

Evaluation of Nursing Home Residents Applying to The Emergency Service

Ali İhsan Kilci¹, Hakan Hakkoymaz¹, Muhammed Semih Gedik¹, Ömer Levent Avşaroğulları², Vesile Şenol³, Mükerrerem Altuntaş⁴

¹ Kahramanmaraş Sütçü İmam University, Department of Emergency Medicine, Kahramanmaraş, Turkey.

² Erciyes University, Department of Emergency Medicine, Kayseri, Turkey.

³ Kapadokya University, Public Health, Nevşehir, Turkey.

⁴ Kayseri State Hospital, Department of Emergency Medicine, Kayseri, Turkey.

Abstract

Background: Emergency department (ED) has an important role at the care of nursing home residents and acts facilitator role at the acute care, admission to the hospital, unexpected injuries and hospitals. Our research is aiming the evaluation of the demographic and clinical features of the nursing home patients applying to ED.

Materials and methods: The nursing home residents who are aged 18 and over 18 applying to ED at the date between 15.04.2014-15.05.2015 are included to this respective study. In the study, demographic information of the patients and diagnosis and treatment information in the emergency room were evaluated.

Results: 51 (52%) of the patients are male. The average age of them is 73. The most frequent disease observed in their medical history is Alzheimer's disease. The physical examinations of the patients resulted that they have cachexia and dehydration. The oftenest diagnoses detected are lung disease (23.5%), infection (22.4%) and malnutrition (22.4%). It has been also detected that 45% of them admitted to hospital and 3.1% of them are to die. The rate of intensive care admission is 64% while the service admission rate is 36%.

Conclusion: The rate of the admission of the nursing home residents to ER and especially to intensive care units is quite high. To ameliorate this condition, training and supervision of the nursing home workers should be made more carefully and often. Since we do not have sociodemographic and clinical data about the nursing home residents applying to ED, more study must be made about this area.

Keywords: Emergency Service, Nursing home resident, geriatric patient.

Introduction

The elderly population is increasing all over the world. People over the age of 65 made up 7.5% of the population in our country in 2012. This rate is expected to increase to 10.2% in 2023, 20.8% in 2050 and 27.7% in 2075(1). According to TurkStat data, life expectancy at birth is estimated to be 74.6 years for 2010 and 78.5 years for 2050 for both sexes; life expectancy at birth for 2013 is 74.7 years for men and 79.2 years for women, and it is estimated that this ratio will be 75.8 years for men and 80.2 years for women in 2023(2). In the United States of America (USA), the elderly population constitutes 13% of the population but accounts for more than 1/3 of hospitalizations and total health expenditures. (3). Various factors such as changes in family structure, economic conditions, and women working outside the home contribute to the decline in the care of the elderly in the home(4).

The emergency department plays an important role in the care of nursing home residents, facilitating the management of unexpected illness and injury, acute care and hos-

pitalization(5). Long-term care patients are a very small proportion of ED patients, but their health needs require a large share of resources(6). Older adults may often have multiple comorbidities, complex medical histories, cognitive impairment and dementia, and have limited abilities and physiological capacities to compensate for critical illness. Their limitations in vision, hearing and cognitive function may alter their ability to express symptoms, tell their medical history and even give personal information(5). Many of these patients have a progressive neurological disease such as Alzheimer's or vascular dementia. When elderly nursing home residents are ill, they are often brought to the emergency department with current symptoms and little documentation about their illness(3). All these factors take up a significant amount of time of the physicians and other health personnel in the emergency department, as well as increasing the length of stay of these patients in the emergency department and increasing the number of examinations and consultations.

The World Health Organization (WHO) takes into account the chronological definition of old age and considers

this period as “65 years and older”. The older population is also divided into subgroups. The age group of 65-74 years is defined as young age or early age, the age group of 74-84 years as old age or middle age, and the age group of 85 years and older as oldest age or advanced age(7). However, the WHO definition is used as a basis in national and international studies of aging.

Old age is considered a physiological event and is defined as the loss of physical and mental powers in such a way that they cannot be restored, the decrease of the organism’s potential to establish a balance between internal and external factors, and the physical and mental deterioration of the person(8). The physical, mental and social changes that occur with age lead to a decrease in the functional capacity of older people and increase their need for assistance(9).

