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Major health concerns of refugees in an emergency department: A single-center experience in the country hosting greatest number of refugees

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ABSTRACT

Objective: Turkey hosts a large number of refugees. The extensive use of the emergency services (ED) created a high burden on the health care system. This study was conducted to determine ED utilization by refugees at a tertiary care center.

Patients and Methods: Pediatric patients presenting with trauma and all adult patients were included in the study. Demographic information, country of origin, date of admission and triage category, complaint on admission, hospital resource utilization frequency, final diagnosis, and outcome of patients were recorded.

Results: A total number of 762 patients (1266 cases) were included. The median age was 30 (range 23-39) and 317 (41.6%) were male. 627 (82.3%) of the patients were from Syria. Considering hospital resource utilization of 1266 cases, radiologic imaging was performed on 28.1% and laboratory testings were performed on 50.2% of cases. 1128 (89.1 %) of all cases were discharged, while 119/1266 (9.4 %) cases were admitted to wards and 19/1266 (1.5 %) cases to intensive care units.

Conclusion: There is not enough data regarding in which health care areas refugees need care. Access to primary care specific to refugees may reduce ED utilization. Especially, routine gynecologic primary care and follow-up centers are needed for refugees in Turkey.

Keywords: Refugee, Emergency service, Syrians

1. INTRODUCTION

Since the emergence of the civil war in Syria in 2011, many Syrians have tried to seek asylum in various countries. Turkey has received the greatest share of these asylum seekers. According to a report published by the Turkish migration administration on January 6, 2021, Turkey hosts 817.898 refugees, of whom 371.820 reside in Istanbul. The report also specifies that 115.234 of refugees are from Iraq, while over 83.495 are Syrian nationals [1].

The increasing number of refugees is becoming a global social and healthcare problem. In recent years, emergency departments (EDs) have been faced with rising numbers of patients from Syria, Iraq, and Afghanistan. Immigration causes physical, mental, and social health-related challenges [2].

Researchers should study refugees from many angles, as their situation is extraordinary and different from that of the native population. Among the possible topics, healthcare issues are of paramount importance. Most refugees live in rural and suburban areas under poor conditions, which renders them susceptible to disease and limits their access to healthcare facilities. Managing refugees can be troublesome because of difficulties with communication and a lack of previous medical data on diseases, medications, and surgical procedures, for example.

Since the first days of the refugee crisis, the Turkish government has worked to establish a healthcare system for refugees that covers all acute, chronic, and emergent health problems. Healthcare services and medicine are provided free of charge to all registered refugees in Turkey [3]. However, the vast number of refugees and their extensive use of emergency services has imposed a heavy burden on the healthcare system. Data on the scale of this burden are limited; thus, to guide future planning

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and organisation, this study examines ED utilisation at a tertiary care centre among refugees residing in Istanbul.

2. PATIENTS and METHODS

This study was designed retrospectively to evaluate the data of foreign patients who were admitted to the ED of the Marmara Research and Training Hospital between the 1st of January 2018 and the 31st of December 2019. Our hospital is a tertiary referral hospital and ED has patient load of 500.000 annually, and all patients are treated under supervision of emergency medicine specialists.

Marmara University Ethics Committee approved the study (approval number: 09.2019.870) and Istanbul Provincial Health Directorate permitted us to use the database. Informed consent was not necessary as the design of the study was retrospective. Patient admission and follow-up forms were reviewed retrospectively and the data of patients were recorded.

Any foreigner who resides in Turkey for more than six months or who has a work permit is given a foreigner ID number of eleven digits like Turkish citizen ID numbers, except it begins with '99'. This ID given by the Turkish Government allows those foreigners to benefit from the Turkish health care system just like any Turkish citizen.

Foreign patients admitted to ED during the given period were selected from hospital database by their ID numbers. Pediatric patients (<18 years old) presented with trauma and all adult (>18 years old) patients were included in the study. Demographic information including age, gender, country of origin, date of admission were recorded. Triage category, complaint on admission, hospital resource utilization frequency, final diagnosis and outcome of patients were also recorded.

In hospital records patients were categorized into five groups according to the Australasian triage scale [4]. We regrouped them into three: category 1-2 as red (emergent), 3-4 as yellow (urgent) and 5 as green (non-urgent).

Complaint on admission was grouped into ten categories mainly based on major symptoms such as trauma, muskuloskeletal pain related, neurologic (headache, dizziness, loss of consciousness, etc.), respiratory tract (sore throat, runny nose, dypsnea, cough, etc.), gastrointestinal (nausea, vomitting, abdominal pain, etc.), cardiovascular (chest pain, palpitation, etc.), genitourinary (pregnancy, vaginal discharge, dysuria, flank pain, etc.), ear, nose and throat, ophtalmologic (otalgia, red eye, etc.), soft tissue and dermatologic (swelling, itching, rash, etc.) and other (fever,intoxication, syncope, etc.) symptoms.

