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Araştırma/Research

Gunshot Deaths in Eskisehir, Turkey from 1997 to 2016

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Abstract:

Aim: Each year, thousands of people around the world die due to firearm-related injuries. Due to the widespread interest in firearms in Turkey, firearm related deaths which occurred in Eskişehir were investigated in detail and compared with the literature.

Material and methods: Forensic autopsy reports of 312 cases who died due to firearm wounds between 1997-2016 in Eskişehir were evaluated retrospectively. The age, gender, origin, place of death, type of weapon used, season of death, wound location, the number of wounds, and the organs affected were recorded.

Results: Of the 312 cases included, 166 were homicides (53.2%), 130 were suicides (41.6%) and 16 were accidents (5.2%). The type of weapon used was a handgun in 53.8% of the cases, and a shotgun in 42.3% of cases. The majority of the firearm related deaths were male (77.4%). The majority of the firearm-related deaths were in the 20-29 age group (27.27%).

Discussion and Conclusion: Firearm-related fatalities are a significant cause of mortality in Eskisehir, as in various other parts of the world. In order to minimize the mortality, disability, and expenses caused by firearms, legislation on the carrying and possession of firearms should be revised.

Keywords: Firearm, autopsy, homicide, suicide,

Tezin adı: Eskişehir İlinde 2009-2015 Yılları Arasında Ateşli Silah Yaralanmasına Ait Ölüm Olgularının Değerlendirilmesi (Kabul tarihi:25.07.2017)
Yazımız ingilizce ve türkçe özetle birlikte 2.303 sözcükten oluşmaktadır.

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1997-2016 Yılları Arasında Eskişehir'deki Ateşli Silaha Bağlı Ölümler

Özet

Amaç: Dünya'da her yıl binlerce insan ateşli silah yaralanmalarına bağlı hayatını kaybetmektedir. Türkiye'de ateşli silahlara olan yoğun ilgi nedeniyle, Eskişehir'de meydana gelen ateşli silahla ilgili ölümlerin ayrıntılı bir şekilde incelenmesi ve literatürle karşılaştırılması amaçlanmıştır.

Gereç ve Yöntemler: Eskişehir'de 1997-2016 yılları arasında ateşli silah yaralanmasına bağlı ölen 312 olgunun adli otopsi raporları retrospektif olarak incelendi. Olgular yaş, cinsiyet, orijin, ölüm yeri, kullanılan ateşli silah tipi, mevsim, yara yeri, yara sayısı, ve etkilenen organlar açısından değerlendirildi.

Bulgular: 312 olgunun 166'sı (% 53,2) cinayet, 130'u intihar (% 41,6) ve 16'sı kaza (% 5,2) sonucu ateşli silah yaralanmasına bağlı ölümlerdi. Kullanılan silah türü, olguların % 53,8'inde tabanca ve % 42,3'ünde av tüfeği idi. Ateşli silahlarla yaralanmaya bağlı ölüm olgularının büyük kısmını erkekler (% 77,4) oluşturmakta idi. Ateli silahlara bağlı ölümlerin büyük çoğunluğunu 20-29 yaş grubu oluşturmakta idi (27.27%).

Sonuç: Ateşli silahlara bağlı yaralanmalar, dünyanın birçok yerinde olduğu gibi, Eskişehir'de de önemli bir ölüm nedenidir. Ateşli silahların neden olduğu ölüm, sakatlık ve masrafları en aza indirmek için, ateşli silahların taşınması ve bulundurulması ile ilgili mevzuat gözden geçirilmelidir.

Anahtar kelimeler: Ateşli silahlar, otopsi,cinayet; intihar,

Introduction

Firearm-related fatality rates vary significantly between countries, and this is presumably due to factors related to the acquisition of guns. The literature on the epidemiology of firearm-related fatalities draws attention due to the fact that firearm-related fatality rates have been increasing in numerous countries worldwide, and emphasizes the importance of effective gun control laws (1). Due to the widespread interest in firearms in Turkey, firearm injuries have become a frequently encountered problem for the society, healthcare providers, judicial authorities and law-enforcement forces. Even though the gun control laws in Turkey prohibit gun carrying and gun use without a permit, illegal acquisition of weapons is remarkably common (2).

The increase in the incidence of firearm-related crimes is more common in low- and middle-income countries and it reflects the deterioration of the law and order in the society (3). In 2000, the overall violence-related mortality rates were more than twice as high in low- and middle- income countries compared to high-income countries (3).