The problems that occur in old age are not only due to chronological aging. In addition to rapid population growth, urbanization, conversion to nuclear family due to internal and external migration, decrease in the number of extended families, economic problems, women’s participation in the labor force, lack of suitable and sufficient space for the elderly due to downsizing of houses as a result of conversion to nuclear family, young people’s view of old age, intergenerational communication problems, deterioration of health in old age, and addiction have made home care for the elderly more difficult. Although the traditional approach in our country has been to house the elderly in the family, for the above reasons, the elderly in our country are now being housed in facilities that are different from the family environment, and the need for services for the elderly in our major cities is increasing(10).

Despite the importance of emergency services in the care of nursing home patients, there have been few studies of the use of emergency services by these patients in the United States. The aging of society is leading to increasingly frequent problems with health care services for the elderly. It is known that the geriatric age group accounts for approximately 15% of all emergency department admissions, and this is expected to increase to 25% in the 2020s(11).

Most emergency physicians are not specifically trained in geriatric care, and many report that they are not comfortable managing these patients(12). Knowledge of the characteristics of geriatric conditions presenting to the emergency department can be helpful in making the correct diagnosis and providing emergency treatment. Older patients have been reported to present to the ED more frequently and with more complex problems than younger patients, to require more intensive care, to undergo more radiologic and laboratory procedures, to stay longer in the ED, and to be admitted to hospitals and intensive care units more frequently than other age groups(13).

Of the elderly patients discharged after admission to the ED, 27% return to the ED, are admitted as inpatients, or die within 3 months(10).

In our literature search, we found that there are few studies worldwide on the assessment of nursing home admissions to the emergency department. The purpose of our study is to examine the demographic and clinical characteristics of nursing home patients admitted to the emergency department who cause high rates of hospitalization and intensive care unit admissions.

Materials and Methods

This retrospective descriptive epidemiological study was initiated with the decision of the Education Planning Committee of Kayseri Training and Research Hospital dated 12/11/2015 under number 47. Patients aged 18 years and older who presented to the emergency department of our hospital between 15.04.2014 and 15.05.2015 and were accommodated in nursing homes and private care facilities were included in the study. The parameters to be studied were printed on a form. The information about the patients was entered into the forms by the physicians in the respective departments. The information used and analyzed in our study came from scanning these forms and records.

The research data were entered into the IBM SPSS 20.0 statistical program and reviewed after data entry was completed.

Descriptive statistics (frequency, percentage distribution), chi-square test for comparison of categorical variables between two groups, one-way analysis of variance (Anova, F-test) for comparison of more than two group averages, t-test for students between different groups of social variables, and paired samples t-test for different variables of the same groups were used as statistical analysis in the analysis of the data obtained from the study evaluation forms. Results are expressed in terms of mean±SD or frequency (percentage); $p < 0.05$ was considered statistically significant at 95% confidence interval.

The emergency department of our hospital consists of 4 departments. It consists of the examination unit, which usually treats patients in the green zone (sore throat, urinary symptoms, abdominal pain, etc.); the trauma unit, which treats trauma patients with low trauma score; the monitored observation unit, which treats patients with chest pain, unconsciousness, severe respiratory distress, melena, etc. or patients with poor general condition are treated; and the resuscitation unit, where unconscious patients, patients with cardiac arrest, patients with high trauma score, patients with poor general condition, ventricular tachycardia (VT), ventricular fibrillation (VF), or patients requiring isolation are treated.

Results

The study included 98 nursing home and elderly home patients over 18 years of age who presented to the emergency

Table 1: Sociodemographic characteristics

Gender	Number (n)	Percentage (%)
Male	51	52
Female	47	48
Age groups		
18-64	21	21
65-74	25	26
75-84	30	31
85 and above	22	22
Social security		
Social Security Administration	57	58
Green card	20	20
No social security	21	22
Form of transfer		
Outpatient clinic	73	75
Nursing home vehicle	24	24
Private vehicle	1	1
Application unit		
Resuscitation	60	61
Trauma	15	16
Supervised observation	12	12
Examination	11	11
Admission time range		
08:00-16:00	56	57
16:00-24:00	28	29
00:00-08:00	14	14

department between 04/15/2014 and 04/15/2015. Fifty-one (52%) of the patients were male and forty-seven (48%) were female. The average age was 73 years. The most common age group was 75-84 years, followed by 65-74 years. The demographic data of the patients are shown in Table 1.

