

# Factors associated with depression among elderly patients in a primary health care clinic in Malaysia

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## Abstract

**Aim:** To identify the factors associated with depression among elderly patients attending a primary health care clinic in Malaysia.

**Methods:** A cross sectional study was conducted on patients aged 60 years and above in Klinik Kesihatan Butterworth, Seberang Perai Utara, Pulau Pinang, Malaysia from April to September 1999. The Geriatric Depression Scale questionnaire was used as a screening instrument.

**Results:** The response rate was 99.0%. A total of 18% of the patients were found to have depression. The associated factors were females (odds ratio (OR) = 2.87, 95% confidence interval (CI) = 1.37–6.02), those who were unmarried (OR = 3.46, 95% CI = 1.66–7.21), without formal education (OR = 8.0, 95% CI = 2.97–21.48), low total family income (OR = 7.97, 95% CI = 2.71–23.46) and urban residence (OR = 2.23, 95% CI = 1.09–4.58).

**Conclusion:** Depression is very common among the elderly. As this is an important problem in primary care practice, primary care doctors should be aware of this problem so that early detection and management can be implemented.

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**Key words:** associated factors, depression, elderly, Malaysia, primary care.

## Introduction

Population aging refers to the increasing proportion of elderly within a population. The world population aging is a phenomenon caused by an increase in the absolute and relative number of elderly in developed and developing countries. This is a result of dramatic decline in mortality rates (increase life expectancy) over the last 50 years and also sharp falls in birth rates, especially in nearly all developing countries. In the year 2000, there were about 600 million elderly, aged 60 and over. Approximately two thirds of the world elderly are living in developing countries. There are currently more than 20 developing countries in which

life expectancy at birth is 72 years and above, which also includes Malaysia.<sup>1</sup> In anticipation of this shift in population demographics, primary health care providers need to be alert and informed of the special needs of the elderly.<sup>2</sup>

Depression is an affective illness characterized by depressive symptoms such as disturbance in mood, cognition and behavior.<sup>3</sup> Community based studies show a wide range of prevalence of depression in the elderly, ranging from 4.8% in Spain to as high as 35% in Turkey and Hong Kong.<sup>4–6</sup>

Although depression is the most common psychiatric disorder in the elderly, it is commonly misdiagnosed and under treated. The untreated depressed elderly patients have significant clinical and social implications as these disorders decrease an individual's quality of life and increase dependence on others.<sup>7</sup>

Reasons for misdiagnosis and under treatment of depressive disorders in the elderly could be due to the misconception that depressive symptoms are part of aging rather than a treatable condition.<sup>7</sup> The manifes-

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tations of depressive disorders in the elderly are also different compared to other periods of adulthood. The elderly often present with atypical, non-specific or somatic symptoms. Furthermore, doctors may have problems in eliciting history as a result of the presence of cognitive impairment in the elderly. Reluctance or denial by the patient and family members may also complicate the doctor's assessment.<sup>8</sup>

As most of these patients are seen at primary care level and not by the psychiatrists, primary care doctors play an important role in the early detection and treatment of the depressed elderly.<sup>9</sup> There are many screening instruments and rating scales available to aid the primary care doctor to detect depressive symptoms among the elderly.<sup>10</sup> The Geriatric Depression Scale (GDS) which has a high sensitivity and specificity has been proven to be a valid instrument. It is widely used to screen for depressive symptoms among the elderly.<sup>11-13</sup>

The objective of the present study was to determine the sociodemographic factors associated with depression among the elderly attending a primary health care clinic in Malaysia. The prevalence and factors associated with depression among the elderly patients were identified. One of the hopes of the present study was to provide a better picture of the burden of depression among the elderly in the community.

## Materials and method

The present study was conducted in Klinik Kesihatan Butterworth (Butterworth Health Clinic) in the Health District of Seberang Perai Utara, Pulau Pinang, Malaysia which covers an area of 267.5 km<sup>2</sup> and has a population of 252 000. The total attendance to the clinic was 71 595 for 1998. The total number of elderly patients was 5016, which was approximately 7% of the total populations. A cross sectional study was conducted over a period of 6 months, from April to September 1999.

The study population comprised of patients aged 60 years and above who attended the clinic during the study period. Random sampling was carried out to obtain the study population. Verbal consent was obtained from each subject. The study was done throughout the week except on Fridays, Saturday and Sundays.

