

# Health results of a coup attempt: evaluation of all patients admitted to hospitals in Istanbul due to injuries sustained during the July 15, 2016 coup attempt

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## ABSTRACT

**BACKGROUND:** A coup attempt against the government took place in Turkey on July 15, 2016. This attempt caused serious injuries and deaths in the country. In this study, the data of patients referred to all hospitals in Istanbul during the attempt were evaluated, and differences between natural disasters, other terrorist actions, and coup attempts were analyzed.

**METHODS:** In total, 1104 patients were injured in the abovementioned coup attempt. In this study, the demographic and health information of 882 coup victims who were admitted to all hospitals (state and private) in Istanbul on July 15 and 16, 2016 and registered at the Crisis Center of Istanbul Provincial Health Directorate was analyzed.

**RESULTS:** Of the 882 patients evaluated, 97.27% were male and 2.73% were female. The mean age of the patients was 34.12 years. Most (82.43%) patients were admitted to state hospitals, and 17.57% were admitted to private hospitals. The total mortality rate due to the abovementioned coup attempt was 10.4% (9.76% in state hospitals and 13.54% in private hospitals). Of the 882 patients evaluated, 65.07% had gunshot injuries, 11.11% had been assaulted, 7.70% had experienced tank/motor vehicle accidents, 5.44% had other penetrating injuries, 5.32% had soft-tissue trauma, 2.83% had experienced falls (including falls from heights), 0.33% had psychiatric disorders, and 2.15% were admitted for other reasons.

**CONCLUSION:** The patterns of injury and mortality resulting from the July 15, 2016 coup attempt differed from those resulting from natural disasters and terrorist acts and were similar to those encountered during wars: the victims were predominantly male, similar to those in wars. Following a coup attempt, an increase in the number of patients with post-traumatic stress disorder can be expected. Further studies focusing on the incidence of this disorder due to the abovementioned coup attempt in Turkey are needed. Hospital disaster plans need to include information and plans related to terrorist acts, such as coup attempts.

**Keywords:** Coup; disaster; injury; July 15 2016.

## INTRODUCTION

Disaster is defined as the catastrophic disruption of existing functions, with human, economic, and environmental impacts that the community cannot absorb using its own resources alone. Disasters have natural and human origins. Human-in-

duced disasters can occur as a result of people's direct or indirect actions;<sup>[1]</sup> the two most important types of such disasters are war and terrorism. Terrorism is defined as the attempt to achieve a political or ideological goal through the use of violence or threat of violence.<sup>[2]</sup>

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The government of Turkey described the coup attempt in that country, which took place on July 15, 2016, as a terrorist act.<sup>[3]</sup> Coup attempts that are considered to be terrorist acts are major social events that have become common in underdeveloped and developing countries, particularly since the 1980s.<sup>[4]</sup>

In political terms, “coup” refers to the seizure of government or forceful change of the political regime. Coup attempts by the army are defined as military and those by civilians or civil parties are defined as civilian. Military coup attempts are usually undertaken by a military force. Civilian coup attempts are usually undertaken by a parliament or other groups in the effort to defend a nation’s rights.<sup>[5]</sup>

The official records of the Republic of Turkey document previous coup attempts undertaken on May 27, 1960 and September 12, 1980 and memorandums on March 12, 1971, February 28, 1997, and April 27, 2007.<sup>[6]</sup>

During the 20<sup>th</sup> century, most military coup attempts have occurred in developing countries, such as Argentina, Chile, Burma, Greece, and Turkey.<sup>[4]</sup> During almost all of these attempts, majority the of people killed or injured were civilians.<sup>[7,8]</sup>

On July 15 and 16, 2016, a group of soldiers unsuccessfully attempted a coup in Turkey. In many provinces of Turkey, people protested against the coup and showed resistance. During these protests, the soldiers involved in the coup attempt committed violent acts against civilians; 248 people were killed and 2,193 were injured.<sup>[9]</sup> In Istanbul, 99 people were killed and 1,104 were injured.

Coup attempts are often discussed in terms of their social and political effects, but they also have many negative effects on public health. These effects may include death, injury, permanent disability, and short- and long-term psychological disorders due to trauma. The effects of coup attempts on public health have not been investigated adequately. Evaluation of these effects will contribute useful data for future generations.