Analysis of the patients' vital signs at the time of admission revealed that the measured temperature was above 37.5 in 9.2% of the patients. In addition, in 12.2% of these patients, the mean arterial pressure (MAP) was less than 65 mmHg.

When analyzing the presenting complaints, it was found that the most common reasons for admission were neurological and respiratory problems, each accounting for 18%. All the main reasons for admission are shown in Table 2 in number and percentage. 32.7% of patients had more than one complaint.

The most common disease was Alzheimer's disease. Hypertension and diabetes mellitus were the second and third most common diseases. The rates of requested examinations are shown in Table 2. The most frequently requested imaging modality was direct radiography, at 54%. computed tomography (CT) of the brain was requested in 34% of cases.

Table 2: Main complaints at admission

Main complaint	Number (n)	Percentage (%)
Neurological problem	18	18.4
Problem with respiratory tract	18	18.4
Swallowing disorder	14	14.3
Falling	13	13.3
Fire	9	9.2
Gastrointestinal System (GIS) symptoms	8	8.2
Chest pain	2	2
Abnormal laboratory findings	2	2
Other	14	14.3
Total	98	100,0

Table 3: Number and percentage of blood and other tests ordered.

Blood and other tests requested	Number (n)	Percentage (%)
Complete blood count	80	81.6
Emergency biochemistry	78	79.6
Coagulation tests	73	74.5
Cardiac enzymes	53	54.1
Blood gas	41	41.8
Complete urinalysis	37	37.8
Fasting blood glucose	30	30.8
Other examinations	20	20,4

On physical examination, the general outlook of the patients was rated as 20.4% poor, 40.8% fair, and 38.8% good. Cachexia and dehydration were noted in 24% of patients. Absence of swallowing reflex in 14.3% of patients, presence of positive thoracic interrogation findings in 34.7% and positive abdominal examination findings in only 7.1% of patients. It was found that 6.1% of patients already had a urinary catheter and 14.3% of patients did not have an electrocardiography (ECG) in sinus rhythm. In 29.6% of patients, the glaskow coma scale (GCS) score was 14 and below, whereas in the other patients, a GCS score of 15 was obtained.

In a systematic analysis of the patients' diagnoses, the most common diagnosis was pulmonary disease (23.5%), followed by infections and malnutrition (22.4%). Mental status disorder and acute renal failure (ARF), chronic renal failure (CRF), or abnormal electrolyte findings were found in 21.4% of diagnoses. These diagnoses were followed by cerebrovascular events. The systemic diagnoses of the patients are listed in Table 4.

Table 4: Systemic group-specific diagnoses received by patients.

Diagnoses	Number (n)	Percentage (%)
Diseases of the lungs	23	23,5
Infectious diseases	22	22,4
Malnutrition	22	22,4
Mental state disorder	21	21,4
ARF, CRF, or abnormal electrolyte findings	21	21,4
Cerebrovascular incident	17	17,3
Heart disease	10	10,2
GIS diseases	7	7,2
Non-cardiac chest pain	3	3,1
Drug intoxication or side effect	3	3,1
Diseases of the urogenital system	2	2
Injury of limbs	3	3,1
Trauma to chest, abdomen, or pelvis	5	5,1
Miscellaneous trauma	7	7,1

When interventional procedures were analyzed, urinary catheter insertion was the most common procedure. When patients were analyzed by outcome, it was found that 52% of patients were discharged and 35% were hospitalized. It was noted that 9 patients were referred to the intensive care unit. Adding this figure, it was found that 45% of patients were hospitalized and 3.1% died. No statistically significant difference was found when the outcome of patients was compared with age groups ($p=0.418$).

When patients were analyzed by place of hospitalization, it was found that 64% were admitted to the intensive care unit (ICU) and 36% to the infirmary.

When comparing the place of admission and length of stay in the ED, it was found that the length of stay in the ED was significantly different and longer for patients admitted to the resuscitation unit than for patients admitted to other units ($f=6.61$, $p<0.001$). It was found that the majority of trauma patients were discharged within one hour, while the majority of monitored observation patients were discharged within 60-120 minutes. In the resuscitation unit, where the majority of patients were evaluated, it was found that the evaluation of 46.7% of the patients was completed between 2-4 hours. The resuscitation unit was the 2nd unit where patients stayed the longest (41.7%; >4 hours).

