

## Research Article

# The Effects of Syrian Immigrants on Our Health System: Kilis State Hospital Operating Room Case Profile Changes over Years

 Ali Bestemi Kepekci<sup>1,2</sup>

<sup>1</sup>Department of Anesthesia, Meltem Hospital, Istanbul, Turkey

<sup>2</sup>Health Occupation High-School Anesthesia, Yeni Yuzyil University, Istanbul, Turkey

### Abstract

**Objectives:** World wars in world history affected all humanity according to the distance to the battlefield. Syria also wounded in the civil war were transferred to Turkey, including in particular our border cities.

**Methods:** All operations performed at Kilis State Hospital between 2009-2014 were retrospectively evaluated from the patient file records of the operating room in the hospital automation program. The operations were divided into groups A-B-C-D-E according to Turkish Medical Association Directive. The effect of migration on the types of operations performed in the operating room was investigated.

**Results:** A total of 88.711 operations were evaluated. When the operations performed in the operating room were evaluated according to the surgical group, it was seen that there was an increase in the overall operation groups over the years.

**Conclusion:** In this study, the total number of operations increased each year. The acceleration in the increase is in line with the times when the conflicts in the Syrian war increased. The wars have affected the countries of the region in many ways. When planning health investments, hospitals and health organizations should be planned with consideration of geopolitical and environmental characteristics.

**Keywords:** Case profile, health system, immigrants

**Cite This Article:** Kepekci AB. The Effects of Syrian Immigrants on Our Health System: Kilis State Hospital Operating Room Case Profile Changes over Years. EJMI 2019;3(2):127–131.

World wars in the history of the world, according to the distance from the battlefield affected the people of the whole world. Civilian deaths have been reported during the wars, along with a large number of soldiers.<sup>[1]</sup>

In the Syrian civil war, the number of due to deceased between 2011 and 2014 was more than 190.000,<sup>[2]</sup> more than 500.000 injured.<sup>[3]</sup>

The number of people forced to emigrate from the region they live in is 9 million.<sup>[1]</sup>

Persons injured in the civil war in Syria were transferred

to our border cities, especially Kilis and Hatay. Our border cities host not only the wounded but also those who emigrated from Syria due to internal instability and insecurity. They were most people had to migrate to Turkey in piles to save their lives.<sup>[4]</sup> Prime Ministry Disaster and Emergency Management Presidency (AFAD), 2015 to 1.385.000 registered refugees living in Turkey. 49.000 of this number resides in Kilis.<sup>[5]</sup>

By March 2016, the total number of registered and informal refugees reached 2.7 million.<sup>[6]</sup>

**Address for correspondence:** Ali Bestemi Kepekci, MD. Health Occupation High-School Anesthesia, Yeni Yuzyil University, Istanbul, Turkey

**Phone:** +90 212 444 50 01 **E-mail:** alibestemi.kepekci@yeniuzuyl.edu.tr

**Submitted Date:** February 20, 2019 **Accepted Date:** March 07, 2019 **Available Online Date:** March 14, 2019

©Copyright 2019 by Eurasian Journal of Medicine and Investigation - Available online at [www.ejmi.org](http://www.ejmi.org)



Migrations can produce visual results such as political and distorted urbanization, as well as health-related and social consequences.<sup>[7]</sup>

In this study, demographic and clinical characteristics of the operations performed in the State Hospital Operating Room in Kilis, which is adjacent to the border cities and also the transition route in the region, was investigated according to years.

## Methods

All surgical files between 2009 and 2014 were retrospectively reviewed from the operating room patient file records in Kilis State Hospital automation program. All the interventions in the operating room were included in the study. Minor interventions in the emergency department were not included in the study.

Demographic data and surgical procedures were recorded. A total of 88.711 operations were performed. The operations were divided into groups according to the Turkish Medical Association Directive.<sup>[8]</sup>

Specialized surgeries and interventions A group; Special operations and initiatives Group B; Major operations and interventions group C; Medium operations and interventions D group; Small operations and interventions were defined as group E. As of March 2011, when the Syrian civil war began, the migration of Kilis State Hospital operating room case profile was examined. It was aimed to show the effects of this migration on our health system with the change in the operation procedures performed in the operating room between the years 2009-2010 and 2011 and in 2012-2013-2014.

