








RESEARCH ARTICLE

A mixed-methods assessment of off-duty police shootings in a media-curated database

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Abstract

Objective: The aim of this study was to examine rates of killings perpetrated by off-duty police and news coverage of those killings, by victim race and gender, and to qualitatively evaluate the contexts in which those killings occur.

Data Sources and Study Setting: We used the Mapping Police Violence database to curate a dataset of killings perpetrated by off-duty police (2013–2021, $N = 242$). We obtained data from Media Cloud to assess news coverage of each off-duty police-perpetrated killing.

Study Design: Our study used a convergent mixed-methods design. We examined off-duty police-perpetrated killings by victim race and gender, comparing absolute rates and rates relative to total police-perpetrated killings. [Correction added on 26 June 2023, after first online publication: 'policy-perpetrated' has been changed to 'police-perpetrated' in the preceding sentence.] We also conducted race-gender comparisons of the frequency of news media reporting of these killings, and whether reporting identified the perpetrator as an off-duty officer. We conducted thematic analysis of the narrative free-text field that accompanied quantitative data using grounded theory.

Principal Findings: Black men were the most frequent victims killed by off-duty police (39.3%) followed by white men (25.2%), Hispanic men (11.2%), white women (9.1%), men of unknown race (9.1%), and Black women (4.1%). Black women had the highest rate of off-duty/total police-perpetrated killings relative to white men (rate = 12.82%, RR = 8.32, 95% CI: 4.43–15.63). There were threefold higher odds of news reporting of a police-perpetrated killing and the off-duty status of the officer for incidents with Black and Hispanic victims. Qualitative analysis revealed that off-duty officers intervened violently within their own social networks; their presence escalated situations; they intentionally obscured information about their lethal violence; they intervened while impaired; their victims were often in crisis; and their intervention posed harm and potential secondary traumatization to witnesses.

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Conclusions: Police perpetrate lethal violence while off duty, compromising public health and safety. Additionally, off-duty police-perpetrated killings are reported differentially by the news media depending on the race of the victim.

KEYWORDS

intersectionality, intimate partner violence, media studies, police violence, racism

What is known on this topic

- Police encounters are an important source of morbidity and mortality in the United States, particularly for Black, Indigenous, and Latinx communities.
- Few studies examine off-duty police-perpetrated violence; limited research shows that Black civilians are more likely than white civilians to be killed by off-duty officers.
- Previous studies demonstrate that differential reporting of police encounters by news media influences public perception and policy preferences.

What this study adds

- Off-duty police intervene violently among their own family and acquaintances, their presence escalates the situations in which they intervene, and they intentionally obscure information about their lethal use of force.
- Black men were the most common victims killed by off-duty police. However, Black women had the highest rate of off-duty police-perpetrated killings/total police-perpetrated killings.
- News media report police-perpetrated killings and the off-duty status of the perpetrator more commonly with Black and Hispanic victims relative to white victims.

1 | INTRODUCTION

Police violence against Black, Indigenous, and Latinx populations represents one of the many pathways through which structural racism causes negative health outcomes for ethnoracially minoritized populations in the United States (US).^{1,2} However, there are very few studies on the contribution of off-duty police violence to overall police-civilian fatal encounters and much of the literature that meaningfully analyzes off-duty police encounters is over four decades old. Off-duty police officers, including active but off-duty law enforcement officers and veteran law enforcement officers, are deputized as state actors with few limitations on their jurisdiction and weapons carriage. The Law Enforcement Officers Safety Act empowers active, off-duty, and veteran police to carry concealed firearms throughout the United States regardless of any state and local law to the contrary, except where state or local law makes allowable restrictions on firearms on private or government property. Furthermore, individual agencies discipline off-duty officers for their *failure* to intervene in the interest of public safety.^{3,4} However, civilians that have encountered off-duty officers purportedly acting for public safety have alleged unwarranted violence and racial profiling.³

Prior literature on off-duty police-perpetrated violence emphasizes intimate partner violence, alcohol use, and the permissibility of private security work among off-duty officers.^{3,5} Previously published research has shown that off-duty officers have been apprehended for discharging their service weapons in acts of intimate partner violence, during bar fights, and amidst other personal altercations.^{3,5} Additionally, roughly

80% of police agencies permit officers to moonlight as private security, and state and agency policies regarding moonlighting vary greatly.⁶

Racial inequities in police violence are well documented, with Indigenous populations experiencing the highest burden, followed by Black and Latinx populations.⁷⁻⁹ Furthermore, Black and Latinx individuals are more likely to be killed than white individuals even when unarmed.⁹ The limited contemporary research examining off-duty officers shows that Black civilians are more likely than white civilians to be killed by off-duty officers.¹⁰⁻¹² Therefore, off-duty interactions contribute to racial disparities in police violence and have health justice implications.

