

Characteristics of Suicides Cases in Batman, South East of Turkey

Türkiye'nin Güney Doğusunda, Batman'daki İntihar Vakalarının Özellikleri

Behçet AL, MD,^a
Murat ORAK, MD,^b
Mehmet ÜSTÜNDAĞ, MD,^b
Özgür SÖĞÜT, MD^c

^aDepartment of
Emergency and First Aid Medicine,
Gaziantep University,
Faculty of Medicine, Gaziantep

^bDepartment of
Emergency and First Aid Medicine,
Dicle University, Faculty of Medicine,
Diyarbakır

^cDepartment of
Emergency and First Aid Medicine,
Harran University, Faculty of Medicine,
Şanlıurfa

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Yazışma Adresi/Correspondence:
Behçet AL, MD
Gaziantep University,
Faculty of Medicine,
Department of
Emergency and First Aid Medicine,
Gaziantep,
TÜRKİYE/TURKEY
behcetal@gmail.com

ABSTRACT Objective: The objective in this prospective study is to evaluate the frequency, mortality and demographic properties of suicides in our province (Batman City, Turkey). **Material and Methods:** All cases of suicides who admitted to the emergency department of the Batman State Hospital between April 2005 and November 2007 were included in the study. Patients' gender, age, history, educational and marital status, time and method preferred for suicide, suicide causes and mortality rate were reported. The results were discussed with similar studies in literature. **Results:** There were 328 (0.2%) suicide cases among 146.000 patients who admitted to our emergency department. Of the suicide cases, 75.9% were females and 24.1% were males. The mean age of cases was 23.5 ± 7.4 years. The suicide made a peak between the ages of 15 and 24. The majority of cases attempted suicide by taking drugs orally (93.0%). Antidepressants were the most common agents (74.4%) among the drugs incriminated in suicide. The majority of cases attempted suicide due to family problems (39.2%). Nineteen patients were taken to intensive care unit (ICU). Organophosphates and hanging for suicide attempts were the main cause of suicide in the patients who admitted to ICU. The majority of deaths occurred due to hanging (91.7%). The mortality rate for all patients was 3.7 %. **Conclusion:** In our study the the most common method for suicide attempt was drugs. Mortality was most frequent with hanging. Females attempted suicide more frequently. The suicide made a peak between the ages of 15 and 24. The majority of cases attempted suicide due to family problems

Key Words: Suicide; intensive care units

ÖZET Amaç: Hastane merkezli gerçekleştirilen bu prospektif çalışmadaki amacımız, şehrimizde (Batman ili, Türkiye) meydana gelen intiharların sıklığını, ölüm oranlarını ve demografik özelliklerini değerlendirmektir. **Gereç ve Yöntemler:** Nisan 2005 ve Kasım 2007 tarihleri arasında Batman Devlet Hastanesi Acil Servisi'ne başvuran tüm intihar vakaları bu çalışmaya dâhil edildi. Hastaların cinsiyetleri, yaşları, özgeçmişleri, eğitim ve medeni durumları, intihara başvuru zamanı ve intihar için tercih edilen yöntem, intihar sebepleri ve meydana gelen ölüm oranları kayıt edildi. **Sonuçlar** literatürdeki benzer çalışmalarla tartışıldı. **Bulgular:** Acil servisimize başvuran 146.000 hasta içinde 328 (%0.2) intihar vakası vardı. İntihar vakalarının %75.9'u (n= 249) kadın, %24.1'i (n= 79) ise erkek idiler. Vakaların ortalama yaşı 23.5 ± 7.4 yıl idi. İntihar girişimleri 15-24 yaşları arasında artış göstermişti. Vakaların çoğu (%93) ağızdan ilaç olarak intihar girişiminde bulunmuşlardı. İlaçlarla olan intihar girişiminde en çok (%74.4) tercih edilen ajan antidepressanlar idi. Vakaların çoğu (%39.2) ailevi problemlerden dolayı intihar girişiminde bulunmuşlardı. On dokuz hasta (%5.8) yoğun bakıma yatırıldı. Yoğun bakıma yatırılan hastalarda asıl sebep organofosfat ve asi ile olan intihar girişimleri idi. Ölümünün çoğu (%91.7) asiye bağlı meydana gelmişti. Ölüm oranı tüm hastalarda %3,7 idi. **Sonuç:** Çalışmamızda intihar girişimi için en sık tercih edilen yol ilaçlar idi. Ası sonucu meydana gelen intiharlar ölümlerin en sık nedeni idi. Kadınlar daha sık intihar girişiminde bulunmuşlardı. İntihar girişimleri 15-24 yaşları arasında artış göstermiştir. İntihar girişim sebepleri arasında en sık ailevi problemler yer almakta idi.

