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It takes a curfew: The effect of Covid-19 on female homicides

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A B S T R A C T

Gender-based violence is a global phenomenon threatening women irrespective of race, nationality, education or socio-economic status. Evidence shows that domestic violence help calls have been increasing in many countries during the Covid-19 pandemic, but the effect on female homicides, this extreme form of violence, is not clear. In this study, we analyze the effects of social distancing measures and in particular the impact of curfews on female homicides in Turkey where domestic violence and female homicides are on the rise, causing public uproar. We find that the probability that a woman is killed by an intimate partner declined by about 57 percent during the period of strict social distancing measures, and by 83.8 percent during curfews in comparison to the same period between 2014 and 2019. We do not find any impact on female homicides by other perpetrator types. We argue that the decline in female homicides is driven by physical difficulties faced by ex-partners to reach victims, especially during curfews and fewer women leaving current partners due to economic hardships and fear of infection. Increased probability of getting caught might have also played a role in deterring deadly crimes against women.

1. Introduction

There is emerging evidence that domestic violence against women increased during the Covid-19 pandemic (UNDP, 2020; Leslie and Wilson, 2020). In this study, we analyze the effects of social distancing measures under Covid-19 on female homicides in Turkey.

How the pandemic affects female homicides is unclear. Social isolation, job losses, and economic stress may deteriorate the psychological well-being and directly affect violence (Van Gelder et al., 2020; Altindag et al., 2020). Extended time spent with a partner at home might trigger conflict and increase the probability of homicide by unstable partners. Women might find it difficult to leave partners due to economic dependency and fear of infection, even under increased violence.

In contrast, social distancing may reduce female homicides due to difficulty to reach women. This channel might particularly affect homicides in which the perpetrator resides outside the household, such as an ex-partner (Ivandic et al., 2020). A report by the Turkish Police Academy shows that ex-partner jealousy imposes the greatest risk for women and suggests that a non-negligible part of female homicides by ex-partners takes place on days when men arrive to see the children (Taştan and Küçüker Yıldız, 2019). Decreased mobility, police stops, and identity checks, especially during curfews could dissuade potential perpetrators by increasing the probability of getting caught. Evidence shows certain crimes such as sexual assault and homicide declined during Covid-19 lockdowns (Ravindran and Shah, 2020).

Turkey has the highest female homicide rates across OECD members (OECD, 2019). Although high female homicide rates in Turkey has stirred public outrage, police data on domestic violence is not publicly available. In this study, we use a daily news database specifically dedicated to male violence against women in Turkey. We used difference-in-differences and event-study methods to compare daily female homicides relative to trends between January 1, 2014 and July 31, 2019. We find a sharp reduction in murders committed by intimate partners, especially during curfews. In contrast, we show that there was no decrease in female homicides in cities where mobility declined the least. We find no impact on homicides perpetrated by male family members (other than intimate partners).

Our results highlight the unsettling fact that it is the combination of the physical difficulty to reach victims and women...
potentially not being able to leave abusive relationships during the pandemic that reduced female homicides rather than the legal protection mechanisms.

2. Timeline of mobility-restricting measures

The first official Covid-19 case in Turkey was reported on March 11. The first death was recorded on March 17, 2020. As the number of cases increased exponentially in the first weeks of the outbreak, the Turkish government imposed several measures to limit mobility.

Curfews were announced on April 11–12, April 18–19, April 23–26, May 1–3 for 30 metropolitan cities, May 9–10 for 24 metropolitan cities, May 16–19 for 15 metropolitan cities, May 22–26 for all 81 cities, May 30–31 for 15 metropolitan cities, and June 27–28 for all 81 cities of Turkey. In Appendix A, we provide detailed information on curfew cities, population sizes and timeline. The fine for curfew offenders was set as 3186 Turkish Liras, about 40 percent above the monthly minimum wage of 2324 Turkish Liras.

3. Data

In the absence of real-time police data, we rely on a database called the “Male Violence Monitoring Portal”, specifically dedicated to violence against women, maintained by Bianet, an independent media outlet. This outlet collects data on female homicides and assault to women from national and local press on a daily basis and fact-checks with the authorities. The database only covers women who lost their lives as a result of gender-based male violence.