32.7% of the patients had more than one presenting complaint. However, there was no significant difference between the presence of more than one presenting complaint and the length of stay in the emergency department ($p=0.26$). However, in the presence of more than one complaint, the outcome of the patients was different even if not statistically significant. While the discharge rate was 60.6% in patients without multiple complaints, it was 34.4% in patients with multiple complaints. In addition, the hospitalization rate of

patients with more than one complaint increased significantly. While the hospitalization rate was 28.8% in patients without more than one complaint, it was 50% in those with more than one complaint. Statistically significant results were obtained when the presence or absence of more than one complaint was compared with the general appearance of the patients ($p<0.05$). Only 10.6% of the patients without more than one complaint had a poor general condition while 40.6% of the patients with more than one complaint had a fair and poor general condition.

Although statistically significant results were not found when the time of admission and the units in which the patients were evaluated in the emergency department were compared, patients were most frequently admitted to the emergency department by 112 ambulance and then most frequently by nursing home vehicle in all time periods.

Patients with a history of Alzheimer's disease were more likely to be diagnosed with malnutrition ($p<0.005$), but the presence of a history of Alzheimer's disease was not significant in terms of ARF, CRF and electrolyte disorders ($p=0.05$). Nephrology and neurology consultations were requested at similar rates in patients with and without a history of Alzheimer's disease.

Significant results were obtained when the patients were analyzed in terms of outcome and hospitalization according to GCS ($p<0.05$, $f:15,616$). Of the patients with $GCS\leq 14$, 51.7% were hospitalized and 20.7% were referred for intensive care. However, 66.7% of patients with a GCS of 15 were discharged.

A statistically significant difference was found when patients were compared according to GCS according to the diagnoses of ARF, CRF, abnormal electrolyte findings, which was similar to the result obtained in the GCS-nephrology consultation comparison ($p<0.01$). While 48.3% of patients with $GCS\leq 14$ had ARF, CRF or electrolyte disturbance in their diagnosis, 44.8% of these patients were asked for nephrology consultation. These rates were 10.1% and 7.2% in patients with a GCS of 15.

Although there was no statistically significant difference between the GCS and the request for neurological consultation and the diagnosis of cerebrovascular disease, it was notable that 76% of patients with a $GCS\leq 14$ were not diagnosed with a cerebrovascular event and 83% of these patients were not asked for a neurological consultation ($p=0.32$). However, when comparing GCS diagnosis to mental status disorder diagnosis, 45% of patients with a $GCS\leq 14$ were diagnosed with a mental status disorder ($p<0.001$).

The comparison of patients with a fever of 37.5 and above with patients with a current clinical diagnosis of infection was also significant ($p<0.01$). However, it was noted that 13 patients had normal fever despite a diagnosis of infection.

Patients who had dehydration on physical examination were more likely to be diagnosed with ARF, CRF, abnormal electrolyte findings, and malnutrition ($p<0.01$).

Patients diagnosed with ARF, CRF, and electrolyte disturbances were more likely to have a nephrology consultation requested than other patients ($p < 0.01$). Half of the patients diagnosed with ARF, CRF and abnormal electrolyte findings remained in the emergency department for more than 2 hours.

When patients were analyzed by length of stay in the ED, 71.4% of patients stayed longer than 2 hours in the ED. The highest rate was found between 120 and 240 minutes (39.4%).

When patient outcomes and hospitalizations were analyzed according to mean arterial pressure (MAP) at the time of admission, only 16.7% of patients with an MAP < 65 mmHg were discharged, and more than 80% were admitted or referred as inpatients. 4/5 of hospitalized patients were admitted to the intensive care unit. Of the patients with MAP \geq 65 mmHg, 57% were discharged. Similarly, 57.5% of these patients were treated in the intensive care unit.

When the length of stay of patients in the emergency department was analyzed according to the time of admission, no significant difference was found.

Only 2% of patients were readmitted to the ED within the last 72 hours.

Finally, no significant difference was found between age groups in terms of patient outcome and length of stay in the ED.

Discussion

Of the patients included in the study, 51 (52%) were male and 47 (48%) were female. In studies conducted abroad, the proportion of female patients ranged from 63 to 72% (3,5,6,14). The reason for this difference could be the small total number of patients in our study and the sociocultural differences between our country and other countries. In our study, the mean age was 73 years and 4/5 of the patients were geriatric patients. In the study by Ackermann R. et al, the percentage of geriatric patients was 84%, which was similar to our study (3).

