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Research Article

Evaluation of socio-demographic factors and attempted suicides in the elderly

İntihar girişiminde bulunan yaşlılarda sosyo-demografik etmenlerin değerlendirilmesi

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Abstract

Introduction: The aim of this study is to reveal the socio-demographic and certain clinical characteristics of elderly patients admitted to the emergency department after a suicide attempt.

Methods: This is a cross-sectional study. The universe of the study consisted of 96 patients aged 60 and over who were admitted to emergency department of Izmir Dokuz Eylul University Hospital between 2015-2019 due to a suicide attempt. Information for the study was obtained by retrospectively scanning the files of the patients.

Results: Mean age of the 96 patients included in the study was 68.22 ± 9.45 years. The most common suicide method among the patients was drug overdose (n: 59, 61.45%). It was found that 45.05% of the patients who attempted suicide had a known psychiatric diagnosis (n:41). The suicide rate of women (n:42, 43.75%) who were primary school graduates (p=0.026), had a known psychiatric illness (p=0.001), continuously used drugs (p=0.002) and used antidepressants (p<0.001) was significantly higher compared to men (n:54, 56.25%).

Conclusion: Being a primary school graduate, having a psychiatric illness, and using antidepressants increase suicide rates in women. It was suggested that this group of patients with suicidal tendencies should be treated with more care in emergency department.

Keywords: Emergency department, suicide, aged patient, risk factors

Öz

Giriş: İntihar girişimi nedeni ile acil servise başvuran yaşlı hastaların sosyo-demografik ve belirli klinik özelliklerini ortaya koymaktır.

Yöntem: Kesitsel tipte planlanmış bir araştırmadır. Çalışmanın evreni; İzmir Dokuz Eylül Üniversite Hastanesi acil servisine, 2015-2019 yılları arası, intihar girişimi nedeniyle başvuran 60 yaş ve üzeri toplam 96 hastadan oluşmuştur. Çalışma için bilgiler hastaların dosyaları geriye dönük olarak taranarak elde edilmiştir.

Bulgular: Çalışmaya alınan toplam 96 hastanın yaş ortalaması 68,22±9,45 olarak hesaplanmıştır. İntihar yöntemi olarak hastalar en çok ilaç içme yöntemini (n:59, %61,45) kullandıkları görülmüştür. İntihar girişiminde bulunan hastaların %45,05'inin bilinen bir psikiyatrik hastalık tanısı olduğu bulunmuştur (n:41). İlkokul mezunu olan (p=0,026), bilinen bir psikiyatrik hastalığı bulunan (p=0,001), sürekli ilaç kullanan (p=0,002) ve antidepresan kullanan (p<0,001) kadınların (n:42, %43,75) intihar oranı erkeklere (n:54, %56,25) göre istatistiksel olarak anlamlı derecede yüksek bulunmuştur.

Sonuç: Kadınlarda, ilkokul mezunu olmak, psikiyatrik hastalığı bulunmak ve antidepresan kullanmanın intihar oranını arttırdığı görülmüştür. İntihara meyilli bu grup hastalar için acil servislerde daha özenli davranılması gerektiği önerilmiştir.

Anahtar Kelimeler: Acil servis, intihar, yaşlı hasta, risk faktörleri

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Introduction

Every death event that occurs directly or indirectly as a result of a positive or negative act knowingly performed that it will result in death is defined as suicide [1]. Suicide is a serious and global public health problem. More people die from suicide from malaria, breast cancer, war and murder. Suicide is one of the top 20 causes of death worldwide, with nearly 800,000 deaths each year. Suicides and suicide attempts are important because they have a ripple effect affecting families, friends, colleagues, communities and societies [2]. Turkish Statistical Institute (TUIK) data in 2019 shows that 3,406 people committed suicide and crude suicide rate is calculated to be 4.12/100,000 [3].