Beyond the incidence and prevalence of off-duty police-perpetrated killings and the role of weapons carriage in facilitating off-duty police-perpetrated violence, news coverage of these incidents is also noteworthy. Public sentiment around police use of force may influence political involvement.¹³ Therefore, news coverage can contribute to the emphasis of law enforcement regulation in policy agendas. By providing accurate information on the occurrence and conditions of these fatal incidents, particularly about the on-/off-duty status of the offending officer, news media agencies may drive policy change that can mitigate the potential dangers of unregulated action and physical violence by off-duty officers.

This study used data from public databases on police killings and related news coverage to examine rates of off-duty police officer killings, and news coverage of those killings, by victim race and gender, and we qualitatively evaluate the contexts in which those killings occur. We draw upon the theory of intersectionality, which frames how social-structural power systems operate in concert to influence the lives of multiply marginalized individuals.¹⁴⁻²¹ We hypothesized

that individuals from ethnoracially minoritized groups and intersectional identities would be over-represented among victims of off-duty police-perpetrated killings.¹⁶ We also hypothesized that news coverage would be influenced by victim race, considering the role of news media in documenting the police-perpetrated killings that sparked the racial justice protests of 2020.

2 | METHODS

2.1 | Data sources

We linked the Mapping Police Violence (MPV) (mappingpoliceviolence.us) database with summary data on frequency and content of news media reports regarding off-duty policing derived from Media Cloud (<https://mediacloud.org/>). One of the challenges of studying police-involved deaths is the sociopolitical climate that fortifies police power and limits data availability. Government surveillance systems underreport police-involved deaths.²² Independently curated databases assembled by news, nonprofit, and academic institutions are more accurate and maintain higher validity on contextual sociodemographic data.²³ As a result, independently curated databases have become standard for evaluating racial inequities in police violence.^{7,9,24}

The Mapping Police Violence database is curated by the Mapping Police Violence, Inc. nonprofit organization, and contains information on police-perpetrated killings dating back to 2013.²⁵ Mapping Police Violence data are extracted from state death records and state-level use-of-force databases (where available),²⁵ crowdsourced incident reports,²⁶ and independent news media searches. It is, to our knowledge, the only database that reports on-/off-duty status of the offending officer, includes the largest time catchment, has the greatest diversity of input sources, and has extensive contextual data elements.²⁵

Media Cloud is an open-source content analysis platform for news coverage that aggregates data from more than 50,000 news sources, from over 100 countries, in over 20 languages.^{27,28} Media Cloud supports searching individual media sources, or across media sources. It is a research collaboration of the University of Massachusetts at Amherst, Northeastern University, and Harvard University.²⁹

2.1.1 | Fatal encounter incident data

Mapping Police Violence includes an “off-duty” variable that indicates whether the offending officer was reported as off duty at the time of the incident. Our analyses focus on the subset of victims who were killed by off-duty police as indicated by this variable. These killings are the ones included in the qualitative and news media analyses described below. Other variables in our analyses include ethnoracial identity (Black, Hispanic, Native American, Pacific Islander, white, or unknown); binary gender (men and women); age; reported armed status of the victim (allegedly armed, unarmed/did not have an actual weapon, unclear, or vehicle); reported signs of mental illness or drug/

TABLE 1 Demographic and news media reporting characteristics of victims killed by off-duty police ($N = 242$).

Demographic of victim/news media reporting of killing	Distribution
Age, mean (SD)	31.87 (12.05)
Intersectional position, N (%)	
Black women	10 (4.1)
Black men	95 (39.3)
Hispanic women	2 (0.8)
Hispanic men	27 (11.2)
Native American men	1 (0.4)
Pacific Islander men	1 (0.4)
White women	22 (9.1)
White men	61 (25.2)
Women of unknown race	1 (0.4)
Men of unknown race	22 (9.1)
Reported armed status of victim, N (%)	
Allegedly armed	112 (46.3)
Unarmed/did not have an actual weapon	82 (33.9)
Unclear	37 (15.3)
In a vehicle	11 (4.5)
Reported symptoms of mental illness or drug use, N (%)	
No	186 (77.2)
Yes	6 (2.5)
Drug or alcohol use	8 (3.3)
Unknown	42 (17.4)
Cause of death, N (%)	
Beaten	4 (1.7)
Beaten/bludgeoned with instrument	1 (0.4)
Gunshot	237 (97.9)
Census region, N (%)	
Midwest	41 (16.9)
Northeast	27 (11.2)
South	129 (53.3)
West	45 (18.6)
News media reporting of police-perpetrated killings, N (%)	
National news report of killing	59 (24.4)
National or local news report of killing	103 (42.6)
National news reporting of killing and off-duty status of officer	28 (11.6)
National or local news reporting of killing and off-duty status of officer	59 (24.4)

alcohol use (none, signs of mental illness, signs of drug/alcohol use, or unknown); and cause of death (beaten, beaten/bludgeoned with instrument, and gunshot).

