



The cumulative effect of gun homicide-related loss on neighborhood perceptions among street-identified black women and girls: A mixed-methods study

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ABSTRACT

Racial disparities in death indicate that Black women and girls are disproportionately bereaved by violent loss across their lifetime. Yet the context and consequences of this loss remain largely understudied. This study examines the effect of gun homicide-related loss of relative/friends on subjective neighborhood perceptions among street-identified Black women and girls (ages 16 to 54). The study used a convergent mixed-methods design, with simultaneous quantitative and qualitative components. Data were collected from two low-income, high-crime neighborhoods in Wilmington, Delaware. Quantitative data ($n = 277$) included a community-based survey on health, opportunity and violence. Qualitative data ($n = 50$) included semi-structured interviews primarily from a sub-group of the survey population. This study used a street participatory action research (Street PAR) methodology, which included members of the target population onto the research project. OLS regression analyses predicted the effect of exposure to gun homicide on perceptions of neighborhood social environment (i.e., safety, aesthetic quality, walkability, social cohesion, and availability of healthy foods). Interviews were analyzed using grounded theory. Approximately 87% of those surveyed were exposed to a relative/friend gun homicide. All interviewees were exposed to a relative/friend gun homicide. Exposure to the gun homicide of either a relative or friend alone was nonsignificant. But the combination of exposure to gun homicides of both a relative and friend was significantly related to poorer neighborhood perceptions, even when controlling for co-occurring factors. Mixed-method findings indicate that the cumulative impact of gun homicide-related loss matters most in shaping negative neighborhood perceptions. Qualitative data suggest that losing multiple members of one's familial and peer networks to homicide is a powerful form of co-victimization that alters how participants conceptualize and navigate public space. Interventions to decrease gun violence should consider how traumatic loss has unintended consequences on the quality of life of co-victims and those in close proximity to street life.

1. Introduction

Gun homicide is a significant public health epidemic that disproportionately impacts low-income Black communities (Fowler et al., 2015). Although the United States has experienced substantial reductions in violent crime over the last three decades, fatal and nonfatal shootings spiked during the COVID pandemic, which only widened racial disparities in firearm violence (Martin et al., 2022). Black Americans continue to experience the highest firearm homicide rates in every age group, and overall firearm rates in 2021 were the highest documented since 1993 (Simon et al., 2022). Homicide is still the leading cause of death for Black men and boys ages 15 to 34, and the second leading cause of death for Black women and girls ages 15 to 24 (CDC and

Prevention National Center for Injury Prevention and Control, 2022). Rates of intimate partner violence have declined, but Black women are still four times more likely to be murdered by a significant other than their white counterparts (Frazer et al., 2018). Gunshot victimization is highly spatially-concentrated and typically clusters among young Black men involved in small, identifiable co-offending networks (Papachristos and Wildeman, 2014). Assaultive gun violence is said to reduce the life expectancy of Black Americans by at least three years (Kalesan et al., 2019) and is correlated with complex social determinants of health such as structural racism and concentrated disadvantage (Burrell et al., 2021).

Despite a growing literature on gun victimization in marginalized Black communities (Frazer et al., 2018), less attention has been paid to

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the collateral consequences of the family, peers, and community members who are left behind (for exceptions see Carter, 2019; Sharpe and Boyas, 2011). As members of this extended network, Black women and girls are disproportionately bereaved by violent and excess deaths, especially those who are in closer proximity to street life and distressed conditions in urban Black neighborhoods (Geronimus et al., 2011; Hitchens, 2020). But the critical perspectives and attitudes of this population are often simultaneously missing from our analyses on gun homicide (Hitchens, 2022; Lindsey, 2022). Part of this gap lies in the methodological challenges associated with accessing and recruiting study participants from hard-to-reach populations, particularly those who are actively-involved in illegal activity (Tourangeau et al., 2014; Sandberg and Copes, 2013). This study works to overcome this gap through the use of street participatory action research (Street PAR), a methodological framework that includes members of the “researched” or target population throughout the research process, including study design, implementation, and analysis (Baum et al., 2006). This paper contributes to nascent research on the cumulative effect of gun homicide-related loss of relatives and friends on subjective neighborhood perceptions among street-identified Black women and girls (ages 16 to 54). Using a mixed-methods approach, I elucidate how their experiential knowledge is imperative to better understanding both the problems and solutions of gun violence in urban America.