Considering hospital resource utilization, we recorded whether any laboratory and radiology testings (computed tomography (CT), magnetic rezonance imaging (MRI), ultrasound (USG)) were made, and the frequency of consultations. The outcome of the patient was grouped into three; discharge, admission to ward or intensive care unit (ICU). The international Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) was used to define patients'final diagnosis [5]. ICD-10 codes were organized into 17 broad categories of clinical diagnoses.

Each admission of a patient with multiple admissions over 24 hours, either with the same or different complaint were recorded as a separate case.

Statistical Analysis

Data analysis was performed using SPSS Statistics V22.0 (SPSS Inc., Chicago, IL, USA). Continuous variables were presented as median values and interquartile ranges (IQRs), whereas categorical variables were presented as frequencies and percentages.

3. RESULTS

A total number of 762 patients and 1266 cases were included in the study, as some of the patients had multiple admissions. 317 (41.6%) of the patients were male while 445 (58.4%) were female.

The median age of all patients was 30 (range 23-39). The age distribution of the patients is seen on Table I. 571 (74.9%) of all patients were between the age of 18-44. The median age of 71 pediatric (<18 years old) patients was 7 (range 4-12) and the median age of adults (>18 years old) was 32 (range25-40).

While 499 of (65.5%) of all patients had single admission, 153 (20.1%) of them had 2, 63 (8.3%) had 3 and 47 (6.2%) had more than 3 admissions.

Table I. *The age distribution of the patients*

		Frequency	Percent
Age	<18	71	9.3
	18-44	571	74.9
	45-65	102	13.4
	>65	18	2.4
	Total	762	100.0

Considering the country of origin 627 (82.3%) of the patients were from Syria, 79 (10.4%) were from other Turkic Republics like Azerbaijan, Turkmenistan, 16 (2.1%) were from the European union (EU) and 40 (5.2%) were from various countries like Indonesia, Tunisia, Chinese.

Of the 1266 cases, 809 (63.9%) were admitted during 2018 and 457 (36.1%) were admitted during 2019. Seasonal distribution of admissions was as follows: 300 (23.7%) during winter, 365 (28.9%) during spring, 322 (25.4%) during summer and 279 (22 %) during autumn periods. 606 (47.9%) of all cases were admitted during day time (08:00-17:00) and 660 (52.1%) were admitted between 17:00 – 08:00. While 505 (39.9%) of cases were admitted within working hours (when out-patient clinics are on services), 761 (60.1%) were admitted during evening and weekends when only ER sevices are available to admit.

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Complaint on admission was grouped into ten categories mainly based on major symptoms. Among them genitourinary symptoms like pregnancy, vaginal discharge, dysuria, flank pain were the most prominant, accounting for 18.5% of all cases. Trauma was the second most common complaint on admission with 18% of cases. Of these 233 trauma patients 71 were in the pediatric age group. Distribution of all complaint groups are listed on Table II.

***Table II**. Distribution of all complaint groups*

	Frequency	Percent
Trauma related symptoms	233	18.4
Musculoskeletal pain	123	9.7
Neurological symptoms	81	6.4
Respiratory system symptoms	142	11.2
Gastrointestinal symptoms	224	17.7
Cardiovascular symptoms	60	4.7
Genitourinary symptoms	243	18.5
Eye, ear, nose, and throat symptoms	61	4.8
Soft tissue and dermatologic symptoms	57	4.5
Other (fever, intoxication, syncope, etc.)	51	4.0
Total	1266	100.0

We regrouped triage scale into three as red, yellow and green. 716 (56.6%) of all cases were defined as green, 217 (17.1%) as yellow and 333 (26.3%) as red triage group.

Considering hospital resource utilization, radiologic imagings were performed on 356/1266 (28.1%) cases. CT was performed on 167/1266 (13.2%) cases, diffusion MRI on 10/1266 (0.8%), USG on 12/1266 (0.9%) and plain X-ray on 201/1266 (15.9%) of all cases. Laboratory testings were performed on 636 (50.2%) cases.

Attending ER specialist concluded 847/1266 (66.9%) cases without any need for consultation. 419/1266 (33.1%) cases were referred to other clinics. Of these referrals 212/419 (50.6%) were to obstetrics and gynecology, 75/419 (17.9%) to orthopedics, 28/419 (6.7%) to ophthalmology, 19/419 (4.5%) to internal medicine, 15/419 (3.6%) to cardiology. In 23/419 (5.5%) cases, consulting more than one clinic was needed.

