

Dementia: a major health problem for Australia

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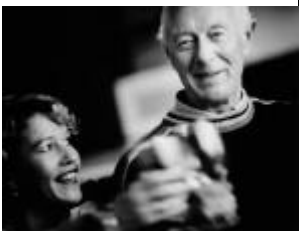


Dementia is one of the biggest health problems facing Australia right now and it will be an even bigger one in the future. To understand why this is so, it is necessary to examine the historical change in pattern of diseases in Australia.

The Historical Change From Infectious Diseases to Neurodegenerative Diseases



200 years ago Australia had a much higher birth rate, with big families being the norm. However, few people survived through to old age. It was very common for people to die in childhood from infectious diseases and for women to die in childbirth. In short, Australia had a high birth rate, but also a high death rate. However, with the advent of better sanitation, better living conditions and immunisation, infectious diseases are a far less serious health problem than they used to be. Most people are living to older ages and the birth rate has dropped. We are now in a society with a low birth rate and a low death rate.



The big health problems are now diseases of later life like heart disease and cancer. Of course, heart disease and cancer were always there in the age of infectious diseases. We simply did not see them as often because people did not live long enough to be at risk. A helpful analogy is of a receding tide. As the tide of infectious diseases has gone out, the rocks that were always there have been revealed. These rocks are heart disease and cancer. But, gradually, even heart disease and cancer are receding as we see the benefits of prevention programs and better treatments.

As the tide of these diseases retreats, what other rocks will be revealed? The answer is the so-called "neurodegenerative diseases", those diseases of the brain that tend to strike people in very old age. These will be a major challenge for the health system in the 21st century. By far the biggest of these neurodegenerative diseases, in terms of numbers of people affected, is Alzheimer's disease.

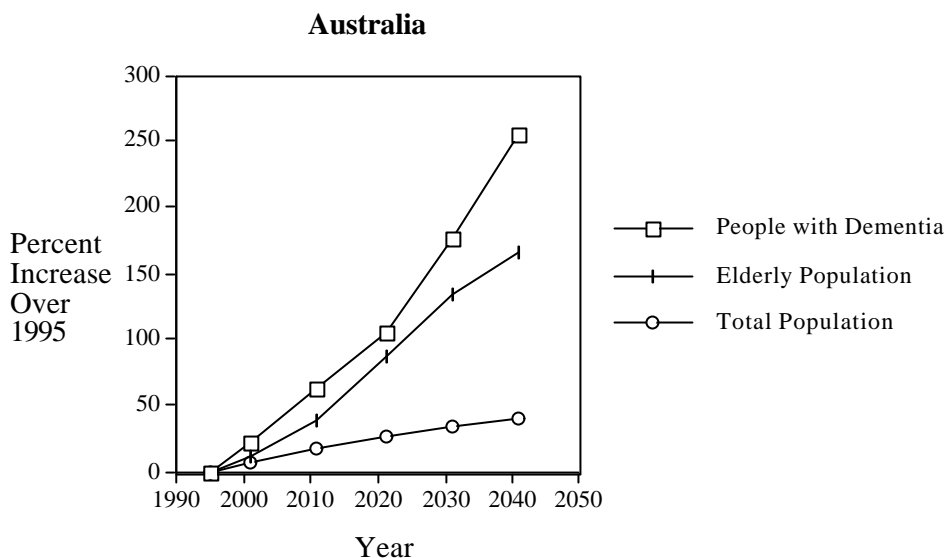
Growth in Prevalence of Dementia

We can see the growth of the problem by looking at prevalence figures. In 1995, Australia had a population of 18 million and there were estimated to be 130,000 people with dementia. In 2041, it is projected that Australia will have 25 million people, and 460,000 of these will have dementia (see Figure 1). In other words, while our total population will increase by only 40%, our population with dementia will increase by three and a half times. The reason is that the very elderly, who are the age group most at risk for dementia, will be the fastest growing segment of the population.



Figure 1. Projected increase in dementia cases, elderly population and total population for Australia, 1995-2041.

(Source: Henderson AS, Jorm AF. *Dementia in Australia*. Australian Government Publishing Service, Canberra, 1998)



Dementia as a Major Source of Disability

An important aspect of dementia and other neurodegenerative diseases is that they are very disabling. However, in deciding which diseases merit most attention in Australia we have traditionally turned to data on mortality rates rather than to data on disability. Information on mortality rates from various diseases is put together each year by the Australian Bureau of Statistics, based on what doctors write on death certificates. We can use this information to calculate how many years of life are lost prematurely from various diseases. When this is done for Australia, we find that the big two are heart disease and cancer, with injuries also an important cause of loss of life in men. However, in recent years, it has been recognized that, while some diseases cause death (often leading to death fairly quickly) others cause long-term disability. These disabling diseases have received less attention because they do not always get written down as a cause of death on death certificates. Diseases causing dementia are among the most important causes of disability in older people, but are not always recorded as causes of death. To solve this problem, health researchers have now developed methods of combining together both mortality and disability data so we get a full picture of what has been called the "burden of disease". The Australian Institute of Health and Welfare has looked at the leading causes of disease burden for older Australians (see Table 1). For women, number one is ischemic heart disease, number two is stroke and number three is dementia. Dementia is ahead of respiratory diseases, breast cancer, colorectal cancer, lung cancer, diabetes and arthritis. For men, dementia comes in number 5 behind ischemic heart disease, stroke, lung cancer and respiratory diseases. With men, we can see the ill effects of smoking which causes lung cancer and respiratory diseases and these push dementia lower in the league table. However, the projections are that by 2016 the situation will change dramatically. Dementia will rise in importance in both men and women and, in fact, it will become the largest source of disease burden in women (see Table 2). Note that this is 2016, which is not so far away.