Anahtar Kelimeler: İntihar; yoğun bakım ünitesi

Suicide is ending one's life. The concept of suicide exists since the beginning of history and still one of the most important health problems in contemporary societies.¹

Suicidal behavior is a complex phenomenon-one that includes biological, social, and psychological risk factors. Many persons who have one or more risk factors, however, are not suicidal. Generally, adverse life events such as job loss or death of a loved one are considered to be precipitators of suicide attempts when they occur in combination with other risk factors such as depression. Other risk factors include a prior suicide attempt, previous episodes of deliberate self-harm, family history of suicide, family violence, easy access to lethal methods including firearms in the home, incarceration, exposure to suicidal behavior in others, physical illness, isolation or lack of social support, barriers to mental health treatment, some cultural and religious beliefs, and an unwillingness to seek help because of stigma.^{1,2} Hopelessness and previous suicide attempts are especially strong and independent predictors of suicide risk.³ Men are four times more likely to die by suicide than women, but women report attempting suicide about three times more often than men.⁴ Attempted suicide is less common among older adults compared with younger adults and adolescents.⁵ Older adult men and women are more likely to use a gun to commit suicide than younger adults.⁶

Our purpose in this observational, prospective study is to evaluate the etiologic and demographic characteristics of suicide in young and adults in order to ascertain the epidemiology, causes of the suicides and death rates occurred in Batman a city belongs to south-east of Turkey.

MATERIAL AND METHODS

In this prospective study, we analyzed all cases of adult suicides, who admitted to the emergency department (ED) of the Batman State Hospital, Batman, Turkey, between April 2005 and November 2007. The patients either admitted directly to ED or were referred from the other regional hospitals. Batman is a middle city with a 450.000 population

states at the South part of Turkey. The majority of suicides occur with drugs in and around Batman, in Turkey.⁷

Poisoning was defined as every case of acute exposure to drugs or any environmental substance resulting in a visit to ED. Even when the patient was considered symptom-free by ED staff and discharged directly from ED, the patient was included in the study. Acute exposure was defined as single exposure or continuous exposures lasting for less than eight hours, or repeated exposures over a period not longer than one week.⁸

The Health Ministry of Turkish Republic' data forms were used in this study. A poisoning form was prepared in which the following quarries were included; patient demographics (age and sex); substance involved in exposure (medicines, cleaning products, household product, carbon monoxide, pesticide and others); route of intake (ingestion, inhalation, skin contact, injection); circumstances of poisoning (self administration, administration by others, accidental or deliberate); methods of management (mainly emergency treatment such as activated charcoal, emetic, gastric lavage, cathartic; intubation, if any, antidote used, supportive treatment and/or other interventions); admission rate to intensive care unit (ICU); length of stay in the ICU; and finally the outcome of the patients (complete recovery, residual consequences, or death).

The substances, which caused suicide, were categorized into seven groups: medicines, insecticide (organophosphate), hanging, drowning, gunshot injury, jumping, height, cutting tool injury.

Drugs used for self-poisoning were recorded and categorized into subgroups as well; analgesics (acetaminophen, salicylates) and antiinflammatory agents, antibiotics, antidepressants, antiacids, antidiabetics, cardiovascular and other prescription drugs.

