


Influence of Covid-19 Restrictions on Urban Violence

The American Surgeon
2022, Vol. 88(8) 1928–1930
© The Author(s) 2022
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/00031348221086821
journals.sagepub.com/home/asu


Priti Lalchandani, MD¹, Bethany L. Strong, MD¹, Melike N. Harfouche, MD² , Jose J. Diaz, MD², and Thomas M. Scalea, MD¹

Abstract

We investigated whether the COVID-19 pandemic affected rates of interpersonal violence (IV). A retrospective study was performed using city-wide crime data and the trauma registry at one high-volume trauma center pre-pandemic [PP] (March-October 2019) and during the pandemic [PA] (March-October 2020). The proportion of trauma admissions attributable to IV remained unchanged from PP to PA, but IV increased as a proportion of overall crime (34% to 41%, $p < 0.001$). Assaults decreased, but there was a proportionate increase in penetrating trauma which was mostly attributable to firearms. Despite a reduction in admissions due to IV in the first 4 months of the pandemic, the rates of violence subsequently exceeded that of the same months in 2019. The cause of the observed increase of IV is multifactorial. Future studies aimed at identifying the root causes are essential to mitigate violence during this ongoing health crisis.

Keywords

COVID-19, interpersonal violence, trauma

Shortly after the initial COVID-19 cases were reported in the United States in March 2020, stay-at-home and social distancing orders were enacted to mitigate spread of the deadly virus. These restrictions led to unintended outcomes, such as exacerbating mental illness and increasing strain on interpersonal relationships.¹ There is limited data on how COVID-19 affected urban violence and, interpersonal violence (IV), in particular.² We hypothesized that rates of IV would be higher during the COVID-19 pandemic than in the preceding time period.

A retrospective review of the trauma registry at the R Adams Cowley Shock Trauma Center (STC) was performed for the periods of March to October 2019 (PP = pre-pandemic) and March to October 2020 (PA = pandemic). The STC is a level I trauma center located in Baltimore that also serves as a regional referral center for the state of Maryland. Approximately 7000 trauma patients are treated yearly. The trauma registry contains prospectively collected demographic and clinical variables. The time periods allowed us to compare overall violence, and violence as a percentage of all injuries, over similar periods. City-wide crime data was obtained from a publicly available, online dataset hosted by the city of Baltimore. The dataset contains information on the date, location, and type of crime.

IV was defined as any act of harm committed toward another individual. This was defined as an assault, stab, or firearm injury in the trauma registry and an assault, homicide, rape, or shooting in the city-wide database. Self-inflicted injuries were excluded. The primary outcome of interest was change in incidence of IV between the PP and PA periods. Additional analyses were performed for changes in demographic characteristic and proportion of injuries attributable to firearms by period, and trends in incidence of IV by month. STATA/BE 17.0 was used for all statistical analyses, and significance was set at $P < .05$.

There were 2894 patients in the PP group and 2657 patients in the PA group. The proportion of trauma admissions suffering IV remained unchanged from PP to PA (22.3% and 22.2%, respectively) with a decrease in IV from 645 to 591 patients. Mean age was 34.6 years, 86% of victims were male, 78.2% were of black race, and mean Injury Severity Score was 10.5 among

¹R Adams Cowley Shock Trauma Center, Baltimore, MA, USA

²University of Maryland Medical Center, Baltimore, MA, USA

Corresponding Author:

Priti Lalchandani, MD, R Adams Cowley Shock Trauma Center, 225 Greene Street Baltimore, MA 21201, USA.

Email: priti.lalchandani@som.umaryland.edu

Table 1. Incidence and Subtypes of IV Before and During the Pandemic*.

	Trauma Registry			City-wide Crime Data		
	PP	PA	<i>p</i>	PP	PA	<i>P</i>
IV	645 (22)	591 (22)	.97	11053 (34)	9821 (41)	<.001
<i>IV subtype</i>						
Assault	172 (27)	145 (25)	.39	8358 (76)	7089 (72)	.32
Stab	172 (27)	145 (25)	.39	808 (7)	807 (8)	.01
Firearm	301 (47)	301 (51)	.13	1887 (17)	1925 (20)	<.001

*Listed as count (percent).