In a 3049-patient study carried out in a US trauma center, 1347 stab wounds and 1702 gunshot wounds were identified, which demonstrated the importance of firearm-related injuries (4). In 2010, a total of 31,076 American citizens died due to firearm injuries (firearm-homicide, firearm-suicide or unintentional firearm death). This is equivalent to more than 85 deaths per day and corresponds to more than 3 deaths per hour (5). In the United States, the risk of death due to a firearm injury is greater than the risk of death due to a traffic accident (6). This can be explained by the fact that it is easy to access firearms in the US. On the other hand, firearm-related mortality rates are lower in European countries. For example, in Sweden, the annual firearm-related mortality rate is approximately 200. Similar rates were observed in Finland and Denmark (7, 8).

Differences in firearm-related mortality rates around the world may be attributed to national and regional factors, as well as social and cultural diversity (9). Various studies conducted on this subject reported the rate of firearm-related homicides as 72.8% in New York, 78% in Brazil (10), and 80% in Colombia (11). On the other hand; the rate of firearm-related homicides were reported as 19.3% in Scandinavian countries (12,13). The type and origin of the firearms used and the sociodemographic data also differ (14). In a study conducted in Denmark, firearm

related deaths were examined and it was determined that 50% of suicides and 28% of the homicides were with shotguns (15). In a study of 335 suicide cases in Stockholm (1993-1992), it was reported that 35% involvement of shotguns (16).

With regard to firearms in Turkey; the purchase, possession and relocation of firearms was regulated by the Law on Firearms No. 6136 and the regulations issued based on this law (17). Despite legal restrictions, 66%-75.6% of the firearms in Turkey was determined to be unlicensed. In homicide cases, the ratio of unlicensed weapons to licensed gun was 4/1 (18-19).

Eskişehir is a city located in the Central Anatolia region of Turkey, with a population of 844,842 according to the 2016 data. In this study, firearm-related fatalities which occurred in Eskişehir were investigated in detail and compared with the literature.

Materials and Methods:

The forensic autopsy reports of 312 firearm victims who died in Eskişehir between 1997 and 2016, were reviewed retrospectively. The age, gender, origin, place of death, type of weapon used, season of death, wound location, the number of wounds, and the organs affected were recorded.

Results:

Demographic Data

A total of 7512 medicolegal autopsies were performed during the 20 year period from 1997 to 2016 in Eskişehir. 577 (%7,7) deaths were determined as homicides and 747 (%9,9) deaths were suicides. 312 (4,2) cases were deaths due to firearm injuries. Of these, 166 were homicides (53,2%), 130 were suicides (41,6%) and 16 were accidents (5,2%) (Table 1).

Of the subjects included in this study, 241 (77.4%) were male and 71 (22.6%) were female. The percentage of males was 71.1% (118/166) in firearm homicides, 83.8% (109/130) in firearm suicides, and 87.5% (14/16) in unintentional firearm-related deaths.

Table 1. Manner of Death

Years	Suicide	Homicide	Accident	Total
1997	9	11	1	21
1998	9	11	0	20
1999	4	6	0	10
2000	4	6	0	10
2001	6	9	1	16
2002	5	6	1	12
2003	4	7	0	11
2004	3	6	1	10
2005	9	9	2	20
2006	7	8	1	16
2007	7	8	1	16
2008	9	9	2	20
2009	6	7	0	13
2010	4	10	1	15
2011	6	11	1	18
2012	7	6	2	15
2013	6	6	0	13
2014	8	7	0	16
2015	8	8	1	17
2016	9	13	1	23
Total	130	166	16	312

Manner of Death

As shown in Table 1, the number of annual cases varies between 10 and 23 (mean: 15.6). As can be seen, homicides constitute the majority of firearm deaths.

Age Groups

The majority of the firearm-related deaths were in the 20-29 age group (n=93, 27.27%), followed by the 30-39 age group (n=86, 25.21%). For both genders, the 20-29 age group comprised the largest number of cases. This was followed by the 30-39 age group (Figure 1).

Type of firearm used

Unfortunately, in 3.9% of the cases, the type of weapon used could not be determined precisely. The type of weapon used was a handgun in 53.8% of the cases, and a shotgun in 42.3% of cases.

