

# Psychiatric Evaluation of Suicidal Drug Intake in the Emergency Department

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## Abstract

**Introduction:** Poisoning is usually caused by suicidal or unconscious intake of high doses of drugs or substances. Suicides are the voluntary termination of life, accounting for about 95% of all cases of intoxication, and are more common in female sex.

**Objective:** The aim of this study is to show the effects of psychiatric evaluations on the rates of re-admission and prognosis in emergency department admissions due to suicide attempt.

**Materials and Methods:** This was a retrospective study including patients over 18 years of age who were admitted to the Clinic of Emergency Medicine of University of Health Sciences Umraniye Training and Research Hospital, Istanbul, Turkey with suicide attempt due to intoxication or other reasons between 01.9.2018-01.09.2019. The patients were classified according to gender, exposure to the drug, and consultation with the psychiatrist. Approach to suicidal patients was also evaluated.

**Results:** Of the patients included in the study, 102 (56.98%) patients were consulted with psychiatrist and 16 (15.68%) of these patients had ongoing suicidal ideation. Of the patients with suicidal ideation, 9 (56.25%) were male; 7 (43.75%) were female. 14 of the patients with suicidal ideation were admitted to the psychiatric service. 2 of them were admitted to the psychiatric service after medical treatment was completed in the internal medicine service. It was learned that 10 (5.58%) patients had previously attempted suicide. 9 (90%) were women; 1 (10%) was male. None of the 10 patients who had previously attempted suicide had reapplied.

**Conclusion:** Suicide; It is an issue that needs to be evaluated in detail with the thought, initiative and completion of the action. Patient admissions should be meticulously evaluated and, if any psychiatric illness should be diagnosed. Patients with no pathological findings and a decision to be discharged should be tried to avoid suicidal attempts.

**Key words:** Intoxication, Psychiatric evaluation, Suicide

## Özet

**Giriş:** Zehirlenmeler genellikle intihar amaçlı veya bilinçsizce yüksek miktarda ilaç veya madde alımından kaynaklanır. İntihar, yaşamın gönüllü sonlandırılmasıdır, tüm zehirlenme vakalarının yaklaşık% 95'ini oluşturur ve kadın cinsiyetinde daha yaygındır.

**Amaç:** Bu çalışmanın amacı intihar girişimi nedeniyle acil servis başvurularında psikiyatrik değerlendirmelerin yeniden başvuru ve prognoz oranları üzerine etkilerini göstermektir.

**Gereç ve Yöntemler:** Bu çalışma, 18 yaş üstü, Sağlık Bilimleri Üniversitesi Umraniye Eğitim ve Araştırma Hastanesi Acil Tıp Kliniğine, intoksikasyon veya başka nedenlere bağlı intihar girişimi ile başvuran hastaları kapsayan retrospektif bir çalışmadır. 01.9.2018-01.09.2019 tarihleri arasında, çalışma kriterlerini karşılayan hastalar cinsiyete, ilaca maruz kalmaya ve psikiyatriste danışmaya göre sınıflandırıldı. İntihar hastalarına yaklaşım da ayrıca değerlendirildi.

**Bulgular:** Çalışmaya alınan hastalardan 102'si (% 56.98) psikiyatriste danışılmış ve bu hastalardan 16'sında (% 15.68) intihar düşüncesinin devam ettiği görülmüştür. İntihar düşüncesi olan hastaların 9'u (% 56.25) erkekti, 7'si (% 43.75) kadındı. İntihar düşüncesi olan hastaların 14'ü psikiyatri servisine yatırıldı. Bunlardan 2'si dahiliye servisindeki tıbbi tedavisi tamamlandıktan sonra psikiyatri servisine yatırıldı. 10 (% 5.58) hastanın daha önce intihara teşebbüs ettiği öğrenildi. 9'u (% 90) kadındı; 1 (% 10) erkekti. Daha önce intihar girişiminde bulunan 10 hastadan hiçbiri tekrar başvurmamıştı.

**Sonuç:** İntihar, eylemin düşüncesi, girişimi ve tamamlanması ile ayrıntılı olarak değerlendirilmesi gereken bir konudur. Hastalar titizlikle değerlendirilmeli ve herhangi bir psikiyatrik hastalığı varsa teşhis edilmelidir.

