Araştırma / *Original article*

Outcomes of suicide attempters in the emergency unit of a university hospital

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ABSTRACT

Objective: *The aim of our study was to investigate the suicide attempters with the results of their clinical observations, to compare the suicide methods and first time/multiple attempts that resulted in admission to a university hospital emergency department in Turkey.* ***Methods:*** *The records of 640 patients admitted to a university hospital emergency department after a suicide attempt was reviewed retrospectively in a five year period. Following variables were included in the study: the demographic parameters, the date of admission, the number of attempts, features of the suicide attempts (methods, impulsive or planned attempts, stress factors before the attempts, the results of the clinical observations and the diagnosed mental disorders before the attempts). Non-violent and violent attempters according to the method and first time/multiple suicide were compared seperately. Chi-square test was used for comparing nominal variables. Differences were considered as statistically significant for p values under 0.05.* ***Results:*** *The majority of the suicide attempters were women (66.3%) and mostly between the age groups of 15-24 and 25-34. The most common method was self-poisining with drugs (84.5%). Most common suicide behaviour was impulsive (82.5%) and was likely to be the first-time attempters. First-time attempters were mostly (71.9%) discharged from the emergency department after a follow-up. According to the suicide method, non-violent suicide methods were more common in 15-24 age group and singles. Violent methods were frequently preferred in summer. Of all suicide attempters 6.4% were recorded as treatment refuse to the follow-up in the emergency unit. Treatment refusals were more common in multiple attempters who mostly have a mental disorder* ***Conclusion:*** *Our findings about the sociodemographic features of suicide attempters were consistent with the literature except the marital status. However treatment refuses in the common hospital emergency services seem to be serious problems that further preventive strategies should be reassessed in emergency units.* ***(Anatolian Journal of Psychiatry 2014; 15:124-131)***

Key words: *suicide attempt, emergency service, treatment refusal, treatment outcome*

Bir üniversite hastanesi acil servisinde intihar girişimi olgularının sonuçları

ÖZET

Giriş: *Bu çalışmada, bir üniversite hastanesi acil servisine başvuran intihar girişimi olgularının klinik izleme sonuçları ile birlikte değerlendirilmesi, intihar yöntemlerinin ve ilk/çoklu girişimlerin karşılaştırılması amaçlanmıştır.* ***Yöntem:*** *İntihar girişimi sonrası bir üniversite hastanesi acil servisine beş yıllık süreçte başvuran 640 olgunun kayıtları geriye dönük olarak incelenmiştir. Çalışmaya şu değişkenler alınmıştır: Demografik veriler, hastaneye başvuru tarihi, intihar girişimi sayısı, intihar girişimi özellikleri (yöntem, dürtüsel veya planlı girişim, intihar girişimi öncesi stres etkeninin varlığı, klinik izleme sonuçları, intihar girişiminden önce tanı konmuş psikiyatrik bozukluk varlığı). Yönteme göre ciddi ve ciddi olmayan girişimler ve ilk/çoklu girişimler ayrı ayrı karşılaştırılmıştır. Nominal*

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değişkenlerin karşılaştırmasında ki-kare testi kullanılmıştır. Farklar 0.05 altında p değerleri için istatistiksel olarak anlamlı kabul edilmiştir. ***Bulgular:*** *İntihar girişiminde bulunanların %66.3'ü kadındı ve çoğunlukla 15-24 ve 25-34 yaş grupları arasındaydı. En sık kullanılan yöntem ilaçla zehirlenmeydi (%84.5). En sık görülen intihar davranışı dürtüseldi (%82.5) ve genellikle ilk kez girişimde bulunanlardı. İlk kez intihar girişiminde bulunanların %71.9'u acil serviste izleme sonrasında taburcu edilmişti. İntihar yöntemine göre karşılaştırıldığında ciddi olmayan intihar yöntemleri 15-24 yaş grubu ve bekarlarda daha sıktı. Ciddi yöntemler sıklıkla yazın tercih edilmekteydi. Tüm intihar girişimlerinin %6.4'ü acil serviste izleme tedavisini redetmişti. Genellikle psikiyatrik bir bozukluk öyküsü olanlarda, çoğul girişimde bulunanlarda tedaviyi reddetme daha sıktı.* ***Tartışma:*** *Bulgularımız intihar girişiminde bulunanların sosyodemografik özellikleri açısından medeni durum dışında literatürle uyumluydu. Bununla birlikte genel acil servisteki tedavi redetmenin ciddi bir sorun olarak görünmesi, acil servislerde ileri önleyici stratejilerin yeniden değerlendirilmesini gerektirmektedir.* ***(Anadolu Psikiyatri Derg 2014; 15:124-131)***

