



## ORJİNAL MAKALE / ORIGINAL ARTICLE

Balıkesir Sağlık Bilimleri Dergisi / BAUN Sağ Bil Derg  
Balıkesir Health Sciences Journal / BAUN Health Sci J  
ISSN: 2146-9601- e ISSN: 2147-2238  
Doi: <https://doi.org/10.53424/balikesirsbd.1481436>



### Epidemiological Investigation of Patients Admitted to the Emergency Department and Considered as Psychiatric Emergencies

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*Geliş Tarihi / Received:* 9.05.2024, *Kabul Tarihi / Accepted:* 25.08.2024

#### ABSTRACT

**Objective:** Today, 3-12% of patients presenting to the emergency department (ED) are diagnosed with a preliminary psychiatric diagnosis. Therefore, physicians working in the ED should know psychiatric diseases well and should be able to plan the correct treatment algorithms. In this study, it is aimed to evaluate the sociodemographic, etiological and epidemiological status of patients with a prediagnosis of psychiatric illness in the emergency department. **Materials and Methods:** Prospectively, patients over 18 years of age who received a psychiatric diagnosis in the emergency department between 16.10.2015-16.01.2016 were included in the study. Demographic information, complaints at presentation, psychiatric/physical examination findings, medical history, current diagnoses, preliminary diagnoses in the ED, laboratory and radiological examinations, hospitalization, discharge, mortality/morbidity were statistically evaluated. **Results:** There were 727 patients who met the study criteria, but 500 patients were analyzed. Psychotic (68%), depressive (9.8%), suicidal (7.6%) and manic (6.6%) findings at the time of admission were determined respectively. The rate of hospitalization was 12.6% and 20.6% of the patients were hospitalized against their will. **Conclusion:** Our study suggests that being young-middle-aged and female may be risk factors for both admission to EDs and hospitalization in psychiatric emergencies. Considering the intensity and workload of Emergency Departments, it is seen that they have a critical importance in terms of assessing the mental health needs of patients as well as dealing with the physical health problems of patients.

**Keywords:** Emergency Departments, Psychiatric, Emergency Medicine.

### Acil Servise Başvuran ve Psikiyatrik Acil Durum Olarak Değerlendirilen Hastaların Epidemiyolojik İncelenmesi

#### ÖZ

**Amaç:** Günümüzde acil servise (AS) başvuran hastaların %3-12 sine psikiyatrik bir ön tanı konulmaktadır. Bu nedenle AS’de çalışan hekimler psikiyatrik hastalıkları iyi bilmeli ve doğru tedavi algoritmalarını planlayabilmeleri gerekmektedir. Bu çalışmada acil serviste psikiyatrik ön tanı alan hastaların sosyodemografik, etyolojik, epidemiyolojik durumlarını değerlendirmek amaçlanmıştır. **Gereç ve Yöntem:** Prospektif olarak 16.10.2015-16.01.2016 tarihleri arasında acil serviste psikiyatrik tanı alan 18 yaş üstü hastalar çalışmaya alınmıştır. Hastaların demografik bilgileri, başvuru şikayetleri, psikiyatrik/fizik muayene bulguları, tıbbi öyküleri, mevcut tanıları, AS’de aldıkları ön tanıları, laboratuvar ve radyolojik tetkikleri, hastaneye yatış, taburculuk, mortalite/morbidite gibi sonuçlanma durumları istatistiksel olarak değerlendirilmiştir. **Bulgular:** Çalışma kriterlerini karşılayan 727 hasta tespit edilmiş, ancak 500 hasta üzerinden analiz yapılmıştır. Hastaların başvuru sırasındaki bulguları sırasıyla; psikotik bulgularla (%68), depresif bulgular %9,8, suicidal bulgular %7,6 ve manik bulgular %6,6 olarak saptandı. Çalışmada hastaların hastaneye yatışı oranı %12,6 olduğu ve %20,6’sının yatışının ise kendi isteği dışında olduğu saptandı. **Sonuç:** Çalışmamızda Psikiyatrik acillerde, genç-orta yaş ve kadın olmanın hem AS’lere başvuruda hem de hastaneye yatışta risk faktörü olabileceğini düşündürmektedir. Acil Servislerin yoğunluğu ve iş yükü de göz önünde bulundurularak, hastaların fiziksel sağlık sorunlarıyla ilgilenmesinin yanı sıra hastaların ruh sağlığı ihtiyaçlarını değerlendirmek açısından da kritik bir öneme sahip olduğu görülmektedir.

