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VICTIM OFFENDER OVERLAP: FIREARM HOMICIDE VICTIMS WITH AND WITHOUT CRIMINAL RECORDS

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Abstract: In the United States, firearm homicide is a major public health concern. Certain populations are at greater risk for being a victim of firearm homicide, such as those with prior criminal justice involvement. The overlap between violent victimization and offense history, referred to as the victim-offender overlap, is empirically supported, but research is limited on the overlap of firearm homicide victimization and justice involvement. Therefore, we examined the extent of victim-offender overlap of firearm homicide decedents by matching Illinois public health data with state arrest data. A total of 1,331 firearm homicide decedents were examined, including 20.4% (n = 271) with no arrest records and 79.7% (n = 1,060) with an arrest record, as well as 55.6% (n = 740) with a prior conviction and 31.8% (n = 423) with a prior incarceration. A higher proportion of firearm homicide victims with an arrest record were male, another race than White, non-Latinx, and single or never married than those without an arrest record. This study further supports the existence of the victim-offender overlap and highlights demographic disparities in criminal justice involvement among victims of fatal firearm violence.

Introduction

Firearm violence is a major public health and criminal justice issue in America. According to the Centers for Disease Control and Prevention,[1] over 19,000 individuals died from firearm homicide in 2020. Moreover, it is estimated for every fatal firearm injury in the United States, there are two non-fatal firearm injuries.[2] Beyond those who are physically injured many, many more have experienced trauma related to witnessing a shooting or losing a family member, friend, or community member to firearm violence. The number of firearm homicides have increased by 38% between 2018 and 2020, indicating a worsening problem.[3] In addition, increased anxiety, undertreated mental health issues, increased strain in relationships, and employment and financial difficulties resulting from the COVID-19 pandemic may have exacerbated firearm accessibility and use.[4] In the United States, there was a substantial increase in gun sales volume and ownership early in the pandemic.[5]

In Illinois in 2020, homicide firearm deaths totaled 1,167, accounting for 6% of U.S. firearm homicide deaths.[6] The rate of Illinois firearm homicide deaths was 9.3 per 100,000 persons, 58% higher than the national rate of 5.9 per 100,000 persons.[7] Racial disparities also play a role in Illinois firearm homicide death rates: Black persons are 10 times more likely than White persons to die by firearm homicide.[8] Chicago drives Illinois firearm violence statistics, with most instances occurring in disadvantaged neighborhoods.[9] In 2021, Chicago experienced 794 homicides.[10] Chicago, in particular, has seen substantial impact of firearm violence among communities of color and lower socioeconomic status, in which racial segregation, wealth inequality, gangs, and law enforcement's inability to solve and clear crimes continue to fuel this violent epidemic.[11] To better understand fatal firearm violence, it is important to examine victim demographics, incident circumstances, and precipitating events. In this article, we explored victim-offender overlap in relation to firearm homicide victims.

The research questions for this study were:

- What is the extent of overlap between firearm homicide decedents and criminal history records (prior arrest, conviction, and incarceration)?
- What are the demographic characteristics of firearm homicide victims with and without prior criminal history records?
- Are there demographic differences between firearm homicide victims who did and did not have criminal history records?

Background on Victim-Offender Overlap

Research indicates an empirical association between victimization and offending, often referred to as the "victim-offender overlap."[12] The connection between violent victimization and violence perpetration spans historical and current contexts, cultures, mental health status, nature of intimate partner relationships, and national and international research.[13] Berg and Mulford conducted a narrative review of extant literature to revisit and reappraise the victim-offender overlap.[14] The authors noted several areas of theory related to the victim-offender overlap: differential exposure, cultural perspectives, individual differences, and situational perspectives.

