Estimating the prevalence of dementia in Georgia

Gigineishvili D.[1,2], Kordzaia D.[1], Shakarishvili R.[1,2]

Abstract

Background: The paper focuses on providing new estimates of the number of people with dementia in Georgia.
Methods: No studies were identified from the systematic review of publications of dementia prevalence in Georgia through the PubMed database. Thus, the prevalence of dementia in Georgia was calculated by applying Alzheimer Europe prevalence rates to 2018 population number, published by the National Statistics Office of Georgia.
Results: Applying the mean estimate of prevalence in combined EU and non-EU countries for 2018, dementia prevalence in Georgia would be 58554. Using the estimates of particular European countries, showing congeniality with Georgia by several demographic factors (population, economic status, soviet legacy), the prevalence of dementia would be somewhere between 45500 and 64895.
Conclusions: Although there are several limitations to these estimates, the data provide useful information for planning and managing health and social care services, as well as raising public awareness and knowledge about dementia at a national level.
(TCM-GMJ June 2025; 10 (1): P3-P5)

Keywords: prevalence, dementia, Georgia, policymaking, population projections

Introduction

Dementia is a group of disorders caused by pathological changes in the brain, characterized by severe impairments in memory, thinking, social skills, and behavior that negatively affect the patient's daily life. The most common form of dementia is Alzheimer's disease, a progressive neurodegenerative disease that affects the elderly population. According to WHO data in 2015, 47 million people worldwide had dementia, and 9.9 million new cases were diagnosed each year. 60% of these patients live in low- and middle-income countries (1). According to the Global Burden of Disease Study 2016, dementia was one of the leading causes of death: it ranked fourth after ischemic heart disease, chronic obstructive pulmonary disease, intracerebral hemorrhage, and ischemic stroke. In 2016, dementia accounted for 8.6% of all deaths in people over 70 years of age, making dementia the second leading cause of death in this age group after ischemic heart disease (2, 3). In 2016, the mortality rate due to dementia was higher in women than in men. The age-standardized global prevalence in women was also 1.17 times higher than in men, and the total number of patients in 2016 was 27 million women and 16.8 million men (3).

Dementia is also a major cause of disability, which has a profound impact not only on the patient, but also on the caregivers of the person with dementia and on society as a whole. Global societal economic costs of dementia usually are divided into three cost sub-categories: direct medical costs (accounting for 20% of the total costs), direct social care costs (additional 40%) and costs of informal (unpaid) care (remaining 40%). In high-income countries, the relative contribution of social care costs is increasing up to 43%, in contrast, the same sub-category costs are extremely low (15%) in countries with low and middle-income while informal costs increasing up to 60% (4). Dementia is **one of the costliest health conditions (5, 6), t**he cost will rise exponentially as the number of people living with dementia is projected to triple by 2050 (7). The findings above indicate that the rising burden of dementia will deplete the labor force and reduce productivity as individuals take on informal caregiving roles for those with dementia, as well as re-

From the [1]Tbilisi state University , Georgia; [2]Sarajishvili Institute of Neurology, Georgia;
Received March 5, 2025; accepted April 29 , 2025.
Address requests to: Gigineishvili David
E-mail: david.gigineishvili@tsu.ge

duce the capital supply available to invest elsewhere as dementia care consumes substantial resources. These effects will negatively impact on the economic growth of a country, especially increase the financial burden for low and middle-income countries. This data indicates that the estimation of the costs of dementia is and will in future be of utmost importance for policy makers and health care officials.

There is currently a wide gap between the need for dementia prevention and care and the actual provision of these services. Dementia is widely underdiagnosed, leaving many cases of dementia undetected (up to 75%). And where dementia is diagnosed, it is mostly done at a late stage of the disease (8).