**Anahtar Kelimeler:** Acil Servisler, Psikiyatrik, Acil Tıp.

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*Bu makaleye atıf yapmak için / Cite this article:* Kiyak, R., Gizli, G., & Koksall, O. (2024). Epidemiological investigation of patients admitted to the emergency department and considered as psychiatric emergencies. *BAUN Health Sci J*, 13(3), 566-571. <https://doi.org/10.53424/balikesirsbd.1481436>



BAUN Health Sci J, OPEN ACCESS <https://dergipark.org.tr/pub/balikesirsbd>

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## INTRODUCTION

Psychiatric emergencies may generally arise from mental illnesses or adverse life events but may also be due to organic causes such as poisoning, substance abuse, drug side effects and drug-drug interactions (Yıldız et al. 2003). Currently, a prediagnosis of psychiatric illness is made in 3-12% of patients presenting to the emergency department (ED) (Saddock, 2007). Therefore, physicians working in the ED should know psychiatric diseases well and should be able to plan the correct treatment algorithms.

At this stage, the most important task of emergency physicians is to determine the etiology of crises leading to urgency in the management of psychiatric emergency patients. Psychiatric emergency services ensure that patients are saved with the least loss in a limited time, with effective measures, rapid and accurate guidance (Bekaroğlu and Bilici, 1998). The main aim in the initial evaluation of the emergency psychiatric patient should be to prevent harm to the patient and other people, to question the patient's psychiatric and medical history, to evaluate the information such as psychoactive substance use in a short time, to distinguish cognitive disorders related to the general medical condition and to recognize a possible prepsychotic state. Although physical and neurological examination are important parts of psychiatric evaluation, laboratory investigations appropriate for the patient's condition must be performed (Arkonac, 1989).

Although emergencies with psychiatric indications are as common as neurological or traumatological emergencies, most emergency physicians do not feel qualified or experienced enough to treat them. Therefore, physicians have to make decisions with a small amount of information (Saddock, 2007). In psychiatric emergencies, obtaining information about the patient is difficult for emergency physicians because of limited time (Blais et al 2003). A good knowledge of the principles of development of emergency psychiatry, intervention techniques in emergency psychiatric patients and the approach to emergency psychiatric diseases is useful in making this decision (Gerson and Bassuk, 1980).

The aim of this study was to evaluate the sociodemographic, etiological and epidemiological

status of patients with a preliminary psychiatric diagnosis in the emergency department.

## MATERIAL AND METHODS

### Study type

The prospective study was conducted between 16.10.2015 and 16.01.2016 and included patients over the age of 18 who were diagnosed with psychiatric illness as a result of physical examination and investigations performed by the primary physician of the emergency department. Patients under 18 years of age, pregnant women, and patients admitted due to trauma were excluded from the study.

### Procedure

After obtaining the patient's consent, demographic information, complaints at admission, psychiatric/physical examination findings, medical history, current diagnoses, preliminary diagnoses of AS, laboratory and radiological examinations, hospitalization, discharge, mortality/morbidity, and end points were recorded on the Uludağ University hospital information management system.

The data used were classified according to DSM-IV-TR (The Diagnostic and Statistical Manual of Mental Disorders) axis diagnoses for statistical classification.

### Statistical analysis

SPSS (Statistical Package for the Social Sciences) version 22.0 package program was used for statistical analysis of the data in the study. Kolmogorov-Smirnov test and Shapiro-Wilk test were used to assess the conformity of the univariate data to normal distribution. Descriptive statistical values were used in line with the characteristics of the variables in the study.

