

Evaluation Of Elderly Suicide Characteristics In Turkish Population

Türk Toplumunda Yaşlı İntihar Özelliklerinin Değerlendirilmesi

Abdullah Avşar

Department of Forencis Medicine, Kahramanmaraş Sütçü İmam University, Kahramanmaraş, Turkey

ÖZ

Amaç: Bu çalışmada yaşlı intiharlarının sosyal ve psikiyatrik özelliklerinin araştırılması, demografik verilerin incelenmesi ve olası risk faktörlerinin belirlenmesi amaçlanmıştır.

Gereç ve Yöntemler: 2010-2021 yılları arasında 65 yaş ve üzeri intihara bağlı adli ölümlerin otopsi raporları geriye dönük olarak incelendi. Veriler cinsiyet, intihar türü, intihar zamanı ve ölüm yerine göre istatistiksel olarak karşılaştırıldı. Ayrıca bu olguların eşlerinin hayatta olup olmadığı, kiminle yaşadığı, psikiyatrik hastalık öyküsü, psikolojik travma öyküsü ve daha önce intihar girişimi olup olmadığı cinsiyetlere göre değerlendirildi.

Bulgular: 44 olgunun yer aldığı çalışmada olguların %75'i erkek (n:33); %25'i kadındı (n:11). İntihar vakalarının çoğu sonbaharda (%34,1), kapalı mekânlarda (%72,7) ve gündüz (%79,5) meydana geldi. Her iki grup için de en fazla intihar yöntemi asıydı. Tüm olguların %54.5'inde psikiyatrik hastalık öyküsü vardı. Vakaların %81.8'inde ilk intihar girişimiydi. Tüm bu parametreler için kadın ve erkek cinsiyetler arasında istatistiksel olarak anlamlı bir fark bulunmadı.

Sonuç: Cinsiyete göre geriatrik yaş gruplarında intihar risk faktörleri ve kullanılan yöntemler dikkate alınarak koruyucu ve önleyici tedbirler alınırsa intihar girişimleri ve intihara bağlı yaşlı ölüm oranlarının azaltılabileceğini düşünüyoruz.

Anahtar Kelimeler: İntihar, geriatrik, otopsi, psikiyatrik bozukluk

ABSTRACT

Aim: In this study, it was aimed to investigate social and psychiatric characteristics of elderly suicide and examine demographic data, and determine possible risk factors.

Material and Methods: Autopsy reports of forensic deaths due to suicide between 2010-2021 years of age 65 and older were retrospectively analyzed. The data were statistically compared by gender, type of suicide, time of suicide, and place of death. In addition, whether the spouses of these cases were alive, with whom they lived, their history of psychiatric illness, history of psychological trauma, and whether there was a previous suicide attempt were evaluated according to gender.

Results: In the study, which included 44 cases, 75% of the cases were male (n:33); 25% were female (n:11). Most of the suicide cases occurred in autumn (34.1%), were indoors (72.7%) and were during the daytime (79.5%). The most suicide pattern was hanging for both groups. 54.5% of all cases had a history of psychiatric illness. It was the first suicide attempt in 81.8% of the cases. No statistically significant difference was found between male and female genders for all these parameters.

Conclusion: We think that suicide attempts and suicide-related elderly mortality rates can be reduced if protective and preventive measures are taken in geriatric age groups by gender, taking into account the suicide risk factors and the methods used.

Keywords: Suicide, geriatric; autopsy; psychiatric disorder

Sorumlu Yazar/Corresponding Author: Abdullah Avşar
Department of Forencis Medicine, Kahramanmaraş Sütçü İmam University,
Kahramanmaraş, Turkey