The epidemiology of dementia is important in two ways. Determining the incidence and prevalence of the disease (measures of frequency) is the cornerstone that helps health care planners (policymakers) correctly determine priorities for improving health of older people. However, epidemiology also studies the mechanisms that cause the disease and determines variety of variables associated with an increased risk of disease, the so-called risk factors. By identifying and influencing them (especially modifiable one), the onset of the disease can be delayed and, accordingly, the number of patients can be reduced. Thus, assessments of major modifiable risk factors aid in prioritizing public health targets for intervention.

Methods

Using the scientific search engine (PubMed) ((dementia [Title/Abstract]) AND (epidemiology[Title/Abstract])) AND (Georgia[Title/Abstract]) we were unable to find any separate publications on the epidemiology of dementia in Georgia. However, it is worth highlighting two global studies published by the Global Burden of Dementia collaborators in 2019 and 2022 (3, 7). According to the data presented there, there were 30,310 patients with dementia in Georgia in 2016 and 46,291 patients in 2019. Since a large population-based epidemiological study has not been conducted, we attempted to determine the prevalence of the disease in Georgia through linkage to European population-based studies. The detection of epidemiological indicators using this extrapolation method is an accepted practice (9, 10).

The dementia prevalence rates we used were based on the report published by the Alzheimer's Europe Society on the basis of a large-scale survey and analysis (11). In the report the authors selected and summarized prevalence studies conducted in Europe and published between 2008 and 2019 and calculated prevalence estimates of people with dementia at a European level. In parallel, they published the rates for each EU and non-EU European country that were available at that time. The review process adopted the same search methodology and screening process previously identified as part of EuroCoDe project (12).

Results and discussion

Using the average European rate (EU-28 and non-EU 9 countries), there should have been 58,554 people with dementia in Georgia in 2018 (1.57x3,729,600:100). The population number was taken from National Statistics Service of Georgia web report (13). In order to more accurately determine the prevalence rate of dementia, we decided to take epidemiological indicators from European countries whose socio-economic parameters are comparable to those of our country. In particular, based on the gross national income per capita (GNI - 5042 USD) for 2021-2022, Georgia is included in the list of upper middle -income countries by the World Bank (14). Bosnia and Herzegovina also belongs to the same group (GNI -6919 USD, population - 3.28 million). By extrapolating the 2018 dementia prevalence rate of this country (1.22%) to Georgian population, the number of people with dementia would be 45,501. If we take into account the socio-economic and political past, we can consider the epidemiological estimate of Latvia (1.74%), which extrapolates to a higher rate of people with dementia in Georgia - 64,895.

Several studies showed that the overall prevalence of dementia varies widely by continent and country (15, 16). The results of studies are sometimes inconsistent. Some indicate a low rate in sub-Saharan Africa and a high rate in Latin America, while others indicate high rates in industrialized countries such as the United States and Western Europe. Most studies have measured the prevalence of the disease only in the population over 60 years of age (17). One of the first European collaborative studies found a very low prevalence of dementia (0.2%) in the 30 –59 year old population, and this figure is often used in subsequent studies (18). The prevalence of the disease increases with age: it is relatively low in the 55-64 age group (80 per 10,000), triples in those aged 65-74 (267 per 10,000), and is 18-fold higher in those aged 80-89 (1,510 per 10,000) (11). There are also conflicting results from studies examining the variation in dementia prevalence over time, with some reporting an increase in the prevalence, while others report a plateau or even a decline. A recent meta-analysis, aimed to select population-based epidemiological studies that used more or less identical methodology, identified a total of 9 studies (6 European, 2 American, and 1 Japanese). The analysis of the rates did not show an increase in the age-specific prevalence of dementia over time (17).

On the other hand, it is widely accepted that as life expectancy increases, the number of people with dementia is likely to increase. In the UK, the proportion of people aged 65–74 years is expected to increase by 20% between 2019 and 2040, and that of people aged 85 and over by 114% (19). This is why the Alzheimer's Europe Society's 2019 publication 'Dementia in Europe' also provides the expected prevalence of dementia in 2025 and 2050, both for each selected European country and for the combined figure. The latter is expected to increase from 1.57% to 1.8% in 2025 and to 3% in 2050. Therefore, establishing accurate and up-to-date epidemiological data on dementia should be a priority for health system and prudent policymakers should plan future service provision based upon current prevalence projections.

