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RESEARCH

DEPRESSION IN THE ELDERLY PATIENTS ADMITTED TO THE EMERGENCY DEPARTMENT: A MULTICENTER STUDY

ABSTRACT

Introduction: To investigate the prevalence and characteristics of depression in geriatric patients admitted to the emergency department (ED), and to determine the factors concerning depression.

Materials and Method: This prospective study was carried out on 512 consecutive elderly patients over or equal to 65 years of age referred to EDs of three different centers during the six-month study period. The Geriatric Depression Scale (GDS) was used for the recognition of depression. Sociodemographic data and information needed to highlight depression status were collected via datasheets prepared for the study.

Results: Scores obtained from GDS were assigned into groups regarding severity of illness: 35.3% of the patients (n=181) were found normal, 48.4% of the patients (n=248) were interpreted as mildly depressed and severe depression was considered in 16.2% of the patients (n=81). Mean GDS score determined in the normal patient group is 5.6±2.4 (range: 0 and 9). Mean scores of the mildly depressive patients were found to be 14.7±2.4 (range:10 and 26) while those of the severely depressed patients were found as 23.5±2.2 (range: 20 and 28). A significant relationship was determined between depression, and chronic disease, frequency of ED visit and psychiatric treatments.

Conclusion: Depression in the elderly with underlying comorbid illnesses becomes more complex to recognize and treat. Depressive symptoms of patients are attributed to patients' current diseases and depression is often unnoticed.

Key Words: Aged; Depression; Geriatrics; Emergencies.

ARAŞTIRMA

ACİL SERVİSE KABUL EDİLEN YAŞLI HASTALARDA DEPRESYON: ÇOK MERKEZLİ ÇALIŞMA

ÖZ

Giriş: Acil servise başvuran yaşlı hastalarda depresyonun karakteristiğini ve prevalansını araştırmak ve depresyona ilişkin faktörleri incelemektir.

Gereç ve Yöntem: Bu prospektif çalışma altı aylık dönemde üç farklı merkezin acil servislerine başvuran 65 yaş ve üstü 512 ardışık hastada gerçekleştirilmiştir. Depresyonun tanımlanmasında Geriatrik Depresyon Skalası (GDS) kullanılmıştır. Sosyo-demografik bilgiler ve depresyon durumu için gerekli bilgiler çalışma için hazırlanan bilgi formundan toplanmıştır.

Bulgular: GDS verilerine göre hastaların ciddiyetlerine göre gruplandırılmıştır: Hastaların %35.3 (n=181) normal, %48.4 (n=248) hasta hafif depresyon, %16.2 (n=81)hastada ciddi depresyon bulundu. Normal grup içerisindeki hastaların GDS ortalamaları 5.6±2.4 (range= 0-9), hafif depresyonda 14.7±2.4 (range=10-26), ciddi depresyonda 23.5±2.2 (range=20-28) bulundu. Depresyon ile kronik hastalık, acil servise başvuru sıklığı ve psikiyatrik tedavi arasında anlamlı ilişki tespit edildi.

Sonuç: Altta yatan hastalıklar ile yaşlılarda depresyon tanınması ve tedavisi oldukça kompleks bir hale gelmiştir. Hastaların depresif semptomları hastaların mevcut hastalıklarına bağlanabilir ve depresyon sıklıkla atlanabilir.

Anahtar Sözcükler: Yaşlı; Depresyon; Geriatri; Acil Servis.