e.mail: drabdullahavsar@gmail.com

Tel: +905052288864

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INTRODUCTION

Suicide attempts are an important cause of death with an increasing frequency all over the world (1,2). Suicide ideation is more common in the geriatric population (>65 years old) than in the younger age group (3). Comorbidities and psychiatric disorders such as depression and dementia in this age group constitute an important predisposition since they adversely affect the somatic, cognitive and functional status of patients (4). Chronic diseases, the frequency of which increases with age, chronic pain, age-specific impulsivity, and hopelessness are also important factors that trigger suicide attempts (5). For these reasons, suicide attempts are higher in the geriatric age group than in the younger age group, and mortality rates in this age group increase in direct proportion to age (6,7). A number of risk factors have been identified for suicide attempts in the geriatric age group (2). These risk factors are individual (psychiatric illness, physical illness, disability, loneliness, social isolation, hopelessness, low education level, unemployment, economic stress, substance abuse, previous suicide attempt), relational (living alone, marital status (unmarried/divorced), bad family relationships, domestic violence, family history of suicide) and social history (exclusion, lack of adequate support, limited access to health services, refrain from getting psychiatric support, ease of access to lethal tools) (8). Considering these risk factors in our study, we aimed to deal with the general characteristics of suicide cases according to male and female gender.

MATERIAL-METHOD

Suicide cases aged 65 and over who underwent forensic death examination and autopsy in Kahramanmaraş province between 2010-2021 were evaluated retrospectively. Year, season (spring, summer, autumn, winter) and time (day and night) of the suicide, type of suicide (hanging, jumping from a height, drowning, shotgun, poisoning, firearm), place of death (home, outside) were evaluated and compared in terms of gender. In addition, it was evaluated whether the cases received treatment and whether an autopsy was performed. The social and psychiatric characteristics of the suicide cases were also examined. In this context, whether the spouse was alive, with whom he lived (with his family, with his spouse, alone), history of psychiatric illness, history of psychological trauma (depression from severe illness, learning that he has cancer, presence of psychiatric illness, no reason) and whether there was a previous suicide attempt or not were evaluated. Ethics committee approval of the study was obtained from Kahramanmaraş Sütçü İmam University Faculty of Medicine Clinical Research Ethics Committee in session numbered 2022/28 with decision number 09. Statistical analysis

NCSS (NumberCruncher Statistical System) Statistical Software (Utah, USA) program was used for statistical analysis. While evaluating the study data, descriptive statistical methods (mean, standard deviation), as well as the Shapiro-Wilk test and boxplot charts, were used for the conformity of the variables to the normal distribution. The Mann-Whitney U test was used for intergroup comparisons of non-normally distributed variables. Pearson Chi-Square test and Fisher's Exact test were used to comparing qualitative data. Significance was evaluated at the $p < 0.05$ level.

RESULTS

A total of 44 suicide cases in the geriatric age group who underwent forensic death examination or autopsy in Kahramanmaraş province between 01.01.2010 and 31.12.2021 were included in the study. 33 of the cases were male (75%); 11 of them were female (25%). The average age of men is 74.8 ± 7.7 ; the mean age of female was 74.4 ± 9.5 . There was no significant difference between genders according to mean age ($p: 0.683$). Considering the distribution of suicide by year, the highest number of suicide cases was in 2017 (22.7%) and 2019 (15.9%). When the distribution is evaluated according to the seasons, suicide occurred mostly in autumn (34.1%) and summer (29.5%). There was no statistically significant seasonal difference ($p: 0.476$). The most common form of suicide for both groups was hanging (40.9%); the second was the high jump (25%). Other forms of suicide were shotgun (11.4%), poisoning (9.1%), firearms (6.8%), and drowning (6.8%), while this type of death occurred only in males (Table 1). The majority of suicides occurred in the home for both groups (72.7% total). The incidence of suicide in the home was higher in females; than males (81.8% female, 69.7% male). The most of the suicides occurred during the daytime for both groups (79.5% total; 75.8% male, 90.9% female). The rate of treatment for suicide cases was quite low, and no statistically significant difference was found between men and female (15.9%, $p: 1$). Autopsy was performed in 90.9% ($n: 40$) of all cases. Spouse survival rate was higher in the male group (57.6%; 45.5%), but no statistically significant difference was found between the two groups ($p: 0.484$). While 42.4% of male cases lived with their families, 33.3% lived with their spouses, and 24.2% lived alone; 36.4% of the female cases were living with their families, 27.3% were living with their spouses, and 36.4% were living alone. No statistically significant difference was found between men and female for all three conditions ($p: 0.744$). More than half of all cases had a history of psychiatric illness (54.5%). Psychiatric disease history was higher in female cases, but no significant difference was found by gender (51.5% male, 63.6% female, $p: 0.484$). While the rate of being overwhelmed by severe

