

Socio-demographic and clinical factors related to mortality among the geriatric suicide attempters admitted to the emergency department

Acil servise intihar girişimi ile başvuran yaşlı hastalarda mortaliteyi etkileyen sosyodemografik ve klinik faktörler

Yılmaz Zengin¹, Ercan Gündüz¹, Mustafa İçer¹, Recep Dursun¹, Hasan Mansur Durgun¹, Hüseyin Gürbüz², Süleyman Demir³, Mahir Kuyumcu⁴

ABSTRACT

Objective: The ratio of elderly people in Turkey is rapidly growing. Accordingly, psychiatric problems and suicidality among elderly people are growing concerns. In this study, we aimed to investigate the socio-demographic characteristics of older people who attempted suicide by drug and to identify risk factors affecting mortality.

Methods: Patients who were over 65 years old and admitted to the emergency department of a university hospital due to drug-related suicide attempt between January 1, 2004 and December 30, 2014, were included into this retrospective cross-sectional study. Relationship between suicide attempt and mortality was investigated in regard to socio-demographic and clinical factors. Patients were divided into two groups according to whether they survived or died.

Results: Of the 107 patients included in the study, 68.2% were female and 31.8% were male; 34.6% were married. Common reasons for suicide attempt were depression (34.6%) and domestic violence (30.8%). Analgesics (33.6%) were the most common drugs used in suicide attempts. The analysis of the factors related to suicide attempt and mortality revealed that significant factors were loneliness, being widowed, being retired, having adjustment disorder and anxiety disorder.

Conclusion: Loneliness, being widowed, being retired, adjustment disorder, and anxiety disorder were found as the risk factors affecting mortality in geriatric suicide attempts.

Key words: Geriatric, mortality, suicide

ÖZET

Amaç: Tüm dünyada olduğu gibi Türkiye’de de yaşlı nüfus oranı hızla artmaktadır. Buna paralel olarak ileri yaşta görülen psikiyatrik hastalıklar ve intihar eğilimi önem kazanmaktadır. Bu çalışmada, ilaç alımı ile intihar girişiminde bulunan yaşlı hastaların sosyodemografik özelliklerini belirlemeyi ve mortalite üzerinde etkili olan faktörleri tespit etmeyi amaçladık.

Yöntemler: Bir üniversite hastanesi acil servisine 01.01.2004 ile 30.09.2014 tarihleri arasında ilaçla intihar girişimi nedeniyle başvuran 65 yaş üzeri olan hastalar çalışmaya dahil edildi. Hastalar yaşlarına göre gruplara ayrıldı. Sosyodemografik ve klinik özellikler açısından intihar girişimi ile mortalite arasındaki ilişki araştırıldı. Hastalar yaşayanlar ve ölenler olmak üzere iki gruba ayrıldı.

Bulgular: Hastaların %68,2’si kadın, %31,8’i erkekti. Hastaların %34,6’sı evliydi. En sık intihar girişim sebebinin ise ruhsal bunalım (%34,6) ve aile içi şiddet (%30,8) oluştuğuydu. İntihar amaçlı en sık (%33,6) kullanılan etken madde analjeziklerdi. Çalışmada yalnız yaşama, emekli olma, uyum bozukluğu olması ve anksiyete bozukluğu olmasının intihar girişimi ile mortalite anlamlı faktörler olduğu tespit edildi.

Sonuç: İntihar girişiminde bulunan yaşlı hastalarda yalnız yaşama, emekli olma, uyum bozukluğu olması ve anksiyete bozukluğu olması mortalite üzerine etkili risk faktörleri olarak bulundu.

