AN ANALYSIS OF HOMICIDE INCIDENTS REPORTED IN POLICE BULLETINS IN 2017

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Abstract

Aim of this study was to generate a database of homicide incidents in Turkey in 2017 from Police Bulletins, to study the characteristics of homicide on a national level, including temporal homicide patterns. A database of 782 homicide incidents that took place in 2017 was generated from Police Bulletins. Data on the number of victims, number of offenders, time and place of homicide, weapon used, and apprehension of the offender were extracted from the Police Bulletins and used in SPSS analysis of the data. Incidents identified involved 863 victims of homicide, including 16 homicide-suicide incidents. Most homicides identified were one-on-one events. 68,3% of homicides had taken place on the outside. No statistically significant seasonal effect was found, but December had the highest frequency of homicide. Religious holidays were not associated with spike or drops in homicide frequency. It was found that frequency of homicides drops towards the middle of the week, and increase over the weekend. Over the course of the day, homicides increased in the afternoons and evening, peaking at 9pm. Most homicides were committed using a weapon, with firearms used in 61,7% of all homicides. Homicide-suicides were more likely to happen during winter months, and commonly involved a firearm. While the data is incomplete, this study confirms on a national level many findings of smaller studies that have been conducted in Turkey on a local level. Expansion of the database is needed to improve the understanding of temporal patterns of homicide.

Keywords: *Homicide, Homicide-suicide, Police, Violence, Victim, Firearms.*

2017'DE POLİS BÜLTENLERİNDE GEÇEN İNSAN ÖLDÜRME OLAYLARININ ANALİZİ

Öz

Bu araştırmanın amacı, Polis Bültenlerini kullanarak Türkiye'de ulusal çapta insan öldürme olayları veri tabanını oluşturmak ve özellikle zamansal dağılımlarına da odaklanarak öldürmelerin ulusal seviyede özelliklerini incelemektir. 2017'de gerçekleşen 782 insan öldürme olayına dair bilgi içeren veri tabanı, Polis Bültenlerindeki bilgilerden oluşturulmuştur. Mağdur ve fail sayısı, öldürmenin yeri ve zamanı, silah kullanımı ve faillerin yakalanma durumuna dair bilgiler bültenlerden tespit edilerek veri tabana eklenmiş ve bu veriler SPSS yazılımı ile analize edilmiştir. Tespit edilen öldürme olaylarının 863 mağduru olduğu ve 16 olayın öldürme-intihar özellikleri taşıdığı tespit edilmiştir. Öldürmelerin büyük oranda birer fail ve mağdurdan oluşan olaylar olduğu anlaşılmıştır. Öldürmelerin %68,32'sinin dışarıda gerçekleştiği tespit edilmiştir. Dağılımda mevsimsel etki saptanmamış, fakat en fazla öldürmenin yaşandığı ayın aralık olduğu anlaşılmıştır. Dini bayramların öldürme olayları sayısına artırıcı ya da azaltıcı bir etkisi tespit edilmemiştir. Haftanın ortasında öldürmelerin azalıp hafta sonuna doğru arttığı tespit edilmiştir. Gün içinde ise öğleden sonra ve akşama doğru öldürmelerin arttığı, akşam saat 9'da zirveye ulaşıp ardından gecenin geç saatine kadar düştüğü tespit edilmiştir. Çoğu öldürme olayında bir silahın kullanıldığı ve öldürmelerin %61,7'sinde bunun ateşli bir silah olduğu anlaşılmıştır. Öldürme-intihar olaylarının kış aylarında daha fazla ve genelde ateşli silah kullanımıyla gerçekleştiği tespit edilmiştir. Verilerde eksikliklerin olmasına rağmen bu araştırma, Türkiye'de daha önce yapılmış küçük çaplı araştırmaların bazı bulgularını ulusal çapta da doğrulamaktadır. Zamansal varyasyonları daha detaylı inceleyebilmek için oluşturulan veri tabanı genişletilmelidir.

Anahtar kelimeler: *Öldürme, Öldürme-intihar, Polis, Şiddet, Mağdur, Ateşli Silah*