Outcome of patient was grouped into three; 1128 (89.1%) of all cases were discharged, while 119/1266 (9.4%) cases admitted to wards and 19/1266 (1.5%) cases to ICU. Of the cases admitted to wards, 85/119 were to obstetrics and gynecology (68 for delivery) and 20/119 were to internal medicine clinics.

Table III summarizes the distributions of patients according to their final diagnosis. 219 (17%) of all 1266 cases were discharged as non-emergent cases with inconclusive or non-specific diagnosis. 237 (18.7%) of cases were diagnosed as trauma related. Of these, 29 (2.3%) suffered from facture, dislocation or amputation, 52 (4.1%) had lacerations to be sutured, 156 (12.3%) had none of these and were defined as soft tissue trauma. 4 (0.3%) cases were diagnosed as acute renal failure, while 2 (0.2%) as cardiac arrythmia, 7 (0.6%) as acute coronary syndrome, 6 (0.5%) as decompensated heart failure, 4 (0.3%) as acute abdomen, 9 (0.7%) as gynochologic emergency, 4 (0.3%) as gastrointestinal hemorrage, 3 (0.2%) as burn, 2 (0.2%) as sepsis, 2 (0.2%) as hemoptysis, 8 (0.6%) as intoxication.

***Table III.** The distributions of patients according to their final diagnosis.*

	Frequency	Percent
No definitive diagnosis	219	17.3
Trauma	237	18.7
Soft tissue diseases	45	3.6
Acute gastroenteritis	32	2.5
Upper respiratory tract infection	133	10.5
Asthma, COPD*	12	0.9
Lumbalgia	32	2.5
Dispepsia, gastritis	13	1.1
Urolithiasis	28	2.2
Labor	73	5.8
CNS** pathologies (Epilepsy, intracranial neoplasm, CVD, vertigo)	13	1.0
Pregnancy	124	9.8
Eye pathologies (conjunctivitis, corneal foreign body..)	39	3.1
Pneumonia, pulmonary embolism, pneumothorax	14	1.1
Myalgia	106	8.4
Urinary tract infection	46	3.6
Other (like burn, hyperglysemia, intoxication)	100	7.9
Total	1266	100.0

COPD: chronic obstructive pulmonary disease , CNS**: Central nervous system*

4. DISCUSSION

Turkey provides free emergency service care to all registered refugees. However, there is insufficient data regarding the healthcare areas in which refugees need care and the emergent conditions that lead to their hospital admissions. Because refugees encounter many obstacles, such as language barriers, financial problems, and a lack of health insurance, they tend to prefer the use of emergency services to address their health problems [6,7]. This study aims to evaluate the demographic and medical features of refugee patients who present to the ED.

We had a total number of 762 patients and 1266 cases due to repeated admittions. 8.4% of patients were women. This is same as in previous studies. Guess et all found 53% female, Baykan found 57.7% in their refugee ED studies [8,9].

The median age of adult patients was 32 whereas the median age of 71 pediatric (<18 years old) patients was 7 in our study. In User et al., study, infants and pre-school-aged children constitute 66% of their refugee patient group in the prediatric surgery department [10]. This is the same age group as in our study and the same pediatric group of trauma patients. In another pediatric group refugee study Yurtseven et al., found

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mean age as 3.4 ± 4.1 in all pediatric ED patients [6]. In the adult group, Pfortmueller et al., found the median age as 34, Guess et al., found 28.4, the same as in our study, the relatively young median age is similar [8,11].

Of the patients in our study, 65.5% had a single admission, 20.1% had two admissions, 8.3% had three admissions, and 6.2% had four or more admissions to the ED. Previous studies have reported that refugees tend to visit the ED at a higher frequency compared to the general population [8,12]. In addition, Kiss et al., have found that 12% of refugee patients visited the ED more than four times [13]. Because of the many issues that affect refugees, including language barriers, financial problems, and a lack of health insurance, they usually prefer to use emergency services. The Turkish government has covered all health expenditures for refugees treating acute and chronic diseases in primary, secondary, and tertiary health centres and even in private clinics and hospitals [14]; however, emergency service applications for Syrian refugees in the country exceed 10% of the total applications, and the proportion is especially high in cities on the Syrian border [6].

In recent years, ED's in the EU have been faced with a rising number of patients from Syria, Afghanistan, and Iraq seeking asylum [15]. The largest proportion of refugees was from Africa (48%) in Kiss et al., study from Canada [13]. In our study we found that 82.3% of all refugee patients were from Syria, 10.4% were from other Turkic Republics, 2.1% were from EU and 5.2% were from various countries. In Turkey, there are approximately 3.6 million Syrian citizens and approximately 330000 registered refugees and asylum seekers from other nations [15].