For armed status, Mapping Police Violence treats individuals who reportedly were not holding weapons, holding household/personal items and toys, innocent bystanders or hostages, or persons killed by

being intentionally hit by a police car as “unarmed/did not have a weapon.” Individuals coded as “vehicle” (referred to as “In a Vehicle” in Table 1) were killed while allegedly driving toward officers or civilians or during high-speed pursuits. Lastly, “armed” individuals are those who were alleged to possess weapons without falling into the other two categories.³⁰ Mapping Police Violence also included the address of the incident which we linked to the census region (Midwest, Northeast, South, and West). Lastly, the database includes a “brief description of incident” free-text field that includes a narrative summary of the incident based on the index news media report.

2.1.2 | Data on news media reporting of incident

We used Media Cloud to obtain information on the frequency of news articles regarding off-duty police-perpetrated killings, with and without mention of the off-duty status of the offending police officer.

The purpose of this analysis was to assess how the news media cover off-duty police-perpetrated killings and how the identity of the victim may have influenced such portrayals. We were interested in assessing (1) how often a victim was mentioned in the news and (2) how often news media mentioned the victim's death was due to an off-duty officer. When combined with demographic data available for each victim (as well as the known date of the victim's death), these data from Media Cloud allowed us to determine whether certain subpopulations of victims were more likely than others to have their deaths reported on by the news media. Moreover, these metrics lend insight into which subpopulations of victims were reported as having died because of an off-duty police-perpetrated killing (i.e., rather than a more generic description of the incident that excludes pertinent information about the off-duty officer who perpetrated the killing).

To obtain information on news media reporting regarding off-duty police-perpetrated killings, we pulled data for each off-duty police-perpetrated killing victim by querying the exact name of the victim and the term “off-duty” (and two common variations of this term, “off duty” and “offduty”). We populated the following fields for each victim:

1. Total number of articles in which the victim was mentioned between the date of the killing and June 30, 2021 (i.e., the date of the final Mapping Police Violence data pull), irrespective of whether the term “off-duty” appears.
2. Total number of articles in which both the victim and the term “off-duty” were mentioned between the date of the killing and June 30, 2021.

Because local news media may be more responsive, we populated the above data fields using Media Cloud's US National corpus, as well as Media Cloud's All Corpora option (i.e., including state and local corpora). Only 11.6% of police-perpetrated killings were reported with the additional information that the officer was off-duty in the US National corpus. This increased to 24.4% when including all available corpora.

2.2 | Mixed-methods integration

Our integration approach was a convergent design where qualitative and quantitative components of the study took place concurrently. We conducted an embedded analysis where the qualitative and quantitative components were merged during both data collection and data interpretation.^{31,32}

2.3 | Quantitative analyses

2.3.1 | Off-duty police-perpetrated killing incident analysis

Drawing on intersectionality in our quantitative analysis, we investigated the role of systemic racism and sexism, measured by proxy via race and binary gender.³³ We report the number of off-duty police-perpetrated killings by intersectional positions (race-gender cross-strata). We also calculated the within-intersectional rate (expressed as a proportion) of off-duty police-perpetrated killings relative to the total number of police-perpetrated killings for that position (e.g., the proportion of police-perpetrated killings of Black women victims that are committed by off-duty officers relative to all officers). We chose this rate denominator to calculate the degree to which the phenomenon of off-duty police-perpetrated killings exhibits or diverges from the well-documented nature of racialized policing bias violence broadly³³⁻³⁶ and overall police-perpetrated killings.⁹ Lastly, we calculated the rate ratio of off-duty police-perpetrated killings (and corresponding 95% confidence intervals) for off-duty/total police-perpetrated killings for each intersectional position relative to white men. We chose this reference category because white men represent the most privileged group relative to those in the United States who experience systemic racism and/or sexism. Native Americans and Pacific Islanders were excluded from the rate calculations due to low-frequency and zero-value cells; however, these groups are disaggregated in descriptive statistics. Additionally, intersectional positions with the “unknown” race group were also excluded since individuals in these groups likely experience heterogeneous relationships with social-structural systems of power.