Anahtar kelimeler: Yaşlı, mortalite, intihar

¹ Dicle University, Faculty of Medicine, Emergency Medicine Department, Diyarbakır, Turkey

² Dicle University, Faculty of Medicine, Emergency Medicine Department, Diyarbakır, Turkey

³ Dicle University, Faculty of Medicine, Psychiatry Department, Diyarbakır, Turkey

⁴ Dicle University, Faculty of Medicine, Anesthesiology Department, Diyarbakır, Turkey

Yazışma Adresi /Correspondence: Yılmaz Zengin,

Dicle University, Faculty of Medicine, Emergency Medicine Department, Diyarbakır, Turkey Email: yilmazzengin79@gmail.com

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INTRODUCTION

Aging in humans is a physiological process of irreversible functional and physical changes that accumulate over time [1]. Onset of aging varies among societies and even among the individuals of a society depending on gender, level of education, economic conditions, and physiological and psychological age [2]. According to the aging report by the World Health Organization (WHO) (1998), old age is defined as the accumulation of disabilities and growing dependence on others, whereas the psychogeriatric old age period defines "old" as people aged 65 and older and "very old" as people aged 85 and older [3]. On the other hand, gerontologists break the old age period into categories: "young-old" (65–74), "middle-old" (75–84), and "oldest-old" (85 and older) [4].

The ratio of elderly people in Turkey is rapidly growing, just as is the global ratio. Accordingly, psychiatric problems and suicide attempts in elderly are growing concerns, and geriatric suicidal behaviour has become a serious public health problem [2,5]. Major risk factors associated with suicide attempts in elderly include male gender, loss of spouse or close family members, loneliness and isolation, weak religious and family ties, being a member of a minority group, loss of economic and social status due to advancing age, and physical and mental illnesses [6,7].

Older people are less likely to attempt suicide than younger people and are more likely to complete suicide than younger people and the general population [8,9]. In this study, we aimed to investigate the socio-demographic characteristics of older people who attempted suicide by drug as well as the risk factors affecting mortality and the factors contributing to elderly suicide attempt.

METHODS

Patients who were over 65 years old and admitted to the emergency department of a university hospital due to drug-related suicide attempt between January 1, 2004 and December 30, 2014, were included into this retrospective cross-sectional study. The study was approved by the ethical board (2014/393). Pa-

tients were divided into two groups according to whether they survived or died.

The patients who died before hospital admission, those under 65, those poisoned accidentally, and those with incomplete medical records were excluded from the study. The data was obtained from the patients' hospital records including age, gender, time of hospital admission, occupational status, level of education, marital status, number of dependents, residential area, life history, history of smoking, history of alcohol dependence and drug abuse, reason for suicide attempt, the drug used for suicide, previous suicide attempts, associated diseases, psychiatric history, patient outcome, and the need for intensive care.

Statistical analysis was performed using SPSS 18.0 (Statistical Package for Social Science, Chicago, IL, USA). Data were tested for normality using the Kolmogorov–Smirnov normality test. The results were expressed as means \pm SD or number of patients. Categorical data were analyzed using the chi-square test. Multivariate logistic regression analysis (Backward-Wald Step-Wise Model) was used to detect risk factors for mortality. A student's t-test was used for normally distributed data. A p value of <0.05 was considered significant.

RESULTS

The total number of patients admitted to the emergency department due to attempted suicide between January 01, 2004 and December 30, 2014 was 4,205 and 119 of these patients were over 65 years old. After excluding 12 patients with incomplete medical records, 107 were included in this study.

The clinical and socio-demographic characteristics of the patients were presented in Table 1. Thirteen patients (12.1%) died during the follow-up period. Thirty-seven patients (34.6%) were hospitalized and 17 of them needed intensive care admission.

The analysis of the factors related to suicide attempt and mortality revealed that significant risk factors were loneliness, being widowed, being retired, adjustment disorder, and anxiety disorder ($p<0.001$; $p=0.004$; $p<0.001$; $p<0.001$; and $p<0.001$ respectively) (Table 2).