**Anahtar Sözcükler:** İntihar, Psikiyatrik değerlendirme, Zehirlenme,

## Introduction

The history of poison and poisoning dates back thousands of years. The word 'poison' is the first time in the literature that was defined as a drug and elixir prepared from dead-

ly substances in B.C.1230<sup>1</sup>. Poisoning is usually caused by suicidal or unconscious intake of high doses of drugs or substances. Suicides are the voluntary termination of life, accounting for about 95% of all cases of intoxication, and are more common in female sex<sup>2</sup>.

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It is known that the number of poisoning cases admitted to the emergency department in our country constitutes 0.46-1.57% of all cases<sup>3,4</sup>. Suicide attempts are frequently encountered in psychiatric patients. Sometimes there are suicide attempts in patients with undiagnosed psychiatric disorders. Most of the hospital admissions due to suicide are intoxications.

The aim of this study is to show the effects of psychiatric evaluations on the rates of re-admission and prognosis in emergency department admissions due to suicide attempt.

## Materials and Methods

This was a retrospective study including patients over 18 years of age who were admitted to the Clinic of Emergency Medicine of University of Health Sciences Umraniye Training and Research Hospital, Istanbul, Turkey with suicide attempt due to intoxication or other reasons between 01.9.2018-01.09.2019.

The patients were classified according to gender, exposure to the drug, and consultation with the psychiatrist. Approach to suicidal patients was also evaluated.

The data obtained were analyzed using the using Statistical Package for the Social Sciences for Windows 25 (SPSS, Chicago, IL, USA). The Kolmogorov-Smirnov and the Shapiro-Wilk tests were used to analyze the compliance to the normal distribution, and the chi-square and t-tests were used for the remaining analyses. The quantitative data were expressed as mean, Standard deviation (SD) and median (minimum – maximum value), and the qualitative data were expressed as case number (n) and percentages (%). The outcomes were evaluated in 95% confidence interval and the significance was accepted at a level of  $p < 0.05$ .

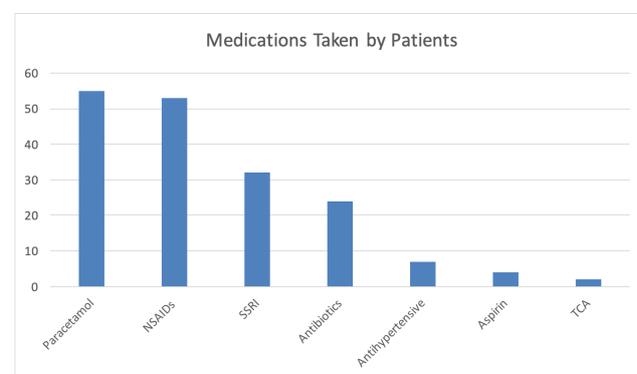
## Results

The files of 186 patients admitted to our clinic were evaluated retrospectively. Patients whose investigation data were insufficient or who were recorded after unauthorized hospital leave were excluded from the study. Seven patients were excluded. 179 patients admitted to the emergency department for suicide were included in the study. Of the patients, 51 (28.5%) were male and 128 (71.5%) were female. The mean age was 32.7 years.

Among the patients included in the study, one (0.56%) patient was treated with suicide due to hanging and intoxication, one (0.56%) patient was treated with suicide due to incision; 177 (98.8%) patients were admitted with suicide

only due to intoxication. One patient (0.56%) who presented with cardiac arrest due to intoxication and substance intake was exitus.

29.2%<sup>73</sup> of the drugs taken for suicidal purposes could not be determined because the drug content could not be remembered by the patients and / or could not be found by their relatives or because the patient refused to declare the drug. All patients had multiple drug intake. Of the identified drug contents, 22%<sup>55</sup> were paracetamol, 21.2%<sup>53</sup> were NSAIDs (nonsteroidal anti-inflammatory drugs), 12.8%<sup>32</sup> were SSRIs (selective serotonin re-uptake inhibitors), 9.6%<sup>24</sup> of them were antibiotics, 2.8%<sup>7</sup> were antihypertensive drugs, 1.6%<sup>4</sup> were aspirin and 0.8%<sup>2</sup> were TCA (tricyclic anti-depressant) (Figure.1).