In the present study we defined elderly as males and females aged 60 and above. The sociodemographic factors included in the study were age, sex, ethnicity, marital status, living arrangement, place of residence, occupation, education and family income. The inclusion criteria in the study were elderly patients who attended the health clinic during the study period, whereas the exclusion criteria were severe cognitive impairment and difficulty in communicating. Patients

who fulfilled the criteria were personally interviewed using the structured questionnaires. They were personally asked by the principal author to participate in the study. The principal author happened to be the attending doctor at the clinic where the study was conducted. The questions consisted of two parts. Part one is based on demographic data and part two consisted of the GDS.<sup>13</sup>

The GDS consists of 30 questions and was used as the study instrument. The total scores ranged from 0 to 30. The patients' answers were scored by summing up the positive and negative responses. A predetermined cut off score of more than 10 was used to identify depressive symptoms. The GDS scores of 10 or less were considered to be negative for depressive symptoms, whereas scores of 11 and more were considered to be positive. This classification was based on the GDS guidelines. Information was collected by personal interview, conducted by the principal author using a structured questionnaire and the GDS.

Data was analyzed using the Statistical Package for Social Sciences program version 7.5. Further analyzes involved the calculation of crude odds ratio (OR) and the 95% confidence interval (CI) for having depression by the sociodemographic factors using logistic regression. The estimated OR indicates the odds of having depression when a sociodemographic factor exists compared to those without the sociodemographic factor. The 95% CI estimates the degree of association between depression and the sociodemographic factors, and if the interval does not include one, the estimated odds ratio is considered to be statistically significant at  $p < 0.05$  level.

## Results

A total of 210 respondents fulfilled the study inclusion criteria. Two respondents were excluded because of severe cognitive impairment and communication difficulties.

### *GDS score*

The score of the GDS ranged from 0 to 19. The mean score was 6.32 and the median score was 5.00. Based on the GDS scores, 37 (18%) of the respondents were found to have depressive symptoms.

### *Sociodemographic profile*

Table 1 shows the characteristics of the respondents. In the present study, the proportion of Malays and non-Malays were almost equal. Most of them were males (56.2%), married (71.6%), had no formal education (51.9%), were living with family (94.7%), living in rural areas (62.0%), not working (74.0%) and had a monthly family income of less than Ringgit Malaysia

**Table 1** Sociodemographic profile of the respondents ( $n = 208$ )

Factors	<i>n</i>	%
Race		
Malays	99	47.6
Non Malays	109	52.4
Sex		
Female	91	43.8
Male	117	56.2
Marital status		
Married	149	71.6
Single/Widowed	59	28.4
Living arrangement		
Living alone	11	5.3
Living with family	197	94.7
Place of residents		
Rural	129	62.0
Urban	79	38.0
Education level		
No formal education	108	51.9
Formal education	100	48.1
Occupation		
Not working	154	74.0
Working	54	26.0
Family income <sup>†</sup>		
Less than RM300	121	58.2
RM300 or more	87	41.8

<sup>†</sup>US \$1.00 = RM 3.8087. RM, Ringgit Malaysia.

(RM) 300.00 (58.2%). The cut off point for family income at RM300 was calculated from the median of family income of the respondents. (This value is below the Malaysian mean per capita income of RM537.40).<sup>14</sup>

### Sociodemographic factors

Table 2 shows the association between depressive symptoms and sociodemographic factors. In the present study, depression was significantly associated with females (OR = 2.87, 95% CI = 1.37–6.02), being unmarried (OR = 3.46, 95% CI = 1.66–7.21), without formal education (OR = 8.0, 95% CI = 2.97–21.48), having a monthly family income less than RM 300.00 (OR = 7.97, 95% CI = 2.71–23.46) and living in urban areas (OR = 2.23, 95% CI = 1.09–4.58).

Although depression was more common among the elderly who were living alone compared to those living with family (OR = 2.84, 95% CI = 0.79–10.25) and among Malays compared to non-Malays (OR = 1.05, 95% CI = 0.52–2.14), the differences here were not statistically significant. Depression was also more common among the elderly who were not working compared to those who were still working (OR = 2.57,

95% CI = 0.95–6.98), but this difference was also not statistically significantly.

## Discussion

There is an increase of depression in the elderly compared with other age groups as shown in studies of late life depression.<sup>15</sup> In the present study, the prevalence of depression in the elderly attending Klinik Kesihatan Butterworth in Malaysia was 18%. The findings of the present study are consistent with other studies which reported the range of depression in primary care settings were from 5 to 37%.<sup>16</sup>

Factors found to be significantly associated with depression among the elderly were sex, marital status, education status, monthly family income level and place of residence. Elderly females were found to be almost three times more depressed compared to elderly men. This could be explained by the fact that elderly women had frequently lost their spouses and were widowed. A widower often remarries, but widows tend to maintain their widowhood.<sup>17–24</sup> An elderly female also experiences loss of income and changes in living environment once they are widowed.<sup>16,19</sup> In developing countries like Malaysia, the situation is even worse as most elderly women are financially dependent on their spouses and are from the lower socioeconomic group.<sup>20</sup>