There are many inequities found particularly in poorer communities and communities of color, often concentrated in urban cities, that affect offending and victimization and in particular, gun violence.[15] These include poverty and social determinants of health including such as low or poor education, lack of housing, and limited employment opportunities.[16] In addition, mass incarceration has disproportionately affected communities of color leading to increases in both offending and victimization.[17]

Victim-Offender Overlap Theories

Differential exposure theories propose that certain individuals are more exposed to victimization and offending due to their routine activities and lifestyle.[18] Cohen and Felson's routine activities theory suggests that victimization and offending occur when there is a suitable target (victim), lack of social control or supervision, and an individual motivated to commit a crime.[19] Osgood and colleagues (1996) theorized that a lack of social control and unstructured socializing with peers creates more opportunity for engagement in criminal activity while offering limited protection from victimization from peers.[20] Research on differential exposure theories is limited; more research is needed to evaluate their applicability, including better definitions and rigorous research design.[21]

Theories centered around cultural perspectives posit that a lack of prosocial norms, or norms supportive of anti-social behavior, cause the victim-offender overlap. Cultural themes, particularly among low-income urban communities,[22] include the importance of honor, or the defense of one's status, as well as a lack of police legitimacy leading to conflict resolution through violence.[23] More research is needed to truly understand how cultural norms are associated with victimization and offending.[24]

In addition, there are theories centered around individuals and situations. Individual differences are biological, psychological, and cognitive characteristics associated with antisocial behavior.[25] Situational perspectives suggest that certain situations may lead to, and escalate, conflict and violence, including homicide. Such situations may include perceived disrespect, a third-party audience to the conflict, and alcohol use which increase offending and victimization among those who want to retaliate.[26] Poor conflict management skills may exacerbate retaliation leading to violence.[27]

The victim-offender overlap is complex and not yet fully understood. There is a need for rigorous, mixed-method research detailing victim-offenders and their actions over time in different populations.[28] Firearm homicide is a growing public health issue and much more research is needed to inform prevention. An examination of firearm homicide victim-offender overlap may prove fruitful as it presents a particularly extreme form of victimization.

Firearm Homicide Victim-Offender Overlap

Homicide and Prior Criminal Offending

There is a literature on homicide victims and victim-offender overlap but limited research specific to firearm homicide victimization and prior criminal offending. Studies have found

varying degrees of overlap between homicide victims and victims with arrest records, from a low of 33% to a high of 50% with prior records.[29] Wolfgang led one of the first studies analyzing homicide and criminal justice involvement, finding 47% of homicide victims had an arrest record.[30] Wolfgang also found that homicide victimization was often precipitated by the victim's perpetration of a crime.[31] Later, Broidy and colleagues shared similar findings in which 50% of homicide victims had arrest records.[32] Kellerman et al. found increased risk of homicide victimization in any home where a household member had been arrested.[33]

Offender Risk of Homicide

Studies have shown those that die by homicide by any cause have histories of criminal offending and that those histories vary. Some studies indicate criminal justice system-involved individuals have an increased risk of homicide victimization compared to those who are not involved in the criminal justice system.[34] Other studies have not found increased risk of homicide victimization with criminal justice system involvement.[35] Other research on criminal justice system-involved individuals focuses on mortality with few specifics on homicide victimization and even fewer on firearm homicide.[36]

Diversity of Offenders who Become Homicide Victims

A small body of research is available on offenders who later became homicide victims. Ezell and Tanner-Smith found criminal justice system-involved individuals at increased risk for homicide were Black males with gang affiliation and records of violent arrests; and that risk was elevated following a period of incarceration.[37] Broidy and colleagues noted homicide victims are similar to those who commit homicide, living in the same disadvantaged areas, engaging in similar risky behaviors, and committing similar non-violent offenses.[38]

Methodology

Data Sources

The Illinois Department of Public Health's Institutional Review Board and approved this study. To examine the research questions, we used the three primary data sources, detailed below.