ICU admission criteria were unconsciousness, need for endotracheal intubation and/or mechanical ventilation, need for inotropic support, and need for intense monitoring. The modes of mechanical ventilation were also noted.

A statistical analysis was carried out using Chi-square test package in order to investigate the relationship between the route of intoxication and gender as well as the cause of intoxication. Results were considered statistically significant when $p < 0.05$.

RESULTS

Of 146.000 admissions to our ED between April 2005 and November 2007, 328 (2.2%) were due to suicides. Of patients, 249 (76%) were females. The mean age of all cases was 23.8 ± 7.4 years. (The mean age for females and males were 24.4 and 24.3 years respectively). The majority (57.6%) of cases were between 15-24 years old. The patients preferred attempting suicide in summer more frequently (36%). Thirty-eight patients (11.6%), of whom 92.1% were between 15-34 years old, attempted suicide once before the present study. The demographic data are shown in Table 1. The mortality rate was higher among housewives, students, bachelors and those who were under 15 years and between 15-34 years old; it was statistically significant ($p < 0.05$). The highest mortality rate (36.8%) was among those who were under 15 years old.

Therapeutic agents were found to be involved in most of the suicide accounting for 93.0% of all suicide cases and it was followed by hanging (4.9%). When compared to the married, bachelors offered much more (87.5%) hanging for suicide. Antidepressants were the most common agents (80.0%) among the drugs incriminated in suicide, and were followed by analgesics-antiinflammatory agents (63.6%) (Table 2). The cases who had never gone to school attempted suicide with antidepressants more ($p = 0.030$). The most frequently used analgesic was acetaminophen. Some patients took more than one agent for suicide. Although the majority of cases took drugs for suicide attempt, there was no death in this group. When education was considered, the majority of cases (50.0%) were graduated from middle school, 27.7% of all cases have never gone to school (Table 2).

The majority of suicide attempts (48.2%) occurred between 12⁰⁰-18⁰⁰. The remainder suicides

TABLE 1: The distribution of gender, marital status and occupation of patients who attempted suicide.

| | n | % | Exitus | Previous attempt |
|-----------------------|-----|------|--------|------------------|
| Gender | | | | |
| Female | 249 | 75.9 | 7 | 28 |
| Male | 79 | 24.1 | 5 | 10 |
| Age | | | | |
| 0-14 | 19 | 5.8 | 7 | - |
| 15-24 | 189 | 57.6 | 3 | 20 |
| 25-34 | 91 | 27.7 | 1 | 15 |
| 35-49 | 28 | 8.5 | 1 | 2 |
| 50-65 | 1 | 0.3 | - | 1 |
| Marital status | | | | |
| Married | 161 | 49.1 | 1 | 22 |
| Bachelor | 167 | 50.9 | 11 | 16 |
| Occupation | | | | |
| Employed | 47 | 14.3 | 3 | 5 |
| Unemployed | 96 | 29.3 | 2 | 11 |
| Housewife | 126 | 38.4 | 1 | 20 |
| Student | 59 | 18.0 | 6 | 2 |
| Seasons | | | | |
| Winter | 61 | 18.6 | 4 | 9 |
| Spring | 91 | 27.7 | 2 | 10 |
| Summer | 118 | 36 | 2 | 13 |
| Autumn | 58 | 17.7 | 4 | 6 |

occurred between 01⁰⁰-06⁰⁰ (7.3%), and 18⁰⁰-24⁰⁰ (32.6%). The mean duration between attempting to suicide and arriving to the ED was 120 min (range 20 min-5 hours). The majority of cases attempted suicide due to family problems (39.2%); and this group preferred drugs and hanging for suicide much more ($p = 0.008$, and $p = 0.05$). Of hanging, 62.5% occurred due to family problems. Of all cases, 16.2% attempted suicide due to prior psychiatrically illness, and 94.3% of them preferred drugs for suicide. Females with psychiatric illnesses tended to attempt suicide more than males ($p = 0.043$). Eight patients were not able to provide care for their children, so they attempted suicide. (Table 3). Nineteen patients of 328 patients (5.8%) were hospitalized to ICU; 10 of them were females and nine were males. Nine patients had cardiopulmonary arrest while they were on their way to ED, and all of them were hanging cases. None of them responded resuscitation in the ED. Three patients died in ICU. The remainders were treated in the