Anahtar sözcükler: *İntihar girişimi, acil servis, tedaviyi reddetme, tedavi sonucu*

INTRODUCTION

Suicide is a complex behavior involving biopsychosocial factors which may manifest as an ideation, a tendency, or an attempt.[1] Suicidal ideation consists of thoughts of intentional self-harm or death, and attempted suicide and suicide are voluntary self-harm behaviors. Finally, suicide is defined as suicidal behavior resulting in death.[2] Although suicide vary according to regions or countries, every year, almost one million people die from suicide with a mortality rate of 16 per 100,000. Suicide is among the top ten causes of death worldwide and is the second leading cause of death between 10-24 years.[3] In many studies it has been pointed out that suicidal attempts are more common in women, while suicide related behaviors by men tend to be more serious, resulting in completed suicides in many cases.[4-6] Psychiatric disorders, genetic, personality, hopelessness, early traumatic life events, neurobiological disturbances, physical disorders, social factors, availability of means, and exposure to models have been shown as the risk factors for suicidal behavior[7] and history of self-harm or suicide attempts are known as the strongest factor for subsequent suicides, present in at least 40% of the cases.[8-12]

Due to the complex pattern of suicide, suicide behaviours are classified as planned, unplanned/impulsive, lethal, non-lethal, first time and multiple in most of the studies.[13,14] Researchers are focused on different risk factors and preventative strategies for different suicide behaviors.

Planned suicides are identified with the presence of a prior suicidal planning in a person's lifetime that may be more lethal while unplanned or impulsive suicides involve little preparation.[11] Although most of the studies suggest that less planned and more impulsive suicide attempts are less lethal, they may still result in death as some researchers mentioned before.[14] According to the number of suicide, first-onset suicidal behaviour is found to have more stronger links with social, economic factors and negative life events than multiple suicidality.[15]

Another risk factor in different cultures is different prejudices for suicide. In a recent study 25% of the participants agreed that people who suicided were 'weak', 'reckless', or 'selfish'.[16] The stigmatization of suicide in community, may impair help-seeking behavior and the compliance of treatment which would be a risk factor for preventing suicide.

Emergency services are the first and perhaps the most important step to evaluate the suicide attempters and even prevent the future suicides. Therefore, this paper presents the findings obtained from the reports of suicide attempts that resulted in admission to the emergency service in a university hospital in Turkey during a five year period. The aim of this study was to determine the sociodemographic risk factors, compare the violent-nonviolent and first time-multiple attempters and to investigate the clinical observation results in five years. To the best of our knowledge this study is the first determining the treatment refuses after a suicide attempt in an emergency service.

METHODS

A total of 640 medical records of the suicide attempters who were admitted to the emergency service of a university hospital in Turkey were reviewed retrospectively during a five year period. We evaluated the medical records of the patients, including emergency medical service, psychiatric and the intensive care records.

The demographic variables, date of admission, follow-up results, suicide method and psychiatric records (violent/non-violent, impulsive/ planned, stress factor before the attempt, first attempt or multiple) about the suicide were

obtained by two psychiatrists. Suicide attempts were classified due to ICD-10 as violent (hanging, stabbing, shooting, jump from buildings or in front of vehicles, severe deliberate car accident, electricity, fire) or non-violent (illicit or prescription drugs, gas suffocation, drowning) according to the methods which was used in various studies.[17-19] Unplanned attempters have commonly been called impulsive attempters, because of the unpredictability of their suicide attempt and we recorded the suicide attempters who did not have a plan for a suicide attempt in their lifetime as impulsive attempters.[20] Precipitating stressors were recorded based on the statements of the patient or family members. All stress factors were defined as: unemployment, economic distress, couple/family or other relationship problems, chronic physical illness, substance abuse, occupational stress, academic stress, death of friends or relatives, living alone, and others due to the precipitating stressors checklist which was identified before.[21]

The results were analyzed by using SPSS for Windows 15.0. In the statistical analysis, the chi-square test was used for comparing nominal variables. Differences were considered as statistically significant for p values under 0.05. This study was approved by the university ethics committee.