### Ethical considerations

The study was initiated after the ethics committee decision dated 13 October 2015 and numbered 2015-17/25 by Uludağ University Faculty of Medicine Clinical Research Ethics Committee.

## RESULTS

During the study period, 31700 patients applied to the emergency department. A total of 727 patients who met the study criteria were identified. 209 of these patients did not accept to participate in the study and 18 of them left the form unfinished during the form filling. Therefore, 500 patients were analyzed (Figure 1).



Figure 1. Study design

The mean age of the patients was 46.2 years (min. 18; max. 78), 69% were female and 55.8% were married (Table 1). When the educational status of the patients

was analysed, 45% were university graduates and 1.8% were illiterate. 47.4% of the patients were employed and 92.6% had social security (Table 2).

**Table 1. Age, gender and marital status distribution of patients.**

		Number	Percentage
<b>Age (Year)</b>	18-45	395	79.0
	46-65	87	17.4
	>65	18	3.6
<b>Gender</b>	Male	155	31.0
	Woman	345	69.0
<b>Marital Status</b>	Married	279	55.8
	Single	197	39.4
	Other	24	4.8

**Table 2. Education, occupation and social security status of the patients.**

		Number	Percentage
<b>Education Status</b>	<b>Illiterate</b>	9	1.8
	<b>Primary School</b>	56	11.2
	<b>Secondary School</b>	42	8.4
	<b>High School</b>	168	33.6
	<b>University</b>	225	45.0
<b>Profession</b>	<b>Not working</b>	178	35.6
	<b>Working</b>	237	47.4
	<b>Student</b>	85	17.0
<b>Social Security</b>	<b>Paid</b>	31	6.2
	<b>Green Card</b>	6	1.2
	<b>Other</b>	463	92.6

While 51.2% of the patients included in the study had a history of psychiatric illness, 66.8% of the patients had alcohol or substance use and 51.2% had smoking habit.

Among the patients who participated in the study, those with axis diagnosis were 56.4%. Among the patients with axis diagnosis, those with psychotic disorder were 20%, those with personality disorder were 16.6% and those with bipolar disorder were 9.4% (Table 3).

There was no suicidal ideation or attempt in 90.8% of the patients. The proportion of patients with suicidal ideation without suicide attempt was 2.4%, 4.8% with one attempt and 2% with multiple attempts (Table 4) When the findings of the patients at the time of admission were analyzed, it was observed that most

of the patients presented with psychotic symptoms (68%), depressive symptoms were 9.8%, suicidal symptoms were 7.6% and manic symptoms were 6.6%.

In the study, the rate of hospitalization was found to be 12.6%. It was found that 20.6% of the hospitalizations were involuntary and 85.7% of the hospitalizations were made to the psychiatry clinic.

According to the evaluation according to the indications for hospitalization, hospitalizations for diagnosis and treatment ranked first with 46%, followed by suicide risk (36.5%) and metabolic reasons (11.1%). It was observed that 31% of the hospitalizations were made to Uludag University Faculty of Medicine Hospital and the remaining 69% were referred to other hospitals for hospitalization.

**Table 3. Distribution of patients according to axis diagnoses.**

		Number	Percentage
<b>Axis Diagnosis</b>	<b>None</b>	218	43.6
	<b>There is</b>	282	56.4
<b>Diagnosis</b>	<b>Depression</b>	37	7.4
	<b>Bipolar Disorder</b>	47	9.4
	<b>Psychotic Disorder</b>	100	20.0
	<b>Substance Use</b>	11	2.2
	<b>Personality Disorder</b>	83	16.6
	<b>Other</b>	4	0.8

**Table 4. Distribution of patients according to suicidal ideation and attempts.**

		Number	Percentage
<b>Suicidal ideation</b>	<b>None</b>	454	90.8
	<b>There is</b>	12	2.4
<b>Number of suicide attempts</b>	<b>One time attempt</b>	24	4.8
	<b>Multiple initiatives</b>	10	2.0

## DISCUSSION

It is known that psychiatric problems are much more common in the society than thought. For this reason, psychiatric problems have an important place among the patients admitted to ASs and an increase in emergency admissions has been observed in recent years. It is thought that the increase in the rate of violence in societies and the increase in alcohol and substance use increase these applications (Gelisen, 1996). In addition, the realization that there may be mental changes secondary to many physical diseases has also increased people's applications to emergencies for psychiatric reasons.