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INTRODUCTION

Homicide is among the most serious of crimes, and is often treated as a general indicator of trends in crime and violence in a country. Despite this, in Turkey the research on homicide is rather limited. Even basic facts regarding homicide, such as national homicide rates, are not current: The most recent homicide rate statistic for Turkey that is available from United Nations Office on Drugs and Crime is for 2012, showing that the homicide victimization rate in Turkey was 4,25 (per 100.000 population) (UNODC, n.d.). Majority of the research on homicide conducted in Turkey focuse on understanding the characteristics of specific types of homicide, such as filicide (Karakuş, İnce, İnce, Arican and Sözen, 2003), parricide (Gündoğmuş, Biçer and Çolak, 2000), homicide-suicide (Akçan, Yildirim, Lale and Heybet, 2016) or elderly homicide (Erel, Aydin-Demirag and Katkici, 2011). Most studies were conducted from a forensic perspective, often based on case studies. Others have focused on identifying homicide trends in individual cities, such as Aydın (Erel, Aydin-Demirag and Katkici, 2011), Adana (Hilal, Çekin, Gülmen, Özdemir and Karanfil, 2005), Antalya (Karagöz, Karagöz, Atılgan and Demircan, 1996), Istanbul (Geleri and Demirbilek, 2006), Kocaeli (Gündoğmuş, Biçer and Çolak, 2000), Kahramanmaraş (Erkol, Çolak, Yaycı and İnanıcı, 2011), or Konya (Doğan, Demirci, Günaydın and Büken, 2010), usually using autopsy reports as the main source of data. Given that the research that has been conducted in Turkey regarding homicide has been usually on a small scale and local, its findings are difficult to generalize to the country at large.

For example, it was found that in Istanbul women were victims in 14-20% of homicides. The same research indicated that about half of all homicides were related to disputes between persons who know each other, and another 25% were associated with the commission of another crime (Geleri and Demirbilek, 2006).

When it comes to the location where homicide took place, studies conducted in different cities show that homicides are more likely to happen outside than inside. In fact, in Istanbul it was found that 53% of homicides took place in public places, with 32% taking place on the street (Geleri and Demirbilek, 2006). In a study of firearm homicides in Bursa and Kocaeli almost two thirds of such homicides took place outside (Fedakar, Gündoğmuş and Türkmen, 2007).

Studies that explored how homicide frequencies fluctuate over seasons are not particularly conclusive. For example, in Istanbul no significant seasonal variations were found (Geleri and Demirbilek, 2006). In Samsun, it was found that firearm homicides are most frequent during the spring and least frequent during the winter (Aydın and Çolak, 2005). A Similar study of firearms deaths in Bursa and Kocaeli

found no significant seasonal variation (Fedakar, Gündoğmuş and Türkmen, 2007). A study that explored deaths caused by stabbing found that during the summer such homicides were the most, while during the winter they were the least likely to happen (Bilgin, Gökmen, Aktaş, Şenol, Koçak, Kaya and Şen, 2011).

Only one study, conducted in Istanbul, has looked into the time of the day of homicides and it was found that 65% of all homicides took place between 6pm and 6am (Geleri and Demirbilek, 2006). The same study found no variation among the days of the week.

Studies indicate that in Turkey majority of homicides are committed by firearms (Toygar, Türker, Eroğlu, Kaldırım. Poyrazoğlu, Eyi, Durusu and Eryılmaz, 2013). In fact, research conducted in Adana found that 55% of homicides involved a firearm, while 35% involved a stabbing (Hilal, Çekin, Gülmen, Özdemir and Karanfil, 2005). Further, a research looking into homicides of taxi drivers found that 60% involved a firearm (Yavuz, Aşirdizer, Cantürk, Eraslan and Karadeniz, 2010). Research conducted in Istanbul indicates that while handgun is the type of weapon most frequently used in homicides (45% of all homicides), it still did not account for a majority of homicides (Geleri and Demirbilek, 2006). Howerver, that handguns are the most frequently used firearm in homicides was further confirmed by other studies as well, conducted in Samsun (82% of firearms homicides) (Aydın and Çolak, 2005), Bursa and Kocaeli (61% of firearm homicides) (Fedakar, Gündoğmuş and Türkmen, 2007), and Antalya (Karagöz, Karagöz, Atılgan and Demircan, 1996).

While these kinds of studies contribute to our understanding of homicide on a local level or in specific circumstances, larger national trends remain elusive. Studies that did attempt to identify trends on a national scale have relied on aggregated court statistics published by the Ministry of Justice (Topçuoğlu, 2012). While such studies provide useful information regarding how the justice system deals with homicides over longer periods of time, the fact that those use aggregate data (i.e. annual statistics) makes it impossible to study shorter term fluctuations (such as over a year, or over a day), or other incident based variables.

In order to better understand the characteristics of homicide (or any other crime) on a national level, a national database of homicide incidents, similar to National Incident Based Reporting System (Federal Bureau of Investigation, n.d.) used in the USA is mandatory. In Turkey, however, such data is not readily available. While Ministry of Interior (İçişleri Bakanlığı) in Turkey does in fact collect crime incident data (TÜİK, 2017), that data is not publicly shared, and the database is not accessible to researchers. In fact, since 2009, General Security Directorate

(Emniyet Genel Müdürüğü, EGM) has not shared any data with Turkish Statistical Institute (Türkiye İstatistik Kurumu, TÜİK) either (TÜİK, 2017). As a result, researchers must explore alternative data sources.