Sixty-one percent of the patients were examined in the resuscitation department of our emergency department, which was determined to be the red area. Although there was no similar classification in the studies, in a study conducted in Canada, 35.3% of patients were classified as very urgent (emergent) in a narrow classification (nonurgent, urgent, emergent (6)). The reason for the significant difference could be that most patients in nursing homes in our country have advanced illnesses that can no longer be cared for by their relatives and need to be treated, and these patients have to be waited on by their caregivers in desperation until their consciousness changes and are then taken to the emergency room.

$\frac{3}{4}$ of patients were admitted to the hospital by ambulance. In a study conducted abroad, the rate of admission by ambulance was 80% (4). This rate is similar to that in our

study. The reasons for the high rate of admission to the ambulance may be that the care centers do not have a sufficient number and equipment of vehicles, the general condition of the patients is poor, and the patients do not have the possibility of outpatient admission.

More than half of the patients were admitted during working hours. This rate was reported as 44% in the study by Wang H. et al, 42.9% in the study by Ackermann R. et al, and 56.8% in the study by Iwata M. et al (3,5,14). This difference may be due to the fact that nursing home staff, who provide continuous care to patients, work during the day and sufficient staff are available during working hours.

When patients were analyzed by admission complaints, the most common reasons for admission were neurological (18%) and respiratory (18%) conditions. In a study by Ackermann R. et al, which is similar to our study, respiratory problems were the most common reason for admission and the second most common reason for admission was mental status change (3). In a meta-analysis of twenty-seven studies, the most common prior diagnosis when patients were referred to the emergency department was pneumonia (11%), and the second and third most common diagnoses were soft tissue injuries and fractures, each with 10% (15). The fact that Alzheimer's disease (AD) is the most common chronic disease in our study and that these patients often present with neurologic and respiratory problems due to acute alterations in consciousness may be the reason for the high rate of patients with respiratory and neurologic complaints in our study.

The most common diagnostic blood count and emergency biochemistry values were requested from the patients. The third most frequently requested blood test was the measurement of cardiac enzyme levels. Because nursing home patients are usually frail, have limited information about their background and illnesses, and do not have adequate awareness at the time of admission, blood tests and imaging are requested for diagnostic purposes. In addition, the majority of patients included in our study were elderly, and some diseases in elderly patients have atypical findings and presentations.

Although direct radiography was requested in 55% of our patients, CT in 47%, ultrasonography (USG) in 7.1%, and magnetic resonance imaging (MRI) in 6.1%, these rates were 85.4% direct radiography, 35% CT, 2.8% USG, and 0.7% MRI (6) in a similar study. The small number of trauma patients in our study may have caused this difference. We think that the fact that there was a period of approximately 8 years between the date of the similar study and our study is responsible for the higher rates of computed tomography and MRI orders in our study. New imaging modalities can be used frequently to prevent malpractice and misdiagnosis. We believe that the number of USG orders has increased because of the widespread use of USG by emergency physicians and the ease of access to the radiology specialist on

daily duty in the emergency department of our hospital.

Physical examination of our patients revealed cachexia in ¼, dehydration in ¼, and impaired oral hygiene in 41%. The high rate of cachexia and dehydration in nursing home patients suggests that the nutritional needs of patients are not being adequately met. To ensure that these patients are fed according to their caloric needs and adequate hydration, the necessary staff, especially the dietitian, should be available with adequate equipment. It is believed that the necessary care to provide adequate and balanced nutrition to these patients is not shown and is more likely to be neglected than financial concerns. The fact that patients' oral hygiene is also compromised indicates that their personal care is inadequate.

The most common diagnoses are pulmonary disease, infection, malnutrition, mental status disorders, ARF-CRF, or abnormal electrolyte findings. In a study by Sahryn L. et al, the most common diagnoses were falls, abnormal laboratory findings, and respiratory system problems(16). In another study, the most common diagnoses were sepsis and infectious diseases 23.7%, cardiac disease 20.9%, trauma 18%, respiratory disease 15.5%, and genitourinary system disease 14.9%(5). In a similar study, the most common diagnoses were musculoskeletal system problems (24%), cardiovascular system diseases (16%), and respiratory system diseases (13%)17).