1.2. Literature review

Racial disparities in mortality risk exist for most leading causes of death and indicate that Black Americans are disproportionately bereaved by multiple losses across the life course, many of which are violent (Umberson et al., 2017; Umberson, 2017). Longitudinal birth cohort data suggest that Black Americans have 2 to 3 times greater risk than whites of losing a parent, child, or spouse from adolescence through late adulthood (Umberson et al., 2017). Gun violence drives much of this increased risk, as low-income Black residents are more often exposed to both polyvictimization and the violent loss of multiple loved ones (Douglass et al., 2021). Blacks have a greater “cumulative risk of death exposure” than whites, which has “corrosive effects on [B] lack families and communities” (Umberson et al., 2017: 915; Smith, 2015). This burden of premature and excess death has persisted for generations, and sociologists Jackman and Shauman (2019) estimated that there were almost 7.7 million excess deaths among Black Americans from 1900 to 1999.

Because Black Americans are overrepresented among homicide victims, they are also overrepresented among “homicide survivors” or similarly, “co-victims” who vicariously experience the loss of a loved one to homicide and survive the experience (Sharpe and Boyas, 2011; Laurie and Neimeyer, 2008). Scholars estimate that each homicide impacts 3 to 10 loved ones, which translates into approximately 64,000 to 213,000 people annually in the U.S. (Bastomski and Duane, 2019). Urban Black women and girls are often homicide survivors, given the nexus of community violence exposure and household family structure (Johnson, 2010; Jenkins, 2002). Black households are frequently female-headed with extended networks and fictive kinships led by women (Collins, 1990; Laurie and Neimeyer, 2008). Black grandmothers often serve as primary caregivers and experience the challenges of raising multiple generations in neighborhoods rife with community violence and other ecological stressors (Simpson and Lawrence-Webb, 2009). In addition, social dynamics in urban communities increase the likelihood that Black women will witness someone being shot at, see a dead body, or hear about someone they knew shot at, killed, or physically assaulted (Isom-Scott, 2018; Jenkins, 2002). Black mothers experience substantially higher child mortality than white mothers, disproportionately through non-accidental death (Donnelly et al., 2020). As such, these women are frequently the “mothers and mates” of the slain— though there is a paucity of studies on the complex socio-emotional and psychological suffering that they endure as homicide

survivors (Jenkins, 2002; Bailey et al., 2013). The stress of gun homicide-related loss is then “super-imposed” on other preexisting stressors that are disproportionate to the experiences of Black women and girls, including daily discrimination, economic hardship, and role strain (Hill et al., 1995).

Street-identified Black women and girls are likely more often exposed to community violence such as gun homicide, but the consequences of this exposure have not been fully investigated. Most residents of disadvantaged communities do not participate in crime, but street-identified Black women and girls comprise a distinctive, hard-to-reach subset of the broader urban, Black population that is often in closer proximity to criminal justice contact, violence, and other forms of illegal activity (Hitchens, 2022; Hitchens et al., 2022; Hitchens and Payne., 2017; Payne, 2008, 2011). “Street life,” “the streets,” or a “street” identity is phenomenological language that speaks to the various modes of survival in distressed, urban Black communities including both *legal* (e.g., bonding, interpersonal acts, or group solidarity) and *illegal* (e.g., drug use or sale, fighting, theft, or gang involvement) activities (Payne, 2008, 2011). Thus, while some street-identified Black women and girls adhere to an ideological “code of the streets” or informal rules governing violent behavior, street life also encompasses the spectrum of networking behaviors and activities that manifest through both legal and illegal activities in urban Black spaces (Anderson, 2013; Payne, 2008, 2011). Where the code of the streets categorizes low-income Black communities in dyadic terms (“street or decent” or “violent or non-violent”), street life captures the fluidity of distressed, urban living and unravels how street-identified Black men and women organize meaning around feeling well, satisfied, or accomplished, and how they choose to survive in adverse structural conditions (Hitchens and Payne., 2017; Payne, 2008).