One aim of this study is, in fact, to explore such an alternative source of homicide data that has not been used in any research up until now in Turkey – the Police Bulletins. The second aim of this study is to identify the characteristics of homicide incidents, and in particular explore fluctuations in homicide frequency over different time periods, on a national scale, in an attempt to identify any cycles and temporal patterns.

METHOD

Police Bulletins (Bulletins) are daily-published press releases issued by EGM. They include summary information regarding incidents of major offences (homicide, aggravated assault, robbery, arson) that took place the day before the publication of the Bulletin. Bulletins were published daily on publically accessible EGM website (Emniyet Genel Müdürlüğü, n.d.). However, since April 2019, new Bulletins are no longer publically available and the old webpage was removed from EGM website. Bulletins published up until date can still be accessed using search function at EGM wesite. It is unclear whether the Bulletins are no longer published, or if they are published but not made public.

When it comes to homicide, information that is included in Bulletins for every incident is as follows:

- Place of homicide (province, neighborhood, street)
- Characteristic of the location (business, residence, public space, etc.)
- Date and time of the homicide
- Number of victims
- Number of offenders
- Type of weapon used in the homicide
- Whether the suspect(s) is apprehended

We had generated a database in 2018, using data for 2017, as at the time it was the most recent complete year for which data was available. After all homicide incidents reported in Bulletins in 2017 were identified, summary information was coded, creating a database of homicide incidents for Turkey in 2017. This data was analyzed using SPSS software.

Unfortunately, gender and age of victims and offenders were not among the information that was included in Bulletins. The relationship between the victim and the offender was included in only a few cases. Since this was clearly not a standard piece of information, no analysis regarding this variable was conducted.

RESULTS

In Police Bulletins "incident" is identified as an "event", in which one or more persons have been killed, with involvement of one or more offenders. We identified a total of 782 homicide incidents in Bulletins published in 2017, with a total of 863 victims.

It is important to note that cause of death statistics for Turkey show that in 2017 there were 1.294 deaths that were categorized as "homicides" (TÜİK, n.d.). The discrepancy between the number of victims identified in our database (n=863) and the number of homicides reported by TÜİK (n=1.294) indicates that Bulletins do not include all homicide incidents. This is to be expected. First, Police Bulletins by definition would not include any homicides that have taken place in the areas that are under the jurisdiction of Gendarmerie (i.e. rural areas), while TÜİK data would presumably include all homicides, regardless of where they took place. Since police has jurisdiction over areas that include about 80% of the population (Emniyet Genel Müdürlüğü, 2014: 3), the difference between the number of homicide incidents derived from Police Bulletins and those by TÜİK cannot be explained by the jurisdiction issue alone. One must take into consideration the fact that, as already described, each Police Bulletin includes only homicides that have taken place the day before its publication. We did not run into a single incident in Bulletins in which the homicide was referred to as an event that had happened some time ago and was just identified, or where an assault had occurred at an earlier date and the victim died recently. In other words, only homicides that are immediately classified as homicides by the police are included into Bulletins. Apparently, cases in which the victim does not die immediately or within the day of the assault, or in which the victim was found at a later point of time, are not included. This is clearly a drawback, as it very much limits cases to only one type of homicide – those that are immediately brought to the attention of the police and where the victim dies soon after the assault – while others are excluded from this database.

Despite our attempts to obtain official explanation from the EGM as to what criteria are used to include homicide cases and how the data is collected, we could not get a clear answer. It was made clear, however, that data is relayed to EGM from local districts, and that not all districts are equally prompt in relaying this information. Given that Police Bulletins were published daily, district police departments would have had very limited time to report homicide incidents to

EGM, and it is likely that those homicides that happen later in the day are less likely to be included into the database.

In 91,3% of incidents identified, there was only one victim. In 7,2% incidents there were 2 victims, 1,3% incidents there were 3, and in additional two incidents there were 4 victims. The number of offenders involved was available for 624 incidents. In the rest of the incidents (158 cases, of 20% of all incidents) the number of the offenders was unknown, meaning that police did not know who committed the homicide. Of the incidents in which the offender was known, 75,3% involved just one offender, 12,3% involved two, and 5,8% involved three. In the remaining 6,3% of incidents, there were more than three offenders. Most incidents with more than three offenders involved what was described in Bulletins as "fights" or "clashes" between groups. In 54,7% of incidents, it was reported that all offenders were apprehended, and in 38% all were fugitive.

Provinces that account for a majority of homicide incidents (71%) are shown in Table 1, along with the rates per 100.000 population.