In our study, it was found that female patients presenting to the emergency department were more frequent than male patients (Table 1). In some studies, different results have been obtained in the sense that gender affected the presentation, male patients presented more in some studies and female patients presented more in others (Saddock, 2007). In a retrospective study conducted in our country, it was reported that gender had no effect on presentation (Bekaroğlu and Bilici, 1998). In a study conducted by Costanza et al. in 2020, it was observed that female patients presented more frequently than male patients, similar to our study (Costanza et al. 2010).

In our study, 79% of the patients were found to be in the young-middle age range (18-45 years), which is similar to other studies (Table 1). The World Health Organization (WHO) has also revised age standards, defining young age as 25-44, middle age as 44-60, elderly age as 60-75, senile age as 75-90, and long-livers as individuals over 90. The young-middle age range is a period in which individuals are active in life and are more frequently confronted with vital stresses such as career choice, marriage, divorce, having children and so on (Skodal and Karasu, 1978). It may be considered that being mostly female and being in young-middle age may be a risk factor for admission and hospitalization to ASs. It may also be explained by the fact that psychiatric diseases are most frequently observed in these age groups (Bahçeci et al., 2011).

Consistent with the literature, 52.6% of our patients were housewives and unemployed patients such as students. In addition to the periodic stresses brought about by being a student, being a housewife or unemployed is also among the groups carrying risk factors for short hospitalization (Skodal, Karasu, 1978). Slankamenac et al. 2020, it was found that not having a profession may be a reason for psychiatric emergency admissions (Prediction of Recurrent

Emergency Department Visits in Patients with Mental Disorders 2020).

In our study, 55.8% of the cases were found to be married, 39.4% single and 4.8% other. Although the divorce rate in our country has increased in recent years, it is still lower compared to other countries (Yılmaz, 1999). When the socio-cultural characteristics of our country are considered, this situation can be explained as the endeavor of individuals to maintain their marriages.

It was observed that 45% of the patients in our study were university graduates. According to Küçükali et al. 2015, it was found that 48% were primary school graduates, 21% were secondary school graduates, 18% were high school graduates, 7% were university graduates, and 6% were illiterate (Küçükali et al., 2015). Although the majority of the population in our country is composed of primary school graduates, the fact that the patients who applied to our hospital were generally at a high educational level in our study can be explained by the easy accessibility of the young and student population due to the location of our hospital in the university campus.

In our study, it was found that 92.6% of the hospitalized patients had health insurance, 6.2% were paid patients and 1.2% were green card patients. In a study conducted by Liebermann et al. in 1986, it was found that 68.3% had health insurance, 18.2% were paid patients and 13% were green card patients (Liebermann and Strauss, 1986).

In our study, psychotic symptoms were the most common complaints with 66.8%, followed by depressive and suicidal symptoms with 9.8% and 7.6%, respectively. According to Antoon et al. 2000, depressive symptoms (45.7%), suicidal symptoms (39.9%) and psychotic symptoms (30.5%) were the most common complaints of the patients who consulted a physician, similar to our study (Antoon et al., 2010). However, in a study conducted in Türkiye, the rate of psychoactive substance use was found to be 26.3% among the patients admitted to the psychiatry emergency department, while the most common diagnoses were conversion disorder (10.8%), generalized anxiety disorder (3.5%), conduct disorder (3.5%) and panic disorder (3.3%) (Küçükali et al., 2015).

The rate of substance use in our patients was 2.6% and the rate of both alcohol and substance use was 0.6%. In a study conducted in Türkiye, it was found that 9.3% of the patients used cannabis, 5.4% used alcohol and 12.6% used amphetamine, thinner, cocaine and opiates (Küçükali et al., 2015).