Table 1. The socio-demographic characteristics of the patients

Socio-demographic characteristics	Survived (n=94) n (%)	Died (n=13) n (%)	Total (n=107) n (%)
Age (years, mean± SD)	74.9±7.4	67.7±3.1	74.1±7.4
Gender, n (%)			
Male	28 (29.8)	6 (46.2)	34 (31.8)
Female	66 (70.2)	7 (53.8)	73 (68.2)
Marital status, n (%)			
Married	37 (39.4)	0 (0)	37 (34.6)
Single	2 (2.1)	0 (0)	2 (1.9)
Widowed	55 (58.5)	13 (100)	68 (63.6)
Divorced	0 (0)	0 (0)	0 (0)
Job, n (%)			
Worker	3 (3.2)	0 (0)	3 (2.8)
Retirement	18 (19.1)	13 (100)	31 (29.0)
Other	73 (77.7)	0 (0)	73 (68.2)
Residential area, n (%)			
With partner	37 (39.4)	0 (0)	37 (34.5)
With children	34 (36.2)	0 (0)	34 (31.8)
Loneliness	21 (22.3)	13 (100)	34 (31.8)
Nursing Home/ Rest Home	2 (2.1)	0 (0)	2 (1.9)
Substance use, n (%)			
Cigarette	25 (26.6)	6 (46.2)	31 (29.0)
Alcohol	0 (0)	0 (0)	0 (0)
Psychiatry History, n (%)			
Depression	69 (73.4)	3 (23.1)	28 (26.2)
Anxiety	2 (2.1)	6 (46.2)	8 (7.5)
Adjustment Disorders	0 (0)	7 (53.8)	7 (6.5)
Schizophrenia	3 (3.2)	0 (0)	3 (2.8)
Bipolar Disorders	1 (1.1)	0 (0)	1 (0.9)
Other	2 (2.1)	0 (0)	2 (1.9)
Suicidal Reasons, n (%)			
Mental Depression	31 (33.0)	6 (46.2)	37 (34.6)
Emotional Affairs	18 (19.1)	0 (0)	18 (16.8)
Economic Causes	11 (11.7)	5 (38.5)	16 (15.0)
Domestic Violence	31 (33.0)	2 (15.2)	33 (30.8)
Health Problems	3 (3.2)	0 (0)	3 (2.8)
Patient Outcome, n (%)			
Discharge	70 (74.5)	0 (0)	94 (87.9)
Hospitalization	24 (24.5)	13 (100)	37 (34.6)
Need for intensive care, n (%)	4 (4.3)	13 (100)	17 (15.9)

Table 2. Multivariate logistic regression results for factors affecting mortality in the elderly suicide attempt

Risk factors	Odds Ratio	95% Confidence Intervals	p value
Retirement	1.72	1.27- 2.32	<0.001
Loneliness	1.61	1.24- 2.10	<0.001
Be widowed	1.23	1.10- 1.38	0.004
Adjustment disorder	0.06	0.02- 0.13	<0.001
Anxiety disorder	0.09	0.04- 0.21	<0.001

DISCUSSION

Suicide, a major problem facing all societies, is among the top 10 causes of death in the world and suicide rates may vary among countries [10,11]. However, there were no major difference in our study in the clinical and socio-demographic characteristics of the patients between the previous studies, loneliness, being widowed, being retired, adjustment disorder, and anxiety disorder were determined as effective risk factors affecting mortality for geriatric suicide attempters.

Loss of a spouse is one of the leading problems among older people. This problem is experienced by 51% of elderly women and by 14% of elderly men at least once in their lives [12]. However, loss of a spouse has different effects on women and men: while older women are more likely to live alone or with their children, men seem to suffer more from the loss, and this loss tends to be more devastating for men compared to women [13]. Moreover, the people who are excessively dependent on their spouse and have ambivalent feelings after spousal loss are likely to increase depressive symptoms, anxiety, and alcohol use and smoking, get ill and apply to doctors more frequently, and increase suicidal behaviors [11]. In our study, the majority of our patients were widowed, which can be an indication that the problems they experienced after spousal loss triggered their suicide attempts.

