

The prevalence of dementia

This factsheet is now obsolete. For up to date information on the prevalence of dementia, please refer to <http://www.alz.co.uk/research/statistics>

For historical reference, the original content of the 1999 factsheet can be found on the following pages.



The prevalence of dementia

There is a lack of consistent data on prevalence around the world, but estimates can be made based on a number of studies.

Prevalence rates

Prevalence refers to the number of people with dementia in the population at a given point in time. There are a large number of prevalence surveys which have been carried out throughout the world. These tend to give slightly different results depending on the methods used in the study. However, all studies show a sharp rise in the prevalence of dementia with age. A statistical integration of results from a number of prevalence studies gave the following figures.¹

Age group	Prevalence rate %
65-69	1.4
70-74	2.8
75-79	5.6
80-84	11.1
85+	23.6

These figures were derived from surveys in the more developed countries (Europe, North America, Australasia and Japan) and may not apply to the less developed countries. A pooling of data from European studies gave very similar figures.²

Although dementia can occur at any age, it is rare below the age of 60 years.

There is continuing controversy about the prevalence rates in extreme old age (90 onwards). One view is that everyone will develop dementia if they live long enough, but there is an opposing view that the risk of developing dementia levels out, and may even decline in extreme old age.³

Sex differences

Most of the evidence shows that there is no sex difference in the overall prevalence of dementia. However, some studies show a slightly higher

prevalence rate of Alzheimer's disease in women.

Regional differences

Although Alzheimer's disease is the most common form of dementia in Caucasian populations, this may not apply to other national or ethnic groups.

Jorm's research suggested that vascular dementia might be particularly common in Japan and in the former USSR. Since then, there have been at least six further Japanese prevalence studies, which have tended to confirm this suggestion. The overall prevalence of dementia in Japan is similar to that seen elsewhere, however Alzheimer's disease is relatively rare and vascular dementia relatively common. The ratio of vascular dementia cases to Alzheimer's disease cases in Japanese studies varies between 1:1 and 3:1, compared with a typical ratio of 1:2.5 for European and American studies. This difference, if genuine and not just a reflection of different diagnostic practices, remains unexplained. Two American studies of older Japanese immigrants in Hawaii⁴ and King County⁵ observed a ratio of vascular dementia to Alzheimer's disease cases that was more typical of findings among European and American Caucasians.

Evidence suggests that dementia and Alzheimer's disease may be less common in rural than urban areas, and in developing rather than developed countries. In Jorm's study the prevalence rates for dementia were unusually low in the three Scandinavian studies surveying rural communities. Two other small studies have reported very strong associations between urban residence and Alzheimer's disease^{6,7}. Data from developing countries is sparse. Well-conducted studies in Kerala, India⁸ and China⁹

suggest similar prevalence rates for dementia to those seen in developed countries, but dementia seems to be very rare in Kashmir¹⁰, and among Cree native American Indians¹¹. The best evidence for a contrast between developing and developed countries comes from a study that compared directly, using the same methods, the age-adjusted prevalence of dementia in African Americans in Indianapolis (6.4%) with Africans in Ibadan, Nigeria (1.2%)¹². We urgently need more data from studies in Nigeria and other developing countries to confirm or refute the suggestion that dementia may be especially rare in these parts of the world.

Number of dementia cases in the world

Because so little is known about the prevalence of dementia in the less developed countries, it is difficult to estimate the number of cases of dementia in the world. However, it is possible to make an estimate for the more developed countries.

According to the United Nations¹³ the population of the more developed countries was 1,143 million in 1990, with 143 million of these being aged 65 or over. Applying the prevalence rates for various age groups given above, we arrive at an estimate of 7.4 million persons with dementia. Given that Alzheimer's disease generally makes up the majority of cases in more developed countries, we could estimate that more than half of these people would have Alzheimer's disease (ie at least 3.7 million people).

Prevalence in the past

Two population-based studies have continued to survey the residents of the same area over long periods of time,

and are therefore in the unusual position of being able to comment on the trends in prevalence over time. The Lundby study in Sweden¹⁴ indicated no significant change in the prevalence or incidence of either multi-infarct dementia or what was described at the time as 'senile dementia' over the period from 1947 to 1972. In Rochester in the US¹⁵ the meticulously maintained health care register suggested no change in the prevalence of either Alzheimer's disease or dementia between 1975 and 1980. However, despite the recent stability of prevalence rates we cannot exclude the possibility that dementia is a more common disease nowadays than, say, 100 or even 50 years ago – at a time when developed countries were still developing. Accounts of typical cases of Alzheimer's disease are to be found in historical sources, such as Defoe's *Gulliver's Travels*, centuries before Alois Alzheimer's description of early onset cases. However, up to the last twenty to thirty years, we lack any kind of hard data on prevalence that would allow valid comparison with our modern studies.