For the study protocol, permission was obtained from the Istanbul Training Research Hospital Clinical Research Ethics Committee (15.01.2016/751).

## Statistical Analysis

IBM SPSS Statistics 23 package was used to evaluate the

data. Number, percentage, mean and standard deviation values will be given as descriptive statistics. Statistical analyses were performed using chi-square and independent T-test.  $p < 0.05$  was considered statistically significant.

## Results

88.711 operation was evaluated in Kilis State Hospital between 2009-2014. The distribution of the operations included in the study by years; It was seen that it was 7332 in 2009, 9590 in 2010, 14004 in 2011, 15937 in 2012, 18793 in 2013 and 23055 in 2014.

When the operations performed in the operating room were evaluated according to the operative groups, it was seen that there was an increase in all surgical groups in general over the years (Table 1). The number of group A surgeries, which were 121 in 2009, increased to 651 in 2013 and to 703 in 2014 (Fig. 1). The number of group B surgeries were 1101 in 2009 and 2176 in 2014; Group C operations were 1732 in 2009, while 3351 in 2014; D group operations were 1811 in 2009 and 2554 in 2014; Group E operations were 2567 in 2009 and 14271 in 2014. There was an increase in all surgical groups; A and E were the most frequent operation groups. The group with the least change in operation group D operations were seen.

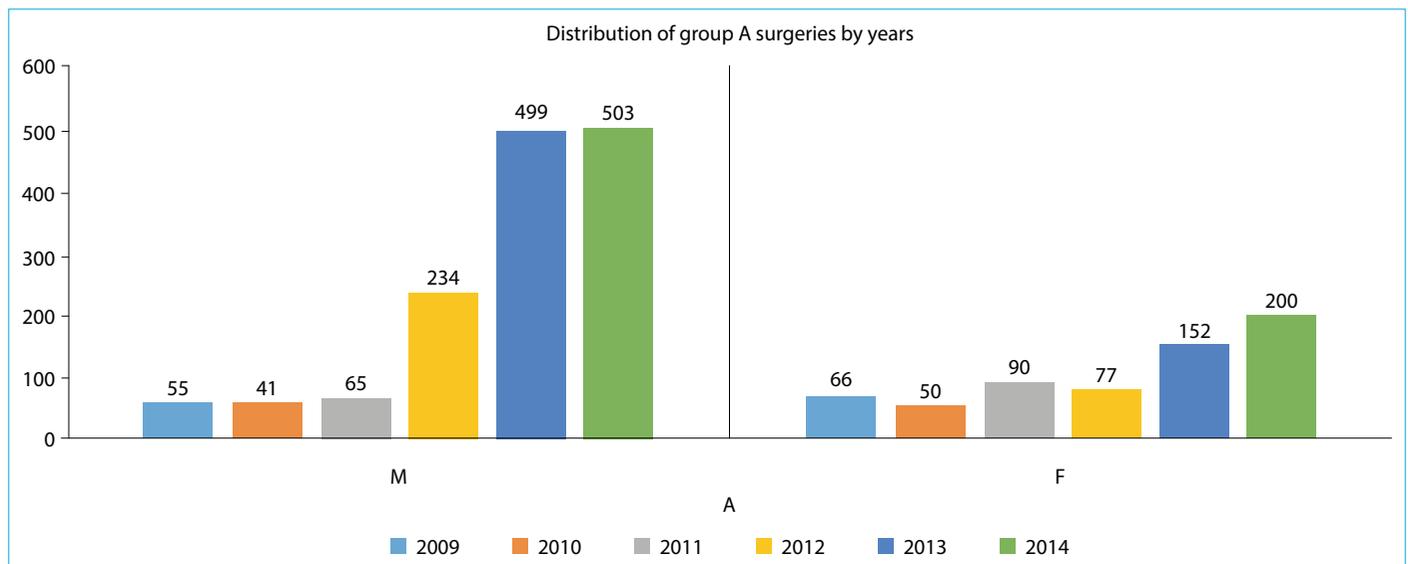
In the study period, the operating table of the Kilis State Hospital, which has 5 operating tables, the number of operations in the A-B-C group per operating table in 2009 is 591 (49/month); In 2010, 617 (51/month); In 2011, 640 (53/month); 965 (80/month) in 2012; 1216 in 2013 (101/month); In 2014, it was seen to be 1246 (104/month) (Fig. 2).

