

# Demographic Characteristics of Patients Applied to The Emergency Service with Drug Intoxications

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## Abstract

**Objectives:** The term poisoning is quite old. Poisoning; It is the situation that stops vital functions where a substance enters the living organism through mouth, skin, respiration, circulation, and damages its function. Poisoning has been one of the important health problems throughout human history. The term "poisoning" was first used by the British in 1230. According to the first report of Turkish National Poison Control Center on the application by poisoning in Turkey is located medical drugs (69.74%). Poisoning caused by pesticides is in second place (8.34%) and poisoning with household chemicals is in third place (7.57%).

**Materials and Methods:** Patients who applied to Erzurum Regional Training and Research Hospital emergency service with drug intoxication between 07.04.2018 and 07.04.2020 were retrospectively screened and analyzed from the medical records.

**Aim:** It was aimed to examine the demographic characteristics of the patients who applied to Erzurum Regional Training and Research Hospital Emergency Service between 07.04.2018 and 07.04.2020 with drug intoxication in a period of two years.

**Results:** 96 patients admitted to the emergency department with drug intoxication between 07.04.2018 and 07.04.2020. Patients presenting with intoxication are 4.1% of all admitted patients. 79.3% of the patients presenting with intoxication are drug intoxication. The average age of these patients is 29,7 years old. 69 (71.8%) of the patients were female 67.7% of patients admitted to the emergency department with drug intoxication are married.

**Conclusion:** Women were intoxicated with a higher rate of drug intake than male. The lower socio-economic level of female in our geography may cause female to hold on to life less and want to end their lives. By increasing the socioeconomic status of female, the rate of suicide can be reduced. In our geography, as the marriage of female puts more psychological burden on themselves, drug intoxication may be more common among female who are married. Drug intoxication may be reduced in those who are married in male, perhaps because their lives are regulated. Since our study was conducted retrospectively, it is not certain what the purpose of poisoning was. Working prospectively in larger groups will provide us with more accurate and broader data.

**Key words:** drug intoxications, demographic, poisoning

## Özet

**Amaç:** Zehirlenme; bir maddenin canlı organizmaya ağız, deri, solunum, dolaşım yoluyla girip zarar vererek işlevini bozmasıdır. 2008 yılı Ulusal Zehir Danışma Merkezi raporuna göre Türkiye'de zehirlenme ile başvurularda ilk sırada medikal ilaçlar yer almaktadır, tarım ilaçları ile oluşan zehirlenmeler ikinci ev kimyasalları ile olan zehirlenmeler ise üçüncü sıradadır.

**Gereç ve Yöntem:** Erzurum Bölge Eğitim ve Araştırma Hastanesi acil servisine 07.04.2018 - 07.04.2020 tarihleri arasında ilaç intoksikasyonu ile başvuran hastaların tıbbi kayıtları retrospektif olarak tarandı ve analiz edildi.

**Bulgular:** Araştırma dönemi boyunca acil servise toplam 2943 hasta başvurmuştu. Bu hastalardan 121'nin geliş şikayeti zehirlenmeydi. Bunlardan 96 tanesi ilaç intoksikasyonu ile acil servise başvurmuştu. İntoksikasyon ile başvuran hastalar tüm başvuran hastaların %4,11'dir. Zehirlenme ile başvuran hastaların %79,33 ü ilaç zehirlenmesidir. Bu hastaların yaş ortalaması 29,73 dir. İlaç intoksikasyonu ile gelen 96 hastanın 69 tanesi kadındı ve 65 (%67,7). İlaç intoksikasyonu ile gelen 96 hastanın 69 tanesi kadındı.

**Sonuç:** Kadınlar erkeklere göre daha yüksek oranda ilaç içerek intoksikasyona uğruyor. Coğrafyamızda kadınların sosyoekonomik düzeyinin daha düşük olması, kadının hayata daha az tutunmasına ve hayatına son vermek istemesine sebep oluyor olabilir. Kadınların sosyoekonomik düzeyinin artırılması ile özkıym oranı azaltılabilir. Coğrafyamızda kadınların evli olmaları kendi üzerlerine daha fazla psikolojik yük yüklediğinden kadınlarda evli olanlarda ilaç intoksikasyonu daha fazla görülüyor olabilir.

