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Research Article

Retrospective analysis of Syrian refugee patients admitted to a hospital adult emergency service

Bir hastane yetişkin acil servisine başvuran Suriyeli mülteci hastaların retrospektif incelenmesi



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Abstract

Introduction: Due to wars and political changes, large-scale migration can occur from countries. Millions of people leave their places of residence and take refuge in other countries and affect the sociological, economic and health systems of the country they go to.

Methods: Syrians under temporary protection, who applied to Sakarya University Training and Research Hospital adult emergency room between 01/03/2018-31/12/2019, were examined retrospectively. Thus, it was aimed to examine the effect of Syrian refugees on emergency services.

Results: A total of 4310 Syrian patient applications are made, of which 2710 are male and 1600 are female. 3607 (83.7%) of the patients applied to the green outpatient clinic, 175 of the patients (4.1%) are forensic cases. 151 (86.3%) of forensic cases belong to male Syrian patients. Most of the patients are young adults, the average patient age is 30.8 ± 10.71 and the median age is 28.

Conclusion: It was concluded that Syrians mostly apply to the green clinic in the adult emergency department, male and young patients apply more, forensic cases occupy a small proportion among these applications, and generally non-emergency cases use the emergency service. Refugees can be informed about applying to primary health care in non-emergency situations and organizing health infrastructure in this direction can reduce the emergency service workload.

Keywords: Emergency service, refugees, Syria

Öz

Giriş: Savaşlar ve siyasi değişiklikler nedeniyle ülkelerden büyük ölçekli göç meydana gelebilir. Milyonlarca insan ikamet ettikleri yerleri terk edip başka ülkelere sığınır ve gittikleri ülkenin sosyolojik, ekonomik ve sağlık sistemlerini etkiler.

Yöntem: 01/03 / 2018-31 / 12/2019 tarihleri arasında Sakarya Üniversitesi Eğitim ve Araştırma Hastanesi yetişkin acil servisine başvuran geçici koruma altındaki Suriyeliler geriye dönük olarak incelendi. Böylelikle Suriyeli sığınmacıların acil servislere etkisinin incelenmesi amaçlanmıştır.

Bulgular: 2710'u erkek, 1600'ü kadın olmak üzere toplam 4310 Suriyeli hasta başvurusu yapıldı. Yeşil polikliniğe başvuran hastaların 3607'si (%83,7), hastaların 175'i (%4,1) adli vakadır. Adli vakaların 151'i (%86,3) Suriyeli erkek hastalara aittir. Hastaların çoğu genç yetişkin olup, ortalama hasta yaşı $30,8 \pm 10,71$ ve ortalama yaş 28'dir.

Sonuç: Suriyelilerin yetişkin acil servisinde daha çok yeşil kliniğe başvurduğu, erkek ve genç hastaların daha fazla başvurduğu, bu başvurular arasında adli vakaların küçük bir payın yer aldığı ve genellikle acil olmayan vakaların acil servisi kullandıkları sonucuna varıldı. Sığınmacılara, acil olmayan durumlarda birinci basamak sağlık hizmetine başvurmaları konusunda gerekli bilgilendirme yapıp, bu yönde sağlık altyapısı örgütlenmesi acil servis iş yükünü azaltabilir.

Anahtar Kelimeler: Acil servis, mülteciler, Suriye

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Introduction

As a result of the civil war in Syria, which began in 2011, millions of Syrians left their homes and migrated to different parts of the world, especially in neighboring countries. The Republic of Turkey is one of the countries most affected by this migration wave since it is in the north of the Syrian Arab Republic and one of its largest neighbors. According to the data of the General Directorate of Migration Administration of the Republic of Turkey Ministry of Interior, there were 14.237 Syrians under temporary protection in Turkey in 2012, which increased to 3.589.289 in 2020 [1]. The increase in the number of Syrian citizens under temporary protection, who have migrated over the years, has highlighted the needs such as health, nutrition, housing and security. The need for health care has also been one of the main needs. Diseases such as infectious diseases, eating disorders, developmental growth retardation, anemia, trauma, and STDs were considered among the common diseases in immigrants [2], [3]. However, it has been reported that there are no significant obstacles to Syrians accessing health care in Turkey [4]. There has also been an expectation of an increase in judicial incidents in line with immigration in general [5].