Among the risk factors that influence the development of dementia are excessive alcohol use, smoking, obesity

and physical inactivity (sedentary behavior). More specific factors include early depression, traumatic brain injury, low education attainment, lack of intellectual activity and social isolation. Dementia risk may be reduced by planning and incorporating single- or multi-domain interventions that target subsets of modifiable dementia risk factors, conducting medical and educational activities within the health system. Other factors (age, sex and genetic) cannot be modified and are therefore beyond the tasks and capabilities of the health system.

Geographical, political and social factors have a great influence on intellectual (skilled) labor and the growth of the elderly population. For example, since the 1990s, Georgia has been in a permanent phase of transition from one socio-economic system to another, new economic system for the country. This has led to the cessation of a number of intellectual activities and a prominent decrease in demand for specialists in this field. The standards of demand for professional activities have also decreased and, in some cases, even leveled. Internal migration has increased (predominantly rural-urban migration for economic improvement) and reached unprecedented proportions - people have been forced to find work in the unintellectual labor market. Migration to another country has greatly increased in recent decades, a larger proportion of migrants are of working age. Currently, more and more young people are going abroad to receive higher education. This can negatively affect the demographic picture of the population and artificially increases the proportion of the elderly population, which is at risk of developing dementia. It is also worth mentioning that prolonged socio-economic disadvantage may leads to elevated exposure to chronic stressors. The latter activates both the sympathetic-adrenal and hypothalamic-pituitary-adrenal axes, which contribute to the development of coronary and metabolic disease (20, 21, 22). Recent large population-based cohort study shows that metabolic syndrome was associated with a 12% increased risk of incident all-cause dementia (23). We can speculate that future well-designed dementia risk prediction research in Georgia can enhance the development of a dementia prediction model applicable for Middle-Income countries.

Conclusion

Exploring epidemiological data related to dementia can reveal the burden of the disease and help government, policymakers and care providers to develop and deliver a public health approach to dementia prevention. We are urging the government in collaboration with neurologists, psychiatrists, gerontologists and psychologists to develop and implement National Dementia Program, because it is a single powerful tool to ensure that health and social care systems are adequately structured and funded to provide high-quality care and support for people living with dementia.