In 2009, 50.94% of the patients were male and 49.06% were female. The proportion of male patients was calculated as 51.38% in 2010, 54.03% in 2011, 61.62% in 2012, 64.36% in 2013 and 69.71% in 2014 according to years. According to years, the rate of female patients was 48.62% in 2010, 45.97% in 2011, 38.38% in 2012, 35.64% in 2013 and 30.29% in 2014 (Fig. 3).

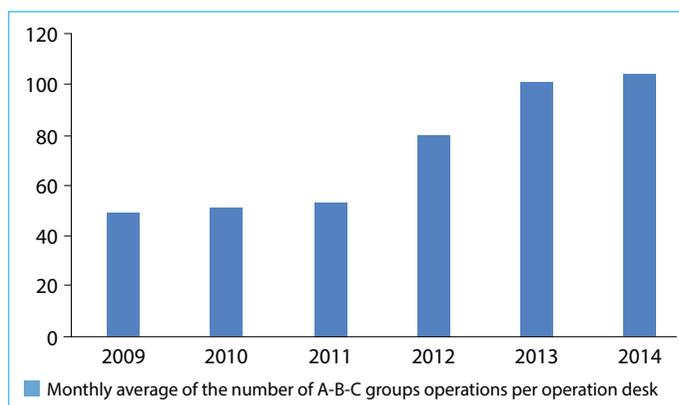
**Table 1.** Distribution of operations in operation groups and genders

Year	A			B			C			D			E		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
2009	55	66	121	488	613	1101	1062	670	1732	640	1171	1811	1490	1077	2567
2010	41	50	91	606	670	1276	1018	699	1717	781	1482	2263	2481	1762	4243
2011	65	90	155	667	559	1226	1133	686	1819	1029	1442	2471	4672	3661	8333
2012	234	77	311	1553	707	2260	1466	788	2254	918	1258	2176	5650	3286	8936
2013	499	152	651	2095	643	2738	1956	733	2689	750	1494	2244	6796	3675	10471
2014	503	200	703	1621	555	2176	2321	1030	3351	870	1684	2554	10757	3514	14271

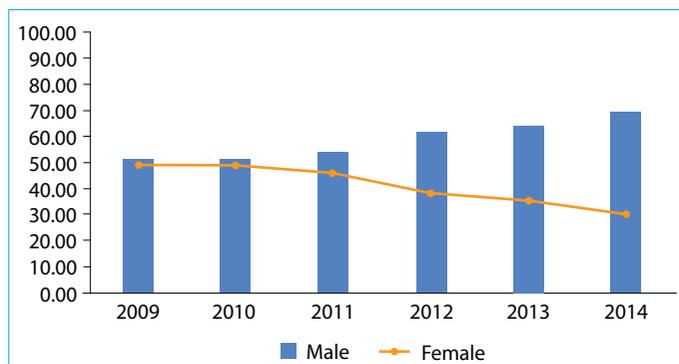
M: Male; F: Female; T: Total.



**Figure 1.** Gender distribution of group A surgeries by years.



**Figure 2.** Changes in the monthly average of the number of operations A-B-C groups per operation desk over the years.



**Figure 3.** Percentage distribution of gender by years.

The average age in 2009 was  $33.02 \pm 21.21$  in males;  $36.56 \pm 19.03$  in women. Looking at the average age in other years; In 2010,  $32.62 \pm 20.93$  males and  $35.71 \pm 19.06$  females; In 2011,  $31.40 \pm 20.87$  males and  $34.97 \pm 19.45$  females; In 2012,  $28.39 \pm 19.48$  males and  $31.60 \pm 19.01$  females; In 2013,  $27.18 \pm 18.15$  males and  $28.79 \pm 17.38$  fe-

males; In 2014, males were  $26.67 \pm 18.61$  and females were  $29.93 \pm 20.33$ . When all patients were grouped according to their ages; The highest increase in numbers was in the 10-20 and 20-30 age ranges (Fig. 4).