One of the most important factors affecting the suicide rate in a society is age, and suicide rate in people aged 60 and over increases with age [4]. In almost all regions of the world, the highest suicide rate for both men and women is seen in people aged 70 and over [5]. In this age group, frequent life events such as retirement, loss of spouse/divorce, death of friends and family, isolation, medical diagnosis and functional impairment put the elderly at higher risk of suicidal behavior [6]. Among the main risk factors of elderly individuals attempting suicide are male gender, loss of a partner/spouse or loved one, living alone, weak family ties, being a minority, loss of economic and social status as a result of aging, and the presence of physical and mental illness [7].

According to a World Health Organization (WHO) report, crude suicide rate between 50-70 years of age is 20.1/100,000 in the United States, 50.1/100,000 in Korea, 30.1/100,000 in Japan, 20.0/100,000 in India, and 4.2/100,000 in Turkey [5]. According to 2018 Turkish Statistical Institute data, 17.2% of all suicide attempts were made by people aged 60 or older [3].

A strong relationship has been found between suicidal behavior and psychopathology, especially major depressive disorder, in elderly individuals [8]. Although elderly individuals with depression expressed less suicidal thoughts, the rate of completed suicide was found to be higher among the elderly [9].

Hospital emergency departments (ED) are often the places where suicide attempters apply first, are evaluated and treated. For this reason, it is important to know the demographic characteristics of the cases applying to the ED after a suicide attempt, and the treatments and psychiatric support provided to these people in ED [10].

The aim of this study is to reveal the socio-demographic and certain clinical characteristics of elderly patients admitted to the ED after a suicide attempt.

Methods

Study participants

The population of this cross-sectional study consisted of patients aged 60 and over who were admitted to the ED of Izmir Dokuz Eylul University Hospital between 01.01.2015 and 31.12.2019 (five years) after a suicide attempt. Sample selection was not conducted, and the target was to reach the entire study population. Between the specified dates, a total of 96 patients admitted to the ED due to suicide, and all of them were included in the study.

Study procedures

The patients who had been admitted due to suicide attempt were determined by a retrospective search through the ICD-10 codes between X60 and X84 between the dates determined by the hospital data processing system Probel-HBYS program. Archive files of the determined patients were scanned retrospectively, and the information was recorded in the study form. The study form includes information such as gender, age, with whom the patients lived, marital status, educational status, method of suicide, whether there was a previously diagnosed psychiatric disease, presence of suicide attempt in the past, and information on continuously used drugs.

Statistical analysis

The data were evaluated with the "SPSS (SPSS Inc., Chicago, IL, USA) for Windows 18.0" program. Descriptive tables were used to present the variables. The "Chi-square Test" was used to compare the gender and socio-demographic characteristics of the patients who were admitted to the ED after a suicide attempt.

Ethical approval

This study was approved by the Non-Interventional Research Ethics Committee of Dokuz Eylul University with the decision number 2019/31-37, protocol number 5123-GOA, dated 16.12.2019.

Results

Between the dates of data collection, a total of 96 patients aged 60 and over were admitted to the ED after a suicide attempt. The mean age of the patients was 68.22 ± 9.45 years (range 60-94 years). The socio-demographic characteristics of the patients is presented in Table 1.

Table 2 shows the information about suicide attempts of patients admitted to the ED. The most common method of suicide was drug overdose (n: 59, 61.45%). It was found that 41 patients (45.05%) who attempted suicide had a known diagnosis of psychiatric illness and majority of these diagnoses were depression (n: 33, 80.48%).

Table 1. Socio-demographic characteristics of the patients (n:96)

	n	%*
Gender:		
Female	42	43.75
Male	54	56.25
Age group:		
60-74 years	73	76.04
75-84 years	15	15.62
85 and above	8	8.34
Marital status:		
Married	47	51.64
Not married (widowed, divorced, single)	44	48.36
Living accommodation:		
With family	44	51.16
Alone	22	25.58
With children	15	17.44
Nursing home	5	5.82
Presence of chronic disease:		
Yes	37	40.65
No	54	59.35
Chronic disease diagnosis: (n:37)		
Diabetes	13	35.13**
Hypertension	12	32.43**
Cancer	8	21.62**
Dementia	5	13.51**
Heart Failure	3	8.10**
Cerebrovascular dis.	3	8.10**
Other	3	8.10**
Educational Status:		
Primary school	26	50.00
High school	12	23.07
University	14	26.93