Our study identified no significant seasonal distribution variance, but 28.9% of patients were admitted in the spring months. In a study by Sariaydin et al., the majority of patients presented in the winter months [17]. We found that 60.1% of refugees were admitted in the evening or weekend, when only ED services are available. Meanwhile, Yurtseven et al., have reported that 47% of Syrian patients were admitted to the ED between 8:00 and 17:00 [6].

The most prominent complaints on admission were genitourinary symptoms, such as pregnancy related issues, vaginal discharge, dysuria, and flank pain, which accounted for 18.5% of all cases. Trauma was the second most common complaint. In Kiss et al.'s study, 27% of refugees presented with an injury complaint, and the predominant difference between refugee and non-refugee patients was in the percentage attending for pregnancy, childbirth, and postpartum-related conditions (ED visits: 6% for refugees vs. 3% for non-refugees) [13]. In a study by Sarıaydın et al., the most frequent complaint was an upper respiratory tract infection (URTI), which was reported by 22% of patients, followed by a soft tissue injury [17]. The hospital also had another gynaecology-specific ED, to which 29.5% of female patients were admitted for pregnancy. The researchers further observed that the most common complaint among paediatric patients was a URTI. However, only children with traumatic problems were part of our study.

Our 56.6% of all cases were defined as green (Level 5) according to triage criteria, 17.1% as yellow (Level 3-4), 26.3% as red triage (Level 1) group. Kiss et al., revealed that less urgent overall (Levels 4 and 5) was 41% in their study, too [13]. Systematic review by Hoot et al., showed that the use of emergency services by non-urgent cases caused crowding, increased mortality, treatment delays, staff shortages, and financial losses in the ED [18]. In a study conducted in Turkey, authors also found that ED use by Syrian patients was higher than that of local patients, and a high proportion of these patients were subject to only outpatient care [14]. The most likely causes of this tendency can be explained with the easy access to the ED, less language problem due to fewer formal procedures in the ED and 24/7 access to ED unlike the outpatient clinics. Overcrowded conditions in EDs may result in prolonged pain and suffering, ambulance diversions, decreased physician productivity, violence associated with prolonged wait times, and miscommunication because of increased patient volume.

Radiologic imagings were performed on 28.1% cases in our study. In Yurtseven's study, the rate of Syrian patients requesting tests is 50% [6]. We referred 33.1% cases to other clinics. Of these referrals, 50.6% were to obstetrics and gynecology. We found that 71.40% of ward admissions were to obstetrics and gynecology. Dikmen et al., revealed that Syrian refugee women still wished to have children despite the difficulties added by immigration. The immigration had no negative effects on women's fertility, and they kept on giving birth in higher numbers [19]. It was also found that female refugees utilized the emergency department twice more than non-refugees for pregnancy related issues [13].

Outcome of patients was grouped into three as discharged (89.1%), admitted to wards(9.4%) and ICU (1.5%). Baykan and Aslaner reported that 91.3% of all Syrian patients admitted to hospital were discharged while 6.9% were admitted to hospital [9].

We neither made a specific diagnosis nor found an urgent situation among 17% of the patients in our study. Pfortmueller et al., have similarly noted that a group of young asylum seeker patients suffered from unspecified somatic symptoms [11]. These symptoms may be part of bodily distress syndrome; however, we did not specifically screen this population for this diagnosis. In our population, a soft tissue injury was present in 3.6% of cases, whereas 2.5% involved gastroenteritis, and 10.5% concerned a URTI. In a study by Gülaçtı et al., the most prevalent disease was a URTI followed by myalgia and a urinary tract infection, respectively [20]. Sarıaydın has suggested that the generally crowded and unsanitary conditions in which refugees live may contribute to the spread of respiratory, skin, gastrointestinal, and genital system infections [17]. This argument is likely applicable to our population as well.

Our research had certain limitations. Since this study was conducted in a single centre, the findings cannot be easily generalised. Moreover, because of the retrospective design of this study, some older medical conditions may not have been detected. Finally, no standardised general and systemic medical history was taken; only hospital records from our institution were analysed in this study.

The findings of our research support specific recommendations regarding the important challenge of healthcare for refugees. Greater access to primary care specific to refugees may reduce ED utilisation. In addition, routine gynaecologic primary care and follow-up are especially necessary for refugees in Turkey.

Compliance with the Ethical Standards

Ethical Approval: Marmara University Ethics Committee approved the study (approval number: 09.2019.870) and Istanbul Provincial Health Directorate permitted us to use the database.

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