**Figure 1.** Medications Taken by Patients

NSAIDs, nonsteroidal anti-inflammatory drugs; SSRI, selective serotonin re-uptake inhibitors; TCA, tricyclic anti-depressant

Patients with a psychiatric illness; four (18.2%) patients had bipolar disorder, four (18.2%) patients had major depression, four (18.2%) patients had anxiety disorder, four (18.2%) patients had panic attacks, three (13.6%) patients had obsessive compulsive disorder, one patient (4.5%) had conversion disorder and one patient (4.5%) had substance addiction.

Of the patients included in the study, 102 (56.9%) patients were consulted with psychiatrist and 16 (15.7%) of these patients had ongoing suicidal ideation. Of the patients with suicidal ideation, nine (56.25%) were male; seven (43.75%) were female (Table 1).

14 of the patients with suicidal ideation were admitted to the psychiatric service. Two of them were admitted to the psychiatric service after medical treatment was completed in the internal medicine service. Of these 16 patients, two (12.5%) had major depression and two (12.5%) had bipolar affective disorder. The remaining 12 (75%) patients had no known psychiatric disease. Of the 102 patients consulted

**Table 1.** General Distribution According to Gender and Suicidal Ideation

	Psychiatrist Consultation- With Suicidal Ideation	Psychiatrist Consultation- No Suicidal Ideation	Patients not Consulted with Psychiatrists	Total
Male	9 (5%)	20 (11,2%)	22 (12,3%)	51 (28,5%)
Female	7 (3,9%)	66 (36,8%)	55 (30,7%)	128 (71,5%)
Total	16 (8,9%)	86 (48%)	77 (43%)	179 (100%)

with psychiatrist, 19 of them (18.6%) were admitted to the internal medicine service; 14 (13.7%) of them were admitted to the psychiatric service; four (3.9%) of them were taken to intensive care unit; two (1,96%) of them were admitted to the psychiatric service after the medical treatment was completed in the internal medicine service (Table 2).

It was learned that 10 (5.58%) patients had previously attempted suicide. Nine (90%) were women; one of them (10%) was male. None of the 10 patients who had previously attempted suicide had reapplied. Eight (80%) of these patients were consulted with psychiatrists. Of the patients consulted with psychiatrists, one (12.5%) had suicidal ideation and was admitted to the psychiatry service. Of the remaining seven patients, two patients (25%) were admitted to the internal medicine service; one patient (12.5%) was admitted to the intensive care unit. Of the patients included in the study, six patients (3.35%) had hospital admissions. Of these patients, three (50%) were male and three (50%) were female. It was seen that two (33.3%) of six patients who were re-admitted to hospital were consulted with psychiatrists. Two of these patients (33.3%) had suicidal ideation. One of these patients was admitted to the psychiatric service. Another patient was admitted to the internal medicine service and admitted to the psychiatric service after medical treatment. He was hospitalized in internal medicine and psychiatric service diagnosed as bipolar affective disorder.

## Discussion

Poisoning occurs in adults mostly due to suicide attempts. Suicidal procedures applied to the hospital are mostly due to intoxication. Intoxications require a multidisciplinary approach and require psychiatric valuation before discharge.

Three concepts were defined in the studies on suicidal behaviors. Completed Suicide: used for death-suicides. Suicide Attempt: This is done to attract attention or to draw attention to problems, as a result of which there is no death. Suicidal Ideation: The person has suicide plans<sup>5,6,7</sup>.

It has been reported that climate, environmental characteristics and seasons have effects on suicide. There are also the types of suicide that Durkheim describes. These are selfish, irregular suicides and deadly suicides<sup>5,8</sup>. Beachler divides suicide types into escapism, aggression, dedication and game suicides. Shneidman's classification includes selfish, duplicated and abstraction suicides. Suicidal behavior varies between countries and societies. It is common in the Americans, Scandinavian countries and Central and Eastern Europe. It is rare in southern Europe. It is quite common in Japan. The difference in suicidal behavior between women and men decreases gradually. In both sexes, the 25-34 age group was the most suicidal group<sup>5,9</sup>.