**Column percentage **Row percentage*

Table 2. Information on suicide attempt of patients evaluated in the ED (n:96).

	n	%*
Method:		
Drug Overdose	59	61.45
Chemical Agent	15	15.62
Wounding	10	10.41
Jumping from height	9	9.37
Other	3	3.15
Previous history of suicide:		
Yes	14	15.38
No	77	84.62
Known psychiatric disease:		
Yes	41	45.05
No	50	54.95
Psychiatric diagnosis: (n:41)		
Depression	33	80.48
Other	8	19.52
Continuous medication use:		
Yes	51	56.04
No	40	43.96
Continuously used medications: (n:51)		
Antidepressant	39	76.47**
Antipsychotic	12	23.52**
Anxiolytic	9	17.64**
Other	13	25.49**
Psychiatric consultation diagnosis:		
Depression	58	65.90
Impulsive attempt	21	23.86
Other	9	10.24
ED* outcome:**		
Discharge	80	83.33
Admission to the psychiatric ward	10	10.41
Admission to the intensive care unit	2	2.08
Admission to the internal medicine service	1	1.04
Dead	3	3.14

**Column percentage **Row percentage ***ED:Emergency Department*

Table 3 shows the comparison of gender and socio-demographic characteristics of the patients admitted to the ED after a suicide attempt. The suicide rate of women who were primary school graduates (p=0.026), had a known psychiatric illness (p=0.001), continuously used drugs (p=0.002) and used antidepressants (p<0.001) was significantly higher compared to men.

Table 3. Comparison of gender and socio-demographic characteristics of patients admitted to the ED after a suicide attempt (n:96).

	Female		Male		Total			
	n	%*	n	%*	n	%*	χ^2	p**
Age group:								
60-74 years	32	76.19	41	75.92	73	76.04	0.00	0.975
75+	10	23.81	13	24.08	23	23.96		
Marital status:								
Married	18	45.00	29	56.86	47	51.64	1.26	0.261
Non-married	22	55.00	22	43.14	44	48.36		
Presence of chronic disease:								
Yes	15	36.58	22	44.00	37	40.65	0.51	0.473
No	26	63.42	28	56.00	54	59.35		
Educational status:								
Primary	16	66.66	10	35.71	26	50.00	4.95	0.026
High school and above	8	33.34	18	64.29	26	50.00		
History of suicide:								
Yes	6	14.63	8	16.00	14	15.38	0.03	0.857
No	35	85.37	42	84.00	77	84.62		
Known psychiatric disease:								
Yes	26	63.41	15	30.00	41	45.05	10.16	0.001
No	15	36.59	35	70.00	50	54.95		
Continuous medication use:								
Yes	30	73.17	21	42.00	51	56.04	8.89	0.002
No	11	26.83	29	58.00	40	43.96		
Antidepressant use:								
Yes	25	59.52	14	25.92	39	40.62	11.06	0.001↓
No	17	40.48	40	74.08	57	59.38		
Psychiatric consultation diagnosis:								
Depression	27	67.50	31	64.58	58	65.90	0.60	0.740
Impulsive attempt	10	25.00	11	22.91	21	23.86		
Other	3	7.50	6	12.51	9	10.24		
ED* Outcome.**								
Discharge	37	88.09	43	79.62	80	83.33	1.23	0.541
Admission to a ward	4	9.52	9	16.66	13	13.54		
Dead	1	2.39	2	3.72	3	3.13		

**Column Percentage ** Chi-Square test ***ED: Emergency Department*

Discussion

This study is valuable as it evaluates socio-demographic characteristics and suicide attempts by retrospectively examining the files of patients who were admitted to the ED after a suicide attempt. In the present study, suicide rate was found to be significantly higher in women compared to men. Being a primary school graduate, having a psychiatric illness, continuous medication use and antidepressant use significantly increased suicide rate in women compared to men.