Over time, a negative perception of Syrians, concerns about Syrians and widespread alienation began to occur in Turkey, both on social media and in the public opinion. It has been reported that the language used by the media also contributes negatively to the formation of negative perceptions about Syrians [6]. There were reports on the internet and the media that Syrian refugees were given priority in hospitals and that these patients filled the emergency services [7]–[9]. This negative atmosphere about Syrian refugees has inspired this study. Because in Turkey, many patients are admitted to the emergency services to be examined. According to a report from 2017, more than 90.000.000 patients were examined in the emergency rooms of state hospitals [10]. Do Syrian refugee patients create a huge patient burden in emergency services that are already so busy? Conversely, are negative publications about Syrian patients' part of a perception? We can only understand whether this situation is a negative perception or real events experienced by scientific research.

In this study, the status of Syrian refugee patients applying to the adult emergency service of Sakarya University Training and Research Hospital (SEAH), which is Sakarya's largest hospital, was examined in Sakarya scale. Considering the negative perception about Syrian refugee patients in Turkish society, this study aimed to investigate the number and demographic characteristics of patients admitted to SEAH adult emergency service.

Methods

This is a retrospective descriptive study. Syrian refugees living in Sakarya Province were chosen as the population of the study. The sample group is the Syrian Refugee patients who admitted to SEAH adult emergency service between March 1, 2018 and December 31, 2019 were included in the study. Since the patient triage information for January and February 2018 admissions at the SEAH was not available, the emergency admissions during this time were not included in the study. Adult patients admitted to obstetrics emergency department, pediatric patients and outpatient clinic were not included in the study. With written permission from the hospital chief physician on March 13th, 2020, patient admissions were retrospectively screened in the hospital information management system for data collection.

In the SEAH adult emergency service, patients who had no risk of losing organ, organ function or life unless undergo any medical intervention within 24–48 hours, patients that can be followed up and treated in outpatient, primary health care institutions, patients who admitted to the hospital with their own means, and patients admitted to emergency service without any emergency condition were considered green room patients. All cases of trauma, such as work accidents, road accidents, falls, sprains, admitted by outpatient or ambulance, were evaluated as emergency trauma room patients, excluding the pediatric age group. Patients over the age of 17, excluding the green room and trauma room patients, who had emergency symptoms or complaints, who admitted for reasons such as laboratory analysis for diagnosis and treatment, follow-up, supervision, and who required consultation with other branches, were considered emergency yellow room patients.

All forensic events, such as work accidents, poisoning, pounding, traffic accident, needlestick injuries, were stated only as "forensic cases" without dividing into sub-types.

Ethical approval, informed consent and permissions

The study protocol was approved by the local ethics committee of Sakarya University School of Medicine [IRB No:71522473-050.01.04-6062-40]. Permission was obtained from the chief physician on March 13th, 2020.

Statistical analysis

IBM Statistical Product and Service Solutions (SPSS) V21.0 was used for statistical analyses. Chi-square test was used for comparison of categorical data. Results with $p < 0.05$ were considered statistically significant. The skewness and kurtosis values were required to be in the ± 2 value range in order to determine whether the analyzed data fit the normal distribution [11]. An "independent t test" was used in the comparison of independent data with normal distribution between two groups. Results with $p < 0.05$ were considered statistically significant.

Results

A total of 718.990 patients admitted to the SEAH adult emergency service between March 1, 2018 and December 31, 2019. Of these patients, 376.451 (52.35%) were examined in the green room, 180.329 (25.08%) in the emergency trauma room, 162.210 (22.56%) in the emergency yellow room. The population of Sakarya province was 1.029.650 people in 2019, and the adult emergency department admission rate was found to be 69.82% of the total population during the study period.