Suicide rates were; It increased to 1.95 per thousand in 1975, 1.69 per thousand in 1980, 2.42 per thousand in 1990, 2.67 per thousand in 2000 and 4.19 per thousand in 2013<sup>10</sup>.

**Table 2.** Hospitalization Rates of Patients Consulted with Psychiatrists

	Suicidal Ideation	No Suicidal Ideation	Total
Patients was admitted to the PS*	14 (%13,72)	-	14 (%13,72)
Patients was admitted to the PS after medical treatment in IMS**	2 (%1,96)	-	2 (%1,96)
Patients was admitted to the IMS	-	19 (%18,62)	19 (%18,62)
Patients was admitted to the ICU***	-	4 (%3,92)	4 (%3,92)
Discharged Patients	-	63 (%61,76)	63 (%61,76)
Total	16 (%15,68)	86 (%84,32)	102 (%100)

\* psychiatric service \*\*internal medicine service \*\*\* intensive care unit

Suicide is a problem of depression. Those with psychiatric disorders tend to have more depression than those without. However, patients can apply to the hospital with a suicide attempt before they are diagnosed with psychiatric disorder. In our study with 179 patients, only 22 patients had known psychiatric disorders. We think that this low rate is due to the lack of a psychiatric clinic in our hospital and the retrospective design of our study.

Although 10 of our patients had previous suicide attempts, there were no hospital admissions after the treatment in our hospital. This may be related to the lack of psychiatric services in our hospital.

Suicidal thinking is inherently dynamic. It is a dynamic variable in distinguishing the first suicide attempts from the first suicide attempts. Nonlinear dynamic models may provide advantages for suicide risk assessment and treatment monitoring in clinical settings<sup>11</sup>. In our study, 16 (15.7%) of 102 patients consulted with psychiatrist had suicidal ideation, and 14 of the patients with suicidal ideation were admitted to the psychiatric service. Two of them were admitted to the psychiatric service after medical treatment was completed. And only two (12.5%) of these 16 patients re-admitted. Of these 16 patients, two patients (12.5%) had major depression and two (12.5%) had bipolar affective disorder. The remaining 12 (75%) patients had no known psychiatric disease.

In conclusion, two of 22 patients with psychiatric disorders diagnosed with or without suicidal ideation underwent psychiatric hospitalization and two of them were admitted to the psychiatric service after medical treatment was completed. In a study examining suicide and survival, it was found that 19% of the patients who attempted suicide were admitted again with suicide attempt within two years, and poor adherence to treatment caused an increase in suicide risk<sup>12</sup>. In our study, none of the patients who had previously attempted suicide did not reapply during our study. Suicidal ideation was the main predictor of hospitalization or outpatient control.

Consultation with a psychiatrist is very important and the general clinical condition of the patient may be misleading. Four of the six patients who were re-admitted were not consulted with psychiatry. Two patients who were consulted had suicidal ideation and were admitted to the psychiatric service.

Suicide is more common in female gender worldwide<sup>13</sup>. Hospital admissions are more common in women due to toxic exposure other than suicide. In our study in which the demographic data of mushroom intoxications were examined, hospital admissions were higher in women (58.8%)<sup>14</sup>. In another study in which hospital application evaluations

were made due to digoxin intoxication, hospital admissions were higher in women (67.8%). In addition, the rate of women in hospitalization was high (56.6%)<sup>15</sup>. Women are more likely to be exposed to verbal, emotional, economic and social violence than men<sup>16</sup>.

In our study, paracetamol was the most common drug which are known among 29.7% of the patients. Paracetamol is commonly used for suicidal purposes because it is easy to access and cheap<sup>17</sup>.

The rate of female patients in suicide attempts who applied to hospital was higher in our study (71.5%). The rate of female in the patients consulted with psychiatrist was high (40.8%). Only female patients with suicidal ideation after consultation were lower than male patients (3.9%).