TABLE 2: The distribution of gender, medicine, suicide shape, marital status and education.

| | Marital status | | Education | | | |
|--------------------------|----------------|----------|---------------|-------------|------------|--------------|
| | Married | Bachelor | Middle school | High school | University | No education |
| Gender | | | | | | |
| Female | 127 | 122 | 127 | 47 | 2 | 73 |
| Male | 34 | 45 | 37 | 24 | 0 | 18 |
| Method of suicide | | | | | | |
| Medicine | 154 | 151 | 151 | 68 | 2 | 84 |
| Hanging | 2 | 14 | 11 | 3 | 0 | 2 |
| Firearm | 1 | 0 | 0 | 0 | 0 | 1 |
| Cutting toll injury | 2 | 1 | 0 | 0 | 0 | 3 |
| Drowning | 0 | 1 | 1 | 0 | 0 | 0 |
| Fall from height | 2 | 0 | 1 | 0 | 0 | 1 |
| Medicines | | | | | | |
| Antiinflammatory | 86 | 108 | 89 | 45 | 2 | 58 |
| Antibiotics | 113 | 104 | 111 | 51 | 2 | 53 |
| Antidepressants | 119 | 125 | 129 | 53 | 2 | 60 |
| Antiacit | 69 | 60 | 70 | 25 | 0 | 34 |
| Antidiabetics | 9 | 12 | 11 | 4 | 0 | 6 |
| Antihypertansives | 15 | 9 | 9 | 5 | 0 | 10 |
| Organophosphates | 10 | 7 | 9 | 2 | 0 | 6 |
| Others | 6 | 11 | 6 | 3 | 0 | 8 |

TABLE 3: The distribution of causes and methods of suicides.

| | Gender | | Method of suicides | | | | | |
|---------------------------|--------|------|--------------------|---------|---------|---------------------|----------|------------------|
| | Female | Male | Medicine | Hanging | Firearm | Cutting tool injury | Drowning | Fall from height |
| Causes of suicides | | | | | | | | |
| Family violence | 91 | 38 | 114 | 10 | 1 | 1 | 1 | 2 |
| Problems with children | 7 | 1 | 8 | 0 | 0 | 0 | 0 | 0 |
| Relative death | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Loneliness | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Communication problems | 21 | 7 | 27 | 0 | 0 | 1 | 0 | 0 |
| Failure at love | 28 | 8 | 36 | 0 | 0 | 0 | 0 | 0 |
| Lose job | 5 | 4 | 8 | 1 | 0 | 0 | 0 | 0 |
| Economic problems | 15 | 7 | 20 | 2 | 0 | 0 | 0 | 0 |
| Examination anxiety | 24 | 4 | 27 | 1 | 0 | 0 | 0 | 0 |
| Matrimony problems | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 |
| Chronic physical illness | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 |
| Psychiatrical illness | 46 | 7 | 50 | 2 | 1 | 0 | 0 | 0 |
| Avoid becoming pregnant | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Total | 249 | 79 | 305 | 16 | 2 | 2 | 1 | 2 |

ED observation wards. Endotracheal intubation was needed in 13 patients (4.0% of all cases), four of them were taken to ICU and ventilated mechanically. The most commonly used ventilator mode

was SIMV (Synchronized Intermittent Mandatory Ventilation). The mean duration of mechanical ventilation was 2.71 ± 1.12 days. The mean ICU stay was $6.3.5 \pm 2.5$ days.

Of all suicide cases, 302 (92.1%) were discharged from the ED while 16 (4.9% of all patients) discharged from ICU. Twelve patients (3.7% of all cases) died, of whom 11 died due to hanging ($\chi^2=202.19$, $p=0.001$) and one died due to jumping into the water ($\chi^2=2641$, $p=0.001$). The hanging cases attempted suicide in their own houses, and two patients attempted suicide once before. Of cases, four were forced to marriage with whom they hesitated and did not want, so they attempted suicide (Table 3).