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Introduction

The ratio of elderly people is gradually rising in the Turkish society, and mood disorders are progressively increasing among older people (1). Depression is observed not only in people with previous depressive episodes but can also be shown on elderly without any diagnoses on mood disorders (2). Depression in the elderly (DIE) may also occur after stressful life events: the death of the significant other, economical reasons, health problems (neurological and/or cardiovascular diseases, arthritis, cancer, nutritional deficiency). DIE is often mistreated, or undertreated, and also under diagnosed, because of the masking of depressive symptoms by somatic complaints or the presumption that symptoms are attributable to concurrent medical illness. Finally, the patient may view the present state as a normal course of life in older people (3). The clinician must be alert to the emergence of DIE in the geriatric patient. Although no specific diagnostic test is available, rating scales can be useful in screening for DIE. The clinician needs to rule out medical illness or medications as contributing factors to depression (4). The objective of the present study is to investigate the prevalence and characteristics of depression in elderly patients of 65 years and older admitted to the emergency department (ED), and to determine the factors concerning depression.

Materials and Method

Study Design and Population

The present study was carried out prospectively on 512 consecutive patients of 65 years and older referred to ED in the six-month study period between 01 July 2010 and 31 January 2011. The study was conducted in three different emergency departments: two university hospitals and one community urban hospital. The Geriatric Depression Scale (GDS) was used for the recognition of depression. Socio-demographic variables of the elderly (gender, age, level of education) and variables regarding their health conditions (number of admissions to the ED within the last year, chronic illnesses) were investigated to determine the factors related with the depression prevalence.

Study Protocol

All patients were evaluated by the emergency physician after their admission to the ED. Patients and their families were also questioned regarding past medical history, living environment, and availability and quality of health support at home. Patients with severe clinical conditions, severe respiratory failure, hemodynamic instability and neurological conditions with cognitive involvement were excluded from the study. In addition, those were excluded if diagnosed with dementia, delirium or major psychiatric disorder which could adversely affect alertness or formal thought processes. All consecutive cases excepting those eliminated due to exlusion criteria were included in the study.

The GDS was administered by a nurse or physician in the ED after patients had signed an informed consent form, during the waiting time between a blood test and its results or before a diagnostic procedure. If a patient fails to complete the GDS, due to difficulty in reading or other handicap, the healthcare professional would offer assistance. Informed consent was obtained from each subject.

GDS is a depression scale which was designed for use to gather information from elderly people. It was developed by Yesavage, Brink et al (5) and was subjected to reliability and validity study in 1983. The validity and reliability study of the scale in our country was carried out by Ertan et al in the year 1997 (6). GDS is a scale consisting of 30 self-report questions answered "yes" or "no". To calculate the total score of the scale, one point was given for each answer favoring depression and zero point for each answer incompatible with depression, and the total point was interpreted as the depression score. The range of the scores was between zero and 30. Cut-off points were as follows: normal: 0-9 points, mild depression: 10-19 points, and severe depression: 20-30 points (5).

Statistical analyses were performed using SPSS version 16.0. The collected data were presented as percentages, means (+/- standard deviation), or medians, while Kruskal–Wallis test, chi-squared test were used as appropriate. A p-value of less than 0.05 was considered statistically significant at 95% confidence interval.

The current study was approved by the Institutional Review Boards of three participating centers in accord with the terms of the Helsinki Declaration.

Results

Mean age of patients with GDS scores in the "normal" range was 76.8±7.2 (range= 65 and 100), while mean age of the patients with scores in the "mildly depressive" range was 76.0±7.2 (range=65 and 98), and that of patients with scores in the "severely depressive" group was 75.7±7.6 (range= 65 and 93). The difference between the groups was not statistically significant. (p=0.432).

In accord with the scores obtained from GDS, 32.6% (n=79) of the female patients were found normal, while 51.2% (n=124) were interpreted to be mildly depressive and

Table 1— Relation Between Education Level and Depression Level

		Normal		Mild		Severe		Total			
		n	%	n	%	n	%	n	%	Chi-Square	p
Education	Literate	100	35.1	138	48.4	47	16.5	285	55.7	3.106	0.795
	Elementary	54	33.5	82	50.9	25	15.5	161	31.4		
	High-School	20	37.7	23	43.4	10	18.9	53	10.4		
	University	7	53.8	5	38.5	1	7.7	13	2.5		
	Total	181	35.4	248	48.4	83	16.2	512	100.0		

16.1% (n=39) were severely depressive. On the other hand, GDS scores of 37.8% (n=102) of male patients were normal, 45.9% (n=124) were found as mildly depressive and 16.3% (n=44) were severely depressive. No statistically significant difference was detected between the sexes (p=0.427).

