AUDIT ARTICLE

Prisoners seeking healthcare in emergency department

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Abstract

Objectives: To evaluate inmate referrals to emergency department of a tertiary healthcare facility in terms of demographical and clinical characteristics as well as their impact on the department.

Method: The retrospective cross-sectional study was conducted at Ankara Numune Training and Research Hospital, Ankara, Turkey and comprised data of incarcerated patients who were brought to the emergency department from January 01, 2010, to December 31, 2012. Demographical characteristics, consultations, duration of hospitalisation, recurrent admissions, disposal and mortality rates were noted. The referrals were grouped as surgical conditions, medical disorders, Eye, Ear, Nose, Throat problems, injury and psychiatric disorders. The groups were then subdivided according to diagnosis. SPSS 22 was used for data analysis.

Results: Of the 856 patients, 804(93.4%) were men and 52(6.1%) were women. The overall mean age was 37.54±14.81 years (range: 15-83 years). The number of patients was the highest in the medical group 363(42.4%) and the lowest in the Eye, Ear, Nose, Throat group 56(6.5%). Mean age of the surgical group was significantly lower than the medical group (p<0.001) but significantly higher than that of the trauma group (p=0.001).

Conclusion: Functional emergency response units, strict emergency triage of inmates and their rapid care and management in jails can help avoid referring these patients to already overcrowded emergency departments.

Keywords: Prisoners, Healthcare, Emergency department. (JPMA 70: 2215; 2020)

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Introduction

The prison population usually has worse overall health conditions than the general population. Prisons are characterised by poor health and healthcare services, which are far inferior to those available in society at large and reasons include poor health and sanitary conditions, lack or shortage of medical resources and services and reduced access to healthcare services. These factors increase the risk of developing medical disorders and result in frequent hospital visits among prisoners compared to their age- and gender-matched free counterparts.[1,2]

Although several health conditions affect the prison population, healthcare practices are usually neglected and poorly organised in various prisons worldwide. Healthcare systems and resources at such facilities are inadequate and hence, public hospitals and emergency departments (ED) are used for the admission of sick prisoners.[3] Studies have investigated the prevalence of chronic disorders, admissions of newly-released prisoners and repeat admissions in the ED or experiences in healthcare services of prisons.[2,4-6]

The environment in the ED is ever-changing and uncertain and it faces sudden patient consultations on a constant basis. Prisons currently face numerous emergency cases almost every day.[4] The population of a prison is not representative of the general population so demographics of this population is utmost important. The current study was planned to highlight inmate referrals to the ED of a tertiary healthcare facility in terms of their demographic and clinical characteristics as well as their impact on ED.

Patients and Methods

The retrospective cross-sectional study was conducted at Ankara Numune Training and Research Hospital, Ankara, Turkey and comprised data of incarcerated patients who were brought to ED from January 01, 2010, to December 31, 2012. After approval from the institutional ethics committee, repetitive entries of the patients were retrieved from the hospital's computerised medical record database

The hospital is a tertiary healthcare institution with approximately 200,000 annual admissions to the ED, which is the designated first medical contact of inmate patients. The

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hospital has now become the referral hospital for the admission of prisoners in the province and from penal institutions outside the province and provides a 12-bed facility for inmates. Data included in the current study related to imprisoned adult patients of either gender. Those aged <18 years and without isolated orthopaedic trauma were excluded and so were those with missing hospital record.

Data was retrieved from the hospital's computerised medical record database and patient files and was recorded on a pre-designed proforma containing demographic characteristics, consultations from other departments, reason behind ED admission, hospitalisation duration, recurrent admissions, admission time and disposal and mortality rates. Emergency referrals were grouped according to surgical conditions, including gastrointestinal symptoms (GIS) and genitourinary symptoms (GUS); medical disorders, including cardiorespiratory, neurological, internal, dermatological and musculoskeletal symptoms); eye, ear, nose and throat (EENT) problems; injuries; and psychiatric disorders. The groups were further subdivided based on diagnosis.

