarkable dividends. To have the greatest impact, we need to reduce exposure to the leading risk factors in each country. For most, this means scaling up locally appropriate, low-cost programmes that support healthier diets, more exercise, quitting smoking, and better access to education. And it also means continuing to invest in research to identify

effective treatments to stop, slow, or prevent dementia."

Dementia is currently the seventh leading cause of death worldwide and one of the major causes of disability and dependency among older people globally—with global costs in 2019 estimated at more than US$1 trillion. Although dementia mainly affects older people, it is not an inevitable consequence of ageing. A Lancet Commission published in 2020 suggested that up to 40% of dementia cases could be prevented or delayed if exposure to 12 known risk factors were eliminated—low education, high blood pressure, hearing impairment, smoking, midlife obesity, depression, physical inactivity, diabetes, social isolation, excessive alcohol consumption, head injury, and air pollution.

The study predicts that the greatest increase in prevalence will occur in eastern sub-Saharan Africa, where the number of people living with dementia is expected to climb by 357% , from nearly 660 000 in 2019 to more than 3 million in 2050, mainly driven by population growth—with Djibouti (473%), Ethiopia (443%), and south Sudan (396%) seeing the greatest increases. Similarly, in north Africa and the Middle East, cases are predicted to grow by 367%, from almost 3 million to nearly 14 million, with particularly large increases in Qatar (1926%), the United Arab Emirates (1795%), and Bahrain (1084%; table 1).

By contrast, the smallest increase in the number of dementia cases is projected in high-income Asia Pacific, where the number of cases is expected to grow by 53%, from 4·8 million in 2019 to 7·4 million in 2050—with a particularly small increase in Japan (27%). In this region, the risk of dementia for each age group is expected to fall, suggesting that preventive measures, including improvements in education and healthy lifestyles are having an impact.

Similarly, in western Europe, the number of dementia cases is expected to rise by 74%, from almost 8 million in 2019 to nearly 14 million in

2050 (table 1). Relatively small increases in cases are expected in Greece (45%), Italy (56%), Finland (58%), Sweden (62%), and Germany (65%). In the UK, the number of dementia cases is projected to increase by 75%, from just over 907 000 in 2019 to almost 1·6 million in 2050.

Globally, more women are affected by dementia than men. In 2019, women with dementia outnumbered men with dementia 100 to 69. And this pattern is expected to remain in 2050. "It's not just because women tend to live longer", says co-author Dr. Jaimie Steinmetz from IHME, University of Washington, U.S.. "There is evidence of sex differences in the biological mechanisms that underlie dementia. It's been suggested that Alzheimer's disease may spread differently in the brains of women than in men, and several genetic risk factors seem related to the disease risk by sex."

According to co-author Professor Theo Vos from IHME, University of Washington, U.S., "Low- and middle-income countries in particular should implement national policies now that can mitigate dementia risk factors for the future, such as prioritising education and healthy lifestyles. Ensuring that structural inequalities in access to health and social care services can be addressed and that services can additionally be adapted to the unprecedented needs of an increasing older population with complex care needs will require considerable planning at both local and national levels."

The authors acknowledge that their analysis was limited by a lack of high-quality data in several parts of the world, including sub-Saharan Africa, eastern Europe, and Central America, and by studies using different methodologies and definitions of dementia. They also note that they were unable to consider all 12 risk factors from the 2020 Lancet Commission report because they were limited to risk factors included in the GBD study and only included risk factors with strong evidence of association. However, including additional risk factors would not have

necessarily led to a change in the forecasted prevalence, unless changes in exposure to a given risk factor were expected as well. Finally, they note that the study examined the overall prevalence of dementia, and it is possible that clinical subtypes, such as vascular dementia, may have different relationships with risk factors, which could affect the results.

Writing in a linked Comment, Dr. Michaël Schwarzinger and Dr. Carole Dufouil, Bordeaux University Hospital in France (who were not involved in the study) say, "In our opinion, the authors' efforts to build on GBD 2019 are still oversimplifying the underlying mechanisms that cause dementia…[they] provide apocalyptic projections that do not factor in advisable changes in lifestyle over the lifetime. There is a considerable and urgent need to reinforce a public health approach towards dementia to better inform the people and decision makers about the appropriate means to delay or avoid these dire projections."

Countries with the highest percentage change in total number of dementia cases 2019–50

1) Qatar (1926%)
2) United Arab Emirates (1795%)
3) Bahrain (1084%)
4) Oman (943%)
5) Saudi Arabia (898%)
6) Kuwait (850%)
7) Iraq (559%)
8) Maldives (554%)
9) Jordan (522%)
10) Equatorial Guinea (498%)

Countries with the lowest percentage change in total number of dementia cases 2019–50

1) Japan (27%)
2) Bulgaria (37%)
3) Serbia (38%)
4) Lithuania (44%)
5) Greece (45%)
6) Latvia (47%)
7) Croatia (55%)
8) Ukraine (55%)
9) Italy (56%)
10) Finland (58%)

More information: Estimation of the global prevalence of dementia in 2019 and forecasted prevalence in 2050: an analysis for the Global Burden of Disease Study 2019, *The Lancet Public Health* (2022). DOI: 10.1016/S2468-2667(21)00249-8 , www.thelancet.com/journals/lan … (21)00249-8/fulltext

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