A particular concern over using news data is the potential underreporting problems. While this is certainly a concern for crimes such as sexual abuse, female homicide is a criminal category that is far less likely to go underreported. Several women’s associations are closely monitoring violence against women in Turkey and advocate for full commitment to international conventions. While self-reported incidences can be subject to measurement errors, as they may reflect changing reporting patterns during major shocks, female homicides are much less prone to underreporting (Miller and Segal, 2019).

Information collected by Bianet includes date, location, and perpetrator tags. We text-mined all daily female homicide news between January 1, 2014 and July 31, 2020 and digitized a total of 1951 homicides across all 81 cities of Turkey. Of the 1951 cases, 65.8 percent is perpetrated by an intimate partner; 19.2 percent perpetrated by any male family member or relative who is not an intimate partner; and the rest is by other men. 982 homicides took place in the 15 metropolitan cities. The unconditional probability of a homicide on a given day is 0.95 percent across Turkey and 2.6 percent in the 15 metropolitan cities.

Fig. 1 shows that the measures taken by the government between March and June 2020 successfully reduced the mobility across the four most populated cities of Turkey (Apple, 2020). Mobility clearly declines after the first Covid-19 case in week 10 and starts increasing in week 21, when social distance measures and weekend curfews were lifted. Female homicides show a strikingly correlated pattern to mobility in the first seven months of 2020. Fig. 2 shows homicides by perpetrator types in the first seven months of 2020 in comparison to the monthly averages between 2014 and 2019. While the pre-Covid-19 trends are quite similar, homicides by intimate partners decline sharply in April when the consecutive weekend curfews were implemented strictly. Homicides sharply increase in June when curfews end.

4. Identification

In estimating the impact of the pandemic and the social distancing measures on female homicides, we rely on difference in differences methods and provide further evidence using an event-study method in Appendix D. Our outcome variable is the probability that a woman is killed on a given day in a given city. Our main focus is the impact in 15 cities which are among the most populated and which have been subject to regular curfews, from the first one to the last.

We estimate the following OLS model:

\[
Pr(\text{Homicide}_{cdy}) = \alpha + \gamma SD_d + \beta SD_y \times Y2020_y + \phi_y + \delta_{c, \text{month}} + \psi_{c, \text{week}} + \theta_{c, \text{day}} + \epsilon_{cdy} \tag{1}
\]

\[\text{We are not the first one to use Bianet data. See Kavaklı (2020).}\]

\[\text{Other men category includes perpetrators who are not related by blood and either known or unknown by victims. Examples include neighbors, romantically rejected acquaintances, burglars, rapists and men who murder sex workers.}\]
Homicide_{cy} is a dummy indicating if there were any female homicides in city c, day-of-the-year d, in year y. SD_{d} is a dummy representing the period between March 11 and May 31 in the first seven months of 2014–2020. Y_{2020} is the dummy, representing year 2020. φ_{cy}, δ_{c.month}, ψ_{c.week} and θ_{c.dow} stand for city-year effects, city-month effects, city-week-of-the-month effects, and city-day-of-the-week effects. Our specification allows for city-specific weekly, monthly, and annual trends, and also captures the differences in the intensity of infection rates across cities. We cluster standard errors at city-year level.

Next, we specifically look at the impact of curfews:

\[ \Pr(\text{Homicide}_{cy}) = \alpha + \gamma \text{Curfew}_{d} + \beta \text{Curfew}_{d} \times Y_{2020} + \phi_{cy} + \delta_{c.month} + \psi_{c.week} + \theta_{c.dow} + \epsilon_{cdy} \quad (2) \]

where \text{Curfew}_{d} is a dummy indicating whether the day in a given year corresponds to curfew dates.

5. Results

Table 1 shows the impact for all 81 cities (panel A) and 15 cities (Panel B). We do not find a statistically significant change in total female homicide probability in response to general social distancing measures related to the Covid-19 shock in either panels. However, coefficients of homicides by intimate partners are negative and highly significant in both panels. Homicides by intimate partners decline by 1 percentage points in the 15 cities, corresponding to a decline of 57 percent, given the fact that the mean daily homicide probability by partners in 15 metropolitan is about 1.75 percent. The relative decline across all cities of Turkey is even stronger, with 60.6 percent. Table 1 shows no impact on the probability of homicide by male family members. There is a statistically significant increase in homicides by other men for the 81 cities, but not in the 15 cities. In Appendix D, we discuss potential reasons for this differential impact.