DISCUSSION

The efforts of Turkey for transition to market economy started in 1950s and the migrations which continue incrementally caused a rapid social change. This caused the weakening of the family relations, decreased the social support for the individuals, increased unemployment and the obligation for working in the temporary works, and prepared the basis for the increase of the social and economical distance between different income levels. As a result of these events the dissatisfaction of the individuals about the social and economical conditions increased and that was the basic reason for the increase of the attempts for committing suicides.⁸ The attempts for committing suicides cover the 0.08 to 0.7% of the applications to the emergency services.⁹⁻¹¹ In our study, the ratio of the women/men who attempted suicides was 3.2/1. The annual applications to our emergency service consist of suicides at a ratio of 0.7%. That ratio was reported between 1.7/1 and 9/1 in various studies.¹²⁻¹⁵ According to the similar studies made in European countries, China, Taiwan, Japan and Turkey, the ratio of women who attempted suicides are higher.¹⁶ The reason for this higher rate in women could be attributed to the fact that depression which is known as the most common reason for the committing suicides is more common in women and the women are in a more far a way position for reaching their targets, expressing themselves and being accepted. Oral et al disclosed that the successful suicide attempts were seen three times more frequent in men and the unsuccessful suicide attempts were seen four times more frequent in women.¹⁷

According to our results, 97.2% of the suicide attempts were unsuccessful for women. This condition may correlate with the fact that women usually do not have a motivation to terminate their lives as much powerful as men, and on the contrary, their motivation for expressing themselves in that manner, calling for help and drawing attention to themselves are more powerful. In our study most of the women who attempted suicide belongs to the low level of education group having (51.0% of them graduated from the primary school, 29.3% of them have never attended to any school) and lacks economical independence (49.0% of them were housewives). This implies us that they live under the conditions that prepares the basis for committing suicide.

The suicide attempts that are not ended up with the death are called parasuicide.¹⁸ In the study of Devrimci et al the ratio of the parasuicide was %93.6.¹⁹ In America about 800.000 persons attempt to commit suicide each year but about 30.000 of them are successful. Suicide in that country constitute the eight most common reason for deaths.²⁰ According to our study, only one case died in spite of 27 attempts for committing suicide. Although 57.6% of our events belong to the age group of 15-24, the ratio of unsuccessful attempts in that group is high for both genders (98.4%). The successful attempts for the women was 2.8% and for men 6.3%. The successful attempts for both genders (seven persons) were observed mostly in < 15 age group and 85.7% of them were hanging cases. According to some researchers, adolescence is the period of starting of separation and individualization efforts, the building of value systems, experiencing of unbalance and chaos from corporal, spiritual and social directions and perceiving the social interaction from the near and far environment as oppression. For that reason, the adolescents could be desperate easily against the difficulties and could choose the suicide as deliverance.^{13,21} The ratios of attempt could be explained as the conflicts between the generations arising from the social changes experienced all over the country, social oppression and limitations applied by the parents who wants to continue the traditional family structure to the yo-

