

# Prevalence of depression with chronic illness among the elderly in a rural community in Malaysia

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## Abstract

**Introduction:** Depression is the most common psychiatric disorder among the elderly. The hallmark of depression in the elderly is its comorbidity with medical illness.

**Aim:** To determine the prevalence of depression and its association with chronic illness among the elderly in a rural community setting.

**Methods:** A cross sectional study design was used. A 30-item Geriatric Depression Scale questionnaire was used as a screening instrument.

**Results:** The prevalence of depression was higher among elderly with chronic illness (9.0%) compared to elderly without chronic illness (5.6%). Depression among the elderly was significantly associated with ischemic heart disease.

**Conclusion:** The prevalence of depression among the elderly with chronic illness in the community is high. Primary care providers need to be vigilant when treating elderly patients in their care as depression is commonly found in this group.

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**Key words:** chronic illness, depression, elderly, prevalence, rural community.

## Introduction

Depression is an affective illness characterized by symptoms such as disturbance in mood, cognition and behavior.<sup>1</sup> It is the most common psychiatric disorder among the elderly which can manifest as major depression or as minor depression characterized by a collection of depressive symptoms.<sup>2</sup> Depression contributes to increased medical morbidity and mortality, diminished quality of life and increased healthcare costs.

Elderly is defined as people aged 60 years or older.<sup>3</sup> In 2000, Malaysia's population was 23.3 million, of which 6.3% were in the elderly group. However, the size of its elderly population is projected to increase to 9.8% by the year 2020.<sup>4</sup>

Studies in the 1990s have generated varied prevalence rates for depression among elderly. These range from 19% in London to 35% in Hong Kong.<sup>5,6</sup> In Malaysia, two local studies using the Geriatric Depression Scale (GDS) were done to determine the prevalence of depression among the elderly. A 1998 study among elderly attending a health clinic showed prevalence of 14%<sup>7</sup> and a 1999 study showed the prevalence at 18%.<sup>8</sup>

Studies showed that the most common factor associated with depression are chronic illnesses. Prevalence of depression can rise from 10 to 30% in patients with chronic illnesses such as diabetes, stroke, rheumatoid arthritis, Parkinson's disease, and renal failure.<sup>9</sup> Arthritis, circulatory problems, speech disorders or skin problems were related to worse outcome with respect to depression.<sup>10</sup>

Dorsey *et al.* found a positive correlation between hypertension and depression.<sup>11</sup> There was also high frequency of depression in patients with type 2 diabetes mellitus.<sup>12</sup> Romanelli *et al.* reported that depression is prevalent after an acute myocardial infarction in patients aged 65 years and older. Compared to older

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Accepted for publication 21 May 2003.

patients without depression, post-myocardial infarct elderly patients with depression have more comorbidities and have almost four times the risk of dying within the first 4 months after discharge.<sup>13</sup> However, in Malaysia there is still a lack of information on depression in the elderly on issues related to chronic medical illness.

There are many instruments and rating scales available to detect depression among the elderly, among which is the GDS, a screening instrument specifically designed to detect depression in the elderly. The GDS has two forms, the original 30-item form and the short 15-item form. The original form consists of 30 simple yes or no questions. It is 84% sensitive and 95% specific in differentiating depressed from normal elderly patients. It was shown to be valid in patients with comorbid medical illness or mild to moderate cognitive impairment, in both inpatient and outpatient settings.<sup>14</sup>

The aims of the present study were to determine the prevalence of depression with chronic medical illness among the elderly and to determine the association between the two in a rural community setting.

## Materials and methods

The Malaysian community is divided into rural and urban communities. Rural communities are further divided into small towns and villages depending on the size of the population. The population of a small town is estimated to be from 10 000 to 75 000, whereas that of a village is less than 10 000.

The current cross sectional study was conducted from 17 June to 25 July 2002 in the rural community of 'Mukim Sepang'. 'Mukim Sepang' covers an area of 20 441 hectares with a population of 7598. It consists of seven villages and two small towns.

Four villages and one small town were randomly selected. All elderly in the selected villages were interviewed. Elderly who refused to participate and those who had significant communication problems were excluded from the study.

In the present study elderly was defined as males and females aged 60 years and above. Hypertension (HPT), diabetes mellitus (DM), respiratory disease (asthma and chronic obstructive pulmonary disease) and ischemic heart disease (IHD) were selected to represent chronic illnesses. For the chronic illnesses listed above, the term 'only' was added signifying the presence of one condition and the term 'also' was added signifying more than one conditions.

The validated GDS (30-item) was used as the study instrument.<sup>7</sup> The questionnaires included questions on sociodemographic characteristics and clinical presentation. The patient's answers were scored by summing up the positive and negative responses. The total

scores ranged from 0 to 30 and a predetermined cut off score of more than 10 was used to identify depression. Using GDS guideline, scores of 10 or less were considered to be negative for depression.<sup>15</sup>

The main dependant variable or outcome in the current study was having depression. The factor assessed with outcome was chronic illnesses. Data was managed and analyzed using Statistical Package for Social Sciences version 10.0.

## Results

There were 4241 residents in the four villages and one small town studied. Out of these 4241 residents, 263 (6.2%) were 60 years old and above. Out of these 263 elderly residents, 223 agreed to participate in the study giving a response rate of 84.8%.