Illinois Violent Death Reporting System (IVDRS)

The IVDRS is part of the National Violent Death Reporting System designed and funded by the U.S. Centers for Disease Control and Prevention. Northwestern University's Buehler Centre for Health Policy and Economics' Feinberg School of Medicine, the IVDRS bona fide agent for data collection, storage, and analysis for the Illinois Department of Health. This reporting system combines data from death certificates, coroner/medical examiner, law enforcement, toxicology, and autopsy reports. The IVDRS collects data on all violent deaths, including those resulting from homicide, suicide, legal intervention, unintentional firearm injury, and those for which the causes are undetermined, from participating Illinois counties. In 2015, IVDRS collected data from six Illinois counties and in 2016, data were collected from 16 counties.[39] These counties accounted for 81% of all Illinois violent deaths during those two years. We matched 2015 and 2016 IVDRS homicide fatality data collected from two criminal justice data sets—the Illinois

State Police's Criminal History Record Information (CHRI) and Illinois Department of Corrections (IDOC) data.

Illinois Criminal History Record Information (CHRI)

We used CHRI data to examine prior arrest histories of those in the IVDRS sample. Through a cooperative agreement with Illinois State Police, ICJIA's Research and Analysis Unit has access to all data posted to the system via an offline database. These data included all posted fingerprint-based arrests and associated arrest charges and basic demographic information submitted by local police agencies. We also accessed subsequent court dispositions and sentencing information submitted by circuit court clerks on those arrests. Individuals who have been entered into CHRI are assigned a unique state identification number (SID) based on their fingerprints. The individuals' fingerprints are linked to their arrest records. CHRI Records are limited to arrests and convictions occurring in Illinois.

Illinois Department of Corrections (IDOC)

We used IDOC data to identify the IVDRS-linked individuals' periods of incarceration for a felony offense. IDOC data include information regarding individual demographics, holding offense, sentence information, and personal identifiers. Also included are admission and exit dates, which can be used to determine lengths of stay. Using state identification numbers (SIDS) and name, we linked each individual's IDOC records with their corresponding CHRI records.