In this study, data on deaths and injuries that occurred in Istanbul during the July 15, 2016 coup attempt were evaluated from a medical point of view.

## MATERIALS AND METHODS

The Istanbul Provincial Health Directorate approved the study protocol on October 31, 2016 and granted use of their data. Injury and death information from the onset of the coup attempt, transferred from all public and private hospitals in the province of Istanbul to the Crisis Center of Istanbul Provincial Health Directorate on July 15 and 16, 2016, was evaluated. Patients’ age, sex, and injury type were recorded on standard forms. Records from the days following the coup

attempt were evaluated to obtain complete data of hospitalized patients. The data were analyzed using SPSS software (ver. 17.0; SPSS Inc., Chicago, IL, USA). Values are given as means and percentages. Categorical variables were analyzed using the chi-squared test.

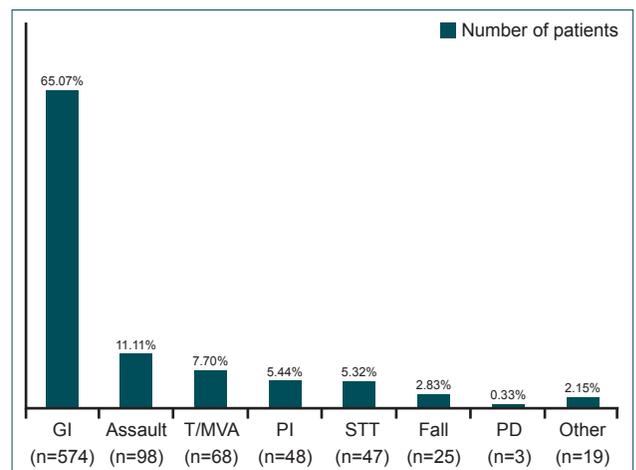
## RESULTS

According to data from the Crisis Center of Istanbul Provincial Health Directorate, 882 patients were admitted to state and private emergency services in the Istanbul Province on July 15 and 16, 2016. Of these, 858 (97.27%) were male and 24 (2.73%) were female. The mean age of the patients was 34.12 years (range: 7–76 years).

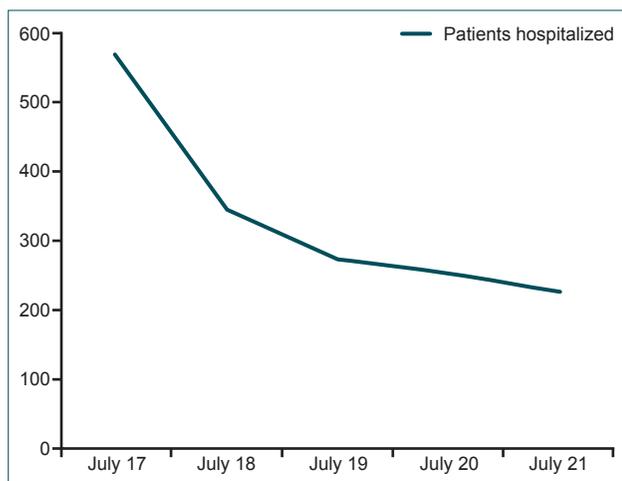
Most (727/882, 82.43%) patients were admitted to state hospitals and 155 (17.57%) were admitted to private hospitals. In total, 160 (18.14%) patients were referred to level 2 hospitals, 481 (54.53%) were referred to level 3 education and research hospitals, and 241 (27.32%) were referred to level 3 university hospitals.

Of the 882 patients, 574 (65.07%) had gunshot injuries, 98 (11.11%) had been assaulted, 68 (7.70%) had experienced motor vehicle accidents, 48 (5.44%) had other penetrating injuries, 47 (5.32%) had soft-tissue trauma, 25 (2.83%) had experienced falls (including falls from heights), 3 (0.33%) had psychiatric disorders, and 19 (2.15%) were admitted for other reasons (Fig. 1).

In total, 511 patients were hospitalized at the admitting services; 33 were admitted to intensive care units, 53 were transferred to tertiary hospitals, and 285 were discharged on July 15 and 16, 2016. Due to discharges, the number of hospitalized patients decreased from 568 on July 17, 2016 to 346 on July 18, 2016, 275 on July 19, 2016, 254 on July 20, 2016, and 227 on July 21, 2016 (Fig. 2).