RESULTS

Sociodemographic characteristics of suicide attempters and clinical observations

A total of 640 suicide attempters were recorded including 424 (66.3%) females, 216 (33.7%) males. According to the age groups, 15-24 (s=369, 57.7%) and 25-34 (s=135, 21.1%) groups constituted the majority of the cases. The most common method was self-poisining with drugs (s=541, 84.5%).

Of all suicide attempters, 242 (37.8%) were externalized after emergency service follow-up, 186 (29.1%) were externalized from intensive-care unit, 94 (14.7%) were externalized after a clinical follow-up, 72 (11.3%) were hospitalized in a psychiatry department, 41 (6.4%) refused the treatment in the emergency service and five (0.8%) were recorded as exitus.

Characteristics of the first- time and multiple suicide attempters

Comparison of demographic characteristics and features of the first-time and multiple attempters are shown in Table 1. Of the 640 suicide attempters, 352 (55%) were first-time and 288 (45%) were multiple attempters. The majority of the attempters were in 15-24 age group. There were no significant differences between the first time and multiple attempters for age and gender.

The most common suicide behaviour was impulsive (82.5%). Impulsive suicide attempters were most likely to be the first-time attempters while the multiple attempters were more planned and there was a significant difference between the groups ($p<0.001$). Presence of a stress factor was higher in the first- time suicide attempters group than multiple suicide attempters ($p<0.001$). Comparing the clinical follow up results of the two groups revealed a difference that was statistically significant even after controlling the suicide victims' scores ($p<0.001$). After the attempt, first-time attempters were more likely to be discharged from the emergency department (71.9%) and multiple attempters were more likely to refuse treatment (92.7%). The highest frequency of repeated suicide attempts was recorded for the group with a mental disorder before the attempt ($p<0.001$).

Characteristics of violent and non-violent suicide attempters

A comparison of demographic characteristics and features of violent and non-violent suicide attempters are shown in Table 2. Among 640 suicide attempters, 86.6% (n=554) used non-violent methods while 13.4% (n=86) attempted suicides by violent methods. There were significant differences in the age groups between non-violent and violent suicides. Among the non-violent suicide attempters, 91.9% were in 15-24 age group and violent methods were less common in the same age group ($p<0.001$). Male gender was more likely to attempt suicide by violent methods while female was preferring non-violent methods ($p<0.01$). Marital status was also significantly different between violent and non- violent groups ($p<0.001$). Single attempters were more likely to prefer non-violent methods than married attempters and married attempters preferred more violent methods than singles ($p<0.001$). Suicide attempters using violent methods were more planned than those using non-violent methods while impulsive attempters preferred non-violent methods.

The majority of the violent suicide attempters were recorded in summer (21.1%) and those

Table 1. Comparison of sociodemographic and suicide characteristics of first-time and multiple attempters

	First-time attempters		Multiple attempters		
	n	%	n	%	p
Age					0.747
Under 15	12	46.2	14	53.8	
15-24	204	55.3	165	44.7	
25-34	78	57.8	57	42.2	
35-44	36	55.4	29	44.6	
45+	22	48.9	23	51.1	
Gender					0.100
Female	243	57.3	181	42.7	
Male	109	50.5	107	49.5	
Suicide behavior					0.001
Planned	68	56.2	53	43.8	
Impulsive	283	82.5	60	17.5	
Not classified	176				
Stress factor before the attempt					0.001
No	89	28.5	223	71.5	
Yes	263	80.2	65	19.8	
Clinical follow-up					0.001
Discharged from emergency service	174	71.9	68	28.1	
Refused treatment	3	7.3	38	92.7	
Discharged from intensive care unit	92	49.5	94	50.5	
Discharged from clinical services	49	52.1	45	47.9	
Psychiatric hospitalization	34	47.2	38	52.8	
Ex	0	0	5	100.0	
Mental disorder before the attempts					0.001
No	192	87.3	28	12.7	
Yes	152	65.8	79	34.2	
Unknown	189				