**Anahtar kelimeler:** ilaç intoksikasyonu, demografik, zehirlenme

## Introduction

The term poisoning is quite old. Poisoning is the situation that stops vital functions where a substance enters the living organism through mouth, skin, respiration, circulation, and damages its function. Poisoning has been one of the im-

portant health problems throughout human history. The term "poisoning" was first used by the British in 1230<sup>1,2</sup>.

Paracelsus described poison as "All matter is poison. It is the dose that separates the drug from the poison." He said and emphasized the amount of poison. In 1959, Du Bois and Geilling published their first toxicology book. Although poi-

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sonings are not common diseases such as stroke and heart diseases in emergency medicine, they are important disease groups. They constitute 5 percent of emergency applications in Germany<sup>4</sup>. Although it is close to this in France, there is no exact data on poisoning for Europe in general<sup>5</sup>. In studies of patients admitted to the emergency department in Turkey, 0.7-5% of patients admitted to the emergency constitutes intoxication<sup>6,7</sup>. Drug-related poisoning can occur as a result of suicidal or accidental substance ingestion. According to first report of Turkish National Poison Counseling Center in 2008, it is located in applicants with medical drug poisoning in Turkey (69.74%). Poisoning caused by pesticides is in second place (8.34%) and poisoning with household chemicals is in third place (7.57%)<sup>3</sup>. The number of female patients admitted with poisoning in 2008 in Turkey (58.38%) male patients (38.1%) is greater than the number<sup>3</sup>.

In this study, we aimed to the poisoning cases admitted to our emergency department with medication to harm themselves; evaluate it retrospectively in terms of demographic characteristics, cause of poisoning, treatment characteristics and duration and to contribute to the poisoning data of our country.

## Materials and Methods

Patients who applied to Erzurum Regional Training and Research Hospital Emergency Service with drug intoxication between 07.04.2018- 07.04.2020 were retrospectively screened and analyzed from the medical records.

## Results

Between 07.04.2018-07.04.2020, 2943, patients applied to Erzurum Regional Training and Research Hospital Emergency Service, among which 121 patients applied with intoxication. Ninety-six of them applied to the emergency department with drug intoxication. Patients presenting with intoxication are 4.1% of all admitted patients. 79,3% of patients presenting with intoxication have drug intoxication. The average age of patients presenting with drug intoxication is 29,7. Out of a total of 96 patients, 69 were female and the remaining 27 were male. The rate of female patients is 71.87%. The rate of male patients is 28.13%. (Table.1) The oldest female patient is 57 years old. The youngest female patient is 16 years old. The average age of female is 29,9. 65 of 96 patients were married and 31 of them were single. 67.7% of the patients presented to the emergency department with drug intoxication were married, and 32.3% were single. Fifty-four of the female patients are married, and 15 of them are single. Married patients are 67.7% compared to the total number of patients, while single patients are 32.3%. (Table 2) Of the female patients admitted to the emergency

department with drug intoxication, 78.26% were married, and 21.7% were single. The number of married female was 54, and the number of single female was 15. 40.7% of male patients admitted to the emergency department with drug intoxication are married, and 59.26% are single. The number of married male patients was 11, and the number of single male patients was 16. (Table 3)

25 (15.9%) patients had medication from more than one group. The distribution of drugs taken by the patients is shown in Table-4. Specific antidote was given to 28% of the patients in addition to supportive therapy. N-Acetylcysteine (NAC) was started in 59.1% of the patients receiving specific treatment. Apart from NAC, atropine, PAM, vitamin K, fresh frozen plasma, desferrioxamine were other specific antidotes. The mean discharge time of the patients was  $3.26 \pm 1.67$  days.