In a study conducted in the USA, alcohol and substance use was found to be 26% (Amy et al., 2011). In our study, the fact that the patients hid their substance use and the tests that would show substance use could not be performed in our hospital may have caused this rate to be low. In a study, while 55% of patients with Axis diagnosis had alcohol use, the rate of substance use was found to be 7% and the rate of both alcohol and substance use was found to be 5% (Liebermann and Strauss, 1986). There are studies showing that substance use accompanying a psychiatric disease is one of the negative prognostic factors and is related with frequent relapses and hospitalizations (Güz and Doğanay 2003). Similarly, it has been shown that comorbid diagnoses of alcohol and substance use are the two diagnoses that impair compliance with treatment the most (American Psychiatric Association, 1994).

In our study, it was found that 20.6% of the hospitalized patients were hospitalized without their own consent (involuntary). In the study conducted by Gültekin et al. 86.9% of the hospitalized patients were hospitalized voluntarily and 13.1% were hospitalized involuntarily and it was found that the most common necessity in the hospitalization decision of involuntarily hospitalized patients was the need for treatment due to dangerousness for oneself and the environment and/or non-compliance with their treatments (Gültekin, Çelik, Tihan, Beşkardeş and Sezer, 2013). In a study conducted by Belli et al. in 2010, the presence of violent behaviour in psychiatric patients was found to be an important criterion for involuntary hospitalization (Belli, Özçetin and Ertem, 2007). In another similar study, it was reported that aggression was an important marker especially in involuntary hospitalizations and this behaviour prolonged the duration of hospitalization (Uzun, 2009).

While 91% of the patients included in our study stated that they had neither suicidal ideation nor any suicide attempt, the rate of those with suicidal ideation was 2%, the rate of those with one suicide attempt was 5%, and the rate of those with multiple attempts was 2%. In a study, it was reported that suicidal ideation was effective for the decision of emergency hospitalization (American Psychiatric Association, Washington DC, 1994.). In addition, studies emphasizing the difference between suicidal ideation and suicide attempt and emphasizing that these two cases should be evaluated separately were also found (Meltzer, 2022).

Although our study has some limitations, all information was obtained from retrospective analyses and subsequent telephone interviews in patients for whom adequate anamnesis could not be obtained. One of the important limitations is that some of the data were obtained not from the patients themselves, but from their relatives, so the accuracy of the information is not clear. Another limitation is that detailed anamnesis could not be obtained from the

patients with acute psychosis due to their aggressive and impulsive behaviours.

## CONCLUSION

In conclusion, emergency psychiatric conditions pose a threat to patients and their relatives and require urgent intervention. Suicide attempt, substance addiction, alcohol intoxication, acute psychotic states, aggression, panic attacks and conversion are the most common psychiatric conditions seen in AS patients. Our study suggests that young-middle age and being female may be risk factors for both admission and hospitalization in psychiatric emergencies.

In addition to the periodic stresses brought about by being a student, a housewife or unemployed is also seen among the risk factor groups. The fact that the patients in our study were generally at a high educational level can be explained by the easy accessibility of the young and student population because our hospital is located in a university campus. The fact that the patients had social security may be related to the fact that they felt more comfortable and secure about going to the ASs.

However, considering the intensity and workload of Emergency Departments, it should not be forgotten that they have critical importance in terms of assessing the mental health needs of patients as well as dealing with physical health problems.

## Acknowledgement

The authors would like to extend their sincere thanks to anyone who contributed to this study.

## Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

## Author Contributions

**Plan, design:** RK, ÖK; **Material, methods and data collection:** GT, RK; **Data analysis and comments:** RK, GT; **Writing and corrections:** RK, ÖK.

## Funding

None.

## Ethical Approval

**Institution:** Uludag University Faculty of Medicine Clinical Research Ethics Committee

**Date:** 13.10.2015

**Approval no:** 2015-17/25

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