

### Outpatient admissions and hospital costs of Syrian refugees in a Turkish university hospital

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#### ABSTRACT

**Objectives:** To examine the most frequent admitted polyclinics, diagnoses, and the costs of Syrian refugee patient in a Turkish university hospital in the metropolitan city of Istanbul, Western part of Turkey.

**Methods:** Research methodology consist of analyzing outpatient admissions to the Hospital Polyclinics of Faculty of Medicine, Istanbul University, Cerrahpasa, Istanbul, Turkey from January-June 2014. We carried out diagnosis groups as classified in the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification, and analyzed the hospital cost of first admission through records based in the hospital information system.

**Results:** Median age of 251 Syrian refugee patients is 19 years, inter quartile rate 7-34 years. Patients aged 65 and older compared with those until 18 years and 19 to 64 years aged groups have made statistically significant ( $p < 0.001$ ) less hospital admissions. The Most frequented clinic was the emergency clinic. On June there have been significantly ( $p < 0.001$ ) more admissions compared with other months. The most common diagnoses were diseases of the respiratory system. The costs of per admission was estimated nearly 48 US Dollar/per patient and the total amount of hospital admissions was 12,031.93 US Dollar.

**Conclusion:** On the specified dates, the clinics were mostly frequented from Syrian refugees until 18 years group. The most common presenting symptoms are respiratory diseases and most frequented clinic is emergency.

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War is a disaster that causes many troubles; interrupting normal life, causing physical, social, cultural, and economic losses in the community. Because of the increased violence and fear in their country, Syrian citizens are leaving their country and moving

to neighboring countries, such as Turkey since March 2011. These people in the refugee status bring along the difficult living conditions, while they are leaving the country. In host countries, refugees face language and health difficulties beside economic problems. According to the World Health Organization (WHO);<sup>1</sup> since the beginning of the war in Syria (March 2011), over 150,000 people were estimated to be killed, and more than 25% of the population is displaced. Syrian refugees who moved to Lebanon estimates to be more than 5% of Lebanon's population.<sup>2</sup> According to Disaster and Emergency Management Authority the number of Syrian refugees both inside and outside of the camps in Turkey was almost 1.4 million at the date 22 August 2014, and over 1.5 million at October 2014. We should know that different factors, such as homeland, language, cultural background, and refugee status has diverse influences on health needs.<sup>3</sup> Healthcare costs of asylum seekers from countries experiencing violent conflict were found to be higher than those of asylum seekers from countries, where there is no conflict. It is well known that health care costs of asylum seekers from countries with civil war are mostly directed from the duration in this status.<sup>4</sup> In the case of Syrian refugees, it is not well known what are the trends of health problems, causes of frequenting health care institutions, and the costs of these services they get at different parts of the countries they refuge to. The Turkish government has provided all Syrian refugees with health insurance, which makes getting health services easier. Research carried out previously,<sup>5</sup> has an approach from the emergency unit perspective but no research approaches with the all outpatients' hospital admissions perspective. Knowing the health challenges of Syrian refugees have an important role to develop preventive and better health care services for them. This study aims to examine most frequently admitted polyclinics, diagnoses, and the costs of Syrian refugees patient in a Turkish University Hospital in the metropolitan city of Istanbul, the western part of Turkey.

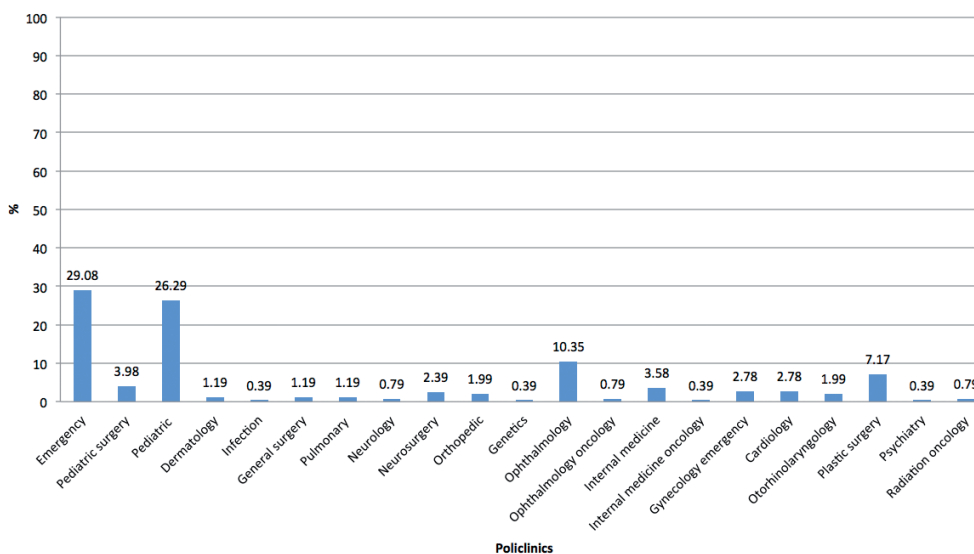
**Methods.** The research method of this record based study is established by authors and consists of analyzing the Syrian refugees admissions to Hospital Polyclinics of Faculty of Medicine, Istanbul University, Cerrahpasa, Istanbul, Turkey from January-June 2014. The unifying