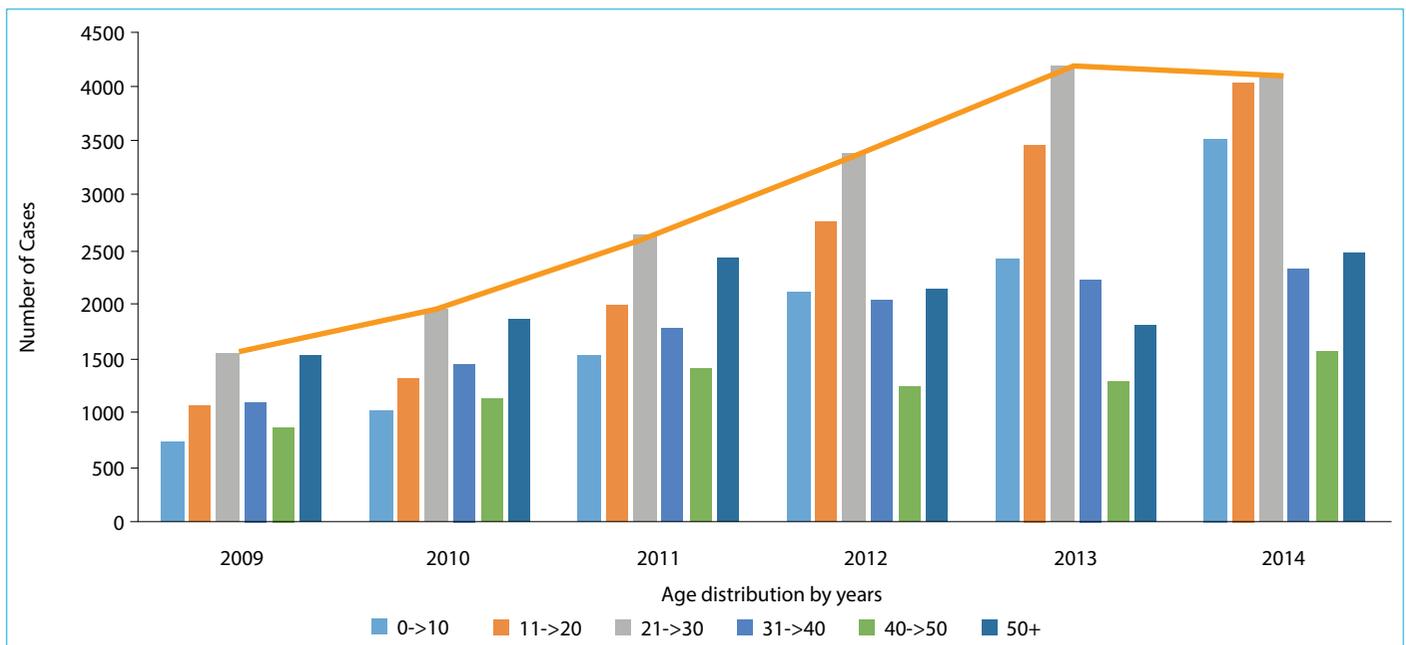
## Discussion

In this study which examined the operation room operations performed in Kilis State Hospital operating room between 2009-2014, it was observed that the total number of operations increased every year. The increase in acceleration was higher after 2011.

The Syrian Civil War began on 15 March 2011. The war in Aleppo, the most intense conflict, began on 19 July 2012.<sup>[9, 10]</sup> According to the data of the Syrian Arab Republic, it is stated in the report that the deaths started in March 2011 and increased every day and reached its peak in July 2012. It is understood from the same report that the conflicts continued at a high acceleration until the end of 2014 within the scope of our study<sup>[2]</sup>. The increase in operation room operations in the period included in our study is consistent with these dates.

The increase in the maximum number of operations in group A and E, especially after 2011, is consistent with the history of the civil war in Syria. The fact that many war injuries were operated due to multiple injuries is consistent with the increase in A group-specific surgeries. Group E operations include simple procedures for the same patients after simple war injuries and major surgeries. This increase is in line with the history of the war.

In 2009, the ratio of male to female was very close; Over the years, the number of men who have operated has exceeded the number of women in large numbers. 54.03%



**Figure 4.** Age distribution of cases according to years.

of patients in 2011 and 69.71% in 2014 increased in favor of men. This increase is in line with the presence of male wounded who were brought to the hospital due to war.