Mental status disorder in patients can have many causes; it can occur secondary to events such as infections, abnormal electrolyte findings, cerebrovascular disease (SVD), or primary causes such as Alzheimer's disease. The reason for the low number of cardiac system diagnoses in our study is that patients in nursing homes in our city are usually end-stage patients, and these patients usually come to the emergency department with diagnoses such as poor general condition, mental status disorders, oral intake disorders, and respiratory distress.

The most common procedure was the insertion of a urinary catheter. This procedure is now widely used as diagnostic urine test (UA) in patients with impaired mental status and inability to urinate, and urinary catheterization in critically ill patients (sepsis, etc.) with ARF-CRF and electrolyte disturbances who need to undergo fluid intake follow-up during follow-up.

When patients were analyzed by the outcome, it was found that 52% were discharged and 45% were hospitalized. Three percent of patients had their tumor removed. Our hospitalization rates are similar to those reported in the literature(3,5). 2/3 of hospitalized patients were admitted to the intensive care unit. However, in a study by Wang H. et al.(5), this rate was 19.5%. The lack of clear criteria for intensive care unit admission leads to a higher rate of hospitalization of nursing home patients with multiple diseases who need close follow-up and special care.

When the patients are analyzed according to the length of stay on the basis of their place of admission, the patients who wait the longest in the emergency department are the

patients admitted to the resuscitation unit. On the other hand, patients admitted to the trauma unit wait the least. The reasons for waiting longer for patients admitted to the resuscitation unit are that the general condition of the patients is worse and more tests are needed for diagnosis, the patients usually have more problems combined together and therefore more consultations are requested, and the time until the intensive care unit is found and the referral process is realized is prolonged in intensive care unit bed occupancy. The reasons for the low waiting time of patients admitted for trauma may be that the traumas in the patients are mostly local and low energy, the patients can usually be diagnosed quickly with x-ray and blood tests that would prolong the length of stay of the patients are not requested.

When the outcome of the patients according to the place of admission is analyzed, it is seen that the highest rates of hospitalization and referral are from the resuscitation and examination unit. The reason for this high rate of hospitalization and referral in the examination unit, which is normally considered to be the green area, is that patients who are evaluated here after being brought by outpatient or nursing home vehicle are then transferred to the yellow area. During this period, the duration of examination and evaluation in this area, where the highest patient density is experienced in the emergency department, is prolonged in parallel with this.

Hospitalization rate and deterioration in general appearance increase in patients with multiple complaints. Since these patients with multiple complaints are complicated patients, the consultation rate and hospitalization rate increase in parallel.

Malnutrition and cachexia are more common in patients with Alzheimer's disease. On the other hand, ARF, CRF and electrolyte disorders, nephrology and neurology consultations were found equally in patients with and without a history of Alzheimer's disease. The reason for this is that these patients receive sufficient fluid intake but do not receive adequate and balanced nutrition and remain malnourished. Even with adequate fluid intake, patients are not diagnosed with ABI, CRF and electrolyte disorders and nephrology consultation is not requested. Neurology consultation is not requested as there is no significant change in the level of consciousness of these patients.

When the outcome and hospitalization of patients according to GCS were analyzed, it was found that patients with GCS<15 had a higher rate of hospitalization and were also hospitalized in the intensive care unit at a higher rate. Among patients with GCS<15, 48.3% were diagnosed with ARF, CRF or electrolyte disturbance, and 44.8% of these patients were asked for nephrology consultation. These patients living in the nursing home with a borderline level of consciousness are monitored by caregivers who do not have adequate training, while partial changes in their consciousness and oral intake are not taken into account and they are followed for a long time in this way. Patients are usually

brought to the emergency room when acute symptoms such as fever, seizures, etc. develop. Therefore, these patients are diagnosed with ARF and abnormal electrolyte disorders when they are brought to the emergency department.

It was found that the patients' GCS score did not affect the request for a neurological consultation. In patients with a history of dementia, no neurological consultation is requested if there is no difference between patients with dementia in the past, if the neurological examination is normal, or if a metabolic disorder explains the change in consciousness. However, about half of the patients with GCS<15 have mental status disorder, and most of the patients' mental status disorders are thought to be due to dementia and metabolic causes in the past.

Physical examination of the patients revealed that nutritional problems were associated with cachexia, dehydration, and impaired oral hygiene. Although the presence of cachexia in patients may be associated with dementia, dehydration and impaired oral hygiene suggest that patients are not adequately nourished or properly cared for.