Tablo 2. Comparison of sociodemographic and suicide characteristics of violent and non-violent suicides

	Non-violent		Violent		
	n	%	n	%	p
Age					0.001
Under 15	23	88.5	3	11.5	
15-24	339	91.9	30	8.1	
25-34	108	80.0	27	20.0	
35-44	52	80.0	13	20.0	
45+	32	71.1	13	28.9	
Gender					0.003
Female	379	89.4	45	10.6	
Male	175	81.0	41	19.0	
Marital status					0.001
Single	242	93.4	17	6.6	
Married	118	80.3	29	19.7	
Divorced/widowed	20	83.3	4	16.7	
Suicide behavior					0.001
Planned	91	75.2	30	24.8	
Impulsive	312	91.0	31	9.0	
Not classified	176				
Date of suicide					0.002
Spring	151	87.3	22	12.7	
Summer	142	78.9	38	21.1	
Autumn	127	92.7	10	7.3	
Winter	134	89.3	16	10.7	

were more frequent in summer even after comparing each season for violent and non-violent suicide attempters ($p<0.01$).

DISCUSSION

In Turkey, the increase of suicide rate is reported as 3.30 to 4.29 per 100.000 between 2002-2012.[22,23] Suicide is more common in men than women for all age groups; but highest over the age of 75 for men (15.22/100.000) and between the ages of 15-19 for women (5.58/ 100,000). However, the rate of suicide attempts is more than suicides and reported as 78.89/100.000.[24] In a recent study, suicide attempt rates of women are 4 times higher than men.[25] Another study conducted in Turkey reported that of the 193 suicide attempters, 78% were women and %22 were men with the mean age of 24.6±9.3.[26]

According to Turkish Statistical Institute (TUIK), suicide rates are reported as approximately 140/100.000 in Izmir which shows a significant increase since 2002, and the proportion of suicide attempts was regarded as 72% for women and %28 for men.[27] In a recent research about suicide attempts admitted to an emergency service for two years, has reported the proportion as 73.1% women and 26.9% men with the mean age 28.1±9.9.[28] In another research, including 1566 suicide attempters, 78.9% were women while 21.1% were men mostly between the ages of 15-24.[25]

Finally, the majority of the studies in our country and the others have highlighted that suicide attempts are more common in women and between the ages of 15-24.[6,24,27,29,30] Although we have found a slightly increased proportion for men suicide attempters (33.7%) our results were concurrent with the findings The majority of the suicide attempters were women and belonged to the age groups of 15-24 and 25-34 like in our country and the others.[6,27,31-33]

In our study, most of the suicides were non-planned. In a recent study conducted in Turkey, suicide attempts were found to be associated with relationships and psychosocial factors in younger ages.[34] TUIK has recently clarified the causes of suicide attempts as family incompatibility, economic problems, illness, emotional relationship problems, business/educational failure and the others.[27] In our study, we similarly revealed that a stress factor was indicated before the attempts, especially for the first ones and most of them were externalized after a follow-up in the emergency service. Therefore, we suggest that we may overlook the cases that need more elaborate psychosocial support for problem-solving, and clinicians should be aware of the stress factors before externalizing.

In TUIK reports, the methods chosen for suicide are hanging (50.7%), firearms (24.9%), jumping from a higher place (10.3%) and use of chemicals (5.1%), respectively. The most common method for suicide attempts is reported as taking chemicals (90.65%).[27,33,35] Our results also revealed that self-poisoning with drugs was common in 84.5% of the cases.

