

# Estimated prevalence of dementia in the Maltese Islands

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## Abstract

Dementia is a serious, common, world-wide neurodegenerative disease associated with severe loss of cortical brain. It is a major predictor of morbidity and mortality in the elderly costing the health services more than cardiovascular disease and cancer put together. Recent studies have also suggested that the global prevalence of dementia would double every twenty years and should reach approximately 82 million cases by the year 2040. Using EURODEM data, we report that the estimated number of individuals with dementia in the Maltese islands is 4,072. This figure is expected to almost double by the year 2035. We discuss the implications of the forecast increase in the number of people with dementia for Malta's health services and society.

## Key words

Dementia, Malta, prevalence, EURODEM

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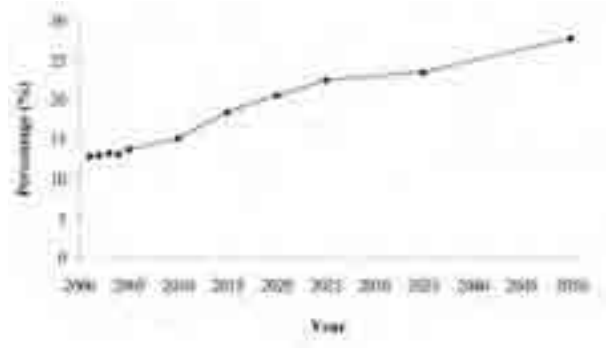
## Introduction

Dementia is a clinical term referring to a group of brain diseases that result in the progressive deterioration of cognitive functions. Dementia usually presents itself as an impairment in short- and long-term memory associated with impairment in abstract thinking, impaired judgment and other disturbances that are of such severity that they interfere with work and social activities.<sup>1</sup> As the disease progresses, the person with dementia will need increasing help and support in performing everyday tasks. Several diseases are known to cause dementia. Alzheimer's Disease accounts for 50-60% of cases, while Vascular Dementia and Lewy Body Disease account for a further 15-20% each.<sup>2</sup> Other disorders associated with this disease process include fronto-temporal dementia and Parkinson's Disease.<sup>3</sup> According to the 2003 World Health Report by the World Health Organization (WHO), dementia contributed to 11.2% of years lived with disability in people aged 60 years and over - much more than cardiovascular disease (5%) and all forms of cancer (2.4%).<sup>4</sup> This is a significant demand on family and informal carers as the majority of care for people with dementia is provided at home.

Alzheimer Disease International and Alzheimer Europe have been campaigning for years to make dementia a public health priority in view of the increasing number of people diagnosed with dementia worldwide and the financial implications of managing the consequences of this disabling condition. People with dementia will invariably make great demands on health care services resulting in considerable socio-economical consequences. It has been estimated that the total number of persons with dementia will double every twenty years for the period 2000 to 2040 at a global rate of 4.6 million new dementia cases every year.<sup>5</sup> This is a result of the current demographic trends leading to increasingly ageing populations and will affect particularly the underdeveloped countries.

Studies aimed at determining the prevalence rates of dementia in the Maltese islands are lacking even though Malta has an ever-increasing ageing population. In view of the importance of having projected figures on the local number of cases of dementia so to guide policy makers undertaking health services planning and to help students and professionals conducting dementia research in Malta, we felt the need to estimate the numbers of people with dementia. An estimate of dementia prevalence can be calculated using the demographic data for the Maltese population as is recommended in the

**Figure 1:** The percentage number of individuals over the age of 65 years out of the total population figures for the years 2001-2050. Note the progressive increase in this age bracket reaching a value of 28% by the year 2050



European Community Concerted Action on the Epidemiology and Prevention of Dementia Group (EURODEM) study.<sup>6-12</sup> This method has previously been adopted by Ferri and colleagues to determine the prevalence of dementia worldwide.<sup>5</sup>

