

## Prevalence of dementia among elderly Malays in an urban settlement in Malaysia

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### Abstract

This is a community based study of the prevalence of dementia among the Malay urban settlements in Kuala Lumpur. 522 subjects were screened using the Malay version of the Elderly Cognitive Assessment Questionnaire (ECAQ). All those who scored 6 and below was submitted to a more detailed Geriatric Mental Scale (GMS). The GMS was used as a semi-structured instrument to arrive at a diagnosis of dementia made according to ICD-10. There were 20 cases of dementia among the study subjects of age >65 years with the estimated prevalence of 6%. Overall the prevalence rate is similar to studies elsewhere and correspond to that reported earlier among the ethnic Malays from Singapore. This is higher than the rates for ethnic Chinese from Singapore and elsewhere. The suggested reasons for the higher prevalence among the Malays versus Chinese are the possible higher frequency of the common cerebrovascular risk factors and apo-E4 alleles.

*Key words:* Dementia, Malay, prevalence.

### INTRODUCTION

Dementia is a syndrome characterised by a decline in cognitive functions without impairment in consciousness. This is often manifested as a disturbance of intelligence, personality, and a significant social and occupational decline from a previous level of functioning. It is also a disease of the aged, and generally 5% of the elderly would develop dementia. Over the age of 80, 20% would develop dementia. Fifty to sixty percent of cases with dementia would have Alzheimer's type, which is the most common type of dementia. Vascular dementia which is etiologically related to cardiovascular disease would contribute 15-20% of all cases with dementia and is most common in patients between the ages of 60 and 70. There is a paucity of information on illnesses affecting the elderly in Malaysia. Earlier work done in Singapore<sup>1</sup> have reported on the prevalence of dementia quoting a prevalence rate of 4% in Malays and 2.3% in Chinese. No community based epidemiological study has been carried out to determine the incidence and prevalence of dementing illnesses in Malaysia. This study aims to establish the prevalence rates for dementia among elderly Malays in a suburban population in Kuala Lumpur.

### MATERIALS AND METHODS

Predominantly Malay urban settlements in the capital city of Kuala Lumpur were selected to screen for dementia in people aged sixty and above. The three settlements were Kampung Baru, Kampung Keramat and Segambut. The research assistants who participated in study were trained to use the questionnaires and supervised as they performed the initial interviews with the elderly to ensure that there was uniformity throughout the study. Purposive sampling was used and a household to household survey was carried out and all elderly over the age of sixty who consented to participate were included in the study over a period of three months in 1995. Two instruments, the ECAQ (Elderly Cognitive Assessment Questionnaire)<sup>2</sup> and SRQ (Social Resources Questionnaire)<sup>3</sup> were the questionnaires used by the research assistants in the first stage of the screening process. The ECAQ is a modified version of the Mini-Mental State Questionnaire<sup>4</sup> and has been translated into Malay and has been used in Singapore.<sup>2</sup> It has a sensitivity of 85% and a specificity of 91% at a cut off point of 5 or 6 as detected among Singapore Malays. The research assistants interviewed the elderly initially with the ECAQ and then with the SRQ. The SRQ measures

social support for the elderly, with scores from one to four, one being good and four being bad. The SRQ dealt with sensitive issues such as being looked after by relatives and so at this stage the research assistants were asked to carry out the interview as discreetly and as privately as possible. All those who scored an ECAQ of 6 and below were submitted to a diagnostic interview using the GMS (Geriatric Mental Scale).<sup>5</sup> A cut-off score of 6 was used to screen so that by being over inclusive no cases of dementia would be missed, although the Singapore study<sup>2</sup> had identified a cut off point of 4 as being most discriminative for dementia. Sensitivity and specificity were also established for the ECAQ at cut-off points of 6, 5 and 4 in this study. The author had already been trained in the use of the GMS I and had established good reliability with the Singapore centre estimated at kappa= 0.8 and above. Since at this stage no-back translation of the GMS had been done the author translated the GMS into Malay verbatim as the interview was conducted. The GMS is used as a semistructured instrument to arrive at a diagnosis made according to ICD 10 (The Tenth International Classification of Diseases).<sup>6</sup>

The SRQ has been reported in an earlier journal.<sup>7</sup> The neurologist member of the team re-examined the patients within three months to reconfirm the diagnosis and to look for other associated medical problems.

## RESULTS

522 elderly Malays were screened, 206 men and 316 women. They were divided into age groups as shown in Table 1. Table 2 showed that a total of 126 elderly Malays scored 5 or below 5, of which 105 (20.1%) were females and 21 (4.0%) were males. Table 3 is the sensitivity and specificity for the ECAQ at the various cut-off points of six, five and four in this study. Table 4 illustrates the increased prevalence in the above 65 as compared to the above 60 (Table 5). Overall, the female preponderance is four times. Out of the 21 cases of dementia, the neurologist only managed to examine 12 because of loss due to death, refusal to be reinterviewed and families having moved out due to urban resettlement programmes. Out of the 12 patients, 7 had significant medical diseases including hypertension, ischaemic heart disease and stroke.