Retirement is another type of loss caused by aging, which leads to different effects on males and females. When older people retire, they lose many social roles, including that of productivity as well as authority and respectability [2,14]. Retirement is perceived as a negative phenomenon, and even a disaster, for individuals who make professional status the centre of their social role, those who are competitive, those who have high expectations of success, those who have limited contact with their family and limited participation in social activities, and those who cannot finalize their professional career as they planned [15,16]. Our results support the literature because retirement was found to be a risk factor for mortality in our patients.

Loneliness, which can be caused by loss of spouse, retirement, economic loss, loss of family and social support, or lack of personal and social

interests, is a major risk factor for elderly suicidality [17,18]. Older people who are not satisfied with their life or do not have any future plans and life aims tend to suffer more from loneliness than other people [2,19]. A study conducted on 20,000 people in Canada revealed that individuals who suffered from loneliness had higher rates of suicidal thoughts compared to individuals who did not feel lonely [20]. In our study, living lonely was also revealed to be a risk factor for mortality, so we consider that loneliness increases both the risk of suicide attempt and the risk of suicide completion.

Psychiatric diseases are also associated with suicide attempts in elderly. Of these, depressive disorders are the most common [21,22]. A multicentre study revealed that 71% of elderly suicides resulted from psychiatric diseases, and more than half of the patients were clinically depressed during the suicide attempt [23]. On the other hand, it is reported that only 0–13% of elderly suicide attempters do not have any psychiatric diseases [24]. Similarly, in our study, about two-thirds of our patients presented with psychiatric diseases. We consider that aging leads to physical and mental loss as well as economic challenges and lifestyle changes and thus results in a higher predisposition to depression and increased risk of suicidality. Moreover, in our study, adjustment and anxiety disorders affected mortality, which suggests that psychiatric diseases in elderly people should be diagnosed, treated, and followed in their early stages.

The mean hospitalization rate for the suicide attempters in Turkey is 17.3%, but this rate increases to 31% for elderly patients with chronic diseases [25-27]. We found similar rates for our patients, and patients who were hospitalized to an intensive care units died. Therefore, we consider that indications for hospitalization should be clearly defined in suicide attempters, and these patients should be closely followed during the hospital stay.

Our study was limited because it was retrospective and a regional single centre study, and only patients who attempted suicide by drug ingestions.

CONCLUSION

Loneliness, being widowed, being retired, adjustment disorder, and anxiety disorder are effective

risk factors affecting mortality for geriatric suicidality. In light of the results of this study, we conclude that suicidal behaviors and suicide attempts can be reduced among elderly people—particularly those who are lonely and have lost physical ability or who have a psychiatric disease—by providing them with psychological support to help them maintain contact with their social lives and sustain their productivity.