Adverse neighborhood conditions, particularly exposure to violence, can increase subsequent involvement in crime but also negative socio-emotional and behavioral responses (Sampson et al., 1997). While Black families are more likely to maintain stronger bonds with the deceased and express greater grief for the loss of extended kin, they are less likely to seek professional support or therapy following loss (Laurie and Neimeyer, 2008). Surviving a gun homicide-related loss is associated with significant downstream sequelae including prolonged grief disorder, PTSD, depressive episodes, substance abuse, and alcohol dependency (Rheingold et al., 2012). These consequences are particularly visible among children, as increased exposure to both polyvictimization and violent death may be mechanisms through which Black youth develop more severe traumatic stress and grief reactions (Douglass et al., 2021). Horowitz et al. (1995) argued that “compounded community trauma” can explain the neighborhood patterns of prolonged and recurrent exposure to violence among urban Black girls, most of whom reported PTSD symptoms including reexperiencing, avoidance, and hyperarousal.

But less is known about how exposure to violence in the context of surviving gun homicide-related loss influences the subjective neighborhood perceptions of street-identified Black women and girls. Individual-level assessments of one’s neighborhood are important indicators of both behaviors and health-related outcomes, as “citizens make decisions and render opinions every day based on broad perceptions and imagined neighborhoods, which in turn have real consequences” (Sampson, 2013: 8). Suffering a violent loss differs from other forms of loss, as it often shatters one’s worldview or understandings about the “goodness” of the world and its inhabitants (Rando, 1993). Homicide survivors are more predisposed to feelings of cynicism, apathy, or distrust as a consequence of trauma (Parson, 1994), and this has real implications for how they also perceive their neighborhood social environment.

This study examines how traumatic loss shapes subjective measures of neighborhood aesthetics (e.g., cleanliness or desirability), cohesiveness (e.g., degree of group connectedness or membership), and safety (e.g., ability to navigate public space without fear or threat of violence; Echeverría et al., 2014; Mujahid et al., 2008). Examining these factors

collectively may provide insight into how differences in the quality of Black neighborhoods contribute to the level of exposure to violence among residents and ultimately how connected and safe they feel (Peterson and Krivo, 2010). Poor neighborhood aesthetics may symbolize criminogenic conditions in the broader physical and social environment, as South et al. (2022) found that abandoned house remediation was directly linked to reduced gun violence, particularly fewer nearby weapons violations, gun assaults, and shootings. Relatedly, urban neighborhoods with more food insecurity, less vegetation, more noise or litter, and fewer “green” spaces often have more violent and property crimes, as these risk factors likely serve as markers for disadvantage and disinvestment, both of which are associated with increased incidences of gun violence (Miller et al., 2021; Kuo and Sullivan, 2001; Drakulich, 2013). These contextual neighborhood features weaken social ties and collective efficacy, and ultimately increase potential victimization (Sampson et al., 1997). A violent social milieu where actual or perceived victimization is high, structures how Black residents understand their neighborhoods and social world, which then shapes their overall quality of life.

1.2.1. Hypotheses

The purpose of this research is to examine the prevalence of relative and friend gun homicide exposure and loss among street-identified Black women and girls ages 16 to 54 and to assess its impact on neighborhood perceptions, while controlling for demographic and potentially co-occurring factors, including prior arrest and victimization. I conduct a mixed-methods analyses with the following aims.

1. Estimate the prevalence of exposure to the gun homicide of either or both a relative or friend among a sample of street-identified Black women and girls;
2. Determine the effect of gun homicide exposure on neighborhood perceptions, controlling for age, neighborhood, and other potential confounding stressors, including employment, marital status, prior arrest, and prior victimization; and
3. Demonstrate how exposure to gun violence has deleterious consequences on the health-related quality of life of homicide survivors as co-victims of violence.