Table 1. Provinces witch accounted for 71% of all incidents

Province	Number of homicide incidents	%	Population in 2017	Rate (per 100.000)
Istanbul	213	27,2	15.029.231	1,42
Ankara	76	9,7	5.445.026	1,40
Gaziantep	54	6,9	2.005.515	2,69
Adana	46	5,9	2.216.475	2,08
İzmir	34	4,3	4.279.677	0,79
Antalya	25	3,2	2.364.396	1,06
Samsun	22	2,8	1.312.990	1,68
Hatay	19	2,4	1.575.226	1,20
Aydın	18	2,3	1.080.839	1,67
Bursa	17	2,2	2.936.803	0,58
Kayseri	16	2	1.376.722	1,16
Kocaeli	16	2	1.883.270	0,85

In the text of the Bulletins, location of homicide incidents is described in a somewhat vague language. In 9 incidents (1,2%) the place of homicide was reported as "inside a vehicle". The rest of incidents were coded as follows:

- Homicide took place "on the street" (…..caddesi/sokağı üzerinde) > On the street/Outside

- Homicide took place "at the address" (…. adresinde bulunan yerde) > At the address/Inside
- Homicide happed at a place of business, closed parking lot, café, court building, stadium, etc. In other words, other non-residential closed spaces > Inside
- Homicide happened not at a particular address but in a public space, such as animal market, in residential neighborhood, in a park, etc. > Outside

Analyzing this data, we found that in 237 incidents (30,5%) homicide had taken place inside, and in 531 (68,3%) outside ($\chi^2(1)=112547$, p>0,000). Majority of those that had taken place inside happened inside a residence (73,4%), with 14,3% happened at a place of business, and 12,2% at other enclosed locations.

Homicides were equally distributed among seasons ($\chi^2(3)=0,271$, p=0,965). When it comes to months, December had the highest frequency of homicide incidents (10,2%), and February the lowest (6,6%). However, no visible pattern could be identified over the course of the year, as can be seen in Figure 1. Further Chi-square test indicated no statistically significant difference in the distribution of homicides among months of the year ($\chi^2(11)=8496$, p=0,668).
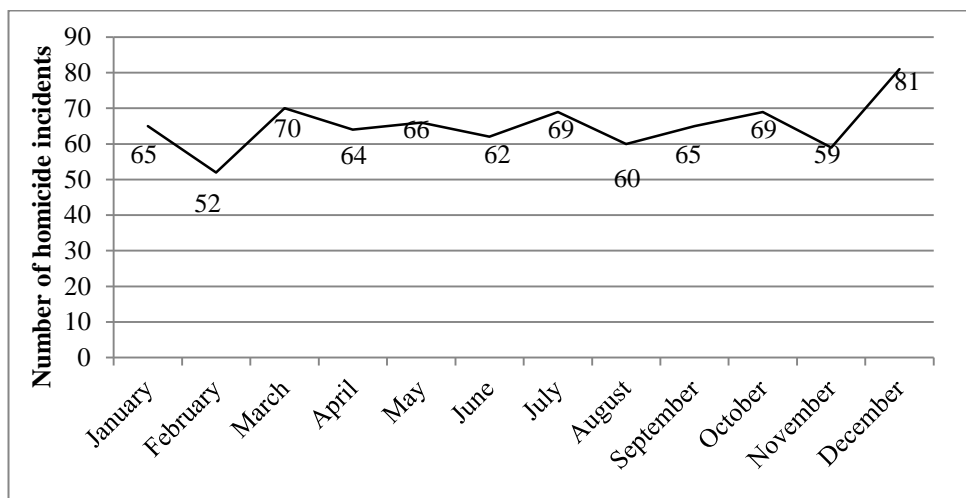

Figure 1. Number of homicide incidents by month.

Similarly, as shown in Figure 2, frequencies of homicide incidents by week do not draw a clear pattern. Weeks with the lowest frequency of homicides were 23rd (4-10 June) and 30th (23-29 July 2017) week of the year, with 7 and 8 incidents, respectively. Weeks with the highest frequency of homicides were 51st (17-23

December), 22nd (21-27 May) and 16th (16-22 April) week of the year, with 22, 21, and 21 homicide incidents, respectively.
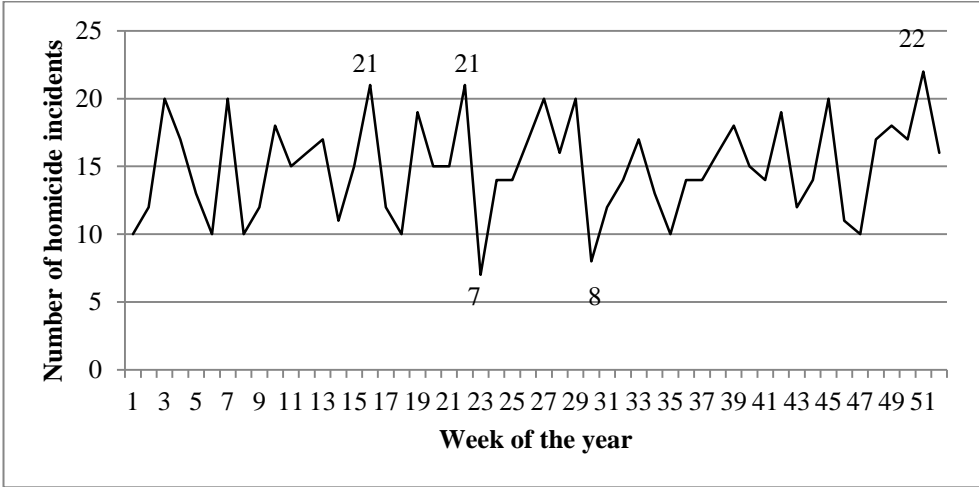

Figure 2. Number of homicide incidents by week.