Referencs

1. WHO. Global action plan on the public health response to dementia [Internet]. 2017. Available from: https://apps.who.int/iris/bitstream/handle/10665/259615/9789241513487-eng.pdf?sequence=1
2. Naghavi M, Abajobir AA, Abbafati C, Abbas KM, Abd-Allah F, Abera SF, et al. Global, regional, and national age-sex specific mortality for 264 causes of death, 1980–2016: a systematic analysis for the Global Burden of Disease Study 2016. The Lancet. 2017 Sep;390(10100):1151–210.
3. Nichols E, Szoeke CEI, Vollset SE, Abbasi N, Abd-Allah F, Abdela J, et al. Global, regional, and national burden of Alzheimer's disease and other dementias, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. The Lancet Neurology [Internet]. 2019 Jan;18(1):88–106. Available from: https://www.thelancet.com/journals/laneur/article/PIIS1474-4422(18)30403-4/fulltext
4. Prince M, Wimo A, Guerchet M, Ali GC, Wu YT, Prina M. World Alzheimer Report 2015. The Global Impact of Dementia: An analysis of prevalence, incidence, cost and trends. [Internet]. unilim.hal.science. 2015. Available from: https://unilim.hal.science/hal-03495438
5. Alzheimer's Research UK. The economic impact of dementia [Internet]. Dementia Statistics Hub. 2021. Available from: https://dementiastatistics.org/statistics/the-economic-impact-of-dementia/
6. Sontheimer N, Konnopka A, König HH. The Excess Costs of Dementia: A Systematic Review and Meta-Analysis. Journal of Alzheimer's Disease. 2021 Aug 31;83(1):333–54.
7. GBD 2019 Dementia Forecasting Collaborators. 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 [Internet]. 2022 Jan 6;7(2). Available from: https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(21)00249-8/fulltext
8. Gauthier S, Rosa-Neto P, Morais JA, & Webster C. 2021. World Alzheimer Report 2021: Journey through the diagnosis of dementia. London, England: Alzheimer's Disease International.
9. Pierce M, Cahill S, O'Shea E. Planning dementia services: new estimates of current and future prevalence rates of dementia for Ireland. Irish Journal of Psychological Medicine. 2013 Mar;30(1):13–20.
10. Benbadis SR, Allen Hauser W. An estimate of the prevalence of psychogenic non-epileptic seizures. Seizure. 2000 Jun;9(4):280–1.
11. Georges J, Bintener C, Miller O. Dementia in Europe Yearbook 2019: Estimating the prevalence of dementia in Europe [Internet]. www.alzheimer-europe.org. 2020. p. 1–108. Available from: https://www.alzheimer-europe.org/resources/publications/dementia-europe-yearbook-2019-estimating-prevalence-dementia-europe
12. Dementia in Europe Yearbook 2008: Social support, socio-economic cost, psycho-social interventions and prevention [Internet]. Alzheimer Europe. 2025 [cited 2025 May 1]. Available from: https://www.alzheimer-europe.org/resources/publications/dementia-europe-yearbook-2008-social-support-socio-economic-cost-psycho?language_content_entity=en
13. Circle. Population - National Statistics Office of Georgia [Internet]. www.geostat.ge. Available from: https://www.geostat.ge/en/modules/categories/41/population
14. GDP per capita (current US$) - Georgia | Data [Internet]. data.worldbank.org. Available from: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=GE
15. Prince M, Bryce R, Albanese E, Wimo A, Ribeiro W, Ferri CP. The Global Prevalence of dementia: a Systematic Review and Metaanalysis. Alzheimer's & Dementia. 2013 Jan;9(1):63-75.e2.
16. Cao Q, Tan CC, Xu W, Hu H, Cao XP, Dong Q, et al. The Prevalence of Dementia: A Systematic Review and Meta-Analysis. Journal of Alzheimer's Disease. 2020 Jan 1;73(3):1157–66.
17. Prince M, Ali GC, Guerchet M, Prina AM, Albanese E, Wu YT. Recent global trends in the prevalence and incidence of dementia, and survival with dementia. Alzheimer's Research & Therapy [Internet]. 2016 Jul 30;8(1).
18. Hofman A, Rocca WA, Brayne C, Breteler MMB, Clarke M, Cooper B, et al. The Prevalence of Dementia in Europe: A Collaborative Study of 1980–1990 Findings. International Journal of Epidemiology. 1991;20(3):736–48.
19. Wittenberg R, Hu B, Barraza-Araiza L, Funder A. Projections of Older People with Dementia and Costs of Dementia Care in the United Kingdom, 2019–2040 [Internet]. 2019 Nov. Available from: https://www.alzheimers.org.uk/sites/default/files/2019-11/cpec_report_november_2019.pdf
20. Hjemdahl P. Stress and the Metabolic Syndrome. Circulation. 2002 Nov 19;106(21):2634–6.
21. Ajibewa TA, Kershaw KN, J. Jeffrey Carr, Terry JG, Kelley Pettee Gabriel, Carnethon MR, et al. Chronic stress and cardiovascular events: Findings from the CARDIA Study. American Journal of Preventive Medicine. 2024 Jul;67(1):24-31.
22. Jurgens SM, Prieto S, Hayes JP. Inflammatory biomarkers link perceived stress with metabolic dysregulation. Brain, Behavior, & Immunity - Health [Internet]. 2023 Dec 1;34:100696.
23. Qureshi D, Collister JA, Allen NE, Elżbieta Kuźma, Littlejohns TJ. Association between metabolic syndrome and risk of incident dementia in UK Biobank. Alzheimer's & Dementia. 2023 Sep 7;20(1).