**TABLE 1: Distribution by age of elderly Malays**

Age	Men	Women	1990 Population	
			Men	Women
55 – 64	42 (8.05%)	81 (15.52%)	402.1	423.3
65 – 74	110 (21.07%)	187 (35.82%)	323	377.2
>75	54 (10.34%)	48 (9.20%)		
<b>Total</b>	<b>206 (39.46%)</b>	<b>316 (60.54%)</b>	<b>725.1 (47.5%)</b>	<b>800.5 (52.5%)</b>

**TABLE 2: ECAQ (Cognitive Scores) of the elderly by Age and Sex**

Age	Men (Score)		Women (Score)		Total
	5<5	6>6	5<5	6>6	
55 – 64	2	37	12	72	123
65 – 74	9	101	68	119	297
>75	10	44	25	23	102
<b>Total</b>	<b>21</b>	<b>182</b>	<b>105</b>	<b>214</b>	<b>522</b>

**TABLE 3: Sensitivity and specificity of the ECAQ for dementia at various cut-off points**

ECAQ cut-off point	Sensitivity	Specificity
6	1.00	0.25
5	0.95	0.63
4	0.81	1.00

**TABLE 4: Prevalence of dementia among elderly Malays by age Population size n=323**

Age	Dementia
65-74	8
>75	12
<b>Total</b>	<b>20(6%)</b>

**TABLE 5: Prevalence of dementia among elderly Malays by sex Population size n=400, age above 60**

Sex	Dementia
Male	4
Female	17
<b>Total</b>	<b>21(5%)</b>

## DISCUSSION

In this community-based study, the first stage screening purposively covered pockets of areas where there were high Malay concentrations, in Kuala Lumpur and a suburb in Johore Bahru. A total of 522 cases were screened with the ECAQ. However, in the second stage, which involved diagnostic screening using GMS, only a suburb in Kuala Lumpur, Kampung Bahru was included. The base population for the second stage screening was 400 for ages >60 and 323 for ages >65.

Table 1 and 2 show that the distribution by age and sex of the overall study is quite similar to the distribution in the general population with a predominantly female population. Table 2 refers to the cognitive scores of the elderly using ECAQ. A score of six and above is generally acknowledged as normal while five and below

indicates some disturbance in the mental state. Significantly more females than males had mental state disturbances, but this may not necessarily indicate cognitive dysfunction. Symptoms of depression and anxiety can contribute to poor concentration and this may have contributed to poor scores on the ECAQ. Although dating their exact date of birth and age was sometimes a problem, accuracy was improved by using official documents like identity cards and confirming with family members.

Table 3 described the sensitivity and specificity for the various cut-off points on the ECAQ in this study. The cut-off point of four has the best sensitivity and specificity for the diagnosis of dementia and discriminates between dementia and the other psychiatric illnesses. This is in agreement with the Singapore study<sup>2</sup> which has also identified 4 as the best cut-off point to detect dementia.

Table 4 illustrates the prevalence of dementia as estimated in the >65 from a population sample size of 323. A prevalence of 6% has been detected with the prevalence increasing by one and a half times in the >75 category. Table 5 shows a female prevalence rate of four times the male prevalence in the population >60. Only one case of dementia was found in the age group of 55-65 and this has resulted in the rates of dementia in the age group >60 being reported as 5%.

Overall the prevalence rates and gender trends are similar to studies elsewhere. The pioneering study by Kay et al<sup>8</sup> in Newcastle Upon Tyne reported a prevalence rate of 5.6 - 5.7% for dementia. Similar early studies in Denmark and in the USA reported a prevalence rate of about 3.4 - 6.1%.<sup>9</sup> Later studies by Copeland<sup>10</sup> studying elderly >65 in the community of Liverpool using the same instruments used in this study, found the level of dementia reaching 5.2%, intermediate between the early New York and London studies. Copeland followed up on his earlier study and published similar prevalence rates three years later.<sup>11</sup> A further project by the Liverpool Research Council<sup>12</sup> from 1989-1992 using similar methodology confirmed prevalence rates for dementia of 4.7%. Kua<sup>1</sup> reported rates for dementia among elderly Malays in Singapore to be similar to the results of the Liverpool - New York study, but higher than the rate for Chinese (2.3%). The prevalence rate for dementia among the Singapore Chinese reported by Kua is similar to studies conducted among Chinese living elsewhere.<sup>13</sup> A possible reason for the higher

prevalence of dementia among Malays as compare to the Chinese is that hypertension, ischaemic heart disease and stroke which are risk factors for multi-infarct dementia may be higher in the Malays. This study found that 60% of the cases of dementia had the above mentioned risk factors. Endocrinological causes such as thyroid disease were not present in this group. The stroke registry from the University Hospital, Kuala Lumpur, however did not show any predisposition to stroke among the Malays as compared to the Chinese (Racial composition of patients with stroke: Chinese 43%, Malays 30%; non-obstetric clinic attendance: Chinese 41%, Malays 30%).<sup>14</sup> Another reason could be the higher frequency of apo-E4 allele among the Malays. Hallman et al has reported the relative frequency of the apo-E4 allele among the Chinese, Malay and Indian to be 0.074, 0.119 and 0.127.<sup>15</sup>

Limitations of this study were the ethnic biases since this study only represents one race. This primarily was because of lack of trained personnel to translate and use the questionnaire in other local languages. Other problems were the effects of delay in conducting the diagnostic and neurological examinations, which resulted in the loss of cases due to death and other reasons.

We have earlier reported from our study that our elderly Malay patients with cognitive decline generally have good social resources.<sup>7</sup> However, the overall medical care appeared to be lacking. Clearly the elderly need services to be provided for in the community that would help in caring for their physical and medical needs.

## ACKNOWLEDGEMENT

This study was sponsored by UKM research grant no. 29/94.

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