## Limitations

Although it is known that re-admissions are usually within 6 months, patients who applied within the last one year were included in our study. Therefore, the 6-month period of some patients remains unknown. Although we have been informed that the admission times are usually within the first two hours, the patient is likely to take medication or attempt a different suicide at different times.

## Conclusion

Suicide; It is an issue that needs to be evaluated in detail with the thought, initiative and completion of the action. Patient admissions should be meticulously evaluated and, if any psychiatric illness should be diagnosed. Patients with no pathological findings and a decision to be discharged should be tried to avoid suicidal attempts. Further studies are needed, including suicide attempts that result in death.

## References

1. Yeşiler F İ, Şendur Ü G, Demiroğlu G İ, Investigation of Acute Intoxication Cases in Intensive Care Unit, *Aegean J Med Sci*, 2019;1:14-8.
2. Ayaz T, Bilir Ö, Ersunan G, Şahin O Z, Yavaş Ö, Rakıcı H, Evaluation of Suicidal Drug Poisoning, *Konuralp J Med*, 2015;7(1):53-6.
3. Özayar E, Değerli S, Güleç H, Şahin Ş, Dereli N, Retrospective analysis of intoxication cases admitted to intensive care unit. *Journal of Intensive Care*, 2011;3:59-62.
4. Aydın A, Evaluation of Poisoning Cases Followed in the Intensive Care Unit: A Retrospective Study, *Firat Med J*, 2019; 24(3):129-133.

5. Atasoy E., Köşle M. Suicides world from the perspective of geography, Turkey and Bursa. *Tesam Academy Magazine*, 2019;6(1):123-165. <http://dx.doi.org/10.30626>.
6. Arsel CO, Batıgün AD, Suicide and Gender: An Evaluation in Terms of Gender Roles, Communication Skills, Social Support and Hopelessness, *Turkish Journal of Psychology*, 2011(26);68:1-10.
7. Bulut ER, Küçük H ve Bulut NS, A brief overview of the causes and methods of suicide. *Cumhuriyet Journal of Medicine*, 2012(34):128-37.
8. Durkheim E, *Suicide*, Istanbul: Pozitif Publications, 2013, 136-240.
9. Eskin, M. *Suicide Explanation, Evaluation, Treatment and Prevention*. Ankara: HYB Publishing, 2012, 6-28.
10. Yakar M, Temurçin A, Kervankıran İ, *Suicide in Turkey: its Changes and Regional Differences*, *Bulletin of Geography: Socio Economic Series*, 2017(35) :123-144. <https://doi.org/10.1515/bog-2017-0009>.
11. Bryan C J, Rozek D C, Butner J, Rudd M D, Patterns of change in suicide ideation signal the occurrence of suicide attempts among high-risk psychiatric outpatients, 2019, <https://doi.org/10.1016/j.brat.2019.04.001>.
12. Irigoyen M, Segovia A P, Galván L, Puigdevall M, Giner L, De Leon S, Baca-García E, Predictors of re-attempt in a cohort of suicide attempters: a survival analysis, <https://doi.org/10.1016/j.jad.2018.12.050>.
13. World Health Organization, 2017. Global Health Observatory (GHO) data-suicide rates (per 100 000 population). Retrieved from [http://www.who.int/gho/mental\\_health/suicide\\_rates\\_male\\_female/en/](http://www.who.int/gho/mental_health/suicide_rates_male_female/en/).
14. Özdemir S, Kokulu K, Algin A, Akca HS. Demographic and clinical characteristics of applications to the emergency service with mushroom intoxication. *Eurasian J Tox.* 2019;1(2):49-52.
15. Akça HS, Algin A, Ozdemir S, Kokulu K, Altunok I. Evaluation of the relationship of serum digoxin levels with demographic data. *Eurasian J Tox.* 2019;1(2):61-4.
16. Ocal O, Ozdemir S, Demir H, Eroglu SE, Onu OE, Ozturk TC. Evaluation of domestic violence against women admitted to the emergency room. *Turkish Journal of Emergency Medicine* 2013;13:133-7.
17. Algin A, Erdogan MO. The investigation of blood drug levels and course of acetaminophen poisoning due to application time. *Biomedical Research* 2017(28);15: 6682-6.