2.3.2 | News media reporting analysis

We extracted information on the frequency of news media coverage of the police-perpetrated killings into four outcomes: (1) number of national articles reporting the incident, (2) number of local and national articles reporting the incident, (3) number of national articles reporting the incident and mentioning the off-duty status of the officer, and (4) number of local and national articles reporting the incident and mentioning the off-duty status of the article. Because of skewed and zero-inflated distribution of these data, we binarized the outcomes into the presence or absence of reporting across all four outcomes. To investigate the association of victim demographic characteristics with each of the four outcomes, we fit four separate multivariable logistic regression models, including

victim binary gender, ethnoracial identity, age, and reported armed or unarmed status (collapsing “in a vehicle,” “unclear,” and unarmed into one category). As with the incident analyses, Native American and Pacific Islander victims, as well as those with unknown race, were excluded.

2.4 | Qualitative analysis

We conducted thematic analysis of the “brief description of events” free-text field from the Mapping Police Violence database to situate our study within discourses of critical race theory and social science studies of policing. We employed grounded theory methodology using a combined inductive-deductive approach to thematic analysis of this short narrative description of off-duty perpetrated killings.³⁷⁻³⁹ We first developed a working theory of off-duty violence informed by prior literature on off-duty policing through group discussions of a team of researchers from multiple disciplines, including epidemiology, history of medicine, social work, psychology, and education.⁴⁰ Our working theory informed an initial list of codes focused on gendered violence, the influence of substance use on fatal police violence, and off-duty officers moonlighting as private security.

Our multidisciplinary team of researchers then iteratively tested the initial list of codes and corresponding definitions on five entries at a time for a total of 20 entries to clarify inclusion and exclusion criteria for codes, updating and refining our working theory of off-duty police violence. This informed the development of the finalized codebook that guided the systematic coding process. We then employed a primarily inductive approach to thematic analysis using the finalized codebook with agreed-upon inclusion and exclusion criteria. Each entry was independently coded by two members of this multidisciplinary coding team who then met to reach agreement on the application of the codebook to each of their shared entries. ENA and BM systematically applied codes to 118 entries and BM, EL, and CAB systematically applied codes to 118 entries for a total of 236 entries qualitatively analyzed. The full qualitative analysis team met regularly to discuss codes, themes as they emerged from the free-text data, and to update our working theory of off-duty police-perpetrated violence grounding insights in the free-text data.³⁷ Each researcher also regularly wrote analytical memos to share their emerging findings with other members of the coding team.

Finally, the lead author then synthesized the collaborative application of codes to the data, analytical memos, meeting minutes, and iteratively refined the codebook into a finalized theory of off-duty police-perpetrated violence and resulting list of themes and sub-themes.^{37,40} Themes and subthemes were not mutually exclusive, consistent with the principles of grounded theory analysis. Particularly, crosscutting themes or subthemes are denoted as such.

3 | RESULTS

3.1 | Quantitative results

Black men represented the largest group of victims, followed by white men and Hispanic men (Table 1). Among women victims, white women

represented the largest group followed by Black women. Less than half of victims were alleged to be armed and almost 5% were in a vehicle. Nearly all victims were shot and over half of police-perpetrated killings occurred in the South census region. Only a quarter of off-duty police-perpetrated killings were reported in the US National Corpus while nearly half were reported in local or national news.

Among all intersectional positions, Black women had the highest proportion of off-duty relative to total police-perpetrated killings, followed by white women, Black men, and Hispanic women (Table 2).

There was a greater than three-fold increase in odds of national news and national and local news reporting a police-perpetrated killing and the off-duty status of the officer for incidents with Black and Hispanic victims relative to white victims (Table 3).

3.2 | Qualitative results

3.2.1 | Off-duty officers committing violence within their own social networks

This theme refers to the harm that off-duty police officers caused their immediate community. This theme included intimate partner violence, murder-suicides, filicide, and violence toward other police officers. For example, one out of every 10 entries, for a total of 25 entries, recorded murder-suicides where officers killed their spouses, former spouses, spouses' new partners, children, and/or in-laws before taking their own lives. There were also instances in which officers killed friends or fellow officers during arguments, while traveling for work, and in risky gameplay.

3.2.2 | Officer impairment while committing violence

This theme relates to behavioral factors that influenced officer conduct while off duty, including alcohol use, other substance use, and mental health crises. These factors were completely independent of the victim or an alleged public safety justification for intervention. For example, officers used their service weapons during bar fights and killed both armed and unarmed fellow patrons during altercations. Additionally, officers with known mental health challenges went on to commit murder-suicides.