Of all adult emergency admissions, 4310 (0.59%) were of Syrian patients under temporary protection. Of these Syrian patients, 2710 (62.9%) were male and 1600 (37.1%) were female. Patients were found to be between the ages of 18 and 90, with an average age of 30.8 ± 10.71 years and a

median age of 28 years. Of all the patients, 83.6% was found to be under 40 years of age. A statistically significant difference was found when the ages of the patients were compared according to their gender ($p = 0.001$). Accordingly, it was observed that the average age of male patients was lower than that of women (men mean age=29.65, women mean age=32.73).

Of the 4310 patient admissions, 175 (4.1%) were forensic cases, and 4135 (95.9%) were non-forensic admissions. Of the forensic cases, 151 (86.3%) were male, 24 (13.7%) were female. A statistically significant relationship was found between the age of the patients and whether there was a forensic case ($p = 0.001$). Accordingly, the average age of those with forensic cases is lower than the average age of those without forensic cases (forensic case mean age= 28.3, non-forensic case mean age= 30.9).

Of the patients, 3697 (83.7%) were admitted to the green room, 596 (13.8%) to the trauma room, and 107 (2.5%) to the emergency yellow room. Looking at the emergency service admissions by year, the average number of Syrian patients admitted to the emergency service per day is considered, it is seen that it was 5.9 patients/day in the relevant period of 2018 and 6.85 patients/day in the relevant period of 2019. (see Table 1).

Table 1. Number and rates of emergency admissions by years

Date Range		Green Room	Trauma	Yellow Room	Total	Average Daily Patient ¹
01/03/2018-31/12/2018	Count	1486	265	57	1808	5.91
	% percent	82.2%	14.7%	3.2%	100%	
01/01/2019-31/12/2019	Count	2121	331	50	2502	6.85
	% percent	84.8%	13.2%	2.0%	100%	
Total	n	3607	596	107	4310	6.42
	% percent	83.7%	13.8%	2.5%	100%	

¹ Average number of Syrian patients presenting to the adult emergency department in one day.

A statistically significant difference was observed between the distribution of age groups to emergency outpatient clinics ($p < 0.050$). Accordingly, most of the admissions to green room, trauma room and yellow room was in the 21-30 age group, while the lowest admission rate to all outpatient clinics was in Syrian patients aged 71 years and older (see Table 2).

Table 2. Distribution of age groups to emergency rooms

Age Group ¹		Green Room	Trauma	Yellow Room	Total	p Value
≤ 20	Count	429	105	8	542	0.001
	% percent	79.2%	19.4%	1.5%	100%	
21-30	Count	1657	291	58	2006	
	% percent	82.6%	14.5%	2.9%	100%	
31-40	Count	906	127	24	1057	
	% percent	85.7%	12.0%	2.3%	100%	
41-50	Count	374	49	6	429	
	% percent	87.2%	11.4%	1.4%	100%	
51-60	Count	170	13	6	189	
	% percent	89.9%	6.9%	3.2%	100%	
61-70	Count	49	8	3	60	
	% percent	81.7%	13.3%	5.0%	100%	
71 ≤	Count	22	3	2	27	
	% percent	81.5%	11.1%	7.4%	100%	
Total	Count	3607	596	107	4310	
	% percent	83.7%	13.8%	2.5%	100%	

¹ The patients younger than 18 years were excluded from the study.

Considering the distribution of forensic cases by years and gender, a significant difference was found in the male forensic cases ($p < 0.050$), while there was no significant difference in the female gender ($p > 0.05$). Accordingly, a statistically significant increase in forensic incidents was observed in Syrian males under temporary protection who admitted to the emergency department, compared to the relevant period of the previous year (see Table 3).