IV = interpersonal violence; PP = pre-pandemic; PA = pandemic.

those experiencing IV. There were no differences in demographic or clinical characteristics between the PP and PA groups. While IV did not change during the study periods, there was a reduction in IV admissions from 20.6% to 6.7% in the first 4 months of the pandemic. Starting in August 2020, however, the rates of violence exceeded that of the same months in 2019. During the entire study period, 48.7% of IV injuries were attributable to firearms, followed by an equal percentage of stab wounds and assaults (25.6%). The mechanism of violence did not vary between the PP and PA periods (Table 1).

Out of 56,555 acts of crime which occurred in Baltimore City during the study period, 32,535 (57.5%) were during the PP and 24,020 (42.5%) were during the PA period. Although cases of IV decreased from the PP to PA period (11,053 vs 9821), the proportion of overall crimes attributable IV increased from 34.0% to 40.9% ($P < .001$). Odds of a crime being associated with IV increased by 1.34 from the PP to PA period ($P < .001$). There was an increase in the use of firearms during acts of IV from the PP to PA period (17.1% to 19.6%, $P < .001$). A similar trend was seen in the proportion of stab wounds but not assaults (Table 1).

Despite an overall decrease in city-wide crime during PA, there was a proportionate increase in IV. A similar overall trend in trauma center admissions due to IV was not observed in this study but has been reported in other studies.^{3,4} Although there were fewer admissions attributable to IV during the first half of the pandemic compared the pre-pandemic period, interpersonal violence increased after COVID-19 restrictions were in place for more than 4 months. It seems reasonable to think that citizens of Baltimore took the regulations seriously and violence decreased initially. When the consequences of social isolation became intolerable, the violence returned surpassing previous levels. Baltimore has been one of the US cities that has not seen a decrease in violence over the past few years. The fact that

pandemic levels of violence exceeded even the impressive rates seen pre-pandemic is extremely concerning, underscoring the severe negative effects seen with isolation.

This study represents the experience of a single urban trauma center and may not reflect overall trauma admissions in Baltimore. It is feasible that other local trauma centers experienced a proportionate increase in admissions due to IV during the pandemic. Given that restrictions and social distancing rules are ongoing, a longer period of analysis may result in trauma center admissions that more closely parallel city-wide crime data.

This study does not explore the root causes of increase in crime due to interpersonal violence during the pandemic. Future studies must explore contributing factors to greater firearm use during periods of social isolation. Increase in rates of intimate partner violence may have contributed to the proportionate rise in IV. Our data cannot address this, and future studies are needed. Findings of this study do underscore the need for greater resources to address the burden of interpersonal violence in urban centers during pandemics or other periods of forced social isolation, including increased access to hospital-based violence intervention programs and domestic abuse protection services. Limitations in social interaction have likely also reduced the availability of counseling and peer support groups in the community, possibly exacerbating the conditions that lead to interpersonal violence.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Melike Harfouche  <https://orcid.org/0000-0001-9555-5698>

References

1. Pfefferbaum B, North CS. Mental health and the Covid-19 pandemic. *N Engl J Med*. 2020;383(6):510-512.
2. Chodos M, Sarani B, Sparks A, et al. Impact of COVID-19 pandemic on injury prevalence and pattern in the Washington, DC Metropolitan region: a multicenter study by the American College of surgeons committee on Trauma, Washington, DC. *Trauma Surg Acute Care Open*. 2021;6(1):e000659.
3. Abdallah HO, Zhao C, Kaufman E, et al. Increased firearm injury during the COVID-19 pandemic: a hidden urban burden. *J Am Coll Surg*. 2021;232(2):159-168.e3.
4. Olding J, Zisman S, Olding C, Fan K. Penetrating trauma during a global pandemic: changing patterns in interpersonal violence, self-harm and domestic violence in the Covid-19 outbreak. *Surgeon*. 2021;19(1):e9-13.