3.2.3 | Lack of transparency facilitating off-duty police violence

This theme relates to officer integrity as well as the lack of clear cues of police authority. For example, thematic analysis revealed that off-duty police officers intentionally obscured the details of off-duty-perpetrated killings. In one case, the news media reported attempts by the local police agency to obscure information about a police-perpetrated killing as limiting the amount of information available to

TABLE 2 Comparison of off-duty police-perpetrated killing rate among all police-perpetrated killings by race-gender intersectional position, January 2013–June 2021.

Group	Number of off-duty police-perpetrated killings	Total number of police-perpetrated killings	Off-duty/total police-perpetrated killings (%)	Rate ratio for off-duty/total police-perpetrated killings
Black women	10	78	12.82	8.32 (4.43–15.63)
Black men	95	2321	4.09	2.66 (1.93–3.65)
Hispanic women	2	59	3.39	2.20 (0.55–8.79)
Hispanic men	27	1631	1.66	1.07 (0.69–1.68)
White women	22	274	8.03	5.21 (3.25–8.36)
White men	61	3961	1.54	1.00 (Ref)

Note: Bold indicates statistically significant at the type I error rate of $\alpha = 0.05$.

TABLE 3 Association between news media reporting of police-perpetrated killing and officer off-duty status with victim characteristics.

Victim characteristic	National news report of police-perpetrated killing	National or local news report of police-perpetrated killing	National news report of police-perpetrated killing and officer off-duty status	National or local news report of police-perpetrated killings and officer off-duty status
Ethnoracial identity				
White	1.00 [Ref]	1.00 [Ref]	1.00 [Ref]	1.00 [Ref]
Black	1.52 (0.71–3.26)	1.29 (0.70–2.37)	3.38 (1.05–10.84)	3.12 (1.40–6.96)
Hispanic	3.16 (1.16–8.61)	1.27 (0.51–3.13)	3.63 (0.81–16.33)	3.02 (1.03–8.87)
Binary gender				
Men	1.00 [Ref]	1.00 [Ref]	1.00 [Ref]	1.00 [Ref]
Women	0.63 (0.23–1.75)	0.53 (0.23–1.21)	0.43 (0.09–2.11)	0.44 (0.14–1.41)
Age	1.02 (0.99–1.05)	1.02 (1.00–1.05)	1.01 (0.97–1.04)	1.01 (0.98–1.04)
Alleged armed status				
Not armed	1.00 [Ref]	1.00 [Ref]	1.00 [Ref]	1.00 [Ref]
Armed	0.62 (0.31–1.24)	0.72 (0.40–1.27)	0.33 (0.12–0.90)	0.79 (0.40–1.55)

Note: Bold indicates statistically significant at the type I error rate of $\alpha = 0.05$.

report. Additionally, in our analysis, witnesses reportedly disputed the officers' accounts or alleged that officers attempted to confiscate video or other evidence of their lethal use of force. Finally, there were instances in which officers confronted civilians while in plain clothes or traveling in unmarked vehicles leaving room for ambiguity when exerting their authority over civilian victims.

3.2.4 | Officer escalation rather than de-escalation

This theme relates to the extent to which off-duty officers escalated situations. We conceive of escalation as increasing the likelihood of a police encounter resulting in a civilian fatality. This was the most prominent theme that emerged from qualitative analysis. This theme also includes the most prevalent subtheme where the victim allegedly failed to comply with off-duty commands, fled, or otherwise posed an alleged threat to the off-duty officer. This subtheme characterized over half of all entries. This theme includes several subthemes including those which describe off-duty police officer intervention during the alleged commission of a crime and off-duty officer escalation during a personal dispute. Additionally, this theme highlights the variety

of settings where off-duty police exert authority. Commercial settings were the most common sites of escalation, characterizing about one-third of incidents. The domestic environment, including both officer homes and victim homes, were the second most common sites of escalation. Domestic settings were followed closely by traffic settings which included traffic stops and high-speed chases. Moonlighting was a subtheme that cut across multiple settings.

3.2.5 | Citizen in crisis

This theme points to the times when off-duty officers may have intervened in situations that they were ill-equipped to navigate either because of victim behavioral health challenges or other forms of structural vulnerability such as a victim's disability.

3.2.6 | Secondary harm or potential traumatization

This theme is cross-cutting and refers to the potential for exposure to off-duty officer-perpetrated violence that could take a physical,

TABLE 4 Themes and illustrative quotations from analysis of the free-text field.