Figure 3 shows frequencies of homicide incidents by days of the months. Frequencies for days 29 and 30 were multiplied by 12/11 to make up for months that did not have those days. Similarly, for day 31, frequency was multiplied by 12/7. 17th of the month is a peak day with the greatest frequency of homicide incidents (37 incidents), while 24th is the day with the least homicides (15 homicides). No clear pattern can be identified by visual inspection (no Chi-square test was conducted due to the high number of cells with a small n).
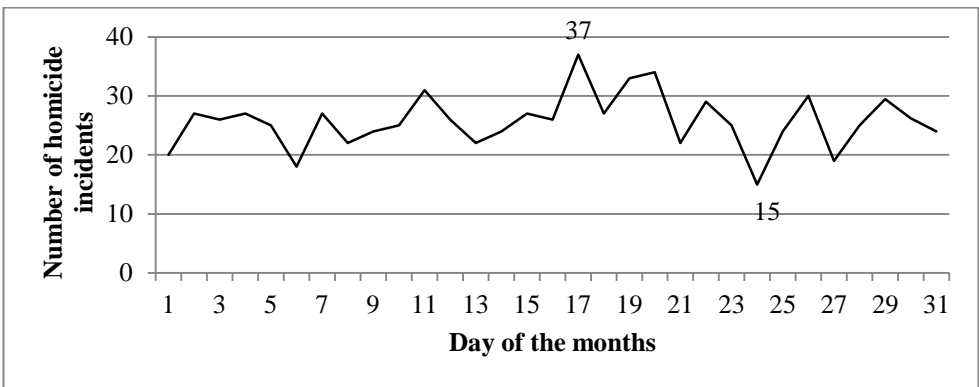

Figure 3. Number of homicide incidents by day of the month.

Figure 4 shows frequencies of homicide incidents by the days of the week. There is a drop in frequency towards the midweek, with frequency increasing again towards the end of the week, and remaining high over the weekend into the early hours of Monday. Chi-square test, however, shows that there is no statistically significant difference in the frequency of homicide incidents between days of the week ($\chi^2(6)=9269$, p=0,159).
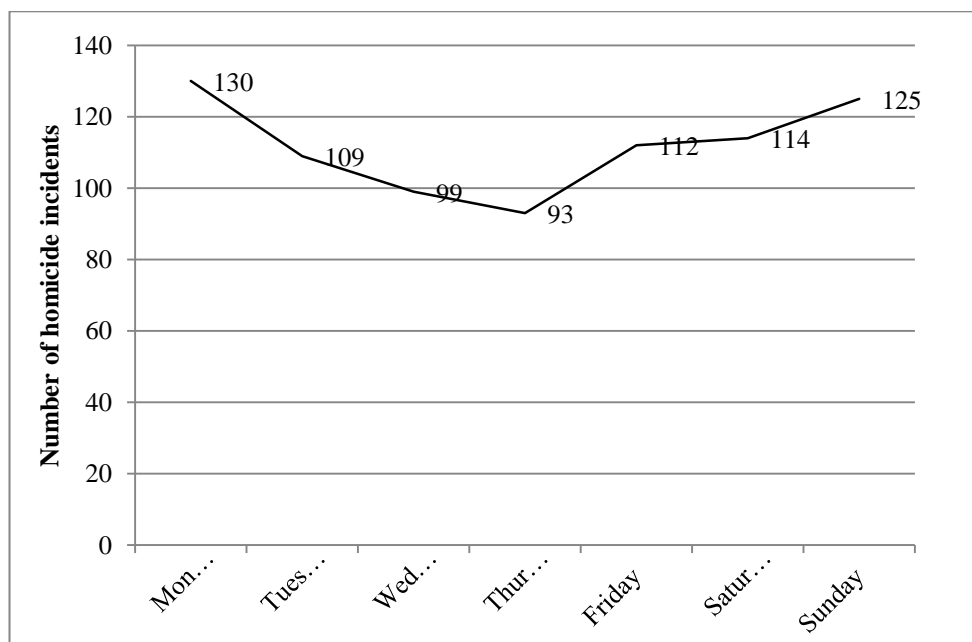

Figure 4. Number of homicide incidents by day of the week.