2. Methods

2.1. Study design

I used a convergent mixed-methods design, which consisted of simultaneous collection of quantitative and qualitative data, using separate protocols, analyzing data separately, and then integrating results towards thematic interpretation (Creswell et al., 2003; Fetters et al., 2013). The goal of this design was that the qualitative findings would help to better explain and understand the results of the quantitative data. Integration of both methods also potentially addresses some of the disadvantages of single-method designs and can strengthen the study with the ability to corroborate findings (Creswell et al., 2003). As the primary focus of the paper was to understand the effect of gun homicide-related loss on perceptions of multiple neighborhood-based features, the qualitative evidence provides substantive meaning on how the nature and prevalence of loss influenced the quantitative outcomes chosen for analysis. Both quantitative and qualitative data were collected from the Wilmington Street PAR Health Project, a research project in two low-income, high-crime neighborhoods in Wilmington, Delaware. The project critically examined the relationship between health, structural opportunity, and violence among a large community sample of street-identified Black Americans ages 16 to 54 in the Northside and Westside neighborhoods of Wilmington.

Use of mixed-methods was also guided by a “social justice rationale,” which involved data collection, recruitment, and analysis that illuminated complex forms of oppression, and involved participants from the

community as research co-collaborators (Plano Clark and Ivankova, 2016). As such, this study used a street participatory action research (Street PAR) methodology, where formal researchers selected members of the target population to mutually design and implement a research program while engaging in local activism (Baum et al., 2006; Payne, 2008, 2017). PAR actively includes members of the “researched” in the research process, including developing research questions and collecting and analyzing data (Baum et al., 2006). As an application of PAR, Street PAR is an epistemological orientation that primarily involves street-identified populations in schools, correctional facilities, and local communities to engage in this participatory enterprise (Payne, 2017). Street PAR assumes that individuals who are actively or formerly involved in the streets are best positioned to systematically examine the socio-structural experiences of an urban and/or street-identified population. In essence, Street PAR embraces the worldviews and lived experiences of this population, shifting the location of power and knowledge production (Baum et al., 2006). Data were collected from April 2017 to October 2018.

This methodological framework was particularly useful in gathering the lived experiences of a hard-to-reach population of Black women and girls who are most vulnerable to socioeconomic precarity, racial stigmatization and justice involvement (Tourangeau et al., 2014; Goode, 2000). The Street PAR framework depended on the social capital and indigenous knowledge of individuals formerly involved in the streets and/or criminal justice system, hired as Street PAR Associates. These Associates or “organic intellectuals” were members of the neighborhoods under study and provided the access and rapport needed to recruit a robust sample of street-identified Black women and girls (Gramsci, 1971).

2.1.1. Research site

Wilmington is the largest city in Delaware, and at the time of data collection (2017–2018), it had approximately 70,166 residents with 58% of the population Black and 36% of the population white (U.S. Census Bureau, 2019). Wilmington is a useful research site to examine the prevalence of violence, as the city has one of the highest per capita homicide rates for a city of its size (FBI Uniform Crime Reporting Program, 2009; Jones, 2014). Labeled “MurderTown USA” (Sutton, 2021; Jones, 2014; Payne et al., forthcoming) and one of the “most dangerous small cities in America” (Jones, 2014), Wilmington has a violence problem that costs Delaware \$611 million per year (Giffords Law Center, 2018). Study participants were recruited from several sub-communities within the Northside and Westside neighborhoods in Wilmington (Appendix Table 1). Participants were recruited from communities characterized by intense concentrated disadvantage, including racial segregation, high unemployment, disproportionate rates of low-income residents, and elevated percentages of incarcerated residents (Chetty et al., 2018).

2.2. Data collection and sample

2.2.1. Quantitative sampling and data collection

The quantitative sample included 277 street-identified Black women and girls, between the ages of 16 and 54. Participants were recruited using both stratified quota and snowball sampling. Quota sampling was based on age cohorts as determined by the 2010 U.S. Census. Age cohorts in the Census are disaggregated into the following groups: (a) 16–24 years old; (b) 25–34 years old; (c) 35–44 years old; and (d) 45–54 years old. The research team determined the number of Black women and girls in the Westside and Northside neighborhoods in each age category then calculated the percentages based on the total number in the neighborhoods. From these percentages, the team determined quotas to ensure that the same percentages of Black women and girls were included in the sample. Participants had to meet the following criteria: (a) self-identify as Black/African American; (b) self-identify as female; (c) live in a low-income environment; (d) be between the ages of

16–54; (e) live in the Westside or Northside neighborhoods of Wilmington; and be either (f) street-identified, involved with crime, formerly incarcerated, or formerly involved in illegal activities.