Data was analysed using SPSS 22. Mean and standard deviation (SD) were calculated as descriptive statistics of continuous variables that were not normally distributed, whereas categorical variables were expressed as frequencies and percentages. The correlation between categorical variables was assessed using Pearson's chi-square test. Shapiro-Wilk test was used to assess normality when the sample size was <50, whereas the Kolmogorov-Smirnov test was used if the sample size was >50. In the analysis of the significance of the difference between the measurement values of the groups, Shapiro-Wilk test was used to control normality and Mann-Whitney U-test was used when the normality criteria were not met. Non-parametric comparison of the groups was carried out using the Kruskal-Wallis test with Bonferroni-Dunn procedure as the post hoc test. P<0.05 was considered statistically significant.

Results

Of the 856 patients, 804(93.4%) were men and 52(6.1%) were women. The overall mean age was 37.54±14.81 years (range: 15-83 years). November was the month that had the maximum influx 100(11.7%). The number of patients was highest in the medical group 363(42.4%) and lowest in the EENT group 56(6.5%). The most frequent referrals in the subgroups were 140(38.6%) with cardiorespiratory

Table-1: Referral patterns.

Surgical	**GIS**	**GUS**
	Nonspecific abdominal pain	Pregnancy and complications
	Acute appendicitis	Ovarian disorders
	Biliary tract disorders	Urinary tract infections
	Pancreatitis	Renal colic
	Peptic ulcer perforation	
	Ileus	
	Hernias	
	Abscess, haemorrhoids	
Medical	**Cardiovascular**	**Respiratory**
	Acute coronary syndromes (ACS): chest pain	Spontaneous pneumothorax
	Acute Heart failure: acute pulmonary oedema	Lower respiratory tract infections
	Dysrhythmias	Haemoptysis
	Hypertensive emergencies	Dyspnoea
	Syncope	
	Thromboembolism- Aortic disorders	
	Internal Neurological	
	Anaemia	
	Acute renal failure and chronic renal disease	Headache
	Diabetes mellitus and its related complications	Seizure
	General disorders Intracranial mass	
	Hepatitis and its related complications Stroke	
	Caustic ingestion Gait disorders	
	Oncologic emergencies	
	Gastrointestinal haemorrhage	
	Foreign body	
	Musculoskeletal	
	Dermatological	
Patients with psychiatric disorders	Anxiety disorder	
	Bipolar affective disorder	
	Depression	
	Suicide	
	Psychosis	
	Dissociative disorder	
	Panic disorder	
	Hunger strike	
	Withdrawal syndromes	
Patients with injury		
Patients with EENT problems	Conjunctivitis	
	Visual disturbance	
	Epistaxis	
	Foreign body	
	Vertigo	
	Upper respiratory infections	

GIS: Gastrointestinal system; GUS: Genitourinary system; EENT: Eye, ear, nose and throat.

Table-2: Clinical comparison of the characteristics of the participants in terms of gender.

Variable		Category				P value
		Male		Female		
		n	%	n	%	
Recurrence						
	Yes	287	35.70%	11	21.20%	0.033
	No	517	64.30%	41	78.80%	
Referral Groups	Surgical	158	19.70%	16	30.80%	<0.001
	Medical	343	42.70%	20	38.50%	
	Psychiatric	67	8.30%	13	25%	
	Injury	180	22.40%	3b	5.80%	
	EENT	56	7.00%	0b	0.00%	
Hospitalization	Absent	576	71.60%	34	65.40%	0.334
	Yes	228	28.40%	18	34.60%	
Outcome	Exitus	16	2.00%	1	1.90%	0.542
	Discharged with full recovery	211	26.20%	17	32.70%	
	Discharged from the ED	576	71.60%	33	63.50%	
	Dispatched	1	0.10%	1	1.90%	

EENT: Eye, ear, nose and throat; ED: Emergency department.

Table-3: Comparison of the clinical characteristics of the participants in terms of age.