Figure 5 shows frequencies of homicide incidents by the hours of the day. As can be seen in this Figure, homicide incident frequency increases throughout the day, starting with the morning, peaks at around 9pm, remains relatively high during the night hours, and drops drastically during predawn time/early mornings. In fact, as can be seen in Figure 6 in which incidents happening during the parts of the day have been aggregated, the time period between 2pm and 2am (afternoon and night) accounts for 63% of all incidents. Chi-square test shows that there is significant difference in the distribution of homicide between the four parts of the day ($\chi^2(3)=65090$, p<0,000).
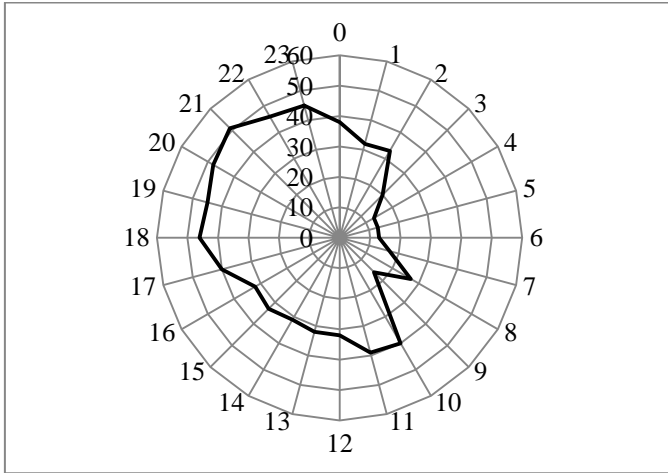
Figure 5. Number of homicide incidents by hour of the day. (0=midnight till 00:59, 1=1:00 till 1:59, etc.)
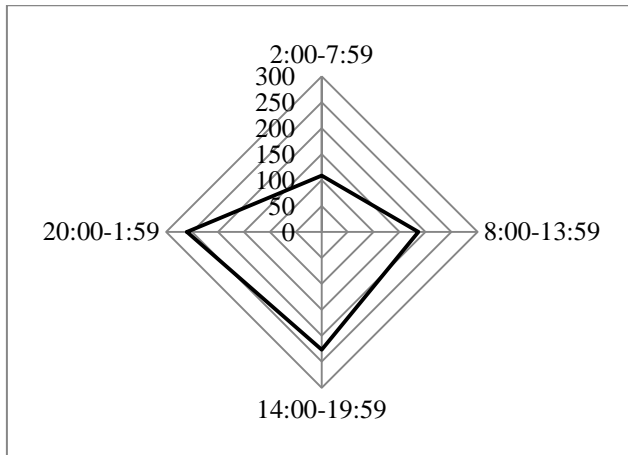

Figure 6. Number of homicide incidents by time of the day (4 categories).

In 94,4% of homicide incidents, a weapon was used. In 3,7% of incidents, no weapon was used, and in 1,9% of incidents, this information was missing. Table 2 shows a breakdown by the type of weapon used. As can be seen from the Table 2, firearms were used in 61,7% of all homicide incidents. Handguns were the most frequently used type of weapon, and knife or similar were the second most frequently used weapon. About 70% of both stabbings and firearm homicides took place outside (70,4% of firearm homicides, and 68,6% of stabbings).

Table 2. Weapons used in homicide incidents

Type of weapon used	Frequency	% of all homicide incidents	% of incidents in which a weapon was used	% of incidents in which a fire weapon was used
Handgun	317	40,5	43,0	65,6
Shotgun	85	10,9	11,5	17,6
Rifle	41	5,2	5,6	8,5
Other firearm	40	5,1	5,4	8,3
Knife of similar	237	30,3	32,2	
Weapon type not identified	17	2,2	2,3	
No weapon	29	3,8		
Missing data	16	2,0		

In this database we have identified 16 cases of homicide-suicide, accounting for 2% of all homicide incidents. Months of those incidents are shown in the Table 3. Only one homicide-suicide involved a stabbing, while all others were committed with firearms, with handgun being used in 10, shotgun in 3, and other fire weapons in 2 incidents. 75,1% of homicide-suicides (12 incidents) happened between 8am and 8pm. 9 of those took place inside, while 7 happened outside.

Table 3. Frequency of incidents of homicide-suicide by month

Month	Number of incidents
January	3
February	2
March	2
April	0
May	1
June	0
July	0
August	1
September	0
October	0
November	1
December	5