**Figure 1.** The type of injuries (%) observed in the July 15, 2016 coup attempt (GI: Gunshot injuries; T/MVA: Tank/motor vehicle accidents; PI: Penetrating injuries; STT: Soft-tissue trauma; PD: Psychiatric disorders).



**Figure 2.** Number of patients hospitalized within the first 5 days after the July 15, 2016 coup attempt.

In total, 92 patients died in hospitals on July 15, 2016; 21 patients died in private hospitals, 6 patients each died in state and university hospitals, and 59 patients died in tertiary hospitals. The total mortality rate due to the July 15, 2016 coup attempt was 10.4% (9.76% in public hospitals and 13.54% in private hospitals).

## DISCUSSION

Natural disasters, such as earthquakes, affect people of all ages and both sexes in similar proportions. The patient profile associated with the July 15, 2016 coup attempt differed from that associated with natural disasters, such as earthquakes and floods, in Turkey. The patient population associated with the Van earthquake had a female:male ratio of approximately 1:1;<sup>[10]</sup> in contrast, 97.28% of those injured in the abovementioned coup attempt were young males, probably because the people struggling against the coup were predominantly from that group. The types of injury and mortality related to the July 15, 2016 coup attempt that were recorded at hospitals also differed from those related to natural disasters or terrorist acts. These injuries were similar to those encountered during war and, similar to warfare, predominantly affected males.

Most (82.43%) of the patients injured in the abovementioned coup attempt were referred to state hospitals, and 17.57% were referred to private hospitals. The total mortality rate was 10.4% (9.76% in public hospitals and 13.54% in private hospitals). Hospitals were able to meet the demand despite the adverse conditions of the crisis and the urgent need for many medical services within a very short time period. During the coup attempt, the mortality rate increased due to the closure of main roads and destruction of ambulances by gunfire.<sup>[11-14]</sup> The provision of medical supplies to healthcare facilities was also difficult for the same reasons.

In the abovementioned coup attempt, approximately 900 injured patients were admitted to the emergency services of

healthcare institutions in Istanbul within a 20-h period. When architectural plans for new hospitals are made, the inclusion of large mass gathering areas for use in similar situations would be helpful.

Of the 260 people injured during the Boston Marathon events on April 15, 2013, only three (1.15%) victims died.<sup>[15]</sup> Emergency medicine specialists and surgeons in Boston have linked this low mortality rate to the well-coordinated emergency system, presence of five emergency services near the explosion site, equitable distribution of patients requiring critical care among hospitals, and competence of skilled hospital personnel. The death:injury ratio resulting from the July 15, 2016 coup attempt was higher than that resulting from the Boston Marathon events. Healthcare institutions were prepared for possible events during the marathon, and the terrorist activity occurred during the day. The abovementioned coup attempt was an unexpected and unforeseeable event that occurred at night; thus, the staff available may have been inadequate compared with that available during the day. These deficiencies related to the features of the coup attempt may have contributed to the higher mortality rate.

The civilian mortality rate during the Bosnian War was 3.9%.<sup>[16]</sup> The mortality rate among our study population was 10%. Lower civilian death:injury ratios under war conditions may be related to better preparation of hospitals for possible events, the presence of medical personnel in military units, and the effectiveness of emergency patient transport systems.

During the events that began in Egypt on June 30, 2013, with political tensions leading to a military coup on July 3, 2013, 3,533 people died and 11,520 people were injured.<sup>[7]</sup> More than 9,000 people have died and more than 20,000 have been injured during the ongoing events following the April 2014 coup in Ukraine, according to the records obtained from the United Nations.<sup>[8]</sup> The total mortality rates were 30.66% for the Egyptian coup, approximately 45% for the Ukrainian coup, and 10.4% for the Turkey coup attempt on July 15, 2016.

The night-time occurrence of the July 15, 2016 coup attempt in Turkey made management more difficult. Hospitals operate with the minimum number of staff required outside of regular working hours. Under these conditions, the hospitals had to admit and care for trauma patients in a manner that exceeded their capacities shortly after the sudden and unforeseen coup attempt. The mortality rate of the population exposed to life-threatening injuries on July 15, 2016 was lower than that of the population exposed in the coups in Egypt and Ukraine. Hospitals and emergency medical services command system used hospital disaster and emergency action plans that had been prepared in advance, which may have affected the mortality rate.