Scores obtained from GDS were assigned into groups regarding severity of illness: 35.3% of the patients (n=181) were found normal, 48.4% of the patients (n=248) were interpreted as mildly depressed and severe depression was considered in 16.2% of the patients (n=81).

Mean GDS score determined in the normal patient group was 5.6±2.4 (range=0 and 9). Mean scores of the mildly depressive patients were found to be 14.7±2.4 (range=10 and 26) while those of the severely depressed patients were found as 23.5±2.2 (range=20 and 28).

The relationship between the levels of education and depression scores was analyzed. Although university graduates had the smallest percentage of patients with severe depression, subgroups regarding education levels were similar to each other with respect to GDS scores (p=0.795) (Table 1).

Table 2 highlights the relation of living conditions of the patients and categories of GDS scores. Despite the scores consistent with severe depression is markedly underrepresented in patients living with their family, the difference between the groups was not statistically significant (p=0.794).

The analysis of the relation of the patients' past medical histories and GDS scores disclosed that patients with a single chronic disease were significantly more likely to have severe depression when compared with patients with no chronic disease (p=0.0001) (Table 3).

The patients' frequencies of admissions to ED within the last year were analyzed in relation with their depression levels. Severe depression was significantly more common in patients with frequent admissions to the ED (p=0.0001) (Table 4).

Discussion

DIE is a serious public health problem (7). Recent research has shown that depression, anxiety disorders, and psychosis are more common than previously supposed in elderly populations without dementia. It is unclear whether the frequency of these disorders increases or decreases with age (8). This multicenter study demonstrated that the entity is very common in patients admitted to ED. The findings pointed out that elderly patients suffering from comorbid diseases and admitted to the ED have higher depression rates. Emergency physicians often fail to recognize and treat DIE among their

Table 1— Relation Between Living Conditions and Depression Level

		Normal		Mild		Severe		Total			
		n	%	n	%	n	%	n	%	Chi-Square	p
Family	Alone	19	35.2	24	44.4	11	20.4	54	10.5	4.64	0.794
	with attendant	15	34.1	19	43.2	10	22.7	44	8.6		
	with spouse	70	34.5	103	50.7	30	14.8	203	39.6		
	with relative	74	35.9	101	49.0	31	15.0	206	40.2		
	nursing	3	60.0	1	20.0	1	20.0	5	1.0		
	Total	181	35.4	248	48.4	83	16.2	512	100.0		

Table 3— Relation Between the Number of Concurrent Chronic Diseases and Depression Level

	Normal		Mild		Severe		Total			
	n	%	n	%	n	%	n	%	Chi-Square	p
None	36	62.1	20	34.5	2	3.4	58	100.0	22.96	0.0001
Multiple diseases	66	30.7	108	50.2	41	19.1	215	100.0		
Single disease	79	33.1	120	50.2	40	16.7	239	100.0		
Total	181	35.4	248	48.4	83	16.2	512	100.0		

patients. This may affect the patient, leading to loss of productivity, functional decline, and increased mortality (9).

Recent studies have shown that the prevalence of major depression is very high among elderly individuals. Steffens et al found a 15.8% lifetime prevalence of major depression in an elderly population (10). Meldon et al. cited that the geriatric depression prevalence was between 27% and 33% in the ED population (9). In the present study, the frequencies of mild and severe depression were noted as 48% and 16%, respectively. Many factors such as the unique conditions of ED and medical conditions which prompt geriatric patients' referral to the ED affect the patients' depression, and may cause overestimation of depression frequency.