DISCUSSION

The first aim of this study was to explore the usefulness of Police Bulletins as a source of data on homicide incidents in Turkey. While Bulletins did not include very detailed information, temporal information was particularly useful and precise. No significant temporal gaps in data were found, meaning that Police Bulletins could be used a useful source of homicide data on a national scale for the study of temporal patterns of homicide. It was also found that not all cases of homicide were included into Police Bulletins and that, therefore, the database was incomplete. Based on the number of homicides obtained from the cause of death statistics, we have concluded that at least annually about one third of homicides are not reported in the Police Bulletins. On the one hand, the way that Police Bulletins were produced (immediately, the next day) dictated that some homicides were to be excluded, in particular those that are not discovered immediately, or when the victim dies at a later time. On the other other hand, it is also possible that some provinces simply did not report homicides quickly enough, or perhaps cases from certain provinces were excluded from the Police Bulletins for other reasons, thus puling the national total down. For example, not a single homicide incident from Bingöl, Bitlis, Bolu, Diyarbakır, Gümüşhane, Kırklareli, Trabzon, Tunceli, Bayrburt, Ardahan, Iğdır, and Yalova was in the database. While it is possible that at least some of those provinces simply did not have any homicide incidents in 2017, for others this is simply not the case. For example, a quick internet search generates news reports indicating that multiple incidents of homicide did take place in Trabzon in 2017. In the absence of meta-data and without a clear explanation from EGM regarding how information on homicide incidents was collected, it is very difficult to assess it and in what way the results of this study may be biased. Hence, all findings reported here should be assumed to not represent the full picture of homicide in Turkey.

Number of homicides reported in Police Bulletins amounts to a homicide rate of 1,07 per 100.000 population for 2017 (calculation is based on country population of 80.810.525 for 2017 (TÜİK, n.d.)). This is much lower than what was reported to UNODC and Eurostat – the rate of 4,3 (UNODC, n.d.). However, this rate is from year 2012. Since 2012, neither UNODC nor Eurostat have any homicide rate data reported for Turkey, making which makes the comparison difficult. However, this rate is somewhat closer to that reported by European Sourcebook project. In the most recent published European Sourcebook, homicide rates for Turkey have been reported in the range of 2,0-2,2 for years 2007-2011 (Aebi, et al, 2014; 34). While these rates are still about a double of what was found in this study, they are about a half of what was reported to UNODC and Eurostat. Given that European Sourcebook methodology depends much or less on the legal definitions of offences

in any particular country (Aebi et al, 2017; 17), they are more suitable for comparison than other types of statistics. Homicide rates found for Turkey in this study (regarding the fact that we know the rate found here is undercounting the actual number of homicides), appear to be within a European range (according to Aebi et al (2014), (some homicide rate examples are 0,9 for Ireland, 1,9 for Greece, 3,5 for France, 2,6 for Bulgaria, etc, for 2011). This indicates that even if the actual rate was double of that that was found in this study, Turkey would still not be an outlier when it comes to homicide rates, despite common image of high violence in the country.

The second aim of this study was to study characteristics of homicide incidents, based on the data generated from the Police Bulletins. While there are a number of studies looking into the same variables that have been analyzed here (time of homicide, month of homicide, type of weapon used, location of homicide, etc.), none of those are nationally generalizable. This study improves the generalizability of the findings by using data that covers the whole country.

This study shows that a majority of homicides in Turkey involve just one victim. For comparative purposes, in the USA it was also found that 95% of all homicides involved just one victim as well (Smith and Cooper, 2013). Further, Miethe, Regoeczi and Drass (2004) also found that more than 92% of had just one victim, and 87% had just one offender. Majority of incidents in this study also involved just one offender as well, leading to a conclusion that a majority of homicides in Turkey are one-on-one events. Homicide events with a larger number of victims, such as mass shootings, are extremely rare. In fact, there was not a single incident involving more than four victims in 2017. The nature of the source of data that we used here possibly excludes some cases that could arguably be considered homicides with multiple victims, such as terrorist attacks. Homicides that happen as a result of terrorist attacks are arguably of a fundamentally different nature than other homicides, and are less evenly distributed over time, thus their inclusion tends to skew the statistics. It has been a practice to exclude such deaths from homicide databases (Federal Bureau of Investigation, 2001).

Out of 5 most populous provinces in Turkey (Istanbul, Ankara, Izmir, Bursa, Antalya), 4 were among the 5 provinces with the highest number of homicide incidents. Gaziantep, which in this study had the 3rd highest frequency of homicide incidents, is actually 8th in Turkey in terms of its population. In fact, among the more populous cities, Gaziantep had higher than average homicide incident rate, while the rate for Bursa was lower than the average. However, given the incomplete nature of this database, homicide rates for provinces reported in this study should not be taken at face value. It is highly likely that rates are in fact

higher, as we know that not all homicides were included. Further, it is possible that cities that have been found to have higher rates are simply better in reporting their homicide incidents to the EGM than cities with lower rates. We have already established that data for some cities is completely missing (such as Diyarbakır or Trabzon), which is a clear indication that rates needs to be evaluated with care.

