Original Article

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A Retrospective Study, Analysis of Syrian Patients Under Temporary Protection Presenting to the Emergency Department

Ali Unal[1], Yagiz Kagan Ergun[2], Servan Kucuk[3], Abdulaziz Dogan[4]

1 Tepecik Educational and Research Hospital, Department of Emergency Medicine, Izmir, Türkiye
2 Kayseri City Hospital, Kayseri, Türkiye
3 Akcakale State Hospital, Sanliurfa, Türkiye
4 University of Health Sciences, Konya City Hospital, Department of Emergency Medicine Konya, Türkiye

Abstract

Objective: The immigration problem, driven by war and economic hardships, is a global social and economic issue. Following the Syrian civil war, millions migrated, mainly to neighboring countries. As of 2024, Turkey hosts the largest Syrian population. Syrians frequently use emergency departments (ED) due to limited primary healthcare access. This study analyzes the demographic data, ED usage patterns, and outcomes of Syrian patients, comparing findings with existing literature.

Materials and Methods: Demographic data, ED usage characteristics, and outcomes of Syrian patients who applied to the ED between October 1, 2023, and April 1, 2024, were analyzed retrospectively.

Results: A total of 1780 patients were included in the study. Most patients presented to the ED during off-duty hours (57.1%), on weekdays (70%), and as self-presentation (%97.7). The most common reason for presentation was symptoms of upper respiratory tract disease (27%). Many patients stayed in the ED for less than an hour (71%). The length of stay in the ED was significantly higher in patients who arrived by ambulance and for whom consultation was requested ($p<0.001$). Consultation was not requested for most patients (87.8%). The rate of consultation requests was significantly higher in patients who arrived by ambulance than in self-presentation ($p<0.001$).

Conclusion: Syrian patients' visits to the ED for non-urgent reasons are a significant health problem. Educating patients about the functioning of the health system and effectively planning and implementing primary health services will significantly reduce the burden on ED and the cost of health services.

Keywords: Emergency department, ED, Syrian, refugee, health services accessibility

Introduction

The immigration problem, because of war and economic difficulties, stands out as a multidimensional social and economic issue worldwide. Following the Syrian civil war, millions of people were forced to leave their country and migrate to different regions, especially neighboring countries. As of 2024, Turkey is hosting the most significant number of Syrians worldwide. People from Syria who live in Turkey are under the "Temporary Protection" status, and these individuals can benefit from free healthcare services. In this context, the number of Syrians under temporary protection has been recorded as 2,901,478, and 114,599 reside in the province of Izmir [1].

These people have problems with basic shelter, nutrition, hygiene, and access to health services. In terms of health services, it is known that ED are the units that these people use most intensively[2-3]. This is due mainly to the lack of access to primary health services[4-6]. This situation has led to a significant increase in ED application rates. In addition, it creates additional costs for the health system and causes difficulties in operation. This study aims to fill the gap in knowledge in this area by examining the diagnoses, demographic data, and outcomes of Syrian patients who applied to the ED of local hospital.

Corresponding author: Ali Unal
e-mail: draliunal91@gmail.com
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ORCID:
Ali Unal: orcid.org/ 0000-0003-3562-6145
Yagiz Kagan Ergun: orcid.org/ 0000-0001-6891-6857
Servan Kucuk: orcid.org/ 0000-0002-3964-6269
Abdulaziz Dogan: orcid.org/ 0000-0002-1306-3938

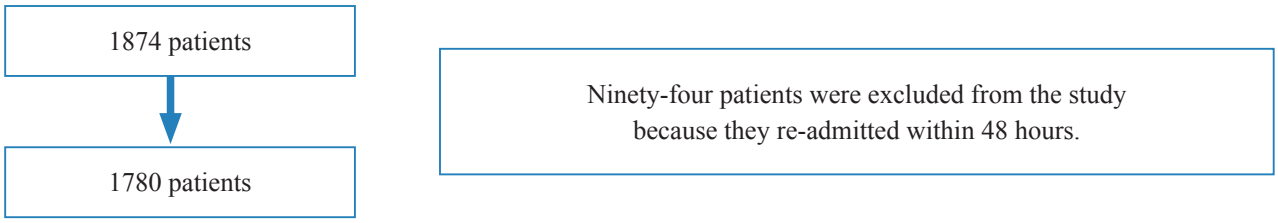

Figure 1. Study flow chart.

Materials And Methods

This study was conducted single-center and retrospectively in a tertiary ED. The hospital where the study was performed has an average of 15000-18000 patients admitted to the ED monthly. Ethical approval was received from a local ethics committee (Decision number: 2024/07-09 Date: 19/08/2024). The tenets of the Declaration of Helsinki performed the study.