Variable	Category	n	Mean	SD	Median	Min	Max	p value
Gender	Male	804	37.64	14.8	35	15	83	0.326
	Female	52	35.9	15.04	31.5	16	70	
Referral groups	Surgical	174	36.07	13.39	33	16	79	<0.001
	Medical	363	43.96	14.89	44	15	81	
	Psychiatric	80	31.13	12.39	28	16	82	
	Injury	18	30.11	11.05	28	15	69	
	EENT	56	33.91	15.04	30.5	17	83	
Hospitalization	Absent No	610	34.93	13.86	32	15	83	<0.001
	Yes	246	44	15.12	43.5	16	81	
Outcome	Exitus	17	57.88	13.2	60	27	76	
	Discharged with full recovery	228	42.99	14.8	43	16	81	<0.001
	Discharged from the ED	609	34.89	13.73	32	15	83	
	Dispatched	2	50.5	44.55	50.5	19	82	

EENT: Eye, ear, nose and throat; ED: Emergency department.

problems in the medicine group, 83(58.9%) with non-specific abdominal pain in surgery group, 23(37%) with suicide attempts in psychiatry groups and 33(59%) with upper respiratory tract infections in the EENT group (Table-1).

Regarding the cause of ED visit at individual level, trauma accounted for 183(21.4%) cases, the upper extremity was the most exposed region 67(71%) and blunt trauma was the most frequent injury type 143(80.3%) (Figure-1).

A total of 42 (4.9%) patients exhibited different types of malignancies; 13(31%) from the gastrointestinal system, particularly stomach 5(38.4%); 11(26.2%) from the respiratory system, particularly lung 7(63.6%); 8(19%) from the haematological system; and 5(12%) each from the reproductive and neurological systems. Also, 9(1%) patients presented with communicable diseases, particularly hepatitis and among them, 3(33.3%) had end-stage hepatic disease. Besides, 1(0.11%) inmate was a kidney transplant follow-up patient and 1(0.11%)presented with complications due to a sex reassignment operation.

There were 566(66.1%) requests for consultations from other departments (Figure-2).

Men had greater recurrent admission rates than women (p=0.033). Diagnostic groups also varied according to gender (p<0.001). Women were more frequently

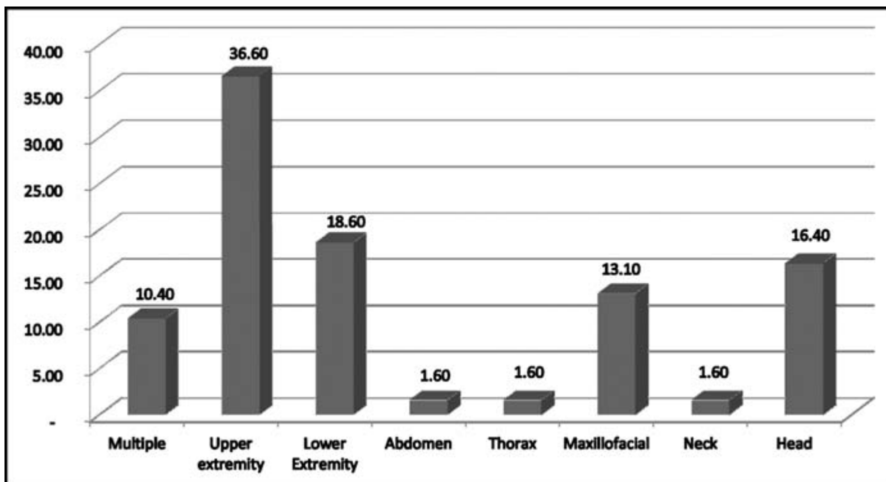

Figure-1: Trauma region and incidence.