uths, experiencing the losses recently which have real or symbolic values and using the suicide as a means of protest or shelter to escape from that type of living by the women and youths who are suffering from the problems of the marriage. It was explained that the high ratios of attempts which are experienced in USA in 15-24 age group are related with the depression, using the drugs, intensive stress factors in the life, gender, compulsory life and other dangerous behaviors.²² It was also explained in that study that this ratio has increased from the ratio of 4.5/100000 to 13.2/100000 during last years in the age group of 15-24. A study made in Turkey has identified the adults and women in the age group of 15-24 as a potential risk factor.²³ Since the attempts were mostly in the age group of 15-24 (three persons) which occurred in the second row, this condition reminds us that the primary factor for committing suicide is depression and the next factor is adolescence age crises. In our study the lack of harmony in the family (39.3%), sickness (17.4%) and unsuccessful emotional relations (10.9%) were the first three reasons for the attempting suicide. According to the study of Şenol et al, the lack of harmony in the family (27.0%), sickness (16.8%) and economical difficulties (7.5%) cover the first three rows.¹⁴ Şenol et al explained that another reason for the attempting committing suicide could be the core type family structure and the support system existing in that type of family structure could be less effective with respect to the support system seen in the traditional type of families. It has been emphasized that in the traditional type of family structure the inter-family support systems are very powerful and it prevents the attempts for committing suicide. The result of our study was different, all suicide cases in our study belonged to traditional families. In our study, both women and men most commonly preferred (93.0%) excessive amount of drugs. The incidents of death happened most commonly in hanging cases (91.7%). There was no incident of death in those who attempted suicide by chemicals. However two of them (those who received organophosphate) were into intensive care unit. According to the studies of Emerson et al 88% of those who

had taken organophosphate had been put into intensive care unit.²⁴ The suicide attempts by taking drugs did not frequently results in death.²⁵ In many studies, drug misuse and taking excessive amounts of drugs has been determined as the most important reason for the parasuicide, similar to our findings.²⁻³⁰ Those who really wish to die preferred more fatal methods such as hanging, jumping from a high point or cutting his/her wrists. Taking excessive amount of drugs also could indicate the seriousness of the desire to die, but the attempts to commit suicide by that method does not usually result in death. Consequently, the attempts to commit suicide by that method help people to reach their targets by drawing attention and expressing him/her without ending with death. In our study the case that took chemicals but not died could have a relation with the realization of the incident mostly at the hours when everybody was at home and having early intervention and effective treatment as a result of taking the victim to the emergency service urgently. Starting from these conclusions, it could be mentioned in our study that the attempts realized by taking drugs are used for the purpose of drawing attention, threatening and calling for help generally.

Qin et al stated that the reason for the attempts to commit suicide by the singles were more than those who were married was the fact that the marriage was a powerful protective tool against committing suicide.³¹ In general, according to our study, the ratios of the married and unmarried persons who attempted to commit suicide were close to each other (50.9% and 49.1% respectively). The attempts occurred more often due to the lack of harmony in the family for the married persons, due to the difficulties of livelihood for the men, due to the unsuccessfulness in the emotional relations for the unmarried persons and men. Gören et al reported that the attempts to commit suicide due to the lack of harmony inside the family were at the second row among the others.³² Chan et al determined that the low income level and unemployment powerful characteristics for the male undertakers. In our study the problems due to job and economy were the second re-

ason for the attempt to commit suicide after the family problems.³³ The ratio of the attempting suicide due to corporal and mental sicknesses was 18.9 % in women and 11.4% in men. The relation between physical healthiness and suicide was meaningful in many studies.³⁴⁻³⁹ Ekici et al stated that the effect of the physical sicknesses on the suicides changes from 25% to 70%.³⁵

Consequently in our study it was determined that the most important risk factors for the attempts to be successful or unsuccessful were being in the age group of 15-24, being woman, being unmarried, having difficulties in the relations inside the family, having various corporal and mental sicknesses and economical problems, having the losses recently which have real or symbolic values, being unsuccessful in the emotional relations with the opposite gender. Although the successful attempts were (3.7%) were realized by serious methods such as hanging and drowning in water;

poisoning himself by using excessive amount of drugs was one of the most important reasons for the parasuicide.

Proposals: It may not be possible to prevent the attempts of committing suicide; however the fatal results can be decreased. The deaths due to committing suicide can be decreased by the general precautions such as creation of the mental health which will have effective function at the first and second stage, raising the social status of the women, informing the members of the family about the risk of committing suicide, activating the regional social support systems, making the availability of the means of suicide, especially the drugs and fired weapons more difficult, being careful for the amount of drugs which could be bought with single receipt not to exceed the toxic dose, training the people, preventing the exhibition of the attempts of suicides as if live broadcasting on the means of media.

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