**Table 1.** Gender distribution of patients who presented to the emergency department with drug intoxication

	Number of patients (%)
Female	69 (%71.8)
Male	27 (%28.1)
Total	96 (%100)

**Table 2.** The ratio of married and single patients who presented to the emergency department with drug intoxication

	N (%)
Married	65 (%67.7)
Single	31 (%32.3)
Total	96 (%100)

**Table 3.** Married and single rates of male and female admitted to the emergency department with drug intoxication

Female		Male	
Married	Single	Married	Single
n (%)	n (%)	n (%)	n (%)
54 (%78.2)	15 (%21.7)	11 (%40.7)	16 (%59.2)

**Table 4.** Demographic distribution of drugs causing intoxication

Medicines	% (n)
Parasetamol	%24.2(23)
Soğuk algınlığı ilaçları	%19.1 (19)
NSAI ilaçlar	%18.5 (18)
Triksiklik antidepresanlar	%12.1 (11)
SSRI	%8.3 (8)
Antihipertansifler	%5.7 (5)
Diğer*	%40.1 (38)

\* Antibiotics, anticoagulant drugs, psychotic drugs, digestive system regulators, drugs affecting the cardiovascular system, drugs used in rheumatological diseases were classified in the other group.

## Discussion

Özyapar et al. study in patients admitted to the emergency department with intoxication in Turkey was found to account for 0,46-1,57's% of patients admitted to the emergency room. In our study, It constitutes 4.11% . The high rate may be due to the lower socioeconomic status in our region<sup>8</sup>. Poisoning is a significant health problem that has been going on since the beginning of human history. In our study, it has been shown to parallel in Turkey according to data from our data. In our study; According to the NPCC's (national poison counseling center) data of 2008, the rates of male and female patients are 38.1% and 58.38%, respectively. Our study 71.87 %%% female, the male gender distribution is similar to that specified 28,13't% average in Turkey. The high proportion of female may be due to the lower socio-economic status of female. In studies conducted in other centers in Turkey, medication intake of female patients showed that men more than the rate of patient-related poisoning. In our study, the rate of female patients was similarly higher than the rates of male patients<sup>1,9-12</sup>. In the study of NA Buckley et al.; Women have a higher rate of intoxication after taking medication than men. The results obtained in our study are similar<sup>13</sup>.

Similar to Avınca O. et al., The number of female patients is higher than the number of male patients. In our study, when the marital status of the patients was examined, the majority of the cases who came to our emergency department with drug intoxication were married individuals<sup>15</sup>.

In our study, drug-related intoxication cases were found to be the most common type of intoxication by the literature. We think that the reason for this is that the drugs and other substances are more comfortable to reach, and the drugs not used at home are easily accessible. In some exercises, women constitute the majority of applications for suicide<sup>16</sup>.

As a conclusion women are intoxicated by drinking a higher rate of medication than men. Married women experience higher rates of drug intoxication. Single male patients suffer more drug intoxication. The lower socio-economic level of women in our geography may cause women to hold on to life less and want to end their lives. By increasing the socioeconomic level of women, the rate of intoxication can be reduced. In our geography, the psychological responsibility arising from the fact that women are mostly married and their higher responsibility may cause drug intoxication to be seen more in women, especially in those who are married. Drug intoxication may be reduced among married men, perhaps because their lives are regulated. Since our study was carried out retrospectively, the purpose of poisoning is not known precisely. Conducting a larger group of prospective studies will increase the accuracy of the data.

Paracetamol is the most common cause of drug intoxications both in the world and in our country, as it is available without a prescription. Paracetamol was the most common cause of intoxications in our patient group. In our study, anti-flu drugs were the second cause of intoxication, while NSAID drugs were in the third place. In many studies in the literature, antidepressant drugs are shown as one of the first three drugs

that cause poisoning. Although this situation is seen relatively differently in our results, when TCA and SSRI group drugs are evaluated together in our study, it stands out that antidepressants (20.4%) are the second most common cause of intoxication. In our study, while most of the patients were discharged with supportive therapy, some of them received a specific antidote. Among the specific antidotes, NAC treatment leads, but K-vitamin, FFP, atropine and PAM are other specific substances. It would be appropriate to have these antidotes in emergencies so that patients can be treated as soon as possible. The mean discharge time of the patients included in the study was similar to previous studies in the literature.