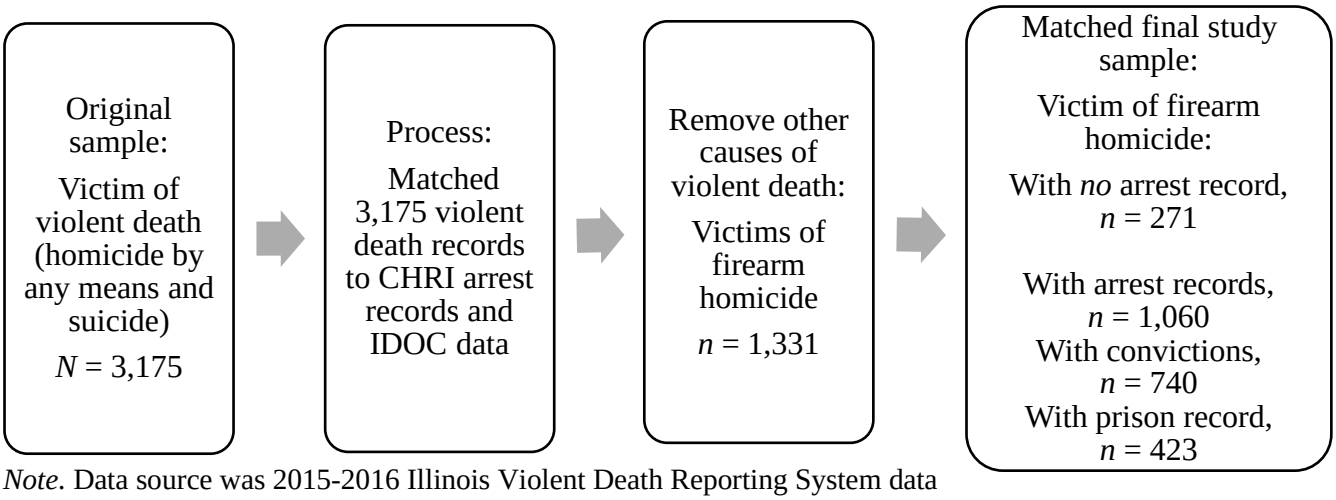
Sample and Procedure

The IVRS data set included a subset of the 3,175 adults (age 18 and older) who met the CDC definition of a violent death (homicide, suicide, legal intervention, unintentional firearm, and undetermined manner)[40] and included 1,258 records collected in 2015 from six counties and 1,917 records collected in 2016 from 16 counties (Figure 1).[41] This is a cross sectional study of a sample in 2015 and 2016.

IVDRS subject names and dates of birth were matched with CHRI data to determine which individuals had prior arrest or conviction records in Illinois. Of the total 3,175 cases, a total of 1,842 records were matched (58%); 27 individual records were manually reviewed and accepted as likely matches after rectifying certain issues, such as reversed last and first names and misspellings. Then victims of suicide or non-firearm homicide were removed from the sample leaving a sample of victims of firearm homicide.

IVDRS records were also matched with IDOC admission, exit, and parole files. The matching process included names, dates of birth, and SIDs associated with the individuals' CHRI records. A total of 530 individuals (17%) were matched to IDOC records. When we conducted the same manual methodological review for IDOC files, 27 of the 1,499 prison admission records identified were removed (2%), as were 28 of the 1,528 prison exit records (2%) because they did not accurately match with a person. After the data quality method was applied, each matched individual had at least one IDOC admission and exit record. We used a subset of the sample that included only firearm homicide victims.

Figure 1
Flow of Data in Study Sample



Note. Data source was 2015-2016 Illinois Violent Death Reporting System data on adults ages 18 and older.

Analysis

Statistical analyses of the data were conducted using IBM SPSS Statistics, Version 22. Basic descriptive statistics categorized the sample's demographics, circumstances of death, and arrest history. We conducted chi-square and t-tests to identify statistically significant differences between victim characteristics in relation to arrest history.

Study Limitations

As a result of missing data, study findings were not generalizable. In addition, the IVDRS data were collected from six (of 102) counties in 2015 and 16 counties in 2016. Most homicide cases sampled occurred in Cook County (88.1%). Only one rural county was represented in the sample and southern Illinois counties lacked representation. Also, arrests and incarcerations were in the state of Illinois only.

The inherent bias that influences the U.S. criminal justice system created another significant limitation. Data indicates Whites are under-represented and Blacks are over-represented among justice-involved populations. Racial disparities in law enforcement, racial bias among criminal justice process decisionmakers and the concentration of Black and other persons of color in under-resourced communities have resulted in an over-representation of Black persons within the U.S. criminal justice system.[42] These biases are reflected in our study as our data rely, in part, on data from criminal justice sources.

Findings

Demographic Characteristics of Firearm Homicide Victims

Over three-fourths of our sample of firearm homicide victims (79.6%) had any prior arrest. In comparison, there were 39.8% of Illinois suicide decedents during the same time periods using

the same datasets.[43] The majority of firearm homicide victims in our study were male, Black, and under 30 years of age. Table 1 offers descriptive statistics of all firearm homicide victims in the sample, including those with no prior arrests and any prior arrests, any convictions, and any state incarceration. Nearly 70% of firearm homicide victims arrested had been convicted and, of those, 55.9% were sentenced to a period(s) of incarceration.