Population Study: Patient information was obtained through the Hospital Information Management System (HIMS). The study enrolled all patients who visited the ED between October 01, 2023, and April 01, 2024.

Inclusion Criteria: In our hospital, Syrian patients with temporary protection status' social security are selected as "Syrian Patients." Therefore, patients whose social security coverage was selected as "Syrian Patients" in their ED applications and registered were included in the study.

Exclusion Criteria: Patients who re-applied with similar complaints within 48 hours were excluded from the study.

Data Collection and Standards: Data on patients admitted to the hospital were collected retrospectively through the HIMS. The collected information was grouped as follows:

- Patients' age, gender, application day and time information, application methods, and reasons.
- Diagnoses received in the ED [grouped according to ICD-10 (International Classification of Diseases) diagnosis codes].
- Length of stay in the ED
- Consultation requirements
- ED outcome information (discharge, hospitalization, referral, or death)
- If hospitalization occurred, in-hospital outcome information (discharge, referral, or death)

Statistical Analysis: Statistical analyses were performed using the JAMOVI v. 2.3.28 software package (The Jamovi Project, Sydney, Australia). The Kolmogorov-Smirnov test was used to check the normality of data distribution. Categorical data were presented as frequency and percentages; numerical data were presented as mean and standard deviation if normally distributed, and median and interquartile range (IQR) values otherwise. Pearson's chi-square test will be used to test whether the differences between pairwise dependent groups are significant. Fisher's exact test will be used when a table has a cell with an expected frequency of less than 5. Mann-Whitney U test was used to compare two groups regarding non-normally distributed data. All analyses will be performed at a 95% confidence level, and p-value <0.05 will be considered statistically significant.

Results

A total of 1874 patients were enrolled in the study that matched the inclusion criteria. Subsequently, 94 patients who met the exclusion criteria were excluded from the study **(Figure 1).** 1780 patients were included in the study. 53.1% (n=946) of the patients were male and the median age was 31 (IQR:24-42) years. 57.1% (n=1017) of the patients applied to the ED between 16:00 and 08:00, 70% (n=1246) on weekdays, and 97.7% (n=1739) as self-presentation **(Table 1).** The most common presenting complaint was symptoms of upper respiratory tract disease. (n=480, 27%) **(Table 2).** There were 1263 (71%) patients who were followed in the ED for less than 1 hour **(Table 3).** We observed that patients arriving by ambulance and patients for whom consultation was requested stayed in the ED for a statistically significant longer time (p<0.001). No consultation was requested in 1562 patients (87.8%) applying to the ED. The rate of consultation requests from

Table 1. Analysis of emergency department application times and types

	Number(n)	Percentage (%)
Application time		
08:00-16:00	763	42.9%
16:00-08:00	1017	57.1%
Application day		
Mid-week	1246	70%
Weekend	534	30%
How to apply		
Self-presentation	1739	97.7%
Ambulance-arrival	41	2.3%

Table 2. Reasons for application of patients

Reason for Application	Number(n)	Percentage (%)
Symptoms of upper respiratory tract disease	480	27.0%
Trauma	299	16.8%
Gastroenterological symptoms	250	14.0%
Musculoskeletal symptoms	250	14.0%
Symptoms associated with the urinary system	111	6.2%
Eye-related symptoms	90	5.1%
Neurological symptoms	86	4.8%
Cardiological symptoms	86	4.8%
Dermatological symptoms	82	4.6%
Other symptoms	46	2.7%
Total	**1780**	**100%**

patients arriving by ambulance was statistically significantly higher than from self-presentation ($p<0.001$).

The most frequently requested consultation was ophthalmology (n=67, 30.7%). Of all patients for whom consultation was requested, 52 (23.9%) were hospitalized. This rate was 32.5% (n=49) for consultations requested from branches other than ophthalmology. 1700 patients (95.5%) were discharged from the ED, while 52 patients (2.9%) were admitted to hospital. **(Table 4).** Patient diagnoses were recorded in accordance with the ICD-10 diagnosis coding system. The most common diagnosis group was diseases of the musculoskeletal system and connective tissue (28.7%), entered with the code "M" **(Table 5).**

Discussion

In our study, the most common presenting complaints of Syrian patients were upper respiratory tract disease, trauma, and gastroenterological symptoms. We observed similar findings in many studies[3,7,8]. In a study, the most common reason for admission was found to be gunshot wounds[9]. This difference may be because the province where the study was conducted is on the Syrian border, the camps are not used effectively, and the war has decreased in intensity over the years. However, compared to the findings of Gulacti et al. (2017)[3], the rate of trauma cases was higher in our study. This difference may be because the war was intense at the time Gulacti et al. conducted the study, and people were mostly living in isolated camps. Also, the fact that Syrian people today live in settlements rather than in isolated camps may have increased their exposure to minor/major traumas. Some studies emphasize the economic burden of refugees on health systems[3,7,10]. In 2022, total health expenditures in