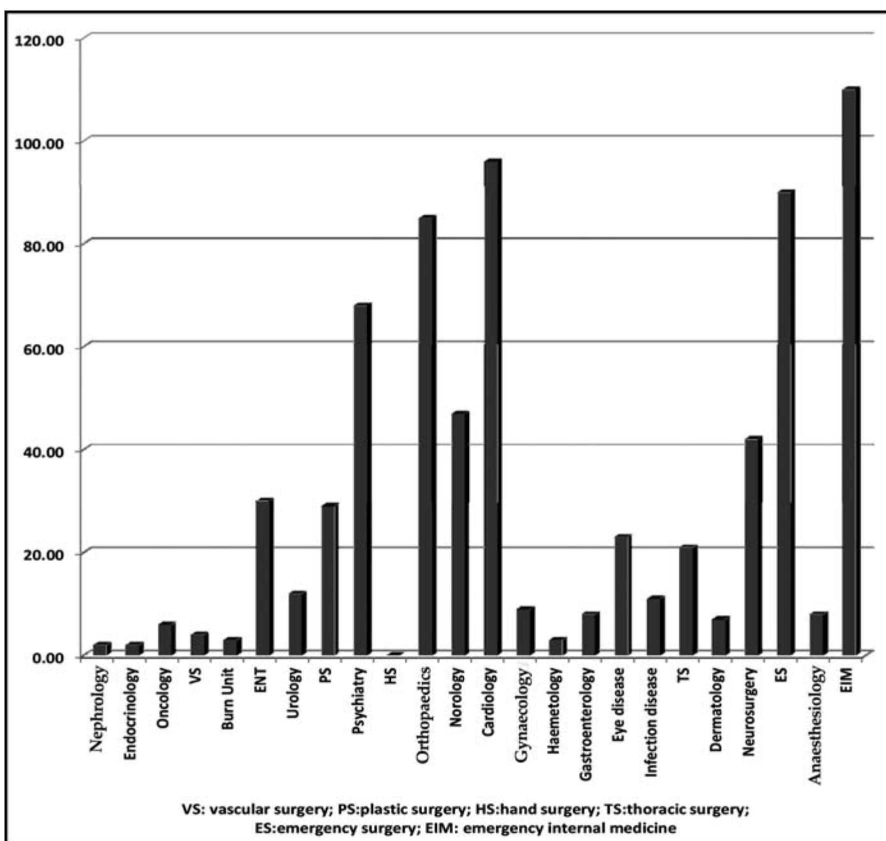

Figure-2: Incidence of other department consultations.

diagnosed with psychiatric problems than men (p<0.05). No significant difference was observed with respect to hospitalisation rates and outcomes in terms of gender (p>0.05) (Table-2).

The mean patient age was significantly lower in the surgical group than in the medical group (p<0.001) and it was significantly higher than that of the injury group (p=0.001). The mean age was significantly higher for the deceased patients than for those who were treated and discharged (p=0.003) and those discharged from the ED (p<0.001) (Table-3).

There were 246(28.6%) hospitalisations with a mean duration of 7.77±8.9 days (range: 1-48 days). The most frequent hospitalisations were in cardiology 56(6.5%), emergency surgery (ES) 45(5.3%) and emergency internal medicine (EIM) 40(4.7%). In terms of clinical outcomes, 228(26.7%) were discharged with full recovery, 17(2%) died and 2(0.2%) were referred to another institution from the ED. There were 298(34.8%) recurrent referrals to the ED and of them, 80(25.5%) were hospitalised and 4(1.34%) died.

Discussion

Emergency medicine specialists provide triage-based medical care round the clock to patients with acute medical or surgical conditions as well as injuries. During this time, they encounter different patient characteristics and attitudes, including the inmate population. Thus, clinical and demographical characterisation is required for such a challenging patient population.[7,8]

Women form the minority of the inmate population, with percentages of female inmates ranging 4-6% among various countries.[2] Consistent with these findings, the present study revealed female inmate percentage of 6.1%. Female prisoners also require advanced healthcare services received by their male counterparts. However, this need is seldom adequately met owing to a more limited access to healthcare services compared with men and overall society.[9,10] The reasons for conviction among female prisoners are generally distinct and they have a separate pattern compared to that of the male prisoners. They are physically and

emotionally vulnerable because they are mothers caring for their children alone and they mostly belong to economically, socially and educationally poor social environments. They frequently have a history of alcohol and drug abuse. Moreover, they may have previously experienced physical and sexual harassment as well as social disadvantages when they were outside of prison. Hence, a substantial prevalence of mental health illnesses has been observed in women.[11-13] The most common reason behind admission to the ED among the female prisoners was psychiatric disorders, of which hunger strike and suicide attempt were the most common. Literature suggests that, in addition to the above-mentioned reasons, the increased risk of committing suicide can be attributed to the traditional Turkish social structure, which exerts social and psychological pressure upon women. However, presentations due to hunger strike are also common among female prisoners and due to political reasons, they appear as a major reason behind admission to the ED. Suicide was the leading cause of admission to the ED in both genders and suicide can also be considered a consequence of prison conditions triggering depression, anxiety and stress-related emotional reactions.