Table 3. Distribution of forensic cases by years and gender

Gender	Year		Normal Case	Forensic Case	Total	Average Daily Patient ¹	p Value
Male	01/03/2018-	Count	1108	39	1147	0.13	0.001
	31/12/2018	% in years	96.6%	3.4%	100%		
	01/01/2019-	Count	1451	112	1563	0.31	
	31/12/2019	% in years	92.8%	7.2%	100%		
Female	01/03/2018-	Count	647	14	661	0.05	0.088
	31/12/2018	% in years	97.9%	2.1%	100%		
	01/01/2019-	Count	929	10	939	0.03	
	31/12/2019	% in years	98.9%	1.1%	100%		
Total	01/03/2018-	Count	1755	53	1808	0.17	
	31/12/2018	% in years	97.1%	2.9%	100%		
	01/01/2019-	Count	2380	122	2502	0.33	
	31/12/2019	% in years	95.1%	4.9%	100%		
		Count	4135	175	4310	0.26	
Total		% in years	95.9%	4.1%	100%		

¹ Average number of Syrian forensic cases presenting to the adult emergency department in one day.

Discussion

In their study of refugees, Guess et al. found that the United States grants asylum to between 60001 and 70001 refugees annually, these refugees use the emergency department less than non-refugees, while there is no difference between refugees and non-refugees in terms of primary health care provision [12]. In contrast, Sarah H Crede et al. reported that international immigrants in Europe use the emergency service more often than non-immigrants [13]. In addition, Mahmoud et al. concluded in their survey study in Australia that immigrant patients admitted to the emergency service would first consult a primary care physician if they were in their own country, and that they would prefer to admit to the emergency service rather than visiting a primary care physician in their own country [14]. According to the Ministry of Interior data dated March 3, 2020 in Sakarya province, Turkey, there are 15.156 Syrians under temporary protection, which corresponds to 1.5% of the population of Sakarya province [1]. These 15.156 Syrians have admitted to the adult emergency service 4310 times in 21 months. This number corresponds to 28.43% of the Syrian refugees living in Sakarya. Considering that the adult emergency admission rate of the entire population of Sakarya province was 69.82% in the same time period, the results of our study were found to be in line with the study by Guess et al., not Sarah H Crede. The reason immigrants in the United States are less likely to admit to the emergency service than in any other population may be due to the structure of the health system. In their study, Wassam Taraf et al. concluded that especially immigrants admit to the emergency service as a last resort in the United States, which may be due to the fact that immigrants are at a younger age, healthy, and have no insurance [15]. In Turkey, however, the fact that whoever admits to emergency services are accepted regardless of the presenting symptoms, and the fact that emergency services are free of charge to those covered by temporary protection may be one of the reasons of the 28.43% rate of emergency admissions among Syrians. In his survey of 100 Syrian people under temporary protection in the Darica District of Kocaeli, Kordeve found that there were no problems with Syrians accessing health care provision [4]. Our findings of higher emergency admission rates are in line with the result of Kordeve's study.

In their study, Baykan and Aslaner stated that the majority of Syrian asylum seekers who use the emergency services were female (57.7%) and the average age of the patients was 23 [16]. Gulacti et al. have also examined Syrian asylum seekers admitted to the emergency service in Adiyaman province, and found that the majority of Syrian patients were young females, with an average age of 21.9 [17]. Karakus et al., however, report that most of the Syrian patients admitted to the emergency service were males [18]. However, the fact that the study covers the years 2011-2012, in which migration has just begun, can be considered a restrictive factor for the result of their study. According to the data of the Directorate General of Migration Administration of the Ministry of Interior, 14237 Syrian citizens immigrated to Turkey under temporary protection in 2012 [1]. However, although the number of Syrians migrating exceeds millions, the gender distribution of Syrian patients admitted to the adult emergency service in our study --2710 males (62.9%) and 1600 females (37.1%)-- is in line with the result of Karakus, but not with the studies of Baykan & Aslaner and Gülaçtı et al. The fact that we included only the adult age group in our study and excluded the obstetrics emergency may have been instrumental in the low number of the female gender in our study. Moreover, in our study, the average age of patients admitted to the adult emergency service was 30.8 years, which supports the results of Baykan & Aslaner and Gulacti et al., despite the exclusion of the pediatric age group.

