Prevalence of depressive symptoms and associated factors in patients attending a geriatric day hospital

ORIGINAL ARTICLE

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ABSTRACT

Objective. To assess the prevalence of depressive symptoms and their associated factors in elderly patients attending a geriatric day hospital (GDH).

Methods. A cross-sectional study was carried out in a GDH in Kwong Wah Hospital. All new patients aged 60 years or above attending the GDH between January and June 2004 inclusive were recruited. The Abbreviated Mental Test (AMT) was used to assess the cognitive ability. Those with AMT scores of 5 or lower were excluded. Other exclusion criteria were a history of psychiatric illness and expressive dysphasia. When they first attended the GDH, each participant was interviewed to obtain demographic, medical, psychological, and social information. The outcome variable was depressive symptoms, assessed by the 15-item Chinese version Geriatrics Depression Scale Short Form and a score of 8 or more than 8 was defined as having depressive symptoms.

Results. Of the 137 attendees at the GDH during the study period, 95 patients (44 males) were included in the analysis. Their mean (standard deviation) age was 77 (8) years (range, 60-92 years). There was no significant association of depressive symptoms with either gender or age. Chronic pain and urinary incontinence were significantly associated with depressive symptoms as were housing, financial situation, and poor functional ability.

Conclusion. Depressive symptoms are common among patients attending the GDH. The current GDH service concentrates on physical training, more attention should be paid to psychological aspects to better facilitate rehabilitation.

Key words: Aged; Depression

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INTRODUCTION

Depressive symptoms are common among elderly people, especially after major medical events, but are often overlooked in patients attending geriatric day hospitals (GDHs). This study was carried out to assess the prevalence of depressive symptoms and associated factors in elderly patients attending a GDH in Kwong Wah Hospital (KWH).

METHODS

With a view to conducting a cross-sectional study in the GDH of KWH, all new attendees between January and June 2004 inclusive and aged ≥60 years were eligible for recruitment. The Abbreviated Mental Test was used to assess the cognitive ability, and patients with scores ≤5 were excluded, as were those with expressive dysphasia or a history of

Table 1
Association between depressive symptoms and rehabilitation diagnosis and medical illness

Factor	Study group, n=37	Control group, n=58	Chi-square	p value
Principal diagnosis on admission			1.487	0.96
Stroke	21 (57%)	31 (53%)		
Fractured hip	5 (14%)	7 (12%)		
Deconditioning	4 (11%)	6 (10%)		
Walking instability	3 (8%)	7 (12%)		
Other fractures	1 (3%)	4 (7%)		
Parkinsonism	2 (5%)	2 (3%)		
Others	1 (3%)	1 (2%)		
Medical illness				
Hypertension	18 (49%)	35 (60%)	1.253	0.26
Diabetes mellitus	9 (24%)	20 (34%)	1.099	0.29
Ischaemic heart disease	3 (8%)	8 (14%)	0.713	0.40
Congestive heart failure	0 (0%)	3 (5%)	1.976	0.16
Renal failure	1 (3%)	1 (2%)	0.105	0.75
Chronic obstructive airway disease	4 (11%)	2 (3%)	2.070	0.15
Stroke	21 (57%)	34 (59%)	0.032	0.86
Parkinsonism	3 (8%)	4 (7%)	0.049	0.83
Fractured hip	7 (19%)	8 (14%)	0.446	0.50
Poor vision	5 (14%)	9 (16%)	0.072	0.79
Frequent fall	20 (54%)	22 (38%)	2.381	0.12
Chronic pain	10 (27%)	2 (3%)	11.38	<0.01
Urinary incontinence	20 (54%)	13 (22%)	9.975	<0.01

psychiatric illness. The participants were interviewed to gather demographic, medical, psychological, and social information when they first attended the GDH. The outcome variable was the presence of depressive symptoms. The 15-item Chinese version Geriatrics Depression Scale Short Form (GDS-S) was used for the assessment and a score of ≥8 was defined as having depressive symptoms. Subjects with lower scores were regarded as controls. Potential associations with the following variables were investigated:

1. Demographical data—age and gender
2. Medical illnesses
3. Socio-economic characteristics—presence of housemates, social contact with friends or neighbours (defined as having social gatherings with them at least once per month), financial sources, type of housing
4. Satisfaction with financial status, housing conditions, and social support
5. Recent life events—bereavements, caregivers with significant illnesses
6. Functional ability as measured by the Elderly Mobility Scale (EMS) and the Modified Barthel Index
7. Self-rated health score (scale of 1-10 representing poor to excellent health)

Student's *t* test was used to analyse data for continuous variables and the Chi-square test for categorical data. The Mann-Whitney *U* test was used for non-parametrical data. A p value of <0.05 was considered statistically significant. A univariate analysis was conducted on the association between depressive symptoms and the variables listed above. Those that the latter analyses revealed to be statistically significant independent variables associated with depressive symptoms as the dependent variable, were submitted to multiple logistic regression. Data were analysed using the Statistical Package for the Social Sciences (Windows version 11.5; SPSS Inc, Chicago [IL], United States).

RESULTS

There were 137 patients attending the KWH GDH during the study period, of whom 95 (44 males; 46%) were eligible for analysis. Their mean age (standard deviation) was 77 (8) [range, 60-92] years.