## Methodology

The method used to determine the estimated number of individuals with dementia in the Maltese islands was as reported by Ferri.<sup>5</sup> Ferri and colleagues analysed the results of a population-based systematic review of published studies on the prevalence calculated in five-year age bands from around the world covering a period from 1980 to 2004.<sup>5</sup> This included a review of all the published work on the prevalence of dementia as well as the opinion of a panel of experts who had extensive research knowledge on prevalence of dementia research. Data on the distribution of the total Maltese island's population was obtained from the National Statistics Office Demographic Reviews for the years spanning 2001-2005, which are in turn projections based on the latest census of the Maltese islands.<sup>6-11</sup> The estimated number of dementia cases was calculated for each age group on the suggested prevalence rates of dementia as indicated in the EURODEM study.<sup>12</sup> The same methodology was used to predict the estimated number of dementia cases for the years 2010 to 2050 by using the population projections from the demographic data provided by the National Statistics Office<sup>13</sup> and the EURODEM prevalence rates.<sup>12</sup>

## Results

Figure 1 shows the estimated population change in individuals aged 65 years and over compared to the total population in the Maltese islands from 2001 to 2050. The trend observed indicates a shift towards a progressively ageing population where the numbers of individuals in this age bracket will more than double, reaching 28% by the year 2050. In 2005 there were 5.2 people in the working-age population bracket for every individual aged 65 years and over. However, by 2050 this ratio is projected to decline to 1 in 2.2 (Figure 2). This decrease in the work force will put financial pressures on social and health care services which currently are heavily subsidised by the local government.

**Figure 2:** Distribution of the total Maltese islands population according to age brackets for the years 2005, 2025 and 2050. Numbers in bold atop the bars denote the old-age dependency ratio (calculated by dividing the number of individuals in the working-age bracket by the number of individuals in the 65 years and over age bracket). By the year 2050, there will be 2.2 individuals in the working-age bracket for every individual over 65 years of age

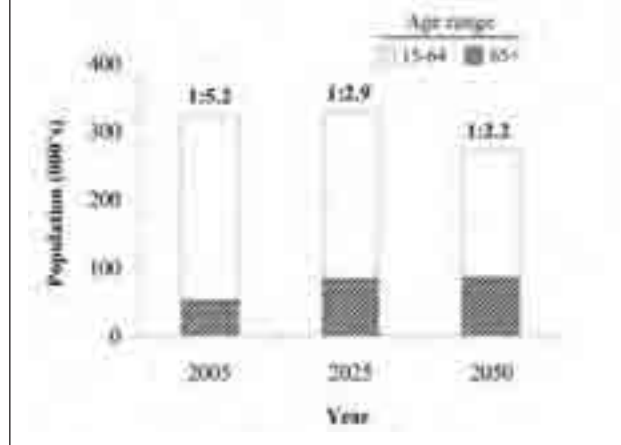


Table 1 shows the prevalence rates of dementia according to gender and age groups as indicated in the EURODEM study.<sup>12</sup> The figures show that the number of individuals with dementia, irrespective of gender, increase with increasing age. The lowest percentages are found in the lower age groups but increase considerably, reaching more than 30% in individuals having 90 years and more. When these figures are applied to the Maltese islands demographic data, the estimated total number of dementia cases in 2005 was 4,072, an increase of almost 14% from the estimated figure for 2001 (Table 2). As expected, the number of dementia cases was higher in females and was considerably evident in 75+ year's age bracket. The total number of Maltese people aged 65 years and above in 2005 was 51,900.

Table 3 shows the results of the calculations on the figures for the total population projections for the years 2010 to 2050, based on estimates of the Maltese population as at 31<sup>st</sup> December 2003.<sup>13</sup> The figures indicate a near doubling in the number of individuals with dementia within the next 20 years to an estimated total number of 6,345 in 2025. This trend is projected to level off with the expected numbers remaining at this same level over the subsequent 25 years. The number of cases in the 75+ age bracket is the highest increase in all age groups.