The prevalence of depression was more than tripled among the unmarried (widowed or single) compared to those who are married in the present study. We believe this is as a result of the lack of support and loneliness among the elderly who remain unmarried. Another study among the elderly in a rural community also found that the prevalence of depression was higher among the unmarried compared to those still married.<sup>24</sup> Other studies have found that elderly who are married lead a better quality of life compared to elderly who are single, divorced or widowed.<sup>18,19</sup>

In the present study, the elderly with no formal education were eight times more likely to be depressed compared to those with formal education. Depression also occurred eight times more frequently among the elderly with low family income compared to those with moderate family income. The elderly who were unemployed were also more depressed compared to those who were still employed. All these factors are commonly found in the lower socioeconomic groups of the community. Studies have found that among the lower socioeconomic groups, there is an increased rate of depression among the elderly. This is as a result of multi factorial elements such as inadequate diet, poor housing, poor health and medical care and the combination of family and community disorganization.<sup>4,17</sup> In Malaysia the elderly are generally less well off financially compared to the rest of the adult population as

**Table 2** Crude odds ratio and 95% confidence interval for depression and sociodemographic factors ( $n = 208$ )

Factors	Depressive symptoms ( $n = 37$ )	No depressive symptoms ( $n = 171$ )	Prevalence (%)	Crude odds ratio	95% confidence interval
Race					
Malay	18	81	18.2	1.05	0.49, 2.27
Non-Malay	19	90	17.4		
Sex					
Female	24	67	26.4	2.87	1.29, 6.43*
Male	13	104	11.1		
Marital status					
Married	18	131	12.1	3.46	1.56, 7.69*
Single/widowed	19	40	32.3		
Living arrangement					
Living alone	4	7	36.4	2.85	0.65, 11.68
Living with family	33	164	16.8		
Place of residence					
Rural	17	112	13.2	2.23	1.03, 4.87*
Urban	20	59	25.3		
Education level					
No formal education	32	76	29.6	8.00	2.79, 24.65*
Formal education	5	95	5.0		
Occupation					
Not working	32	122	20.8	2.57	0.89, 8.00
Working	5	49	9.3		
Family income					
Less than RM300	33	87	27.5	7.97	2.54, 27.77*
RM300 or more	4	84	4.5		

\*Significant ( $p < 0.05$ ). RM, Ringgit Malaysia.

a result of their inability to earn. The elderly depend on their pension, savings, investments or even money from their children to meet their financial needs, which include seeking health care.<sup>22</sup> A recent study on a rural community in Malaysia also found that the prevalence of depression was significantly higher among the elderly who were unemployed compared to those still employed (A. Mustaqim, unpubl. data, 2002). The median family monthly income of RM300 in the present study is higher than the median family monthly of another study among elderly in Malaysia where the median income was RM150 per month.<sup>24</sup>

The present study also found that the prevalence of depression among the elderly living in urban areas was more than doubled those living in rural areas. This could be attributed to the fact that those living in urban areas were more likely to be socially isolated, compared to those in the rural areas. Furthermore, rural community folks tend to be more supportive and helpful to each other.<sup>23</sup>

Depression also occurred more frequently among the elderly who lived alone compared to those who lived with their family. This could also be as a result of

social isolation which leads to the development of depression among the elderly.<sup>23</sup> This finding is also similar to the recent study on depression among the elderly in a rural community in Malaysia (A. Mustaqim, unpubl. data, 2002).

Depression was found more frequently among the non-Malays compared to the Malays in the present study. Two other studies on elderly in Malaysia also found that the Chinese were more likely to be depressed compared to the Malays (A. Mustaqim, unpubl. data, 2002).<sup>24</sup> However, the findings in all studies were not significant.

Among the limitations of the present study is that the respondents were personally asked by the principal author to participate in the study. The principal author happened to be the attending doctor at the clinic where the study was conducted. The patients may have felt obliged to participate in the present study for that reason, thus giving a response rate of 99%.

Another limitation is that the present study was conducted in only one primary care government clinic. It did not include elderly patients from clinics in the private sector. It also did not include patients

who could not attend the clinic because of severe physical disabilities or who were bed-ridden. Therefore, even though the present study provides an insight into the prevalence of depression and its associated factors among the elderly, it does not represent the Malaysian elderly population at large.

## Conclusion

In conclusion, factors found to be significantly associated with depression in the elderly were females,

those who are unmarried, those with no formal education, those with family income less than RM300 per month, and those living in the urban areas. The failure to detect and treat these depression in the elderly has serious clinical and public health consequences. Early detection and treatment will significantly improve the patient's quality of life and reduce dependence on other. Therefore, primary care providers need to be vigilant when treating elderly patients in their care as depression is commonly found in this age group.

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