In his study, Yuzbasioglu stated that forensic cases were lesser in asylum seekers admitted to the emergency service, in addition, forensic cases were more common in male asylum seekers [19]. In our study, 175 (4.1%) of the 4310 emergency admissions of Syrian patients admitted to our adult emergency, service during the 21-month study period, were forensic incidents. The fact that 15156 Syrian asylum seekers were involved in 175 forensic incidents in 21 months supports the Yuzbasioglu's conclusion that forensic incidents are scarce among the asylum seekers. In addition, in our study, a detailed analysis of forensic cases was not conducted, and all incidents, such as traffic accidents and work accidents without any crime, were considered forensic cases. Another conclusion in line with this study is that only 24 (1.5%) of the 1.576 adult emergency admissions of female Syrians were forensic cases. Among all forensic cases, the proportion of females was 13.7%.

In their study, Gulacti et al. investigated 10529 Syrian patient admissions to the emergency service in Adiyaman province, but reported that most of them were not suitable for the emergency service [17]. Of the Syrian patients included in our study, 3607 (83.7%) admitted to the green room.

Given that patients who actually do not have an emergency are examined in the green room after the triage, it can be concluded that Syrian patients who do not actually have an emergency are also not eligible for the emergency service. In this case, our study confirms the conclusion of Gulacti et al. that admissions were not suitable for the emergency service. The higher rates of admissions of Syrian asylum seekers to green room suggest that this group of patients does not pose a significant burden for other emergency units but increases the intensity in the green room. Considering that green room patients are actually non-emergency patients, spreading primary health care services for Syrian refugee patients may be an alternative to the emergency room.

The daily average number of Syrian refugees applying to the adult emergency room is 6.42, corresponding to 0.59% of all emergency patients. In this respect, at least on the scale of Sakarya, it is believed that Syrian refugees do not place a huge burden on emergency services, contrary to the current perception.

Limitations

This is a retrospective and single center study.

Conclusion

Millions of people leave their places and seek refuge in other countries, affecting the sociological, economic and health systems of the country they migrated to. In our study, it was concluded that Syrians were more likely to admit to green room in adult emergency departments, male and young patients were more likely to admit, and forensic cases occupied only a small proportion of these admissions. Given that Syrian asylum seekers mostly admit to green room, where usually non-emergency patients are accepted, it can be stated that this patient group did not pose a significant burden in emergency services but increase the workload of green room. Refugees can be informed about applying to primary health care in non-emergency situations and organizing health infrastructure in this direction can reduce the emergency service workload. This study contributed to the literature on the applications of Syrian refugees to adult emergency services in Sakarya. Studies on Syrian refugee patients are also needed in other regions and provinces.

Conflict of interest: The authors have no conflict of interest in this study.

Author Contributions		Author Initials
SCD	Study Conception and Design	ED
AD	Acquisition of Data	ED, FG
AID	Analysis and Interpretation of Data	ED, FG
DM	Drafting of Manuscript	ED, FG
CR	Critical Revision	ED, FG