Table 1
Firearm Homicide Victim Demographics

	All firearm homicide victims *n* = 1,331		Victim arrests *n* = 1,060		Victim convictions *n* = 740		Victims sentenced to incarceration *n* = 423		Victims with no prior arrest *n* = 271	
Characteristics	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Gender										
Male	1,235	92.8	1,019	96.1	725	98.0	421	99.5	215	79.6
Female	96	7.2	41	3.9	15	2.0	2	0.5	55	20.4
Race										
White	281	21.1	192	18.1	102	13.8	50	11.8	89	33.0
Non-White	1,050	78.9	868	81.9	638	86.2	373	88.2	181	67.0
Ethnicity										
Latinx	206	16.6	147	11.8	80	10.8	42	9.9	53	21.6
Non-Latinx	1,038	83.4	845	67.9	612	82.7	355	83.9	192	78.4
Marital status										
Married/civil union or widowed	141	11.1	97	9.6	81	11.6	46	11.4	44	16.9
Divorced or married but separated	51	4.0	37	3.7	24	3.4	19	4.7	14	5.4
Never married or single (or not otherwise specified)	1,082	84.9	879	86.8	595	85.0	338	83.9	203	77.8
Mean age	29.7			29.4		30.9		31.1		30.6
Median age	26.0			27.0		28.0		29.0		25.0

Note. Data from 2015-16 Illinois Violent Death Reporting System; Illinois State Police, Criminal History Record Information data, and Illinois Department of Correction data.

We conducted chi-square and t-tests to compare demographic characteristics of firearm homicide victims with and without arrest records. There were statistically significant associations between the firearm homicide victims with and without arrest records for gender $X^2(1, n = 1{,}331) = 87.62$, $p = .000$, $\Phi = -.257$; race $X^2(1, n = 1{,}331) = 29.45$, $p = .000$, $\Phi = .149$; ethnicity $X^2(1, n = 1{,}244) = 10.98$, $p = .001$, $\Phi = -.094$; and marital status $X^2(2, n = 1{,}274) = 13.44$, $p = .001$, $\Phi = .103$. Generally, the associations between the two groups—those with and those without arrest records— were weak.

Firearm Homicide Victim and Incident Characteristics

Table 2 provides detail on firearm homicide victims and incidents. Regardless of criminal history, a large majority of firearm homicides involved a handgun and occurred in Cook County.

Only data on handgun use was analyzed, as sample sizes for shotguns or rifles were fewer than 10 and could not be reported. In addition, IVDRS data showed fewer than 10 individuals showed records of a mental health disorder.

Table 2

Firearm Homicide Victim and Incident Characteristics by Criminal History

	Firearm homicide victims *n* =1,331		Victim arrest *n* = 1,060		Victim conviction *n* = 740		Victim incarceration *n* = 423		Victims with no prior arrest *n* = 271	
Characteristic	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Alcohol present										
Yes	327	27.3	281	30.2	216	33.0	133	35.8	46	19.6
No	873	72.7	651	69.8	439	67.0	238	64.2	189	80.4
Substance use (non-alcohol) problem										
Yes	24	1.8	23	2.2	19	2.6	11	2.6	<10	
No	1,307	99.2	1,037	97.8	721	97.4	412	97.4		
Gang related incident										
Yes	53	4.7	48	5.4	34	4.6	24	6.8	<10	
No	1,069	95.3	843	93.6	589	93.6	331	93.2		
Firearm type										
Handgun	1,087	97.9	867	81.8	608	82.2	345	81.6	220	81.2
Location of death										
Cook county	1,201	90.2	966	91.1	668	90.3	389	92.0	235	86.7
Other counties (non-Cook)	130	9.8	94	8.9	72	9.7	34	8.0	36	13.3
Precipitated by argument or conflict										
Yes	171	12.8	139	13.1	93	12.6	58	13.7	32	11.8
No	1,160	87.2	921	86.9	647	87.4	365	86.32	239	88.2
Precipitated by physical fight between two people										
Yes	41	3.1	28	2.6	19	2.6	12	2.8	13	4.8
No	1,290	96.9	1,032	97.4	721	97.4	411	97.2	258	95.2
Related to immediate or ongoing intimate partner violence										
Yes	34	2.6	15	1.4	<10		<10		19	7.0
No	1,297	97.4	1045	98.6					252	93.0
Justifiable by self-defense/defense of other, or by police in line of duty										
Yes	37	2.8	31	2.9	22	3.0	11	2.6	<10	
No	1,294	97.2	1029	97.1	718	97.0	412	97.4		
Precipitating crime was in progress										
Yes	91	6.8	66	6.2	50	6.8	31	7.3	25	9.2
No	1,240	93.2	994	93.8	690	93.2	392	92.7	246	90.8
Precipitated by other serious crime										
Yes	129	9.7	92	8.7	70	9.5	38	9.0	37	13.7
No	1,202	90.3	968	91.3	670	90.5	385	91.0	234	863