We found that 13.4% preferred violent methods but about one third (29.1%) of the suicide attempters were to be treated in intensive care and this ratio might represent more serious attempts. As determined before, we can assume that non-violent suicides may also be lethal based on our findings and clinicians should be aware of the risks.[36]

Another point was our results showed that violent methods were mostly preferred by men and married. Recently it has been reported, hanging and using firearms is two times common in men than women for suicide attempts compatible with our findings.[27] This situation is supported by an extensive literature that male suicides have stronger intention to death than women.[37] Therefore men would prefer more lethal methods. But being married is known as a protective factor that contradicts with our findings. That result may be due to higher impulsivity and relationship/occupational problems which are more common in younger ages that are mostly unmarried and prefer non-violent methods frequently. Also according to the recent data, suicide attempt rates were not found significantly different between married and never married groups.[27] Besides 50% of the suicide cases were reported as married in Turkey which might support the idea that other precipitating factors would be more effective. [23] Researches about the seasonality on suicide presents conflicting results.[38,39] In TUIK reports of the last three years, among the 14.999 suicide attempts, 4344 (29.0%) were performed in summer months while 3254 (21.7%) were recorded in winter months.[27] Şevik et al. and Asirdizer et al. have also indicated that suicide attempts were more frequent in summer months.[26,40] Increased frequency of suicide attempts in summer were also reported in studies performed in Spain, Macedonia and China.[41-43]

In our study, suicide attempts were more common in summer consistent with those studies

and TUIK reports.[27] Although seasonal serotonergic imbalance is suggested as a cause,[44] it's complicated to explain why the frequency of violent suicides are more common in summer and further studies are needed to determine the reasons.

In our country, suicide attempters are either hospitalized to intensive care/ internal service for physical treatment or to a psychiatry clinic (preferably to a closed psychiatry clinic for high suicide risk groups). Also some of the suicide attempters are sent home after a clinical follow-up in the emergency service or after instructing to visit a psychiatry department in a few days if their condition is mild for physically or mentally. But a striking point of our study was another group (6.4% of all suicide attempters) which refused the follow-up in the emergency service. All suicide attempters who refused the treatment and their relatives had signed a paper to refuse the follow-up even they were informed about the risks. The majority of those were multiple suicide attempters that treatment refuses may be due to the previous treatment experience in the emergency service and not to accept the idea of a threat mentally or physically. But also this may be a result of a mental illness like depression even hopelessness, which is one of the most important predictive factor for a future suicide.[45] Our study has shown that multiple suicide attempters were more planned and had a mental disorder. Therefore, their refusal of care constitutes a risk to prevent the next suicide attempt or a completed suicide in the future. In a recent study, researchers have warned about that group, which are not hospitalized and mostly women who tend to repeat suicide triggered by relatively small stressors. They suggested that the members of this group might repeat attempts and complete suicide in the future.[46,47] Stigmatization is another major problem in psychiatric disorders and especially in suicide.[46-48] Some of the suicide attempters may be recorded as 'intoxication' due to stigmatization problem in our country. Suicide may be seen as an embarrassing event by the suicide attempters and their families. So this would also cause a treatment refuse and leave the emergency service as soon as possible.

The limitation of our study was that the medical and mental data were obtained from the medical records and was not a longitudinal study. Therefore some of the information was missing due to recording issues. Besides this study did not include various emergency records in different emergency units of Turkey.

As a result, our findings about the sociodemographic features of suicide attempters were concurrent with the results in literature. Multiple suicides were more planned, and mostly had a mental disorder. Violent methods were common among men and married, mostly planned and especially performed in summer. We also found that at least six of every a hundred suicide attempters who were mostly multiple attempters leave the emergency unit with their and their families' decision. Considering the fact that some of the suicide attempters might be recorded as 'drug poisining', this ratio would be higher. Further controlled studies should be performed to determine the reasons, and educational programs might be helpful for prevention of suicide in emergency services.