Table 3. Length of stay of patients in the emergency department

Length of stay	Number (n)	Percentage (%)
Less than an hour	1263	71%
One to four hours	486	27.3%
More than four hours	31	1.7%
Total	**1780**	**100%**

Table 4. Outcomes of patients in the emergency department and during hospitalization

Patient outcomes	Number (n)	Percentage (%)
Discharged from the emergency department	1700	95.6%
Hospitalization	52	2.9%
Discharged from hospital	46	
Transfer to another hospital	3	
Death in hospital		
Leaving the emergency department with a treatment refusal signature	24	1.3%
Transfer from the emergency department to another hospital	4	0.2%
Total	**1780**	**100%**

Table 5. Patients' diagnosis code groups

Patients' diagnosis code groups	Number(n)	Percentage (%)
M: Diseases of the musculoskeletal system and connective tissue	510	28,7%
J: Diseases of the respiratory system	454	25.5%
R: Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	399	22.4%
N: Diseases of the genitourinary system	115	6.5%
S and T: Injury, poisoning and certain other consequences of external causes	92	5.2%
L: Diseases of the skin and subcutaneous tissue	59	3.3%
K: Diseases of the digestive system	57	3.2%
H: Diseases of the eye and adnexa	28	1.6%
I: Diseases of the circulatory system	17	0.9%
Y: External causes of morbidity and mortality	17	0.9%
Other diagnosis	32	1.8%
Total	**1780**	**100%**

Turkey were recorded at 606 billion 835 million TL[11]. The impact of health services for Syrian patients on these total expenditures is significant. This situation reveals the need for more international cooperation regarding the financing and accessibility of health services. In addition, the use of primary health services by Syrian patients can effectively reduce costs. In a study conducted in a tertiary hospital like ours (earlier than the arrival of Syrian people in our country), the average length of stay of patients in the ED was observed to be two hours. Again, it was found that 12.5% of patients were hospitalized[12]. We found that the average length of stay of Syrian patients in the ED was shorter, and they were hospitalized at a much lower rate. As in our study, studies show that the rate of consultation requests is significantly higher in patients who apply by ambulance and that the length of stay in the ED increases when consultation is requested[13]. This finding may indicate that Syrian patients use ambulances for more serious reasons. In the study by Donmez et al., the hospitalization rate of patients who requested consultation was 27.9%[14]. Our study is also consistent with the literature in this respect. The consultation threshold was used appropriately, resulting in a high hospitalization rate in that population. In our study, the rate of discharge of Syrian patients after applying to the ED was 95.6%. Gulacti et al. (2017)[3] also found high early discharge rates in their study. This indicates that Syrian patients prefer ED to primary healthcare services institutions. In another study done between 2012 and 2016 years, the hospitalization rate of Syrian patients was determined as 46.8%[9]. This difference may be because, today, Syrian patients use ED with non-urgent complaints rather than serious complaints. This is another indicator that patients do not use primary healthcare services effectively.

Limitations: Some centers did not allow patient data to be collected. For this reason, our study is single-center, and the number of patients is limited. The province where our study was conducted has a larger population of former immigrants and settled people than new immigrants because it is far from the Syrian border. This may be the reason why patients apply more for non-traumatic and non-urgent reasons. Studies to be conducted in patient groups, including provinces close to and far from the border, will provide better information on this subject. Although rare, some patients may have a different ICD diagnosis entry than the original diagnosis. Since our study is retrospective, this cannot be ignored.

Conclusion

Syrian patients often visit the ED with non-urgent complaints and have high discharge rates. This situation further increases the existing pressure on the functioning of ED. Redirecting Syrian patients to primary health services, increasing the accessibility of these services, and educating patients on this issue is important in reducing the burden on ED and ensuring more effective use of health services. After these are done, solutions such as not covering the service fee, billing the service recipient, etc., may be applicable in case of applications with non-urgent complaints. In addition, policies that will facilitate the integration of Syrian patients into health services, as well as international cooperation and support, will make significant contributions to the sustainability of the health system. This study is consistent with similar findings in the literature. The study is intended to guide the future of emergency health services provided to Syrian patients and all patients. As a result, primary health care services should be improved when planning health services, and patients under temporary protection status should be encouraged in primary health care units.

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