Medical emergencies, particularly cardiovascular disorders, were on top of the list in the current study. Literature.[2,11,13,14] has indicated an increased prevalence of risky behaviours, such as smoking and substance abuse, owing to an increased burden of the risk factors for cardiovascular and cerebrovascular disorders, negative social conditions and anxiety and depression caused by these conditions. Co-morbidities were not questioned in the present study, but the higher mean age of patients in the medical emergency group compared to those in all other groups was attributed to the increased prevalence of co-morbidities in addition to the causes indicated in the literature.[2,11,13,14] Thus, acute or chronic renal disease and their related complications and diabetic emergencies were the most common reasons behind admission to the ED.

Injuries with unquestionable causes were the second most common reason and they were more common in younger patients and men. Although limited, the results of studies regarding unintentional injuries in prisoners are correlated with those of the present study.[15,16] Orthopaedic injuries are the most common type of injuries. Moreover, 76% of all patients with this type of injury were discharged from the ED, thereby indicating that many of these injuries were not severe. Therefore, patients presenting with these injuries did not need to be admitted to the ED. Only one death, which was caused by traumatic brain injury, was observed.

Although the incidence of surgical conditions shows variability in literature,[2,4] non-specific abdominal pain is the most common reason behind visiting the ED and the current study, too, had similar findings. This may be due to psychiatric and social factors. In one study,[4] a general assessment of the reasons behind admission to the ED indicated that determining the actual risk statuses of the prisoners before ED admission, starting an appropriate treatment regimen or continuing and ensuring compliance to any available treatment for chronic disorders, registering patients for standard cardiovascular monitoring and establishing pre-ED healthcare services by organising prison hospitals in line with the European Council's recommendations in Article No. 46.2 may prevent the admission of prisoners to the ED and Avoid the negative circumstances occurring during these visits.[17]

In a busy and overcrowded ED providing services to approximately 200000 admissions annually, mixed management of inmates and the general population leads to untoward consequences for both populations. As inmates are inclined toward demonstrating aggressive behaviour, which is aggravated by the unfavourable and hostile prison environment, they are more likely to demonstrate violence and odd behaviour during their visits to the ED. This leads to physical and verbal threats, assault, workplace chaos and escape attempts by prisoners.[4] The discharge rate of 71.6% among the prisoners treated in departments other than the ED without being hospitalised suggests that emergency physicians, who strictly work according to the international and legal regulations for the rights of sick prisoners in a busy, chaotic and highly unstable ED setting, remain in a self-defensive mode and seek consultations from other departments. This prolongs a patient's stay in the ED.

In recent years, overcrowded EDs have been a global issue, preventing EDs from providing appropriate help to those who are in need and who seek medical attention for serious disorders. The long durations spent by patients in the EDs is the major factor leading to ED overcrowding. This not only depends on patient- and disease-specific factors, but also on system-related factors. The productivity of an ED is lowered by overcrowding and excessively long ED stays.[7,8,18,19]

The security guards accompanying the prisoner patients request to be given priority in patient care for security reasons and this causes conflicts between the other patients and their relatives and emergency staff. Separate

observation unit and separate staff have to be provided during the observation of this patient group in the ED. Also, increased costs due to recurrent admissions of these patients is another problem considering the number of patients discharged in the current study. These problems are experienced every day in our ED as it has a central role in providing health services to prisoners.

Inmate patients face unique challenges in the ED in terms of both logistics and security and require extra measures and staff and custodial guards need to accompany these patients as well. All these factors lead to overcrowding and chaos in the EDs and prevent professionals in these units to practice their routines and provide services to other patients who are in need of emergency care.[4]

The current study is limited by the fact that it is a single-centre assessment in an urban teaching hospital in Turkey. However, it does provide an important pioneering research in a specific area.

Conclusion

Inmate overcrowding in the EDs is a major problem all over the world. This should be addressed by implementing suitable emergency response units capable of performing various interventions and making different diagnoses, which are dedicated to the emergency triage of inmates and rapid care and management without referring these patients to the already overcrowded EDs.

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