Note. Data from 2015-16 Illinois Violent Death Reporting System; Illinois State Police, Criminal History Record Information data, and Illinois Department of Correction data. Detail on circumstances of death

were derived from both law enforcement and county medical examiner data. Sample sizes varied because individuals with unknown data were removed. Data totaling less than 10 are not shown.

Criminal History of Firearm Homicide Victims

Firearm homicide victims averaged just under 18 years old at ages of first arrest (*M* = 17.6, *SD* = 4.7, *Mdn* = 17.0). As seen in Table 3, firearm homicide victims records showed multiple prior arrests, convictions, and incarcerations. The size of the standard deviations of the means suggests a wide range of arrest, conviction, and incarceration period totals. A minority of firearm victims were on parole at the time of death (7.6%) (*n* = 101); no deaths occurred in a jail.

Table 3

Criminal History Characteristics of Firearm Homicide Victims with Criminal Records

	Arrests		Convictions		Incarcerations	
	n = 1,060		*n* = 740		*n* = 423	
Criminal justice event detail	*n*	%	*n*	%	*n*	%
Mean (*SD*)	13.8 (13.8)		3.1 (3.5)		2.0 (1.3)	
Median	10.0		2.0		2.0	
Range	1-133		1-9		1-7	
Any felony event	865	65.0				
Any violent felony event	447	33.6	207	15.6		
Any controlled substance event	514	38.6	356	26.7		
Any domestic violence/stalking event	346	26.0	65	4.9		
Any weapons event	242	18.2	248	18.6		
Gang-involved event	95	7.1	<10	<10		

Note. Data from 2015-16 Illinois Violent Death Reporting System; Illinois State Police, Criminal History Record Information data, and Illinois Department of Correction data. Some detail on conviction and incarceration were not available in our dataset.

We conducted a t-test to identify differences in mean age between firearm homicide victims who did and did not have arrest records. The t-test revealed no statistically significant difference in mean age between firearm homicide victims with arrest records (*M* = 29.44, *SD* = 9.82) and firearm homicide victims without arrest records (*M* = 30.59, *SD* = 14.52), *M* = 1.15, 95% [-0.69, 2.99], *t*(344.09) = 1.23, *p* = .218.

Discussion

Recent studies have shown strong evidence of an overlap between victimization and crime perpetration.[44] However, prior study findings vary in the overlap's extent. This variation may be due to the differences in the specifics of victimization, such as circumstances, locations, weapon type, and relationship between perpetrator and victim and perpetration. For example, some studies are primarily focused on youth, delinquency, or longitudinal development of perpetration and victimization trajectories. The current study focuses on a particular subgroup of victimization—firearm homicide victims. The focus on firearm homicide is important as a significant public health problem and a major burden to the criminal justice system; nearly 22.8% of persons in state prisons and 5.0% of those in federal prison systems serve time for firearm homicide or non-fatal firearm injury.[45]

We found high, but varying, levels of criminal justice involvement among firearm homicide victims. Nearly 80% of firearm homicide victims in this study had been arrested at least once. Our sample had a much higher proportion of arrests compared to national samples in which about one out of every three Americans were arrested at some point over the last twenty years.[46] The figure is also considerably higher than what was discovered in a Canadian study which reported 33% of youth homicide victims had an arrest record[47] and a study by Broidy et al. that reported that 50% of homicide victims had arrest records.[48] These discrepancies suggest that there may larger overlap with criminality and victimization for victims of firearm homicide.