## Discussion

Dementia is a disease that is increasing in parallel with the increasing life expectancies worldwide. This increase will result in huge socio-economical consequences on patients, carers and communities everywhere. Epidemiological studies show that the majority of people with dementia worldwide are living in less developed regions of the world. By 2040 this proportion will have risen from 60% to 71% of all cases.<sup>14</sup>

**Table 1:** EURODEM prevalence rates according to gender and age groups (adapted from Hofman et al. 1991<sup>12</sup>)

| Age group | Percentage (%) |        |
|-----------|----------------|--------|
|           | Male           | Female |
| 30-59     | 0.16           | 0.09   |
| 60-64     | 1.58           | 0.47   |
| 65-69     | 2.17           | 1.1    |
| 70-74     | 4.61           | 3.86   |
| 75-79     | 5.04           | 6.67   |
| 80-84     | 12.12          | 13.5   |
| 85-89     | 18.45          | 22.76  |
| 90-94     | 32.1           | 32.25  |
| 95-99     | 31.58          | 36     |

Our estimates for Malta reflect this worldwide increase. Whereas the estimated number of people with dementia in the Maltese islands in 2005 was calculated to be 4,072, this number is expected to rise sharply by the year 2050. Furthermore, projecting as a proportion of the entire population of Malta for that year with the increase in the ageing segment and along with the dwindling number of births, it is estimated that 2% of the total population would have dementia in 2050. There will be fewer individuals in the working-age bracket, as clearly indicated by the progressive decrease in the old-age dependency ratio.

Our calculations based on EURODEM prevalence rates indicated that the percentage number of people with dementia compared to the total Maltese population in 2005 (as indicated by the latest estimates of the National Statistics Office) was 1.01%. This falls below the EU average of 1.27% and is comparable to countries such as Iceland (0.97%), the Czech Republic (1.03%), Lithuania (1.03%), Luxembourg (1.07%) and Slovenia (1.09%).<sup>15</sup> However, it must be noted that estimations of the prevalence of dementia in Europe and separate countries, although extremely useful, should be treated with some caution. These estimations are based on the availability of population statistics which are not always present for some age groups. Furthermore, although there are fewer people in the older age groups due to an increase in mortality rate, the percentage having dementia is higher. Consequently, this can distort the results, giving the impression that there are fewer people with dementia than there really are.<sup>15</sup> The fact that many people in the early stages of dementia are not diagnosed also presents

another limiting factor contributing to inaccuracies in the estimates of dementia cases. Studies in which results are based on future projections must also take into account factors such as migration, changing fertility rates, mortality patterns and better diagnosis and treatment of dementia. For this reason, our calculations are intended to provide a rough estimate of the number of people with dementia in the Maltese islands. The actual number of cases is likely to be somewhat higher.

There are several consequences of this increase in the absolute and relative numbers of people with dementia. There will be fewer people paying taxes to provide for the increased health and social services that an ageing population will need. There will be fewer people providing unpaid (informal) care for their relatives. A good proportion of these care-givers have to leave their jobs leading to financial difficulties within the family and a further reduction in the productive capacity of society. Almost 60% of care-givers are known to suffer from some form of depression or psychological stress-related problems that need support and health care and this will be an additional factor reducing the productive capabilities of carers, apart from distress and burden affecting other members of the family.<sup>2</sup> It is worth noting that increasing dementia prevalence can also have a huge impact on health care services such as increased primary care consultations and increased admission for hospital care. Dementia has been shown to be a major contributor for elderly people requiring institutional care.<sup>16</sup>

We believe that the projections contained in this report should be used to help plan policy to meet this increasing and predictable health need. Of particular importance is the need of diagnosing and treating cases of dementia in the early stages of the disease and to provide better home support and respite for patients and care-givers by specialised healthcare professionals. Furthermore, accurate studies on the prevalence, number and distribution of cases of dementia in the Maltese islands are needed in order to provide more accurate information.