REFERENCES

1. Aslan M, Hocaoglu Ç. Suicidal behavior in elderly. *Current Approaches in Psychiatry* 2014;6:294-309.
2. Shah A, Bhat R, Mackenzie S, Koen C. Elderly suicide rates: cross-national comparison of trends over a 10 years period. *Int Psychogeriatr* 2008;20:673-678.
3. Psychogeriatrics. Report of a WHO scientific group. *World Health Organ Tech Rep Ser* 1972;507:1-48.
4. The uses of epidemiology in the study of the elderly. Report of a WHO scientific group on the epidemiology of aging. *World Health Organ Tech Rep Ser* 1984;706:1-84.
5. Seydaoglu G, Satar S, Alparslan N. Frequency and mortality risk factors of acute adult poisoning in Adana, Turkey, 1997-2002. *Mt Sinai J Med* 2005;72:393-401.
6. Akıncı E, Akıllı NB, Köylü R, Cander B. A retrospective evaluation of the patients over 65 years old who treated in toxicology intensive care unit because of unintentional or suicidal poisoning. *Turkish Journal of Geriatrics* 2013;16:330-334.
7. Zengin Y, Gündüz E, Dursun R, et al. Evaluation of pregnant patients admitted to the emergency department with suicide attempt. *J Clin Exp Invest* 2015;6:115-120.
8. Hawton K. Assessment of suicide risk. *Br J Psychiatry* 1987;150:145-153.
9. Lynch TR, Mendelson T, Robins CJ, et al. Perceived social support among depressed elderly, middle aged and young adult samples: cross-sectional and longitudinal analyses. *J Affect Disord* 1999;55:159-170.
10. Duru G, Özdemir L. Causes of elderly suicide and preventive applications. *Journal of Hacettepe University Faculty of Nursing* 2009;16:34-41.
11. Sudak HS. Suicide-Psychiatric emergencies, In: Sadock BJ, Sadock VA, Ruiz P (Eds). *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*. 9th edition. Lippincott Williams and Wilkins, Philadelphia 2010, pp 2717-2731.
12. Lynch TR, Mendelson T, Robins CJ, et al. Perceived social support among depressed elderly, middle aged and young adult samples: cross-sectional and longitudinal analyses. *J Affect Disord* 1999; 55:159-170.
13. Murphy E, Kapur N, Webb R, et al. Risk factors for repetition and suicide following self-harm in older adults: multicentre cohort study. *Br J Psychiatry*. 2012;200:399-404.
14. McClure GMG. Changes in suicide in England and Wales, 1960-1997. *Br J Psychiatry* 2000;176:64-67.

15. Van den Berg MD, Oldehinkel AJ, Bouhuys AL, et al. Depression in later life: three etiologically different subgroups. *J Affect Disord* 2001;65:19-26.
16. Denning DG, Conwell Y, King D, Cox C. Method choice, intent, and gender in completed suicide. *Suicide Life Threat Behav* 2000;30:282-288.
17. Pearson JL, Conwell Y, Lindesay J, et al. Elderly suicide: a multi-national view. *Aging Mental Health*. 1997;1:107-111.
18. Dhossche DM, Meloukheia AM, Chakravorty S. The association of suicide attempts and comorbid depression and substance abuse in psychiatric consultation patients. *Gen Hosp Psychiatry* 2000;22:281-288.
19. Sogut O, Sayhan MB, Gokdemir MT, et al. Evaluation of Suicide Attempts in Southeast of Turkey, Around the Sanliurfa Region. *JAEM* 2011;10:8-13.
20. Stravynski A, Boyer R: Loneliness in relation to suicide ideation and parasuicide: a population-wide study. *Suicide Life Threat Behav* 2001;31:32-40.
21. Harris EC, Barraclough B. Suicide as an outcome for mental disorders. A meta-analysis. *Br J Psychiatry* 1997;170:205-228.
22. Özgüven HD. The epidemiology of suicidal behavior. *Turkiye Klinikleri J Psychiatry-Special Topics* 2008;1:1-7.
23. Andersen UA, Andersen M, Rosholm JU, Gram LF. Psychopharmacological treatment and psychiatric morbidity in 390 cases of suicide with special focus on affective disorders. *Acta Psychiatr Scand* 2001;104:458-465.
24. De Leo D. Cultural issues in suicide and old age. *Crisis* 1999;20:53-55.
25. Enginyurt Ö, Özer E, Gümüş B, et al. Evaluation of suicide cases in Turkey, 2007–2012. *Med Sci Monit* 2014;20:614-623.
26. Yalaki Z, Çakır İ, Taşar MA, et al. Relationship of depressive symptoms in mothers and adolescents with adolescent suicides. *Dicle Med J* 2012;3:350-358.
27. Kurt İ, Erpek AG, Kurt MN, Gürel A. Epidemiology of adult poisoning at the Adnan Menderes University. *Journal of Adnan Menderes University Medical Faculty* 2004;5:37-40.