Table 2
Association between depressive symptoms and socio-economic characteristics and recent life events

Factor	Study group, n=37	Control group, n=58	Chi-square	p value
Housing types			9.871	<0.01
Private	20 (54%)	30 (52%)		
Public	0 (0%)	12 (21%)		
Old-age home	17 (46%)	16 (28%)		
Presence of housemates			3.638	0.16
Alone	2 (5%)	4 (7%)		
With relatives	17 (46%)	37 (64%)		
Others	18 (49%)	17 (29%)		
Satisfied with housing condition	17 (46%)	52 (90%)	21.711	<0.01
Financial sources			2.292	0.32
Allowance	21 (57%)	24 (41%)		
Saving	2 (5%)	3 (5%)		
Family support	14 (38%)	31 (53%)		
Satisfied with financial condition	14 (38%)	51 (88%)	26.235	<0.01
Social contact with friends or neighbours	9 (24%)	27 (47%)	4.742	0.03
Satisfied with social support	17 (46%)	58 (100%)	39.712	<0.01
Caregivers with significant illness	6 (16%)	1 (2%)	6.951	0.01
Recent bereavement	3 (8%)	1 (2%)	2.283	0.13

Table 3
Association between depressive symptoms and the Modified Barthel Index (MBI), Elderly Mobility Scale (EMS) score and the self-rated health score

Index	Study group, n=37 (median)	Interquartile range (Q1-Q3)	Control group, n=58	Interquartile range (Q1-Q3)	p value
MBI	74	58-91	90	80-96	<0.01
EMS score	11	7-17	17	11-20	<0.01
Self-rated health score	4	4-5	6	5-6	<0.01

The prevalence of depressive symptoms was 39% (49% males and 51% females). The mean age of the depressed group was 79 years versus 76 years in the controls (p=0.11). There was no statistically significant association between depressive symptoms and either gender or age. Associations between depressive symptoms and principal admission diagnoses and medical illnesses are shown in **Table 1**. Associations of depressive symptoms with the socio-economic characteristics and recent life events are summarised in **Table 2**. Poor functional ability was also significantly associated with depressive symptoms (**Table 3**).

In the multivariate logistic regression, only the EMS score (odds ratio [OR]=0.800; p=0.022), chronic pain (OR=34.887; p=0.021), housing dissatisfaction (OR=23.015; p=0.003), and financial problems (OR=11.105; p=0.045) were independently associated with depressive symptoms.

DISCUSSION

The sample size was small and only the GDS-S was used to screen for depressive symptoms. The DSM-IV (Diagnostic and Statistical Manual of Mental Disorders–IV) criteria should have been used for better evaluation. Patients with poor cognitive function or expressive dysphasia were excluded, but it is quite common for elderly patients in poor health to have the cognitive problems and co-existing depression, especially those with a recent stroke.[1-4] Moreover, elderly people with depressive symptoms are liable to perform poorly in cognitive tests[5] and thus become excluded. Therefore prevalence of depressive symptoms in our study may well have been underestimated.

The prevalence of depressive symptoms among the elderly is reported to vary widely (4-35%).[6,7] In community-dwelling elderly people (>70 years old)

who obtain the disability allowances, it was found to be 35% (based on GDS-S scores with a cut-off point of 8).[6] In our study of the elderly patients attending the GDH it was 39%, which is higher than the rate reported by other studies. Differences in assessment tools and sample selection and because ours were not necessarily community-based patients may explain such anomalies. Moreover, all our patients had experienced recent medical events and therefore likely to have been more physically and psychologically disabled.

The associations between depressive symptoms and old age, physical impairment, poor social support, poor socio-economic status (housing conditions and low income), chronic medical illness, and recent life events (including bereavement) have been reported previously.[6-9] In our study, old age was not a factor associated with depressive symptoms. Unlike other studies, we did not encounter a higher prevalence of such depressive symptoms with increasing age. Nor did we found an association with gender, whereas female preponderance was reported by others based on univariate analysis (but not when logistic regression was used).[7-9]

Depression is evidently more common in physically ill (older) people,[1,2] especially after major medical events.[3] Yet, we found no such association between depressive symptoms and the principal medical diagnosis on admission.

Consistent with other studies, in our patients physical disability was associated with depressive symptoms. Disability is a very strong predictor of depression; adjusting for disability weakened any association with gender and eliminated it entirely with age.[9] Furthermore, after adjusting for disability, the association between measures of physical ill-health and depression persisted but associations with specific chronic physical illnesses were not sustained. Thus, it is the disability associated with illness, rather than the illness per se, that is associated with depression.

Many studies show that compared to controls, a significantly larger proportion of patients with chronic pain have depressive symptoms and a direct relationship between chronic pain and development of depression has been demonstrated.[10-12] Such depression can precede or predispose an individual to the development of pain, and thus it is unclear whether musculoskeletal pain causes depression in the elderly or that depressed patients have lower-than-normal pain thresholds.

Oxman et al[13] showed that social support measures remain independent predictors of depression even after controlling for disability. West et al[14] found that the association between depressive symptoms and household income was absent after disability and social support were adjusted for. In our study, living alone was not associated with depression, yet interestingly no patient living in public estates had depressive symptoms. Moreover, patients living on allowances including Social Security Allowance or Disability Allowance were not shown to have more depressive symptoms than those living on personal savings or family support. It is generally thought that the people living in public housing estates and depending on allowances have a less favourable living environment and poorer financial status and are therefore expected to be more prone to depression. Surprisingly, this was not the case in our study and deserves further evaluation.

CONCLUSION

Depressive symptoms are common among patients attending the GDH. Such symptoms are associated with physical disability, chronic pain, dissatisfaction with the living conditions, and financial problems. While the current GDH service concentrates on physical training, more attention should be paid to psychological aspects with a view to facilitate better patient rehabilitation.

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