illness was 29.5% and learning that he had cancer was 25%, in 27.3% of the cases, there was no reason that led people to suicide as a result of the statements of their relatives and the examination of the judicial investigation file. There was no previous suicide attempt in 81.8% of all cases (Table 1).

DISCUSSION

Suicide attempts differ according to age, gender, and geography in terms of risk factors, methods used, and mortality rates. Suicide rates are high in older age and males worldwide (9). In the study of Almedia et al., in the geriatric group, suicide cases were found to be 2 times higher in males than in females, and 6 times higher in Shah's cross-national study covering 97 countries (10,11). Similarly, in our cohort, male suicide rates were 3 times higher than females.

A history of psychological disorders constitutes an important predisposition for suicide. In a recent study, it was shown that 41% of the geriatric adult group who attempted suicide had previously applied to the psychiatry service (12). Similarly, more than half of the cases in both sexes in our study were found to have psychiatric disorders. In a review by Huang et al., they showed that the most important risk factor for suicide is depression (2). It is a known fact that the use of anti-depressants also increases suicide attempts (13,14). In this respect, psychiatric cases should be observed with more stringent measures in terms of suicide probability and risk. Chronic diseases, chronic pain syndromes, which are more common in elderly patients, and the use of morphine derivatives used in these patients are also accused of increasing suicide attempts by different mechanisms, from sensitivity to suppression, in neuronal pathways (2). Dementia, which is one of the major neurocognitive disorders frequently encountered in the geriatric age group, is among the important psychiatric causes of suicide attempts in this age group (15).

Considering the psychiatric, cognitive, physical, and social risk factors, it is possible to predict the suicide attempt of the patients. In a new study from Japan, a machine-learning model-based method of detecting cases with high suicide attempts was developed by the questionnaire method. In this way, high-risk cases can be detected in advance and necessary precautions can be taken (16).

The rates of suicide attempts during the COVID-19 pandemic have been evaluated in many studies, both through case reports and meta-analyses. Studies have suggested that psychiatric symptoms such as depression, anxiety, post-traumatic symptoms, and cognitive impairment are frequently observed in post-COVID syndrome develop-

ing after acute COVID-19 infection and trigger suicide attempts in these cases (17). In our study, an increase in suicide attempts was noted in 2019. We can associate this situation with social and individual anxiety caused by the COVID-19 pandemic.

Since methods with high lethal potential are used mostly in the geriatric age group, the rate of death in the first suicide attempt is higher (18). In 81.8% of our suicide cases, the first suicide attempts resulted in death. The most commonly used suicide methods have been reported as hanging, firearms, drowning, jumping from a height, drug overdose, self-stabbing, chemical poisoning, and vehicle crashing (11,19,20). The method most frequently used in our cases was hanging. However, there was a significant difference in hanging rates according to male and female populations. The hanging rate in women was approximately 2.5 times higher than in men. We can explain this situation by the fact that men also use hunting rifles and firearms, drowning and poisoning methods, but such methods are more difficult to reach by female cases. In our cohort, another method used by female cases, apart from hanging, was jumping from a height. In other studies in the literature, it has been shown that female cases use methods such as hanging, jumping from a height, and drug poisoning more frequently (19,21,22). 76% of suicide deaths are male cases (23). The reason for this can be explained by the fact that male cases attempt suicide more frequently and use more lethal methods than females.

Wilson et al. in their study in which they evaluated the general and demographic characteristics of suicide attempts according to gender, it was found that female suicide cases were more likely to live alone, had a more frequent history of psychiatric illness or substance use, and were more likely to die by poisoning; it has been shown that death rates by firearms are more common in men (24). In our study, the rate of using firearms was high in men. There was no case of suicide with a firearm in women.