REFERENCES

1. *Sayıl I, Berksun OE, Palabıyıkoğlu R, Özgüven HD, Soykan Ç, Haran S. İntihar Davranışı: Kriz ve Krize Müdahale. Ankara: Ankara Universitesi Psikiyatrik Kriz Uygulama ve Araştırma Merkezi Yayınları, Damla Matbaacılık, 2000, s.165-178.*
2. *Adam K. Attempted Suicide. Psychiatr Clin North Am 1985; 8:183-196.*
3. *WHO. Suicide prevention (SUPRE). Available from: http://www.who.int/2010.*
4. *Skogman K, Alsen M, Öjehagen A. Sex differences in risk factors for suicide after attempted suicide -a follow-up study of 1052 suicide attempters. Soc Psychiatry Psychiatr Epidemiol 2004; 39:113-120.*
5. *Oda S, Higashi T: Current status of research on suicide and suicide prevention in foreign countries. J Nahl Inst Public Health 2003; 52.*
6. *Kudo K, Otsuka K, Endo J, Yoshida T, Isono H, Yambe T, et al. Study of the outcome of suicide attemts: characteristics of hospitalization in a psychiatric ward group, critical care center group, and non-hospitalized group. BMC Psychiatry 2010; 10:4.*
7. *Hawton K, van Heeringen K. Suicide. Lancet 2009; 373:1372-1381.*
8. *Cavanagh JTO, Carson AJ, Sharpe M, Lawrie SM. Psychological autopsy studies of suicide: a systematic review. Psychol Med 2003; 33:395-405.*

9. Harris EC, Barraclough B. Suicide as an outcome for mental disorders. A meta-analysis. Br J Psychiatry 1997; 170:205-228.
10. Fawcett J, Scheftner WA, Fogg L, Clark DC, Young MA, Hedeker D, et al. Time-related predictors of suicide in major affective disorder. Am J Psychiatry 1990; 147:1189-1194.
11. Conner KR. A call for research on planned vs. unplanned suicidal behavior. Suicide Life Threat Behav 2004; 34:89-98.
12. World Health Organization. Suicide Prevention (SUPRE). The WHO Worldwide Initiative for the Prevention of Suicide. Geneva: World Health Organization, 2009.
13. Levinson, D, Medina-Mora, ME, Ono Y, Posada-Villa J, Williams D. Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. Br J Psychiatry 2008; 192:98-105.
14. Conner KR, Phillips MR, Meldrum S, Knox KL, Zhang Y,Yang G. Low-planned suicides in China. Psychol Med 2005; 35:1197-1204.
15. Neeleman J, De Graaf R, Vollebergh W. The suicidal process; prospective comparison between early and later stages. J Affect Disord 2004; 82:43-52.
16. Batterham PJ, Calear AL, Christensen H. The stigma of suicide scale. Crisis 2013; 34:13-21.
17. Neuner T, Schmid R, Wolfersdorf M, Spiessl H. Predicting inpatient suicides and suicide attempts by using clinical routine data? General Hospital Psychiatry 2008; 30:324-330.
18. Spiessl H, Hübner-Liebermann B, Cording C. Suicidal behaviour of psychiatric inpatients. Acta Psychiatrica Scandinavica 2002; 106:134-138.
19. Coccaro EF, Sielver LJ, Klar HM. Serotoninergic studies in patients with affective and personality disorders correlates with suicidal and impulsive aggressive behavior. Arch Gen Psychiatry 1989; 46:587-599.
20. Witte TK, Merrill KA, Stellrecht NE, Bernert RA, Hollar DL, Schatschneider C, et al. "Impulsive" youth suicide attempters are not necessarily all that impulsive. J Affect Disord 2008; 107:107-116.
21. Brugha TS, Bebbington P, Tennant C. The List of Threatening Experiences: a subset of 12 life event categories with considerable long-term contextual threat questionnaire. Psychol Med 1985; 15:189-194.
22. TÜİK. İntihar İstatistikleri. Ankara: Türkiye İstatistik Kurumu, 2002.
23. TÜİK. İntihar İstatistikleri. Ankara: Türkiye İstatistik Kurumu, 2012.
24. Özgüven HD, Sayıl I. Suicide attempts in Turkey: Results of the WHO-EURO multicentre study on suicidal behaviour. Can J Psychiatry 2003; 48:324-329.
25. Önsüz MF, Demir F, Afşari EK, Şahin A, Çatalbaş Y, Bektaş H. Evaluation of suicide attempts in Sakarya. Turkish Journal of Public Health 2012; 10:.
26. Şevik AE, Özcan H, Uysal E. Analyzing suicide attempts: risk factors and follow up. Klinik Psikiyatri 2012; 15:218-225.
27. TUIK. Suicide Attempt Statistics. İzmir: Turkish Statistical Institute, 2012.
28. Karacaoğlu E, Keten A, Akçan R, İçme F, Karagöl A, Avcı E. A review of cases of attempted suicide admitted to a training and research hospital. Adli Tıp Derg 2013; 27:29-35.
29. Weissman MM, Bland RC, Canino GJ, Greenwald S, Hwu HG, Joyce PR, et al. Prevalence of suicide ideation and suicide attempts in nine countries. Psychol Med 1999; 29:9-17.
30. Şenol V, Ünalan D, Avşaroğulları L, İkizceli İ. İntihar girişimi nedeniyle Erciyes Üniversitesi Tıp Fakültesi Acil Anabilim Dalı'na başvuran olguların incelenmesi. Anadolu Psikiyatr Derg 2005; 6:19-29.
31. Deveci A, Taskin EO, Dundar PE, Demet MM, Kaya E, Ozmen E, et al. The prevalence of suicide ideation and suicide attempts in Manisa city centre. Turkish Journal of Psychiatry 2005; 16:170-178.
32. Kessler CR, Borges G, Walters EE. Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. Arch Gen Psychiatry 1999; 56:617-626.
33. Welch SS. A review of the literature on the epidemiology of parasuicide in the general population. Psychiatr Serv 2001; 52:368-375.
34. Çelik G, Yıldırım V, Metin Ö, Tahiroğlu A, Toros F, Avcı A, et al. Psychiatric disorders, self and family functions in adolescents with suicide. Anatolian Journal of Psychiatry 2011; 12:280-286.
35. Pajonk FG, Gruenberg KA, Moecke H, Naber D. Suicides and suicide attempts in emergency medicine. Crisis 2002; 23:68-73.
36. Zhang J, Li Z. Suicide Means Used by Chinese Rural Youths. J Nerv Ment Dis 2011; 199:410-415.
37. Hawton, K. Sex and suicide: gender differences in suicidal behaviour. Br J Psychiatry 2000; 177:484-485.
38. Tsai JF, Cho W. Re-examination of the seasonality of suicide in Taiwan during 1991-2008: a population based study. Psychiatry Res 2011; 186:147-149.
39. Odağ C. İntihar (Özkıyım) Tanım-Kuram-Sağaltım. İzmir Psikiyatri Derneği, İzmir: Ege Üniversitesi Basımevi, 1995.