Next, we specifically look at the impact of curfews. Table 2 suggests that homicides by partners decreased significantly in curfews in 2020. The estimated coefficient is 1.5 percentage points, corresponding to a staggering 83.8 percent decline in mean homicide probability by intimate partners in the 15 cities. We do not observe a statistically significant change in homicides by any other perpetrator types. Overall homicide probability also decreased by 0.9 percentage points (about 34.6 percent) in curfew days in 15 metropolitan cities due to the decline in murders by partners.4

To understand which channel might have contributed more to the decline in homicides by intimate partners, we break down the intimate partners into current and ex-partners. If the news article makes it clear that a woman is killed by an ex-husband, ex-boyfriend, or by a husband with whom there is an ongoing

4 Our text-mining analysis based on search of keywords such as ‘criminal record’, ‘after serving prison sentence’, ‘previously convicted’, etc. suggests that less than 1 percent of the homicides were perpetrated by ex-offenders in our news database. Hence, these results are likely driven by extensive margins. However, this result should be approached with caution due to potential measurement errors.
Table 1
Covid-19 and female homicides by perpetrator type.

|                  | (1)       | (2)       | (3)       | (4)       |
|------------------|-----------|-----------|-----------|-----------|
|                  | All female homicides | By intimate partners | By family | By others |
| Panel A: All cities |           |           |           |           |
| (March 11–May 31) | −0.004    | −0.004    | −0.000    | −0.001*   |
|                  | (0.004)   | (0.004)   | (0.002)   | (0.001)   |
| (March 11–May 31) * 2020 | −0.002    | −0.004*** | 0.000     | 0.002**   |
|                  | (0.002)   | (0.001)   | (0.001)   | (0.001)   |
| Observations     | 120,366   | 120,366   | 120,366   | 120,366   |

|                  |           |           |           |           |
|                  |           |           |           |           |
| Panel B: 15 metropolitan cities |           |           |           |           |
| (March 11–May 31) | −0.008    | −0.016    | 0.005     | −0.004*   |
|                  | (0.016)   | (0.015)   | (0.012)   | (0.002)   |
| (March 11–May 31) * 2020 | −0.008    | −0.010*** | 0.002     | 0.002     |
|                  | (0.005)   | (0.003)   | (0.002)   | (0.002)   |
| Observations     | 22,290    | 22,290    | 22,290    | 22,290    |

City effects Yes Yes Yes Yes
Day of the week effects Yes Yes Yes Yes
Week of year effects Yes Yes Yes Yes
Month effects Yes Yes Yes Yes
Year effects Yes Yes Yes Yes
City × Day of the Week Effects Yes Yes Yes Yes
City × Month effects Yes Yes Yes Yes
City × Year effects Yes Yes Yes Yes
City × Week of year effects Yes Yes Yes Yes

Notes: (1) Robust standard errors are clustered at city-year level and ***,**, and * refer to 1%, 5%, and 10% significance levels, respectively.

Table 2
Curfews and female homicides by perpetrator type.

|                  | (1)       | (2)       | (3)       | (4)       |
|------------------|-----------|-----------|-----------|-----------|
|                  | All female homicides | By intimate partners | By family | By others |
| Panel A: All cities |           |           |           |           |
| Curfew days      | −0.001    | 0.001     | −0.001    | −0.000    |
|                  | (0.002)   | (0.002)   | (0.001)   | (0.001)   |
| Curfew days * 2020 | −0.003    | −0.008*** | 0.001     | 0.003     |
|                  | (0.003)   | (0.002)   | (0.002)   | (0.002)   |
| Observations     | 120,366   | 120,366   | 120,366   | 120,366   |

|                  |           |           |           |           |
|                  |           |           |           |           |
| Panel B: 15 metropolitan cities |           |           |           |           |
| Curfew Days      | −0.000    | 0.002     | −0.000    | −0.001    |
|                  | (0.004)   | (0.003)   | (0.002)   | (0.002)   |
| Curfew days * 2020 | −0.009*   | −0.015*** | −0.003    | 0.005     |
|                  | (0.005)   | (0.005)   | (0.002)   | (0.004)   |
| Observations     | 22,290    | 22,290    | 22,290    | 22,290    |