In our study population, 0.34% of the patients admitted to emergency services on the first day of the coup attempt had

anxiety or other psychiatric disorders. In this population, traumatic injuries were examined according to the preliminary plan, but an increase in the number of patients with post-traumatic stress disorder following the coup attempt could have been anticipated. Further studies focusing on the incidence of this disorder related to the July 15, 2016 coup attempt are needed.

## Conclusion

The patterns of injury and mortality resulting from the July 15, 2016 coup attempt differed from those resulting from natural disasters and terrorist acts and were similar to those resulting from war: the victims were predominantly male, similar to that observed in war. Hospital disaster plans need to include information and plans related to terrorist acts, such as coup attempts. Following a coup attempt, an increase in the number of patients with post-traumatic stress disorder can be expected. Further studies focusing on the incidence of this disorder related to the abovementioned coup attempt in Turkey are needed.

Conflict of interest: None declared.

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## ORJİNAL ÇALIŞMA - ÖZET

### Darbe girişiminin sağlık bilançosu: 15 Temmuz darbe girişimine bağlı yaralanmalar nedeni ile İstanbul'daki hastanelere başvuran tüm hastaların değerlendirilmesi

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**AMAÇ:** 15 Temmuz 2016 tarihinde Türkiye'de sivil halk ile askerler karşı karşıya geldiği bir darbe girişimi gerçekleşmiştir. Bu darbe girişimi ülkede ciddi yaralanma ve ölümlere neden olmuştur. Bu çalışmada, darbe girişimi esnasında İstanbul ilindeki tüm hastanelere başvuran hastalar, sağlık açısından değerlendirilmiş, olayın doğal afetlerden ve diğer terörist eylemlerden farkları analiz edilmiştir.

**GEREÇ VE YÖNTEM:** Darbe girişimindeki olaylar nedeniyle mağdur olan 1104 hasta mevcuttur. Bu çalışmada, 15–16 Temmuz 2016 tarihleri arasında İstanbul'daki tüm hastanelere (kamu ve özel) başvuran ve İstanbul İl Sağlık Müdürlüğü Kriz Merkezi'nde kayıt altına alınan 882 darbe mağduru yaralının demografik ve sağlık bilgileri analiz edilmiştir.

**BULGULAR:** Değerlendirmeye alınan 882 hastanın %97.27'si erkek, %2.73'ü kadındır. Hastaların yaş ortalamaları 34.12'dir. Hastaların %82.43'ü kamu hastanelerine, %17.57'si ise özel hastanelere başvurmuştur. Toplam ölüm oranı %10.4 olarak bulunurken, kamu hastanelerinde %9.76, özel hastanelerde ise %13.54 olarak bulunmuştur. Hastaların %65.07'si ateşli silah yaralanması, %11.11'i darp, %7.7'si tank veya motorlu taşıt yaralanması, %5.44'ü delici kesici alet yaralanması, %5.32'si yumuşak doku travması, %2.83'ü düşme ve yüksekten düşme, %2.15'i diğer nedenlerle, üç hasta da psikiyatrik bozukluklar nedeni ile hastanelere başvurmuştur.

**TARTIŞMA:** 15 Temmuz darbe girişimindeki hastanelere başvuran hastaların yaralanma ve ölüm nedenleri, doğal afetler ya da terörist eylemlerden farklıdır. Darbe girişimindeki yaralanmalar savaşlarda karşılaşılabilecek nedenlerle gerçekleşmiştir. Gene mağdurların savaşlardaki gibi erkek cinsiyet ağırlıklı olduğu görülmüştür. Bu çalışmada ilk 48 saat içinde olan fiziksel yaralanmalar ve sonuçları incelenmiş olup, post travmatik stres bozukluğu açısından uzun dönem çalışmalar yapılabilir. Ayrıca, Hastane Afet Planları içerisinde darbe gibi çok az görülen toplumsal olaylarla ilgili çalışmalar da yer almalıdır.

**Anahtar sözcükler:** 15 Temmuz; afet; darbe; yaralanma.

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