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criteria was examining only the first admission of Syrian refugees on the mentioned dates through the hospital's information system. Syrian citizens made a total of 367 admissions in the first 6 months of 2014 at Istanbul University Cerrahpaşa, Faculty of Medicine Hospital, Istanbul, Turkey. One hundred and seven of them were excluded due to repeated admission and another 9 admissions were excluded because payment was made from packet. At last 251 (161 Male, 90 Female) Syrian refugees admissions fulfilled the criteria to be included in the study. In the hospital, each patient is provided with a hospital identification number, which makes possible to follow all the admissions made by them, whenever they come to the hospital. Research methodology consist of analyzing, date of birth, date of admission, and clinic diagnoses as classified in the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM): diseases of the respiratory system (J00-J99); diseases of the eye and adnexa (H00-H59); injury, poisoning, and certain other consequences of external causes (S00-T98); diseases of the musculoskeletal system and connective tissue (M00-M99); symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99); endocrine, nutritional, and metabolic disease (E00-E90); infectious and parasitic diseases (A00-B99); diseases of the digestive system (K00-K93); external causes of morbidity and mortality (V00-Y99); diseases of the nervous system (G00-G99); diseases of the genitourinary system (N00-N99); diseases of blood, blood-forming organs, immune mechanism

(D50-D89); diseases of the circulatory system (I00-I99); malignant neoplasms (C00-D49); diseases of the ear and mastoid process (H60-H95); pregnancy, childbirth, and the puerperium (O00-O99); congenital malformations, deformations, and chromosomal abnormalities (Q00-Q99); diseases of skin and subcutaneous tissue (L00-L99); mental and behavioral disorders (F00-F99); and the cost of first admission. Costs were estimated for the hospital perspective. The direct medical costs considered in the study involved the following items: diagnostic procedures costs, laboratory tests, treatment costs, medical examination fees. Descriptive statistics are summarized as frequency and percentage, mean and median and Inter Quartile Rate (IQR). The normal distribution of continuous variables is tested with Kolmogorov-Smirnov and Shapiro-Wilk tests. Chi-square test is used to evaluate categorical variables. Data analysis was performed using the Statistical Package for the Social Sciences version 21 (IBM Corp., Armonk, NY, USA) software package and  $p < 0.05$  was considered to be significant. The study is in full accordance with Helsinki Declaration and necessary permission was taken from the hospital authority.

**Results.** The median age of 251 Syrian refugee patients is 19 years, IQR 7-34 years. Patients aged  $\geq 65$  were compared with 18 years and 19-64 years age groups were statistically significant ( $p < 0.001$ ) and less hospital admissions (8, 124, and 119 hospital admissions). The emergency clinic was the most frequented clinic (Figure 1). There have been significantly more admissions



**Figure 1** - Syrian refugees outpatient admissions rates per polyclinic.

**Table 1** - Hospital admissions frequency rate per month.

Month	Frequency	(%)	P-value
January	14	5.6	<i>p</i> <0.001
February	22	8.8	
March	44	17.5	
April	45	17.9	
May	50	19.9	
June	76	30.3	