Table 1. The 10 leading causes of disease burden in older Australians, 1996.

Women	Disease Burden (%)	Men	Disease Burden (%)
1. Ischemic heart disease	20	1. Ischemic heart disease	22
2. Stroke	11	2. Stroke	9
3. Dementia	9	3. Lung cancer	7
4. Chronic bronchitis, emphysema	4	4. Chronic bronchitis, emphysema	6
5. Breast cancer	4	5. Dementia	5
6. Colorectal cancer	3	6. Prostate cancer	5
7. Lung cancer	3	7. Colorectal cancer	4
8. Age-related vision disorders	3	8. Diabetes	3
9. Diabetes	3	9. Adult-onset hearing loss	3
10. Osteoarthritis	2	10. Benign prostatic hypertrophy	2

Adapted from: Mathers C, Vos T. The burden of disease and injury among older Australians. *Australasian Journal on Ageing* 2000; 19: 54-55.

Table 2. The top 5 sources of disease burden (all ages) projected for the state of Victoria in 2016

Women	Men
1. Dementia	1. Ischemic heart disease
2. Ischemic heart disease	2. Diabetes
3. Breast cancer	3. Prostate cancer
4. Depression	4. Lung cancer
5. Lung cancer	5. Dementia

Adapted from: Vos T, Begg S. *The Victorian Burden of Disease Study: Mortality*. Melbourne: Public Health and Development Division, Department of Human Services, 1999. Also at: <<http://www.dhs.vic.gov.au/phd/9903009/index.htm>>.

Health System Costs of Dementia

The cost of dementia to the health system is also enormous and will grow. According to the Australian Institute of Health and Welfare, the health system spends \$714 million a year on dementia, with most of this going on residential and hospital care (see Table 3). This is likely to be a considerable underestimate, because much health expenditure is not specifically attributed to dementia in hospital and other health service statistics. Consistent with that view, the AIHW analysis of data on the disability pattern in nursing homes attributes 17% of nursing home costs to dementia although other evidence suggests some 60% of residents have dementia. Furthermore, such estimates do not include the financial cost to families, let alone the emotional costs to carers.



Table 3. The health system costs of dementia in Australia, 1993-94

Source of cost	\$ Million
Hospital	110
Medical	11
Pharmaceuticals	2
Other health services	9
Other (includes residential care)	582
Total	714



Adapted from: Mathers C, Vos T, Stevenson C. *The burden of disease and injury in Australia*. Australian Institute of Health and Welfare: Canberra, 1999.



Possibilities for Prevention

This scenario can sound very pessimistic: dementia is common, it will become more common, it contributes a lot of disability and it will contribute more in the future, it costs a lot of money and it will cost more. However, the situation may not turn out to be as bad as this if we take action. All these statistics and projections are based on the assumption that there are no big advances in prevention or treatment. This is where research can make a difference.

Prevention of dementia is not a wild dream. Prevention does not mean we have to be able to eliminate dementia. All we have to do is postpone the diseases until later in the life span. So if people develop Alzheimer's disease later than they normally would, they will have more healthy years of life and we can say that the disease has been prevented. If, for example, we could delay the onset of dementia by even 1 or 2 years across the whole Australian population, this would reduce the prevalence of dementia by tens of thousands of cases.

At present, we do not know how to delay dementia, but there are some possibilities currently being investigated by researchers.¹ For Alzheimer's disease, there are medications such as anti-inflammatory drugs, oestrogen and antioxidants which appear promising. There is also the possibility of immunisation against the brain changes of Alzheimer's disease, which sounds like science fiction, but is actually being trialed at the moment. For vascular dementia, there are possibilities for prevention through lifestyle changes and medications like antihypertensives, antiplatelet drugs, folate and cholesterol lowering drugs.

The Continuing Need for Improvements to Services

Although it is likely that we will become much better at preventing and treating dementia, dementia is not expected to disappear in the foreseeable future. We are going to continue to need health and community services for people with dementia their families and carers and we need to make further efforts to improve these. We have made great strides in this area in Australia in the past 20 years through the efforts of successive Commonwealth and state governments and the Alzheimer's Association. However, health services research is one area where Australia is not doing well. The country has an excellent research effort in biomedical research, which is essential in the long term if we are to treat and prevent dementia. However, health services research is comparatively neglected in Australia, but is just as important in its own way. We all want the best quality services for people with dementia and their carers, and evaluation research has an important role in ensuring service quality. Currently, less than 10% of our research on dementia involves the investigation of services.² And this is knowledge we cannot so easily import from overseas, because there is so much about dementia services that is unique to each country. Even a doubling of dementia services research in Australia would not cost very much, because we are starting at such a low base.



Conclusion

Dementia is a growing health problem in Australia, but one that the nation will manage better if it invests in prevention, treatment and improved services.



Additional References

¹Jorm AF. Possibilities for the prevention of dementia. *Australasian Journal on Ageing*, in press.



²Jorm A, Griffiths K, Christensen H, Medway J. *Research Priorities in Mental Health*. A report commissioned by the National Mental Health Working Group and the Mental Health and Special Programs Branch of the Commonwealth Department of Health and Aged Care.

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