Prevalence in the future

Because of the ageing of the world's population, in the future there will be relatively more people in the age groups at most risk for dementia. In the absence of effective prevention or treatment, the increase in the numbers of people with dementia will come about as a simple consequence of an increase in the size of the population most at risk, ie of those aged 65 years and over.

Between 1990 and 2010, the number of dementia cases in the more developed countries is projected to increase from 7.4 million to 10.2 million (a 37% increase), the elderly population (aged 65+) from 143 million to 185 million (a 30% increase) and the total population in these countries is projected to increase from 1,143 million to 1,213 million (a 6% increase).

Because of the lack of prevalence data from the less developed countries, it is difficult to make projections of the future number of dementia cases. However, these countries are also ageing rapidly and are therefore expected to show an increase in dementia cases. Between 1990 and

2010 the number of people aged 65 or over in the less developed countries is projected to increase from 183 million to 325 million (a 78% increase).

Those projections assume, of course, that the prevalence rate of dementia does not change in the future. The prevalence rate of dementia might become lower, for example, if some means of preventing dementia was discovered. The prevalence rate might also conceivably increase if, for example, better care of people with dementia meant that they survived longer.

Bibliography

- 1 Jorm AF, Korten AE, Henderson AS. The prevalence of dementia: a quantitative integration of the literature. *Acta Psychiatrica Scandinavica* 1987;76:465-479.
- 2 Hofman A, Rocca WA, Brayne C et al. The prevalence of dementia in Europe: a collaborative study of 1980-1990 findings. Eurodem Prevalence Research Group. *Int J Epidemiol* 1991;20:736-748.
- 3 Jorm AF. Cross-national comparisons of the occurrence of Alzheimer's and vascular dementias. *European Archives of Psychiatry and Clinical Neuroscience* 1991; 240:218-222.
- 4 White L, Petrovitch H, Ross GW et al. Prevalence of dementia in older Japanese-American men in Hawaii: The Honolulu-Asia Aging Study [see comments]. *JAMA* 1996;276:955-960.
- 5 Graves AB, Larson EB, Edland SD, et al. Prevalence of dementia and its subtypes in the Japanese American population of King County, Washington state. The Kame Project. *Am J Epidemiol* 1996;144:760-771.
- 6 Prince MJ, Cullen MC, Mann AH. (1994). Risk factors for Alzheimer's disease and dementia: A case-control study based on the MRC Elderly Hypertension Trial. *Neurology* 44, 97-104.
- 7 Baker FM, Jordan B, Barclay L, Schoenberg 135. (1993). Risk Factors for Clinically Diagnosed Alzheimer's Disease. *International Journal of Geriatric Psychiatry* 8, 379-385.
- 8 Shaji S, Promodu K, Abraham T, Roy KJ, Verghese A. An epidemiological study of dementia in a rural community in Kerala, India. *Br J Psychiatry* 1996;168:745-749.
- 9 Zhang M, Katzman R, Salmon D et al. The prevalence of dementia and Alzheimer's disease in Shanghai, China: Impact of age, gender, and education. *Annals of Neurology* 1990;27:428-437.
- 10 Razdan S, Kaul RL, Motta A, Kaul S, Bhatt RK. Prevalence and pattern of major neurological disorders in rural Kashmir (India) in 1986. *Neuroepidemiology* 1994;13:113-119.
- 11 Hendrie HC, Hall KS, Pillay N et al. Alzheimer's disease is rare in Cree. *Int Psychogeriatr* 1993;5:5-14.
- 12 Hendrie HC, Osuntokun BO, Hall KS et al. Prevalence of Alzheimer's disease and dementia in two communities: Nigerian Africans and African Americans. *American Journal of Psychiatry* 1995;152:1485-1492.
- 13 Department for Economic and Social Information and Policy Analysis Population Division. The sex and age

distribution of the world population: the 1994 revision. United Nations: New York 1994.

14 Roorsman B, Hagnell O, Lanke J. Prevalence and incidence of senile and multi-infarct dementia in the Lundby study: a comparison between the time periods 1947-1957 and 1957-1972. *Neuropsychobiology* 1986;15:122-129.

15 Beard CM, Kokmen E, Offord K, Kurland LT. Is the prevalence of dementia changing? *Neurology* 1991;41:1911-1914.

Alzheimer's Disease International would like to thank Dr Martin Prince and AF Jorm for their help in preparing this factsheet.



Alzheimer's Disease International

For more information about Alzheimer's disease and Alzheimer's Disease International, contact:
 Alzheimer's Disease International
 64 Great Suffolk Street
 London SE1 0BL
 Tel: +44 (0)20 7981 0880
 Fax: +44 (0)20 7928 2357
 Email: info@alz.co.uk
 Web: www.alz.co.uk