The overlap between arrests and firearm homicide victimization decreased when we limited the comparison to felony arrests, finding that 65% of firearm homicide victims had at least one felony arrest. For violent felony arrests, the overlap declined to 35%. This suggests prior perpetration of violence may have been concentrated among a subset of firearm homicide victims in the sample. In another analysis of the same dataset, 77% of all homicide victims had prior arrest records.[49]

It is estimated that 5.1% of the U.S. population will serve time in a state or federal prison over a lifetime.[50] We found the proportion of firearm homicide victims who had been incarcerated was more than seven times (39%) that of the general population. This, along with data on arrests and convictions, suggests that those who die by firearm homicide are a population with strong ties to perpetration of crime and the criminal justice system. We also found a significant overlap (38.6%) between those arrested for a controlled substance and firearm homicide victims. This suggests that for those who use illicit substances, substance use may play a role in the offender/victim overlap and an opportunity for deflection earlier.

We identified slightly different sex and race distributions between firearm homicide victims with and without arrest records. Those without arrest records were more likely to be women and individuals who are White, suggesting less overlap between perpetration and victimization for those groups.

Study Implications

Evidence of victim-offender overlap among homicide victims is documented in multiple studies. Our findings suggest an especially robust overlap of firearm homicide victims and those with criminal justice system involvement. As firearm homicides increase in Illinois and nationally, this finding points to a need to address the overlap as part of a comprehensive violence prevention strategy.

Practitioners in criminal justice have seen a growing movement toward trauma-informed care and evidence-based treatment including cognitive behavioral therapy[51] and dialectical behavioral therapy.[52] These services help those who are incarcerated or on community supervision achieve the skills and behavior changes needed to recover from victimization and avoid further perpetration as they re-enter their communities. Early research has shown that trauma-informed care approaches with justice-involved populations may lead to better outcomes, including lower recidivism.[53] More research is needed on the potential relationship between trauma-informed services and subsequent perpetration.[54]

A high proportion of arrests were for controlled substances, supporting the claim that jails and prisons often serve as de facto drug treatment.[55] Therefore, our findings support ways to offer treatment in lieu of justice involvement, such as community-based police deflection, pre-arrest diversion, and court diversion programs for persons with mental health disorders and/or substance use disorders.[56] These programs show promise for reducing recidivism, but more rigorous research is needed to more fully understand their role in interrupting the victimization/offender overlap trajectory.[57]

As Teplin noted in her study on firearm violence:

> Firearm victimization and perpetration are bidirectional: victims may become perpetrators, and perpetrators may become victims. Historically, the criminal justice system has primarily focused on offenders. However, focusing on offenders is already too late to intervene and only addresses half the problem. Prior research has demonstrated that firearm violence spreads through social networks, similar to how epidemics of disease spread (p.7).[58]

More research is needed to explore the overlap between crime perpetuation and firearm homicide victimization for a greater understanding of shared and independent risk factors and potential variation by offense type, circumstances surrounding the fatal injury, and victim/offender demographics. A more nuanced understanding of potential variation by crime perpetration patterns and homicide victimization is needed to inform violence and crime prevention efforts.

Conclusion

Firearm homicide deaths are a significant public health problem with growing losses of life and financial costs. Effective strategies are needed to reduce firearm homicide deaths. To gain insight into firearm homicides for prevention purposes, we examined potential overlap between firearm homicide victimization and offending with arrest, conviction, and incarceration records. We found substantial overlap between individuals with arrest, conviction, and incarceration records and firearm homicide victims, with 80% of victims having at least one arrest, 55% having at least one conviction, and 31% having served time in a correctional facility. Typically, victimization and perpetration are independently considered in research and policy. Our findings suggest that may be an inadequate approach. More research is needed on the specific connection between perpetration and firearm homicide to better understand shared and independent risk and protective factors.

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