City effects Yes Yes Yes Yes
Day of the week effects Yes Yes Yes Yes
Week of year effects Yes Yes Yes Yes
Month effects Yes Yes Yes Yes
Year effects Yes Yes Yes Yes
City × Day of the week effects Yes Yes Yes Yes
City × Month effects Yes Yes Yes Yes
City × Year effects Yes Yes Yes Yes
City × Week of year effects Yes Yes Yes Yes

Notes: (1) Robust standard errors are clustered at city-year level and ***,**, and * refer to 1%, 5%, and 10% significance levels, respectively.

divorce court case (with or without a suspension order), we count that incidence as murder by an ex-partner. Our text-mining analysis suggests that around 37 percent of homicides by partners are committed by ex-partners in our data. An important caveat follows: a relationship could be in the borders of separation, and our classification might be subject to potential errors, such as in the case of a woman trying unsuccessfully to break up with a boyfriend. These cases might be wrongly counted as murder by current partners. Hence, our estimations for ex-partners should be regarded as lower bounds.

In the first two columns of Table 3, we focus on the 15 metropolitan cities with strict social distancing measures and find that female homicides by both current and ex-partners decreased significantly. The estimated coefficients by the order of −0.9 and −0.6 percentage points correspond to 72.1 percent decline in homicides by current partners and 90.9 percent decline in homicides by ex-partners during curfews. We believe the physical difficulty to reach victims due to lower mobility is likely to be the main cause of decline in murders by ex-partners and by current partners in cases where the partners do not share the same house.

Instrumental theory of violence predicts that a decline in female resources, through lower employment opportunities, may reduce the incentives of men to use violence as a means of extracting resources from women (Erten and Keskin, 2018; Gulesci
et al., 2020; Dildar, 2020; Yilmaz, 2018; Alon et al.; Macmillan and Gartner, 1999). There is ample evidence that women are disproportionately affected by the pandemic through the increased burden of childcare, job losses or furloughs, as women are more likely to be employed in services sector and in informal jobs that were hit the most (Alon et al.; Blundell et al., 2020; McKinsey & Company and LeaLin, 2020). This might have reduced the incentives of men to extract resources from women. Women dropping out of the labor force might have also played a role in the reduction of deadly crimes by partners who have a distaste for their partners’ employment or economic freedom. Even if non-deadly violence have increased during the pandemic, economic dependency on the partners might reduce women’s ability to exit abusive relationships.

To test if this mechanism plays a role in driving our results, we focus on the top three Nuts2 regions which have the highest female employment shares in the most vulnerable sectors according to the Covid-19 sectoral vulnerability index developed by Demir Seker et al. (2020). In columns (3) and (4) of Table 3, we find that in these regions homicide by ex-partners has not changed, while homicide by current partners have declined by 0.3 percentage points (75 percent) during the whole period. We do not observe whether non-deadly violence have increased in our data, however as hypothesized above, this finding can be potentially explained in two ways. First, female employment losses could have reduced women’s ability to exit abusive relationships, and while their exposure to domestic violence could have increased, their risk of being murdered could have fallen. Second, in line with the predictions of the instrumental theories of violence, a decline in female earning opportunities could have reduced the incentives of men to use extreme violence for rent extraction.

In Appendix B, we show that there is no statistically significant impact in cities where the decline in mobility was lowest, providing further support for our hypothesis. In Appendix C, we provide placebo tests. In Appendix D, we replicate our analysis using an event-study method and confirm our findings.

6. Conclusion

Our study shows there has been a decline in female homicides by intimate partners due to Covid-19 measures that restricted mobility. Our findings do not imply that the non-homicidal domestic violence against women has declined; there is evidence that it has increased. However, due to the pandemic, fewer women might not be able to leave their partners due to fear of infection as well as increased economic hardships. Women not being able to leave partners despite the increased violence might reconcile the results. Furthermore, physical difficulty to reach the victims by ex-partners and the deterrent effects of the increase in probability of getting caught are also likely to have caused a decline in deadly crimes against women. In this respect, we believe our results are complementary to rather than contradicting the existing evidence.

Appendix A. Supplementary data

Supplementary material related to this article can be found online at https://doi.org/10.1016/j.econlet.2021.109761.

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