**Table 2** - The frequency rates of diagnoses groups according to ICD 10- AM classification and median costs.

Diagnoses group	No	%	Median cost (IQR)
(J00-J99)	47	14.41	7.31 (7.31-23.54)
(H00-H59)	41	12.57	7.31 (7.31-7.37)
(S00-T98)	35	10.73	10.54 (7.31-40.45)
(M00-M99)	26	7.97	14.62 (7.31-22.93)
(R00-R99)	21	6.44	7.31 (7.31-11.87)
(E00-E90)	20	6.13	32.53 (23.86-59.25)
(A00-B99)	20	6.13	14.83 (7.31-25.16)
(K00-K93)	19	5.82	21.22 (13.81-26.03)
(V00-Y99)	19	5.82	14.83 (11.74-30.17)
(G00-G99)	14	4.29	7.31 (7.31-31.68)
(N00-N99)	11	3.37	22.02 (14-75.24)
(D50-D89)	9	2.76	50.47 (46.69-40.47)
(I00-I99)	9	2.76	43.18 (30.38-72.29)
(C00-D49)	7	2.14	18.07 (7.31-29.92)
(H60-H95)	7	2.14	34.43 (22.31-41.56)
(O00-O99)	7	2.14	16.43 (12.09-29)
(Q00-Q99)	5	1.53	16.69 (15.89-21.72)
(L00-L99)	5	1.53	7.31 (7.31-8.01)
(F00-F99)	4	1.22	45.32 (7.31-62.74)

IQR - inter quartile rate

in June compared with other months (Table 1). The most common diagnoses were diseases of the respiratory system (Table 2). The costs per admission were estimated nearly 48 US Dollar/per patient and the total amount of hospital admissions was 12 031.93 US Dollars.

**Discussion.** More than 1,000,000 medical exams of Syrian refugees patients show to be registered in Turkey.<sup>6</sup> Doctors face situations that are very difficult to manage. They work long hours, and manage several urgent cases. The amounts spent for health in host countries are increasing every day. As we calculated in this study, the total amount for first 6 months of 2014; just for first admissions of Syrian refugees at only one of more than 1000 hospitals in Turkey were 12,031.93 US Dollars. Syria's South neighbor country Jordan's Ministry of Health estimates to have spent more than 50 million US Dollars for the health care of Syrian

Refugees only for 4 months.<sup>7</sup>

We found that Most applicants were male (64.1%), a similar finding was also in a research carried out in Adana by Karakuş et al,<sup>5</sup> with 88.8% male, and Bischoff et al's<sup>4</sup> research in Switzerland with 59% males of asylum seeker among people coming from war zones. We found that most applications (30.3%) were performed in June, which is almost identical to Karakuş et al's<sup>5</sup> study with the highest admissions in June (33%).

Bischoff et al's<sup>4</sup> study showed that the most frequent diagnoses among asylum seekers coming from war zones were respiratory disease, bone and muscle disease, skin disease, and injuries. It is almost the same in our study, most frequented ICD-10 AM diagnoses were: (14.4%) diseases of the respiratory system (J00-J99); (12.6%) diseases of the eye and adnexa (H00-H59); and (10.7%) injury, poisoning, and certain other consequences of external causes (S00-T98). This shows a similarity among refugees and asylum seekers coming from war zones regarding frequencies of diseases. It seems different in Karakuş et al's<sup>5</sup> study, where the most frequent complaint was found to be gunshot injury (70.1%).

Data collected by the Amel Association International in Lebanon<sup>8</sup> shows that the most common illnesses encountered are respiratory tract infections, respiratory diseases, skin diseases, eye infections, muscle disorder, gastric disorder, hypertension, flu, and diabetes. Various studies,<sup>9</sup> mainly identify depression and post-traumatic stress disorder (PTSD) among people who lived in war zones as most important mental health problems. Cihan et al<sup>10</sup> in their study in a Syrian refugee camp have found that some of psychosocial implications of refugees are associated with the level of anxiety and depression.

Refugees persist to be the most vulnerable and delicate part in a war situation. As long as the war continues in Syria, refugees cannot return and as a result, their medical needs have to be met in the hosting country.<sup>11</sup> It is favorable that the births among Syrian refugees in a large extent (97%) in Turkey become in health institutions<sup>12</sup> and excludes a possible big health challenges in this area. A study conducted in Mersin area in Turkey<sup>13</sup> reports that Syrian refugees diagnosis of cutaneous leishmaniasis from 32 in 2013 raised in 151 in 2014. The study has too many limitations, the impossibility to get access to all the hospitals information systems to examine the Syrian refugees admissions is the biggest limitation in our study. On the specified dates the clinics mostly were frequented from Syrian refugees until 18 years group and least from age group 65 years

and over. The most common presenting symptoms are respiratory diseases and the most frequented clinic is the emergency clinic. The mode of the admission costs reflect indirectly that most patients were just examined and no laboratory test examinations were needed, which implicates thinking that it is work loading the tertiary healthcare institution.

In conclusion, on the specified dates, the clinics were mostly frequented from Syrian refugees until 18 years group. The most common presenting symptoms are respiratory diseases and most frequented clinic is emergency. The access to primary health care easier for Syrian refugees could have an important role in reducing the workload of the tertiary health institutions and in decreasing health care costs.

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