## References

1. Pekdemir M, Kavalcı C, Durukan P, Yıldız M. Acil servisimize başvuran zehirlenme olgularının değerlendirilmesi. *Acil Tıp Dergisi*. 2002;2(2):36-40.
2. Wax PM. History. In: Goldfrank LR, Flomenbaum NE. *Toxicologic Emergencies* (Ed 6th) New York, McGrawHill 1998:1-14.
3. Özcan N, İkinçioğulları D. Ulusal zehir danışma merkezi 2008 yılı çalışma raporu özeti. *Türk Hijyen ve Deneysel Biyoloji Dergisi*. 2009;66(Supp: ER-3):29-58.
4. Schaper A. Präklinisches Management von Vergiftungen–Bedeutung des Giftnotrufs für den Rettungsdienst. *Intensiv-und Notfallbehandlung*. 2010;35(4):178-85.
5. Schaper A, Ceschi A, Deters M, Kaiser G. Of pills, plants, and paraquat: The relevance of poison centers in emergency medicine. *European journal of internal medicine*. 2013;24(2):104-9.
6. Mert E, Bilgin NG. Demographical, aetiological and clinical characteristics of poisonings in Mersin, Turkey. *Human & experimental toxicology*. 2006;25(4):217-23.
7. Karakaya A, Vural N. Acute poisoning admissions in one of the hospitals in Ankara. *Human toxicology*. 1985;4(3):323-6.
8. Özayar E, Degerli S, Güleç H, Sahin S, Dereli N. Yogun Bakıma Kabul Edilen Zehirlenme Olgularının Retrospektif Analizi/ Retrospective Analysis of Intoxication Cases in the ICU. *Dahili ve Cerrahi Bilimler Yogun Bakim Dergisi*. 2011;2(3):59.
9. Özköse Z, Ayoğlu F. Etiological and demographical characteristics of acute adult poisoning in Ankara, Turkey. *Human & experimental toxicology*. 1999;18(10):614-8.
10. Akköse Ş, Fedakar R, Bulut M, Çebiçi H. Zehirlenme olgularının beş yıllık analizi. *Acil Tıp Dergisi*. 2003;3(1):8-10.
11. Kekeç Z, Sözüer E, Duymaz H, Ökkan S. Acil servise başvuran çoklu ilaç zehirlenmelerinin yedi yıllık analizi. *Türkiye Acil Tıp Dergisi*. 2005;5(2):69-72.
12. Tüfek D, Taşdemir BB, Sivaci R. Yoğun Bakım Ünitesinde İzlenen İntoksikasyon Hastalarının Retrospektif İncelemesi. *Türk Yogun Bakim Dergisi*. 2017;15(2):67.
13. Buckley NA, Dawson A, Whyte I, Hazell P, Meza A, Brie H. An analysis of age and gender influences on the relative risk for suicide and psychotropic drug self-poisoning. *Acta Psychiatrica Scandinavica*. 1996;93(3):168-71.
14. Eray O, Tunçok Y. Zehirlenen Hastaya Yaklaşım: Akut Zehirlenmelerde Hastaya Acil Yaklaşımında Yenilikler. *Türkiye Klinikleri Farmakoloji-Özel Konular*. 2003;1(1):36-40.
15. Avınca Ö, Şen A, Karakoç Y, Damar Ö, Taş M. Zehirlenmeler: neden suisit, neden kadınlar? *JNBS*. 2019:83.
16. Stenbacka M, Samuelsson M, Nordström P, Jokinen J. Suicide risk in young men and women after substance intoxication. *Archives of suicide research*. 2018;22(2):254-62.