As shown in **Figure 1**, there is an obvious surplus in the A group of operations. Many Syrian nationals migrated, especially to neighboring countries, in 2011, with increasing insurgencies in Syria.<sup>[11]</sup> Syrian nationals, most in Turkey, Iraq, Lebanon, Israel, emigrated to neighboring countries such as Jordan and Egypt. Intensive refugee migration has caused significant social and medical problems in our country, which is most affected by migration.<sup>[12, 13]</sup> Providing services to large patient populations; financial costs, as well as serious problems in the health system, has caused.<sup>[14]</sup>

In the war, not only the fighters but also the civilians become victims. When the literature is searched, the studies on the war periods have always seen the victimization of civilians throughout history. One study reported that 23% of the victims of the conflict in the former Yugoslavia were civilians. 15.8% of the victims are children and 27.9% are women.<sup>[15]</sup> In our study, the increase in the operating room profile is especially between 10-20 and 20-30 years. In a study that analyzed the wounded in Palestine, 9 percent of the injured were reported to be women and 12 percent were children.<sup>[16]</sup> In a study examining the wounded in the 2003 Gulf War, 34% of the wounded were civilians;<sup>[17]</sup> In another study on wounded in Afghanistan, 60.6% of the wounded were civilians.<sup>[18]</sup>

Majority of Syrian migrants have been provided with basic nutrition and shelter facilities. Emergency and elective surgical treatments have been made to immigrants through

out the world in addition to these basic supports.<sup>[19]</sup>

In a study conducted in Israel, it was reported that in 2011-2014 a hospital close to the Syrian border, in addition to the patients injured due to war, women and children were given intensive health care services.<sup>[3]</sup> During the civil war in Syria, thousands of trauma patients injured were brought to Turkey for emergency operations.<sup>[20]</sup>

More than 90% of the Syrian refugees living in the camps and 60% of those living outside the camps benefited from Turkish health services.<sup>[21]</sup> According to the Ministry of Health and AFAD records; Between 2011 and 2015, 7519668 people from Syrian national refugees received outpatient health care and 302805 people received inpatient health care. 25467 injured, 228537 surgical operations were performed and 60000 births were performed.<sup>[22]</sup>

According to the report the Ministry of Health in Turkey total per operating table on a monthly scale, the number of operations B and C group is 76.<sup>[23]</sup>

When we compare the operation number of A-B-C group per operating table in Kilis State Hospital; numbers before migration, Turkey was below the average; After the migration, Turkey has exceeded the national average. From 2009 to 2014, the number increased from 49 to 104. According to the annual increase in acceleration, it is above the average of Turkey.

## Conclusion

The wars have affected the countries of the region in many ways. The burden of the national health system has in-

creased. Health care and treatment services have been provided especially in border cities with high capacity and frequency. Hospitals have had to work far above their capacities. Protocols in hospitals have been updated so that refugees and war-wounded victims of the civil war will receive quality clinical and social care. They have specialized skills especially in surgical staff, in terms of complex patient and wound care.

The limitation of our study was that it was not mentioned in which country the patients were citizens.

When planning health investments, hospitals and health organizations should be planned with consideration of geopolitical and environmental characteristics.