Theme	Subtheme	Illustrative quotation
Officers committing violence within their own social network	Intimate partner violence, murder-suicide, and filicide	“Deputy [off-duty officer] shot and killed his wife, [victim 1], 54; daughter, [victim 2], 32; and his 6-year-old granddaughter, [victim 3]. He then shot and killed himself.”
	Officers harming other family members or acquaintances	“A fight broke out on a wooded path involving former schoolmates. A 26-year-old off-duty NYPD officer allegedly pulled his off-duty weapon and shot his buddy, [the victim], in the head, killing him.”
	Officers harming other officers while off-duty	“[Off-duty officer 1], 29, and [off-duty officer 2/the victim], 24, were reportedly playing some version of Russian roulette when [off-duty officer 1] shot and killed [off-duty officer 2/the victim].”
Officer impairment while committing violence	Mention of alcohol use or substance use for officer	“Off-duty deputy was drunk, ‘accidentally’ fired his weapon at his neighbor.”
	Mental illness or abnormal behavior of officer	“[The off-duty officer], who suffered from a number of mental illnesses and depression, shot and killed his wife, two children, mother-in-law and himself.”
Lack of transparency facilitating off-duty police violence	Police obscuring or withholding information about their lethal use of force	“[The victim] and a young female companion were sitting in a parked car in an apartment parking lot when approached by an off-duty Navasota officer and ordered to leave the vehicle. When [the victim] did not immediately comply, the officer discharged his weapon multiple times. One bullet fatally wounded the victim. Witnesses say the officer did not identify himself and tried to confiscate video evidence after the fact.”
	Confrontation between plain-clothed officers and civilians	“Police said that [the victim] confronted an off-duty officer, who was in civilian clothes, about 6:50 a.m. [The victim] had his hand tucked underneath his sweatshirt and was acting as if he was holding a gun... The off-duty officer, who was in the area on personal business, shot [the victim] once.”
	Off-duty violence within or near unmarked police vehicles	“Police found [the victim] shot multiple times inside of an unmarked Birmingham Police vehicle with an off-duty Birmingham Police detective, 39-year-old [off-duty officer] was arrested.”
Officer escalation rather than de-escalation	Officer escalation during the alleged commission of a crime or public safety threat	“Police say a patrol officer was working off-duty at a car show when visitors alerted him to a suspicious man riding his bike...He gave [the off-duty officer] a fake name, police said. When the officer asked him again for his name, he provided another last name, which police said the officer gave over the radio before communication went silent. The dispatcher then heard the officer state “shots fired,” three times. Then the officer told dispatchers the suspect came at him with a knife.”
	Officer escalation in a traffic or transit setting	“An off-duty officer on his way to work shot [the victim], who was driving a motorcycle, after he allegedly attempted to flee during a traffic stop. The officer tried to pull [the victim] over because he allegedly matched the description of someone who had robbed two Sandy grocery stores, a Smit's and Macy's, earlier that morning.”
	Officer escalation in officer's domestic setting	“An off-duty officer was grilling in his backyard when his neighbor jumped the fence. The two men got into a physical fight, and the officer struck the man in the head, knocking him down. [The victim] was pronounced dead at the scene by a medic.”
	Officer escalation in the victim's domestic setting	“Reportedly off-duty Dallas police officer [off-duty officer], said she walked into an apartment that wasn't hers, mistaking it for her own, and shot and killed the legitimate occupant, [the victim], when he didn't comply with her orders.”
	Officer escalation in a commercial setting	“An off-duty Detroit police officer was buying liquor when a man tried to rob him. Each shot, the man was killed, and the deputy wounded.”
	Off-duty officer escalation while moonlighting as private security	“An off-duty officer moonlighting as a security at a Giant store shot and killed a man accused of shoplifting. Video shows [the victim] attempting to drive away from the scene and the officer standing next to his car and then reaching into his car before he shot and killed him.”
	Officer escalation when victim allegedly failed to comply, fled, or	“[The victim] was outside of a concert in his car, allegedly passed out... Another individual attending the concert said they heard eight gunshots fired. The officers saw a gun in the man's waistband and gave him orders

(Continues)

TABLE 4 (Continued)