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References

- [Syrians under temporary protection] (in Turkish). T.C. Ministry of Interior General Directorate of GOC Administration. Mar. 05, 2020. Available at: <https://www.goc.gov.tr/gecici-koruma5638> (Access Date: 12.03.2020)
- Kurt F. Demographic characteristics and treatment costs of immigrant patients in the pediatric emergency department. Turkish J Pediatr Dis. 2019;6:413-7. <https://doi.org/10.12956/tjpd.2018.381>
- Karadag O, Altintas KH. Refugees and health. TAF Prev Med Bull. 2010;9(1):55-62.
- Kordev MK. Access to health services of Syrian refugees: a field research. J Health Manage 2017;1(2):1-12.
- Yorulmaz O, Yakut SG. Investigating socioeconomic determinants of crime rates in Turkey: A robust approach to path analysis. Marmara Uni J Econ Administrative Sci 2017;39(1):307-22. <https://doi.org/10.14780/muiibd.329943>
- Kenes HC. The role of metaphor in discriminatory hegemony: the use of metaphor in reporting of Syrians. Gaziantep Uni J Soc Sci 2016;15(2):253-80. <https://doi.org/10.21547/jss.256727>
- [Syrians fill hospital emergencies] (in Turkish). Available at: <https://www.yenimesaj.com.tr/suriyeliler-hastane-acillerini-doldurdu-H1242608.htm> (Access Date: April 22, 2020).
- Ozdemir AS. [Mistakes About Syrians] (in Turkish). Available at: <https://multeciler.org.tr/suriyelilerle-ilgili-dogru-bilinen-yanlislar/> (Access Date: April 22, 2020).
- [Emergency personnel riot against Syrians] (in Turkish). Available at: <https://www.yenicaggazetesi.com.tr/acil-servis-personelinin-suriyeli-isyani-261723h.htm> (Access Date: April 22, 2020).
- Alper M. [Top 100 hospitals in each branch-2017 number of public hospitals examination, hospitalization, intensive care, surgery, emergency service and births] (in Turkish). Republic of Turkey Ministry of Health Directorate General of Public Hospitals Statistics, Analysis, Reporting and Strategic Management Department Page. Available at: <https://khgmistatistikdb.saglik.gov.tr/TR,43819/her-bransta-ilk-100-hastane-2017-yili-kamu-hastaneleri-muayene-yatis-yogun-bakim-ameliyat-acil-servis-ve-dogum-sayilari.html> (Access Date: March 12, 2020).
- George D, Mallery P. IBM SPSS Statistics 23 step by step: a simple guide and reference (14th ed.). Routledge;2016.

<https://doi.org/10.4324/9781315545899>

12. Guess MA, Tanabe KO, Nelson AE, Nguyen S, Hauck FR, Scharf RJ. Emergency department and primary care use by refugees compared to non-refugee controls. *J Immigrant Minority Health*. 2019;21:793–800. <https://doi.org/10.1007/s10903-018-0795-5>
13. Credé SH, Such E, Mason S. International migrants' use of emergency departments in Europe compared with non-migrants use: a systematic review. *Eur J Pub Health*. 2018;28:61–73. <https://doi.org/10.1093/eurpub/ckx057>
14. Mahmoud I, Eley R, Hou XY. Subjective reasons why immigrant patients attend the emergency department. *BMC Emerg Med*. 2015;15:4. <https://doi.org/10.1186/s12873-015-0031-8>
15. Tarraf W, Vega W, Gonzalez HM. Emergency department services use among immigrant and non-immigrant groups in the United States. *J Immigrant Minority Health*. 2014;16(4):595–606. <https://doi.org/10.1007/s10903-013-9802-z>
16. Baykan N, Aslaner MA. The use of emergency department and outpatient clinics by Syrian refugees. *J Glob Health*. 2019;9(2):020404. <https://doi.org/10.7189/jogh.09.020404>
17. Gulacti U, Lok U, Polat H. Emergency department visits of Syrian refugees and the cost of their healthcare. *Pathog Glob Health*. 2017;111(5):219-24. <https://doi.org/10.1080/20477724.2017.1349061>
18. Karakus A, Yengil E, Akkucuk S, Cevik C, Zeren C, Uruc V. The reflection of the Syrian civil war to emergency department and assessment of hospital costs. *National Trauma Emergency Surg J*. 2013;19:429–33. <https://doi.org/10.5505/tjtes.2013.78910>
19. Yuzbasioglu Y, Isik GC. Retrospective analysis of forensic cases in refugees admitted to emergency department. *Am J Emerg Med*. 2019;37(9):1691-3. <https://doi.org/10.1016/j.ajem.2018.12.010>