Participants were recruited using snowball sampling, a technique generally used to collect data from fringe, sparse, and/or sensitive populations (Tourangeau et al., 2014). Participants who met the inclusion criteria were identified through the Street PAR Associates' social networks. Associates were 14 street-identified Black men who lived in Wilmington and nine were members of a previous Street PAR project (Payne, 2013). Associates provided contact information for those who met the study criteria. Data collection strategies included tapping these networks and then expanding the sample by asking those who participated how we could locate other individuals who fit the sample criteria. Data were collected at four community centers located in the two neighborhoods.

Survey instruments were 45-pages in length and took approximately 2 hours to complete. The instrument included questions on: (1) family; (2) violence; (3) employment and educational opportunity; (4) living/health conditions; (5) police; and (7) incarceration. Participants provided their assent or consent to participate in the study by completing informed consent forms, video release forms, and demographic questionnaires. All were covered by a Certificate of Confidentiality. Participants were informed that participation was strictly voluntary and that all responses would remain confidential. Participants received a \$40 cash incentive and a resource package after survey completion. Data collection and survey items were approved by the University of Delaware Institutional Review Board (IRB).

2.2.2. Qualitative sampling and data collection

The qualitative sample included 50 street-identified Black women and girls, ages of 16 and 54. Participants were primarily a sub-group of the survey population. Following completion of the survey, team members asked participants if they would be interested in sitting for an interview. Team members then scheduled interviews on a rolling basis at local community centers. Interviews were semi-structured, with open-ended questions that allowed for considerable probing. They were designed to gather more in-depth information on the topics described in the surveys, including details about the participants' exposure to violence, perceptions of violent death and loss, wellbeing, and attitudes toward the safety and social cohesion of their neighborhood. Interviews typically took one to two-and-a-half hours to complete. Participants provided their assent or consent to participate in the study by completing informed consent forms, video release forms, and demographic questionnaires. Participants received a \$25 cash incentive or gift card after interview completion. Interview protocol was approved by the University of Delaware IRB.

2.2.3. Measures

2.2.3.1. Independent variables. Gun Homicide-Related Loss of Either Friend or Relative. The first independent variable assessed whether the participant had ever been exposed to the gun homicide of a relative or a friend. This was assessed by asking two "yes" or "no" questions including: "Have you ever had a relative killed with a gun?" and "Have you ever had a friend killed with a gun?"

Gun Homicide-Related Loss of Both Friend and Relative. The second independent variable assessed whether the participant had ever been exposed to the gun homicide of both relative and a friend. This was assessed by asking two "yes" or "no" questions including: "Have you ever had a relative killed with a gun?" and "Have you ever had a friend killed with a gun?"

2.2.3.2. Outcomes. I examined the effect of exposure to gun homicide on two outcomes measures:

Perceptions of Neighborhood Social Environment. A total attitudinal

scale of 35 items on a 4-point Likert scale was created using modified versions of the Dimensions of Neighborhood Environment scale (Mujahid et al., 2007, 2008) and Subjective Neighborhood Scale (Aneshensel and Sucoff, 1996). The constructed scale covered five areas of the neighborhood social environment: *aesthetic quality* (8 items; e.g., "This is an ugly place to live"; Cronbach's alpha = 0.79); *walkability* (10 items; e.g., "My neighborhood offers many opportunities to be physically active"; Cronbach's alpha = 0.71); *access to healthy foods* (4 items; e.g., "A large selection of fresh fruits and vegetables is available in my neighborhood"; Cronbach's alpha = 0.70); *safety* (7 items; e.g., "My neighborhood is safe from crime"; Cronbach's alpha = 0.78); and *social cohesion* (6 items; e.g., "People in my neighborhood can be trusted"; Cronbach's alpha = 0.75). The Likert scale ranged from 1 (Strongly Disagree) to 4 (Strongly Agree), and participant scores were computed by summing the total item count, which showed good reliability in this sample (Cronbach's alpha = 0.89; see Appendix Table 2).