Theme	Subtheme	Illustrative quotation
	allegedly posed a personal threat to officer	regarding the weapon. When he didn't comply, one of the officers shot him."
Citizen in crisis	Mention of alcohol or substance use for victim	"Officers responded to an alleged road rage incident. The 911 caller said [the victim] wanted to fight multiple people and appeared to be under the influence of a substance...an off-duty police officer saw [the victim] driving erratically and pulled over to the side of the road to let him pass. [The victim] then stopped and pulled up next to the officer and began an argument with the officer. The officer reportedly identified himself to [the victim] as police and got out of his car. The officer shot and killed [the victim], although police withheld information as to what precipitated the killing."
	Victim with a presumed disability	"[The victim], a mentally disabled man, allegedly got in an argument with an off-duty LAPD officer, [off-duty officer], in a samples line. [The victim] allegedly knocked out the officer, who woke up and allegedly shot and killed [the victim] and shot and seriously wounded [the victim]'s parents."
	Alleged abnormal behavior of victim	"An off-duty Scottsdale officer responded to a report by a loss prevention officer of a suspicious person...the person had been shoplifting due to "erratic behavior"...the officer caught up with the suspect on the third floor of a parking garage. Police said [the victim] turned toward the officer and started to raise a gun. At that time, the officer shot and killed [the victim]."
Secondary harm or potential traumatization when victim family or acquaintance also present		"An unidentified off-duty Melrose Park police officer shot two brothers during an argument. [Victim 1] was killed. His brother [victim 2] was wounded."

Note: Table 4 lists all themes and subthemes that emerged from the thematic analysis of the free-text field.

psychological, and/or emotional toll on victim families or acquaintances that were present for killings.

4 | DISCUSSION

Our quantitative findings on absolute incidence of off-duty police-perpetrated killings mirror the overall phenomenon of racialized police violence. In our study, Black men made up most victims killed by off-duty police (39.3%), despite Black men comprising just 6.5% of the US population. Notably, among all police-perpetrated killings, Black women had the highest rate of off-duty killings/total police-perpetrated killings with a rate ratio of over eight times that of white men. We also showed that news media were more likely to report a police-perpetrated killing and the off-duty status of the officer for incidents with Black and Hispanic victims relative to white victims. Our qualitative findings are consistent with prior literature on violence perpetrated by off-duty police. In our study, off-duty officers intervened violently within their own social networks, their presence escalated situations, and they intervened while under the influence of substances. Additionally, we found that off-duty police officers intentionally obscured or withheld information about their use of lethal force; their victims were often in crisis; and their violent intervention posed harm and potential secondary traumatization to civilian witnesses.

This is the first mixed-methods analysis of the Mapping Police Violence database to our knowledge. Additionally, this is one of only a small number of scholarly investigations of off-duty police-perpetrated violence and the first investigation of off-duty conduct as a contributor to police violence in over a decade.^{3,5} Together, our results suggest that off-duty police-perpetrated violence is often gendered, a structural manifestation of misogyny⁴¹ and sexism that affects both the social networks of police officers themselves and the broader public. The discourse on the public health implications of policing must include off-duty conduct.

Evidence from prior research suggests that off-duty officers are more likely to shoot people of the same race or ethnicity as themselves.⁴² Our quantitative analysis showed that police-perpetrated killings of Black women were disproportionately perpetrated by off-duty officers relative to the total number of police killings. However, after Black women, white women had the next highest rate of off-duty killings/total police-perpetrated killings, five times the rate of white men. These findings are reinforced by the qualitative findings of matricide, murder-suicide, and filicide. Our qualitative observation of frequent intimate partner violence and our quantitative observation of the high rate of off-duty/total police-perpetrated killings among white women are consistent with each other given prior research that demonstrates individuals tend to build families and maintain long-term partnerships within their own racial groups.^{43,44} Together, our findings

are consistent with the existing literature on gendered violence within police officers' own families and romantic partnerships.⁴⁵

Through thematic analysis, we also found that off-duty police officers were sometimes under the influence of alcohol when intervening with deadly force. Our findings are consistent with prior literature which has shown that off-duty officer-perpetrated violence frequently occurs alongside alcohol use.^{3,46} Our research also demonstrates that off-duty police-perpetrated killings often occur while officers moonlight as private security in bars, shopping malls, and residential buildings. Stoughton reported results of an original survey of non-federal law enforcement agencies that collectively employed over 143,000 state and local officers, which accounted for almost one-fifth of all such officers in the United States. He found that roughly 80% of agencies permitted moonlighting, and that state and agency policies regarding moonlighting varied greatly.⁶ Such practices “blur the line between private and public policing, raising questions about accountability, officer decision-making, police-community relationships, and the role that police agencies play in modern society.”⁶ Multiple incidents in our dataset showed moonlighting officers killing victims in situations that may not have necessitated lethal use of force. Our qualitative findings highlight the ambiguity between public safety, vigilantism, and criminality when police officers exert violent authority while off-duty in a security context.⁴⁷