The structure and composition of services for old age mental health services has been described in the Lausanne Technical Consensus Statement.<sup>17</sup> Prince and Trevilco suggest that “an unconsidered imposition of western models of care...would be unlikely to succeed. New service development needs to recognise the sociocultural and regional factors that modulate health perceptions, illness presentations and interactions between the potential consumers and providers of health services.”<sup>18</sup>

**Table 2:** Estimated number of gender-specific dementia cases in the Maltese islands according to age groups using EURODEM data for the years ranging from 2001 to 2005. Data shown as M/F (M: males, F: females<sup>a</sup>, based on end 2003 estimates of the Maltese population<sup>13</sup>)

| Year | Age groups          |        |         |         |         |         |         |         | Total (M/F) | Total (M+F) |
|------|---------------------|--------|---------|---------|---------|---------|---------|---------|-------------|-------------|
|      | 30-59               | 60-64  | 65-69   | 70-74   | 75-79   | 80-84   | 85-89   | 90+     |             |             |
| 2001 | 129/71              | 125/42 | 157/97  | 244/284 | 206/388 | 293/483 | 168/374 | 119/315 | 1441/2054   | 3495        |
| 2002 | 131/72              | 120/40 | 160/99  | 251/290 | 207/398 | 303/522 | 159/376 | 134/319 | 1465/2116   | 3581        |
| 2003 | 132/73              | 125/41 | 164/99  | 257/302 | 209/401 | 304/540 | 176/369 | 132/342 | 1499/2167   | 3666        |
| 2004 | 132/73              | 142/46 | 170/101 | 265/307 | 206/396 | 321/572 | 185/408 | 152/346 | 1573/2249   | 3822        |
| 2005 | 133/73 <sup>a</sup> | 165/53 | 175/103 | 284/319 | 217/419 | 327/586 | 243/476 | 142/357 | 1686/2386   | 4072        |

**Table 3:** Projected number of total dementia cases in the Maltese islands according to age groups using EURODEM data for the years ranging from 2010 to 2050. Note the progressive percentage increase in the number of cases with progressive years reaching 2% of the total Maltese islands' population by the year 2050

| Year | Age groups |       |       |       |      | Total cases | % of total population |
|------|------------|-------|-------|-------|------|-------------|-----------------------|
|      | 30-59      | 60-64 | 65-69 | 70-74 | 75+  |             |                       |
| 2010 | 203        | 293   | 316   | 629   | 2947 | 4388        | 1.12                  |
| 2015 | 204        | 268   | 444   | 749   | 3227 | 4892        | 1.25                  |
| 2020 | 201        | 285   | 404   | 1035  | 3660 | 5585        | 1.44                  |
| 2025 | 201        | 253   | 422   | 931   | 4538 | 6345        | 1.66                  |
| 2035 | 190        | 257   | 332   | 881   | 5161 | 6821        | 1.91                  |
| 2050 | 150        | 268   | 414   | 970   | 4567 | 6369        | 2.00                  |

They go on to describe the various factors involved in a 'whole systems' approach to developing services for older people with mental health problems including attitudes to older people, where older people live, family support systems, the role of the state in providing care and knowledge attitudes and belief of dementia in society and health care workers. The need to better care for people with dementia is present now. The increase in the number of people needing help is predictable and inevitable. Dementia must become a priority for the Maltese Government, health professionals and society as none are able to meet the challenge without working closely with each other. The debate and discussion on how to meet this coming challenge must start now.

### Useful addresses

The following organisations were mentioned in the text:

1. Alzheimer Disease International, 64 Great Suffolk Street, London, SE1 0B, UK: <http://www.alz.co.uk>
2. Alzheimer Europe, 145 route de Thionville, L-2611, Luxembourg: <http://www.alzheimer-europe.org>

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