The most common suicide method in the present study was drug overdose (61.45%). In a similar study conducted by Gokcelli et al. in the province of Izmir, the authors stated that 74.6% of the elderly patients took drugs as a method of suicide [9]. Yigit et al. conducted a study in the ED to cover all age groups and showed that method of suicide was drug overdose in 88% of the cases [10]. Similarly, in the study of Atli et al., method of suicide was drug overdose in 93.4% of the cases [11]. The ratio of drug overdose as a suicide method was 86.5% in a Chinese study by Zhao et al. and 57.2% in a study conducted by De Leo et al. in 16 European cities [12,13]. As in all age groups, it is seen that the most common suicide method in the elderly is drug overdose.

It was observed that elderly women who were primary school graduates had a higher suicide rate compared to men ($p = 0.026$). In a study by Terranova et al. conducted in Italy, it was shown that education and suicide were negatively correlated [14]. Kadioglu's study showed that 41.3% of those who committed suicide were primary school graduates [15]. This ratio was 47.1% in Atli et al's study, 49% in Sevik et al's study, and 58.1% in Gokceli et al.'s study [9,11,16]. The inverse relationship between education level and suicide was also shown in this study.

Psychiatric diseases play an important role in older adults committing suicide [17]. In the present study, it was found that women with a known psychiatric disease were more likely to commit suicide. Zhao et al. stated that psychiatric diseases play an effective role in suicide [12]. In the study they conducted in South Korea, Lim et al. reported that 28.4% of the elderly who committed suicide had a known psychiatric disease [18]. Suominen et al. stated that depression is an important risk factor for suicides, but the presence of depression is most often noticed after a suicide attempt and that the elderly should be monitored for depression [19]. Vanderhorat et al. showed that depression and suicidal ideation were related [20]. Gokcelli et al. found that 63.5% of the patients who attempted suicide had a known psychiatric disease and 40.3% of these patients were

diagnosed with major depression [9]. Sevik et al. found that the rate of having a known psychiatric disease in patients who committed suicide was 40% and that 31% of these patients were diagnosed with depression [16]. 18.2% and 29% of the patients had a known psychiatric disease in the studies conducted by Kadioglu and by Yigit et al., respectively, and Yigit et al. also reported that 46% of these patients were diagnosed with depression [10,15]. The results of the present study are generally consistent with other studies.

Since 45.05% of the patients included in the study had a psychiatric disease and 80.48% of these patients were diagnosed with depression, the use of antidepressants was high (40.62%) as a natural consequence. In their study, Juurlink et al. found that the risk of suicide increased by 4.8 times in the first month of taking antidepressants [21]. Makris et al. conducted a study in Sweden and observed a high suicide rate in people using antidepressants [22]. There are also studies showing that the use of antidepressants reduces the risk of suicide. Carlsten et al. showed that there was no relationship between antidepressant use and suicide risk [23]. The results of the analyzes conducted by the US, FDA (Food and Drug Administration) reveal that the use of antidepressants significantly reduced the risk of suicidal ideation and behavior in geriatric patients over 65 years of age (OR = 0.37, 95% CI, 0.18–0.76) [24]. Conwell et al. reported that depression is the most evident and modifiable risk factor for suicide, and that effective antidepressant treatment is the best way to reduce suicide rates [25]. This study showed that women using antidepressants are more likely to attempt suicide.

Limitations

There are certain limitations of the present study. The most important limitation is the retrospective nature of the study. Due to missing information in patient files requested for research, some data were evaluated with a low number of patients. Another limitation is the deficiencies that may arise as a result of some files being skipped during the initial review or false information accidentally processed in the patient files.

Conclusion

The most common method of suicide in the elderly population is drug overdose. Being a primary school graduate, having a psychiatric illness, and using antidepressants increase suicide rates in women. It was suggested that this group of patients with suicidal tendencies should be treated with more care in ED.

Conflict of interest: The authors declare that they have no conflict of interest.

Author Contributions		Author Initials
SCD	Study Conception and Design	SY, AP, BB, NDT
AD	Acquisition of Data	SY, BB,
AID	Analysis and Interpretation of Data	SY, AP, BB
DM	Drafting of Manuscript	SY, AP, NDT
CR	Critical Revision	SY, BB, NDT

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