Our quantitative analysis showed that news media are more likely to report a police-perpetrated killing and the off-duty status of the officer for incidents with Black and Hispanic victims relative to white victims. This pattern of news reporting may reflect the racialization of Black and Latinx victims as typified victims of police brutality. Anti-Blackness posits violence against Black bodies as normative to the maintenance of social order in a white supremacist society.⁴⁸ While complete and accurate reporting of off-duty police-perpetrated killings may create some impetus for advocacy for these understudied instances of police brutality, the racialized patterns of news reporting may be reflective of the role of news media in reinforcing Black and Hispanic bodies as acceptable stages for violence. Stories and images of police violence against Black and Brown people may serve as contemporary public spectacles of racial terror.^{49,50}

4.1 | Limitations

Data present in Mapping Police Violence do not capture those instances that do not reach the threshold to attract news coverage. However, federal databases are demonstrably underreported^{51,52} in comparison with independently curated and crowdsourced police violence databases, and to our knowledge, Mapping Police Violence is the most comprehensive in terms of time coverage and available data elements. Additionally, individuals who are both women and from ethnoracially minoritized backgrounds represent intersectionally marginalized groups that have well-documented disparate experiences of police violence. However, transgender women of color, Muslims, immigrants, and individuals experiencing homelessness are not highly visible in the data.¹⁹ Future data collection needs to be more

complete and capture more elements relevant to the social-structural context of victims.

4.2 | Policy recommendations

There is a continued absence of clearly delineated administrative policies governing weapons carriage and usage for off-duty officers.⁴⁶ Our research demonstrates that off-duty police officers use their service weapons to intervene in ways that threaten public safety. If officers were required to return their service weapons after each shift, off-duty officers may be forced to intervene in incidents with less lethal methods. Also, crimes that were initiated by off-duty police officers—intimate partner violence, filicide, and road rage—would be less likely to result in death.

We should also broadly reconsider the utility of deputizing off-duty police officers to intervene when not formally working. If off-duty police officers were required to call on-duty police for help, much like a civilian, incidents when off-duty officers are under the influence of alcohol, arguing with neighbors, or stuck in traffic may not necessarily result in death. Off-duty officers should only be allowed to intervene under very specific circumstances with clear and consistent departmental guidelines for their conduct.

Our research also supports the implementation of policies that address “Police Culture Isolationism” which consists of “internal norms and external pressures (that) work together to create a unique subculture which values control, authority, solidarity, and isolation.”⁴⁵ This subculture ultimately leads to “unswerving loyalty to their fellow patrol officers” which facilitates the burying of misconduct, especially gendered violence.⁴⁵ Intentionally addressing police culture isolationism through mandatory routine mental health checkups, for example, might increase the chances of identifying officers who are at risk of harming themselves, their families, or the broader public. Additionally, our research underscores the necessity of standardized data collection and reporting of off-duty policing incidents. This information should both be regularly reviewed by the department and made publicly available for civilians to evaluate. This in turn may encourage an increase in the integrity with which off-duty officers interact with civilians.

Finally, our research has implications for news reporting of off-duty police-perpetrated violence. Prior research demonstrates the influence of news on public perception of policing and criminal justice policies.¹³ Incidents known to involve an off-duty police officer should explicitly state this information regardless of the race of the victim. In this way, news media may interrupt the pattern of racial violence as public spectacle. It is also important for news media to actively combat attempts by officers to withhold or obscure information with a diversity of sources. Our work demonstrates that this occurred on several occasions. Prior research has discussed the common practice of privileging police as the news media source for police violence incidents.⁵³ Reporting on off-duty violence with a diversity of sources is particularly important when there are attempts by police to obscure evidence of violence at the scene of the incident.

Off-duty police-perpetrated killings are a threat to public health. Off-duty officers frequently kill themselves, their own families, and members of the public in situations that do not necessitate lethal force, including intimate partner violence, filicide, and personal disputes. Off-duty police-perpetrated violence follows a pattern of violence that is racist and gendered, so inclusion of these incidents in the discourse around police violence is critical in pursuit of health justice. The policy discourse on off-duty police-perpetrated killings should include reevaluation of federal weapons carriage policy for off-duty police officers and the role of police culture isolationism in facilitating limited transparency and accountability for off-duty police-perpetrated killings. Furthermore, news media play a special role in research on police violence. It is imperative that news media recognize the sociopolitical climate that fortifies police power and the resultant limitations on data availability. As the most reliable source of data on police violence, including off-duty police violence, the ways in which news media report on off-duty conduct has broad implications for public opinion in a way that may drive policing policy. News media are therefore an important stakeholder in the public health effort to limit the potential dangers of unregulated action and physical violence by off-duty officers.

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