The average length of stay in the emergency department was 4 hours. This duration was calculated to be approximately 5 hours (289 min) in the study by Wang et al.(5) After a clinical diagnosis is made, patients are rapidly transferred to the wards for further investigations, necessary treatments are initiated in the wards, and consultations that are considered less urgent should also be requested in the appropriate departments after hospitalization. It was found that the waiting time in the emergency department did not affect the outcome of patients.

Patients with a mean arterial pressure <65 mmHg were usually admitted as inpatients. These patients were admitted to the ICU at a high rate of 4/5. Because these patients had poorer general health and required positive inotropic support, they were more likely to be admitted to the ICU.

Only 2 (2%) patients were admitted to the ED within the last 72 hours. A similar rate (3%) was found in the study by Wang et al.(5)

Limitations

The main limitations of the study are the small number of nursing homes and patients in our country and the retrospective nature of the study. Another important limitation is the small number of patients with sufficient data. Another limitation of the study is that the examination results of patients admitted to the emergency department were subject to the interpretation of the examining physician.

Conclusion

Our study was important in evaluating the admissions of nursing home patients to the emergency department and ensuring

that the necessary precautions are taken. Our study demonstrated the importance of having the necessary history information and care from trained staff to avoid wasting time with these complicated patients who come to the ED with very little information. Again, thanks to the special units to be set up for these patients, unnecessary visits to the emergency room and requests for examinations can be avoided. Although important because it is one of the rare hospice studies conducted in our nation's emergency departments, it is obvious that many more studies should be conducted.

References

1. Türkiye Halk Sağlığı Kurumu. Türkiye Sağlıklı Yaşlanma Eylem Planı ve Uygulama Programı. Ankara: Anıl Reklam Matbaa; 2015.
2. TÜİK Adrese Dayalı Nüfus Kayıt Sistemi 2010 Yılı Sonuçları. <http://www.tuik.gov.tr/PreHaberBultenleri.do?id=15>. Erişim Tarihi:12/01/2016
3. Ackermann RJ, Kemle K a, Vogel RL, Griffin RC. Emergency department use by nursing home residents. *Ann Emerg Med.* 1998;31(6):749–57.
4. Özçakar N, Kartal M, Dirik G, Tekin N, Güldal D. Burnout And Relevant Factors In Nursing Staff : What Affects The Staff Working In An Elderly Nursing Home? *Turkish J Geriatr.* 2012;15(3):266–72.
5. Wang HE, Shah MN, Allman RM, Kilgore M. Emergency department visits by nursing home residents in the United States. *J Am Geriatr Soc.* 2011;59:1864–72.
6. Gruneir A, Bell CM, Bronskill SE, Schull M, Anderson GM, Rochon PA. Frequency and pattern of emergency department visits by long-term care residents--a population-based study. *J Am Geriatr Soc.* 2010;58:510–7.
7. Özşaker E, Demir-Korkmaz F, Dölek M. Acil Servise Başvuran Yaşlı Hastaların Bireysel Özelliklerinin ve Başvuru Nedenlerinin İncelenmesi. *Turkish J Geriatr.* 2011;14(2):128–34.
8. Külahçı H, Emiroğlu ON. The Usability of the Omaha System in Identifying the Health Needs , Nursing Interventions and Outcomes. *Sağlık Bilimleri Fakültesi Hemşirelik Derg.* 2012;1:36–50.
9. Ardahan M. Yaşlılık ve Huzurevi. *Aile ve Toplum Dergisi.* 2010;20:25–32.
10. Karadağ B. Acil polikliniğine başvuran ve gözleme alınan hasta profili: Üç yıllık inceleme. *Akad Geriatr kongresi.* 2009;
11. Hwang U, Morrison RS. The geriatric emergency department. *J Am Geriatr Soc.* 2007;55:1873–6.
12. Samaras N, Chevalley T, Samaras D, Gold G. Older Patients in the Emergency Department: A Review. *Ann Emerg Med.* 2010;56:261–9.
13. Logoglu A, Ayrik C, Kose A, Bozkurt S, Demir F, Narci H, et al. Examination of Demographic Characteristics of Nontraumatic Elderly Cases Admitted to the Emergency Department. *Turkish J Emerg Med.* 2013;13:171–9.