Research from the United States suggests that homicides tend to happen close to victims' homes, but on average more than 1 km away from offenders homes (Groff & McEwan, 2006).This study had similar findings, confirming on a national scale what was already found to be the case in smaller studies in Turkey: A majority of homicides take place outside, often on the street. In other words, homicide in Turkey is often a public event. It is possible that this finding is the result of the nature of the data we used. As already mentioned, Police Bulletins include only homicides that were discovered soon after the event. Homicides that happen in public places are much more likely to be witnessed, reported, and discovered quickly, than homicide that happen in private spaces. Hence additional research is needed to confirm these findings. According to Wolfgang (1958) most homicides can be classified into one of the following six categories: altercation of trivial origin, domestic quarrel, jealousy, altercation over money, robbery, and retaliation. While this model has not been tested in Turkey, the finding that majority of homicides take place on the street leads us to hypothesize that altercations and robbery are more frequent causes of homicides in Turkey. This is something that needs to be addressed in future research.

There are conflicting findings regarding seasonality of homicide (Ceccato, 2005; Kposowa and Breault, 1998; Tennenbaum and Fink, 1994;), but most studies using national scale data do not report seasonality effect (Sisti, Rocchi, Macciò and Preti, 2012). However, research does indicate that December tends to be the month with the highest homicide rates in 7 out of 10 years (Cheatwood, 1988). It has been suggested that the peak in homicides often observed in December is associated with the New Year and Christmas holidays (Lester, 1979). While in this study we have found no obvious seasonal fluctuations, we did find a small spike in homicide incidents in December. This is interesting since in Turkey religious holidays in 2017 fell in the 26th and 35th week of the year, rather than in December, and these weeks were not associated with either peaks or drops in the frequency of homicide. So the common explanation that peak in December is associated with the religious holidays does not hold, as in Turkey religious holidays are not in December, and yet there is a peak. When it comes to monthly frequencies, we did not identify a clear cycle, even though mid-month appears to be a bit of a peak. More data is needed to further explore these possible trends.

Most research on temporal patterns in homicide shows that it is more likely to happen on weekends and during the nights (Ceccato, 2005; Kposowa and Breault, 1998; Lester, 1979; Sisti, Rocchi, Macciò and Preti, 2012). This study confirms this finding for Turkey as well, however trends identified here are more spread out. Thus, rather than seeing a clear-cut difference between the weekdays and the weekend, our findings indicate that homicide falls towards midweek, and increases gradually towards the weekend. Similarly, rather than findings that the night is when homicides happens (as was found, for example by Ceccato in Sao Paolo, 2005), findings in this study suggest that homicide frequency increases as the day progresses into the afternoon and the evening, reaching the peak at around 9pm, and then starts decreasing again until late night/early morning of the next day.

This study confirms what was already reported in more local studies, and that majority of homicides in Turkey are committed by a firearm (61,7%), with handguns being the weapon of choice in 40% of all homicides. For comparative purposes, in the USA almost two thirds of all homicides are perpetrated by firearms (Smith & Cooper, 2013). This finding brings up the question of the availability of firearms in Turkey. We do not have data that would allow us to understand whether the perpetrators in this study owned the weapons legally or not, but this is a line of research that should be pursued. Previous research on global scale shows that the availability of guns is positively correlated with homicide rates (Hemenway and Miller, 2000; Hepburn and Hemenway, 2004; Killias, 1993), and especially with mass shootings (Lankford, 2016). Data from Small Arms Survey (Karp, 2018) suggests that in Turkey civil ownership of firearms is high. Turkey is 10th in the world in terms of the total number of the firearms owned by civilians (Karp 2018; 4), with the rate of 16,5 firearms per 100 population (Karp, 2018; Annex p. 7). Illegal ownership of firearms is widespread, with approximately 80% of all firearms owned by civilians being unregistered (Karp, 2018; Annex p. 7). Frequent use of firearms in homicides points to a potential point of policy intervention in Turkey, though gun control policies, which are obviously ineffective at this time.

Findings regarding homicide-suicide are in line with previous findings from Turkey. Specifically, the proportion of homicide-suicides to the number of homicide incidents in this study is similar to that found in previous research (Doğan, Demirci, Günaydın and Büken, 2010). Further, fire weapons were most frequently used type of a weapon, which is also in line with previous findings from other countries (Milroy, 1995). These events were different from other homicides in this study in that a majority happened during the day, rather than at night, as is the case with homicides. While with such a small number of cases it is very

difficult to discuss any trends, the fact that, excluding two cases, all incidents of homicide-suicide have happened during the winter months is worth of notice.

Overall, while the data used in this study was far from complete or exhaustive, it is at this time the best available incident data on homicide in Turkey. It is important to expand the database that was used here, by adding the data from other years for which the Police Bulletins are available. Such expansion of the database will allow us to explore with more precision cycles and patterns in homicide incidents, painting a clearer picture about its temporal nature. Finally, we hope that in the near future other types of data that will allow for more detailed analysis will become available as well. Study of the characteristics of victims and offenders, and in particular their relationship is of great importance for understanding and the prevention of homicide in any given country. More detailed understanding of circumstances of homicides would also allow law enforcement agencies to develop more nuanced approaches to the prevention policy.

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