Elderly individuals are more likely to be referred to EDs than the young ones. They also have a higher proportion of urgent visits and their length of ED stay is longer (11).

Previous studies stressed on the association of the female sex with depression. The higher prevalence of depression among women compared with men is a widely documented finding in psychiatric epidemiology (12). However, the findings of the present study failed to demonstrate a sex-related difference in this context. Depression can be attributed to disparate social and environmental factors among men and women. In particular, household composition can significantly correlate with elderly mental health (13). Our study was conducted in emergency departmens of different geographical districts. This may have accounted for the discrepency of the sex prevalance. More studies are needed to resolve this dispute.

It was shown that the low level of education in the elderly, previous diagnosis of depression and poor living conditions are influential on depression (1,14,15). The present study underlined that the depression frequencies in individuals previously diagnosed with depression are significantly higher than the others, consistent with the literature. Although highly educated individuals and those living with their families have lower rates of DIE unlike the literature, the difference was not found statistically significant. The present results differ greatly from the data in the literature, mostly due to small sample size, different variables and other limitations in the previous research data (15). Broader well designed studies should be conducted to draw firm conclusions.

Depression has been linked to many medical conditions, including cardiac disease, stroke, hypertension, diabetes, cancer, chronic obstructive pulmonary disease, asthma, and arthritis or rheumatism (16,17). In our study, consistent with the literature, the depression frequency in patients with chronic illnesses are significantly higher than others. Atypical clinical presentation of illness, a high prevalence of cognitive disorders, and the presence of multiple comorbidities complicate their evaluation and management. Increased frailty, delayed diagnosis, and greater illness severity contribute to a higher risk of adverse outcomes. (18). Elderly individuals suffering from chronic diseases should be thoroughly analyzed.

Table 4— Relation Between the Frequencies of Admissions to the ED and Depression Level

		Depression level					Kruskall-Wallis H		
		n	Mean	Median	Min	Max	Or. Av.	H	p
Number of admissions	Normal	181	3.6	3	1	20	230.6	0.431	0.0001
	Mild	248	4.4	3	1	40	249.1		
	Severe	83	9.6	7	1	50	335.1		
	Total	512	5.0	3	1	50			

In the study carried out by Press et al, a higher level of depression was noted in patients referred to the family physician 16 times or more in a year (19). The present study suggested that mean number of annual emergency admissions of elderly people with GDS scores consistent with severe depression, mild depression and normal are 9, 4 and 3, respectively. This finding supports that frequent admissions to ED can be a harbinger for severe depression.

As indicated in the literature, a very small percentage of geriatric patients with depressive symptoms receive antidepressant treatment (20). Surely, not all patients with depressive symptoms have affective disorders and the initiation of an antidepressant treatment is not a remedy for all of them. Chronic and complicated disease states of patients may also precipitate DIE in these patients. The current states of the patients need to be thoroughly examined and treatment options must be evaluated.

In conclusion, frequent admissions to ED and underlying chronic illnesses enhance the prevalence of the entity. In addition, DIE with underlying comorbid illnesses becomes more complex to recognize and treat. Consequently, it may impair the patients' daily functions and even cause bed confinement. Often, depressive symptoms of patients are attributed to patients' current diseases and depression is often missed. Therefore, the emergency physicians should identify the patient groups with chronic illnesses and multiple admissions in terms of DIE when determining the current disease states of these patients.

Limitations

A major limitation of this prospective study is that the research was carried out in three centers in different geographic regions. The inclusion of a limited number of patient groups to this epidemiological study is another limitation. Differences among societies can be influential on depression. Further studies, taking the peculiarities of our country into consideration may provide the clues for these differences. Psychiatric evaluation which is among the exclusion criteria was performed in the setting of the ED according to the history obtained from the patient. Further psychiatric evaluation of these patients is warranted. However, due to the scarcity of the studies conducted on the subject, the results of the present study may be beneficial.

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