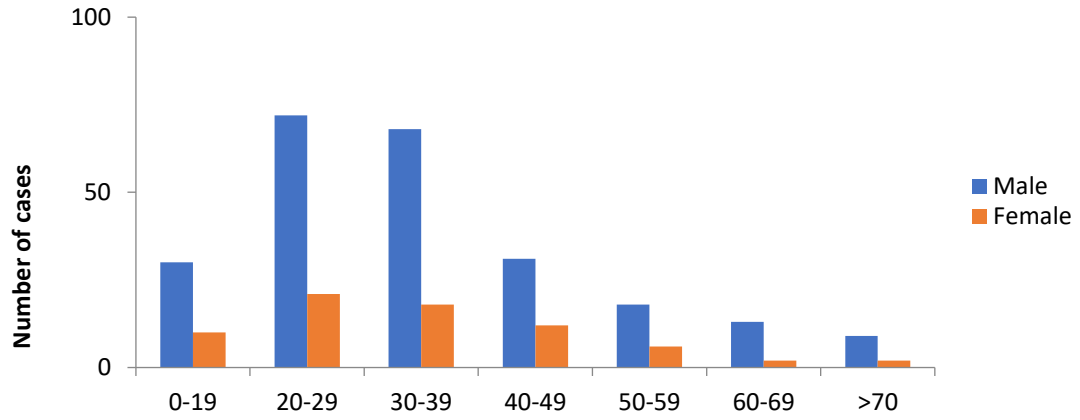

Figure 1. Age group

Location

Most (69.2%) suicides had occurred in or around the victim's home (parking, basement, etc). (Fig. 2). On the other hand, the majority of the homicide victims had died in the hospital (40.4%).

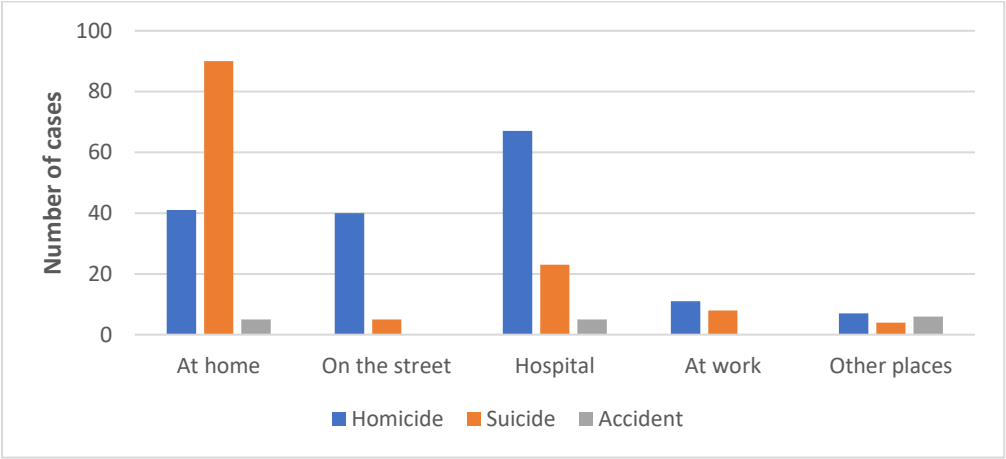

Figure 2. Location of death

Seasonality

Homicides (Fig. 3) were more frequent in the summer, whereas suicides were more common in the spring.

Location of wounds

As might be expected, most cases of suicide (53.1%) and homicide (53.6%) involved an entrance wound to the head and neck (Fig. 4).