40. *Asırdizer M, Yavuz MS, Aydın SD, Dizdar MG. Suicides in Turkey between 1996 and 2005: general perspective. Am J Forensic Med Pathol 2010; 31:138-145.*
41. *Salmeron D, Cirera L, Ballesta M, Navarro-Mateu F. Time trends and geographical variations in mortality due to suicide and causes of undetermined intent in Spain, 1991-2008. J Public Health (Oxf) 2013; 35:237-245.*
42. *Polazarevska M, Manchevska S, FilipovskaA, Gerazova V. Ten-year epidemiological study on suicide attempts in Skopje, Republic of Macedonia. Med Arh 2011; 65:38-41.*
43. *Zhang J, Gao Q, Jia C. Seasonality of Chinese rural young suicide and its correlates. J Affect Disord 2011; 134:356-364.*
44. *Makris GD, Reutfors J, Osby U, Isacsson G, Frangakis C, Ekbom A, et al. Suicide seasonality and antidepressants: a register-based study in Sweden. Acta Psychiatr Scand 2013; 127:117-125.*
45. *Beck AT, Steer RA, Kovacs M, Garrison B. Hopelessness and eventual suicide: a 10-year prospective study of patients hospitalized with suicidal ideation. Am J Psychiatry 1985; 142:559-563.*
46. *Jordan JR. Is suicide bereavement different? A reassessment of the literature. Suicide Life Threat Behav 2001; 31:91-102.*
47. *Harwood D, Hawton K, Hope J, Jacoby R. The grief experiences and needs of bereaved relatives and friends of older people dying through suicide: a descriptive and case-control study. J Affect Disord 2002; 72:185-194.*
48. *Cvinar J. Do suicide survivors suffer social stigma: a review of the literatüre. Perspective in Psychiatric Care 2005; 41:14-21.*