The most important limitation of our single-center retrospective study is the small number of cases. Apart from this, in our study where we evaluated only the geriatric age group, the physical disorders and comorbid diseases of the cases, the history of substance and drug addiction such as alcohol-morphine, their economic status, and living standards were not included in the evaluation.

CONCLUSION

As a result, protective and preventive measures should be taken by considering the suicide risk factors and the methods used by gender. In this way, we think that suicide attempts and suicide-related death rates can be reduced.

Table 1. Characteristics of suicide cases

		Total n	%	Erkek n	%	Kadın n	%	p
Age (mean±SD)				74.8±7.7		74.4±9.5		
Year	2010	4	9.1	3	9.1	1	9.1	0.683a
	2011	1	2.3			1	9.1	
	2012	2	4.5	1	3.0	1	9.1	
	2013	2	4.5	2	6.1			
	2014	1	2.3	1	3.0			
	2015	5	11.4	5	15.2			
	2016	5	11.4	4	12.1	1	9.1	
	2017	10	22.7	6	18.2	4	36.4	
	2018	2	4.5	2	6.1			
	2019	7	15.9	5	15.2	2	18.2	
	2020	2	4.5	2	6.1			
2021	3	6.8	2	6.1	1	9.1		
Month	İlkbahar	9	20.5	8	24.2	1	9.1	0.476b
	Yaz	13	29.5	8	24.2	5	45.5	
	Sonbahar	15	34.1	12	36.4	3	27.3	
	Kış	7	15.9	5	15.2	2	18.2	
İntihar şekli	ası	18	40.9	10	30.3	8	72.7	
	yüksekten atlama	11	25.0	8	24.2	3	27.3	
	av tüfeği	5	11.4	5	15.2			
	zehirlenme	4	9.1	4	12.1			
	ateşli silah	3	6.8	3	9.1			
	Suda boğulma	3	6.8	3	9.1			
Ölüm yeri	Ev	32	72.7	23	69.7	9	81.8	0.698b
	Ev dışı	12	27.3	10	30.3	2	18.2	
Zaman	Gece	9	20.5	8	24.2	1	9.1	0.411b
	Gündüz	35	79.5	25	75.8	10	90.9	
Tedavi	var	7	15.9	5	15.2	2	18.2	1b
	yok	37	84.1	28	84.8	9	81.8	
Otopsi	Var	40	90.9	30	90.9	10	90.9	1b
	Yok	4	9.1	3	9.1	1	9.1	
Eş	Ölü	20	45.5	14	42.4	6	54.5	0.484c
	Hayatta	24	54.5	19	57.6	5	45.5	
Sosyal hayatı	ailesi ile	18	40.9	14	42.4	4	36.4	0.744b
	eşi ile	14	31.8	11	33.3	3	27.3	
	yalnız	12	27.3	8	24.2	4	36.4	
Psikiyatrik öykü	var	24	54.5	17	51.5	7	63.6	0.484c
	yok	20	45.5	16	48.5	4	36.4	
İntihar girişimi	var	8	18.2	6	18.2	2	18.2	1b
	yok	36	81.8	27	81.8	9	81.8	
Psikolojik travma öyküsü	ağır hastalıktan bunalma	13	29.5	9	27.3	4	36.4	0.916b
	sebepe yok	12	27.3	9	27.3	3	27.3	
	Kanser olduğunu öğrenme	11	25.0	9	27.3	2	18.2	
	Psikiyatrik hastalık	8	18.2	6	18.2	2	18.2	

a; Mann-Whitney U, b;Fisher's Exact Test, c; Pearson Chi-square

Declarations**Conflict of interest**

None of the authors received any type of financial support that could be considered potential conflict of interest regarding the manuscript or its submission.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article. Ethics committee approval of the study was obtained from Kahramanmaraş Sütçü İmam University Faculty of Medicine Clinical Research Ethics Committee in session numbered 2022/28 with decision number 09.

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