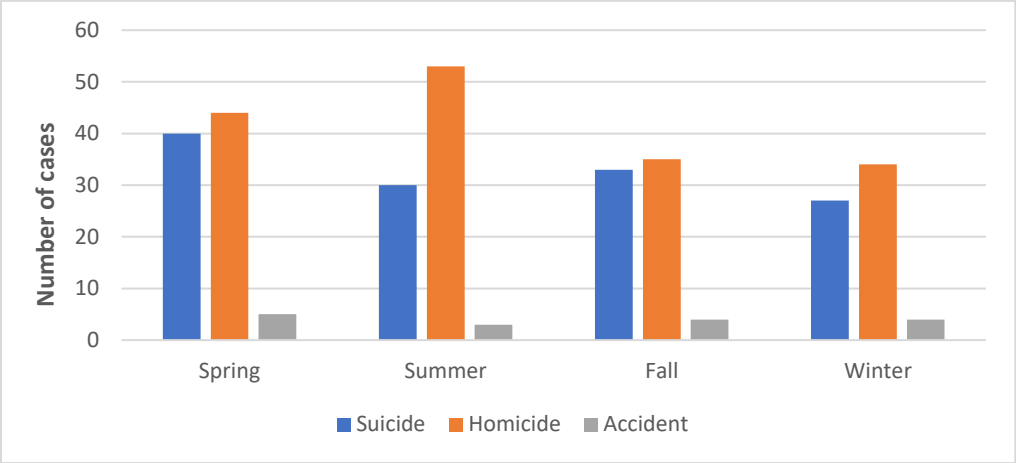

Figure 3. Seasonality

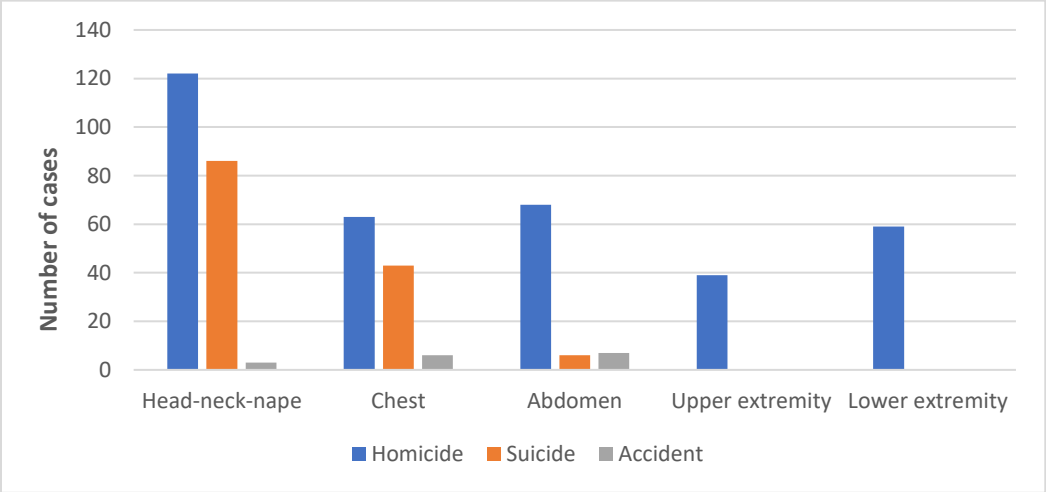

Figure 4. Location of wounds

Number of Wounds

In suicides and homicides, the number of entrance wounds was usually one (Fig. 5). Similarly, in all 16 cases of unintentional firearm deaths, there was only one entrance wound. It is, however, interesting to note that there were 5 cases of suicide with 2 entrance wounds.

Organs Affected

The brain was the most commonly affected organ (57.7%), followed by the heart (23.1%) and large vessels (9%). The other organs were injured less commonly (lungs, liver, etc).

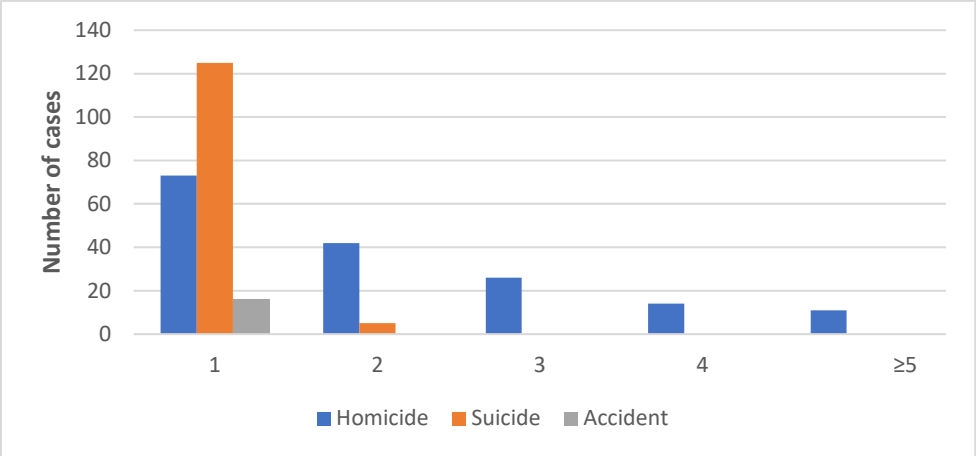

Figure 5. Number of wounds

Discussion:

Each year, thousands of people around the world die due to firearm-related injuries. However, firearm mortality rates differ greatly among countries. The number of incidents, homicide and suicide rates, gender ratios, and the type of weapon used also differ (20).