Majority of the respondents were between 60 and 69 years old (54.7%), females (55.2%), Malays (53.8%), married (60.1%), pensioners (57.0%) and living with their spouses or children (91.5%). Most of the respondents either had no formal education or only primary education (94.2%). Most had a family income of less than Ringitt Malaysia (RM) 500 per month (68.2%) (Table 1). Our cut off point for family income of less than RM 500 per month was calculated from the median of family income of the respondents. (This value is almost the same as the Malaysian mean per capita income of RM 537.40 per month, where as the poverty line level in Malaysia is RM 212 per month).<sup>16</sup>

A total of 128 of the respondents (57.4%) were diagnosed to have some chronic illness such as HPT, DM, IHD or respiratory disease. Some of them had a combination of two or three illnesses. The rest (42.6%) were healthy except for some minor ailments. Those with chronic illness were on regular follow-up and treatment.

The overall GDS scores ranged from 0 to 27. The mean score was  $4.34 \pm 3.76$ . The median was 3.00. Based on the GDS scores, 17 (7.6%) of respondents were found to have depression.

The prevalence of depression was higher among respondents with chronic illness (9.0%) compared to respondents without chronic illness (5.6%). Respondents with IHD had a significantly higher prevalence of depression compared to respondents without IHD (prevalence ratio = 6.0,  $p < 0.05$ ). The prevalence of depression was not higher among respondents who had HPT only (prevalence ratio = 0.206). However, depression was higher among respondents with HPT also (combination of HPT only, HPT + DM and HPT + DM + IHD) (prevalence ratio = 2.576). The prevalence of depression was not higher among respondents with DM only (prevalence ratio = 0.846). However, depression was more prevalent among

**Table 1** Sociodemographic profile of the elderly respondents ( $n = 223$ ) in Mukim Sepang, Sepang, Selangor, Malaysia from 17 June to 25 July 2002

Sociodemographic profile	Number	Percentage (%)
<i>Age</i>		
60–69 years	122	54.7
70–79 years	69	30.9
80 years and above	32	14.4
<i>Sex</i>		
Females	123	55.2
Males	100	44.8
<i>Ethnicity</i>		
Malays	120	53.8
Chinese	52	23.3
Indians	45	20.2
Orang Asli	6	2.7
<i>Marital status</i>		
Married	134	60.1
Single/widowed/divorced	89	39.9
<i>Living arrangement</i>		
Living alone	19	8.5
Living with family	204	91.5
<i>Occupation</i>		
Not working	186	83.4
Working	37	16.6
<i>Family income</i>		
Less than RM500	152	68.2
RM500 and above	71	31.8
<i>Level of education</i>		
No education	100	44.8
Primary education	110	49.3
Secondary education	13	5.9

US \$1.00 = Ringitt Malaysia 3.80.

respondents with DM also (combination of DM only, DM + HPT and DM + HPT + IHD) (prevalence ratio = 2.380) (Table 2).

## Discussion

Commonly, the hallmark of depression in the elderly is its comorbidity with medical illness.<sup>17</sup> The present study showed that the prevalence of depression in the elderly with chronic illness was 9.0%. This figure is much higher compared to the prevalence of depression among the elderly without any chronic illness, which was 5.6%.

Prevalence of depression can rise from 10 to 30% in patients with chronic illness such as diabetes, stroke, rheumatoid arthritis, Parkinson's disease and renal failure.<sup>9</sup> Quality of life may be compromised by the

**Table 2** The association between depression and chronic illness among the elderly respondents ( $n = 223$ ) in Mukim Sepang, Selangor, Malaysia from 17 June to 25 July 2002

	Depression		<i>p</i> -value	Prevalence ratio
	Present	Absent		
All chronic illness				
Present	12	122	0.902	1.076
Absent	5	84		
Hypertension only				
Present	1	48	0.129	0.206
Absent	16	158		
Hypertension also				
Present	6	36	0.100	2.576
Absent	11	170		
Diabetes mellitus only				
Present	3	17	0.185	2.380
Absent	14	189		
Diabetes mellitus also				
Present	2	28	1.000	0.846
Absent	15	178		
Ischemic heart disease only				
Present	0	5	1.000	0.000
Absent	17	201		
Ischemic heart disease also				
Present	4	10	0.015	6.033
Absent	13	196		

morbidity associated with these chronic medical illnesses which in turn, can contribute to depression. In the current study prevalence of depression was associated with having IHD also. Depression makes medical illness worse, and an increase in medical illness is a risk factor for depression.<sup>18</sup> Studies have shown that illness causing vascular damage such as HPT, IHD and DM may induce cerebral pathology that constitutes a vulnerability for depression.<sup>2</sup>

The findings of the present study reflect the situation of these groups of elderly at the time the study was conducted. The time for data collection was short and insufficient in order to cover all seven villages and two small towns within Mukim Sepang. Diagnosis of the chronic illnesses were based on patient's information. The medical records of the respondents were not reviewed to confirm the diagnosis of chronic illness.

## Conclusion

With this prevalence of depression among the elderly with chronic illness, programs need to be implemented to help the elderly. This can be done through coordination with support groups in the voluntary

sector to promote detection and treatment of depression in the elderly. Patients with chronic illnesses espe-

cially IHD also need to be screened for early detection of depression.

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