### Disclosures

**Ethics Committee Approval:** Istanbul Training Research Hospital Clinical Research Ethics Committee (15.01.2016/751).

**Peer-review:** Externally peer-reviewed.

**Conflict of Interest:** None declared.

### References

1. Çelikel A, Karaarslan B, Demirkıran DS, et al. A series of civilian fatalities during the war in Syria 2014.
2. Price M, Gohdes A, Ball P. Updated statistical analysis of documentation of killings in the Syrian Arab Republic. Human Rights Data Analysis Group, Geneva 2014.
3. Biswas S, Waksman I, Baron S, et al. Analysis of the first 100 patients from the Syrian civil war treated in an Israeli District Hospital. *Annals of surgery* 2016;263:205–9.
4. Kaypak Ş, Bimay M. Suriye Savaşı Nedeniyle Yaşanan Göçün Ekonomik ve SosyoKültürel Etkileri: Batman Örneği. 2016.
5. AFAD-FP T. Başbakanlık Afet ve Acil Durum Yönetimi Başkanlığı. Deprem Dairesi Başkanlığı, P-dalgası ilk hareket yönüne göre odak mekanizması çözümü. 2017.
6. AFAD. Republic of Turkey Prime Ministry. Disaster and Emergency Management Presidency. Syrian Refugees in Turkey, 2013: Field Survey Results 2016 [Available from: [https://www.afad.gov.tr/Dokuman/TR/61-2013123015505-syrian-refugees-in-turkey-2013\\_print\\_12.11.2013\\_eng.pdf](https://www.afad.gov.tr/Dokuman/TR/61-2013123015505-syrian-refugees-in-turkey-2013_print_12.11.2013_eng.pdf)].
7. Çoban-İçağasıoğlu A. Göçmen ailelerin uyum süreci: Kaynaklar ve engeller içinde, Sosyal dışlanma ve aile: Sosyal hizmet müdahalelerinde güçlendirme yaklaşımı 2011:107-22.
8. TTB. Türk Tabipler Birliği Yönergesi 2005 [Available from: [http://www.ttb.org.tr/mevzuat/2005ek/sb\\_yonerge/044.html](http://www.ttb.org.tr/mevzuat/2005ek/sb_yonerge/044.html)].
9. Wikipedia. Suriye İç Savaşı [Available from: [https://www.wikizero.com/tr/Suriye\\_İç\\_Savaşı](https://www.wikizero.com/tr/Suriye_İç_Savaşı)].
10. Masterson AR, Usta J, Gupta J, Ettinger AS. Assessment of reproductive health and violence against women among displaced Syrians in Lebanon. *BMC women's health* 2014;14:25.
11. Yazgan P, Utku DE, Sirkeci I. Syrian crisis and migration. *Migration Letters* 2015;12:181.
12. Coupland RM, Meddings DR. Mortality associated with use of weapons in armed conflicts, wartime atrocities, and civilian mass shootings: literature review. *Bmj* 1999;319:407–10.
13. Zeren C, Arslan MM, Aydoğan A, et al. Firearm injuries documented among Syrian refugees in Antakya Turkey. *British Journal of Arts and Social Sciences* 2012;5.
14. Döner P, Özkara A, Kahveci R. Syrian refugees in Turkey: numbers and emotions. *The Lancet* 2013;382:764.
15. Hebrang A, Henigsberg N, Golem A, et al. Care of military and civilian casualties during the war in Croatia. *Acta medica Croatica: casopis Hrvatske akademije medicinskih znanosti*. 2006;60:301–7.
16. Helweg-Larsen K, Abdel-Jabbar Al-Qadi AH, Al-Jabriri J, Brønnum-Hansen H. Systematic medical data collection of intentional injuries during armed conflicts: a pilot study conducted in West Bank, Palestine. *Scandinavian journal of public health*. 2004;32:17–23.
17. Hinsley D, Rosell P, Rowlands T, Clasper J. Penetrating missile injuries during asymmetric warfare in the 2003 Gulf conflict. *British Journal of Surgery: Incorporating European Journal of Surgery and Swiss Surgery* 2005;92:637–42.
18. Coupland RM, Samnegaard HO. Effect of type and transfer of conventional weapons on civilian injuries: retrospective analysis of prospective data from Red Cross hospitals. *BMJ* 1999;319:410–2.
19. Weerasuriya CK, Tan SO, Alexakis LC, et al. Evaluation of a surgical service in the chronic phase of a refugee camp: an example from the Thai-Myanmar border. *Conflict and health* 2012;6:95.
20. Ozdoğan HK, Karateke F, Ozdoğan M, et al. The Syrian civil war: The experience of the Surgical Intensive Care Units. *Pakistan journal of medical sciences* 2016;32:529.
21. Duramaz A, Bilgili MG, Bayram B, et al. Orthopedic trauma surgery and hospital cost analysis in refugees; the effect of the Syrian civil War. *International orthopaedics* 2017;41:877–84.
22. Ekmekci PE. Syrian refugees, health and migration legislation in Turkey. *Journal of immigrant and minority health*. 2017;19:1434–41.
23. S.Bakanlığı. AMELİYAT MASASI BAŞINA DÜŞEN A - B - C GRUBU AMELİYAT SAYISI (Mart 2016) 2016 [Available from: [https://rapor.saglik.gov.tr/birlik/analiz\\_calisma.pdf](https://rapor.saglik.gov.tr/birlik/analiz_calisma.pdf)].