Within the study period of this research, the leading cause of firearm-related mortality was homicide, which was followed by suicide. In other studies conducted in Turkey (2,14) and in the United States, homicides were reported to be more common than suicides (21). On the other hand, in Europe (22) and Australia (23), firearm-related deaths were caused predominantly by suicides. This difference can be explained by the strict measures taken in the firearms registry in Europe and the reduction in the use of violence as a method of problem solving along with cultural, social and economic development.

Similar to the literature, there was a male predominance (%77.4) in deaths due to firearm injuries in this study. It was reported that 91.8% of the cases in Edirne (2) and 83% of the cases in Ankara were male (14). Death rates due to firearms are reported to be significantly higher in males than in females in many other countries as well as in Turkey (20,22,24). Male predominance in forensic autopsy cases can be explained by the fact that males are more likely to take part in criminal events and to access firearms more easily. Males also bear a majority of the burden of self-directed firearm violence. Females have higher rates of non-fatal suicide attempts. This difference is largely due to the lethality of methods used by men and women. Firearms and hanging/suffocation are the most common methods used by men to attempt suicide (25).

The majority of the firearm-related fatalities were in the 20-29 age group (n=93, 27.27%), followed by the 30-39 age group (n=86, 25.21%). For both genders, the 20-29 age group comprised the largest number of cases. In the study by Azmak et al, 54% of firearm-related fatalities were in the 20-40 age group (2), whereas in the study by Kohli et al, the majority (46.7%) of cases were in the 21-30 age group (26). On the other hand, according to a study conducted in the United States, the 15-24 age group carry the highest risk for firearm-related death (9). In a 10-year retrospective study by La Harpe et al, it was observed that in Switzerland, firearm-related murders peaked in the 10-19 and 40-44 age groups, whereas suicides peaked in the 50-54 and 80-84 age groups (24). Firearm violence affects people in all stages of life, but disproportionately impacts younger age groups. This may be due to inexperience handling firearms, situational factors (e.g.,showing a gun to others, playing with a gun) or a result of weapon carrying and use (e.g., hunting, target shooting).

In this study, the type of weapon used was a handgun in 168 cases (53.8%), a shotgun in 132 (42.3%) cases, and unknown in 12 cases. The rate of handgun use was in 58.8% in the study by Azmak et al (2), and 73.94% in the study by Büyük et al (14). In Turkey, handguns are obtained easily because they are cheap, easily carried and concealed. Studies conducted in Switzerland (24) and Finland (20) also reported that handgun use was more common.

Most suicides had taken place at the victim’s home or in its immediate vicinity. This may be explained by the victim's intention to choose a quicker and easier method which will also draw the attention of his/her family. Most firearm-related murder victims had died after they were brought to the hospital. Most firearm-related deaths that took place outside the victim's home were in the form of murder.

In general, the rates of suicide are known to increase the spring (24). In this study, firearm-related suicides peaked in the spring (30.8%), whereas firearm-related murders peaked in the summer (31.9%). There are no seasonal trends among homicides in Turkey (26,27). While in Samsun it’s reported that firearm related homicides mostly occure in autumn (26), in Erzurum most of the homicide cases were in spring (27).

Cases with only one entrance wound constituted 63.5% of the firearm-related fatalities. In 36.5% of cases, there was more than one entrance wound. In suicide victims, the majority of the entrance wounds were located in the head region, especially in the right temporal region and in the face. Analysis of the specific head locations to be under the chin 47 cases, followed by right temple with 24 cases and mouth with 14 cases. Similar results were reported in the

literature (2, 14, 24). In the study by Azmak et al, all cases of suicide were reported to have a single entrance wound and 65% of these were located in the head region (2). There were 5 suicide cases with 2 entrance wounds, it was due to the fact that first shot hit the chest or the abdomen and there was no fatal organ injury so the second shot occurred.

In this study, in firearm-related murders, the entrance wound was most commonly located in the head and neck region, followed by the abdomen and chest. In 73 of the 116 murder victims, only one entrance wound was observed. In contrast to this study, Kohli et al reported that 39% of the injuries were in the chest region, whereas 29.6% were in the head region (28). As expected, organs whose injuries most commonly resulted in death were the brain and the heart. Firearms are a significant cause of mortality in Eskisehir, as in various other parts of the world. In order to minimize the mortality, disability, and expenses caused by firearms, legislation on the carrying and possession of firearms should be revised.

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