Perceptions of Neighborhood Safety. An attitudinal sub-scale of 7 items on a 4-point Likert scale was created using modified versions of the Dimensions of Neighborhood Environment scale (Mujahid et al., 2007, 2008) and Subjective Neighborhood Scale (Aneshensel and Sucoff, 1996). This constructed scale is a sub-scale of the total Perceptions of Neighborhood Social Environment scale and measures perceptions of personal and general safety from neighborhood crime (e.g., "I feel safe walking in my neighborhood, day or night" and "There is drug use and dealing here") and violence (e.g., "Violent crimes happen here"). The Likert scale ranged from 1 (Strongly Disagree) to 4 (Strongly Agree), and participant scores were computed by summing the total item count, which showed acceptable reliability in this sample (Cronbach's alpha = 0.78; see Appendix Table 2).

Controls. Additional variables are included as controls in order to account for potential factors that may be related to perceptions of neighborhood social environment and safety. Demographic characteristics such as age (i.e., continuous measure), marital status (1 = single), employment status (1 = employed), and neighborhood of residence (1 = Northside) are included. In addition, prior arrest history and victimization are included. Prior arrest indicates whether a participant has ever been arrested in the past (1 = yes). Prior victimization was constructed by a series of questions that asked the participants if they had ever been physically assaulted, seriously injured after violence, attacked or stabbed with a knife, shot with a gun, or sexually assaulted. A "1" is noted if a participant answered yes to at least one of these questions.

2.3. Data analysis

2.3.1. Quantitative analysis

Following the convergent mixed-methods design, I separately analyzed quantitative and qualitative data and later integrated those data together (Creswell et al., 2003; Fetters et al., 2013). Statistics were performed using Stata (v.17.0). First, I discuss the descriptive statistics for the quantitative sample (Appendix Table 2). Next, I conducted bivariate analysis and used this analysis to inform multivariate analyses. Specifically, I employed an ordinary least squares (OLS) regression to examine whether exposure to gun homicide-related loss influences perceptions of neighborhood social environment and safety. Two sets of models examine the effect of (a) any exposure to either a relative or a friend gun homicide and (b) exposure to both a relative and a friend gun homicide compared with those not exposed (see Tables 1 and 2).

2.3.2. Qualitative analysis

Qualitative analyses were conducted separately using Dedoose (v.9.0). Descriptive characteristics of interview participants are presented in Appendix Table 1. I analyzed interviews using a grounded theory approach, which included constant comparison of codes to generate common patterns and themes (Charmaz, 2011). Analysis consisted of four steps: 1) **Open Coding:** Reading and listening to transcripts and coding the data, selecting meaningful text segments, and labeling

Table 1
OLS coefficients and standardized coefficients predicting perceptions of neighborhood social environment examining gun homicide exposure.

	Exposure to <i>Either</i> Relative or Friend Gun Homicide				Exposure to <i>Both</i> Relative and Friend Gun Homicide			
	Model 1		Model 2		Model 3		Model 4	
	Coefficient (SE)	β	Coefficient (SE)	β	Coefficient (SE)	β	Coefficient (SE)	β
Gun Homicide Exposure	-3.52 (2.46)	-0.09	-3.66 (2.72)	-0.10	-4.81 (1.71)	-0.17**	-5.32 (1.88)	-0.20**
Age	-	-	-0.02 (0.08)	-0.02	-	-	-0.05 (0.09)	-0.04
Employment	-	-	-1.24 (1.79)	-0.05	-	-	-0.16 (1.82)	-0.006
Single	-	-	-0.05 (2.41)	-0.001	-	-	0.36 (2.45)	0.01
Prior Arrest	-	-	-2.31 (1.91)	-0.09	-	-	-1.92 (1.97)	-0.07
Prior Victimization	-	-	1.84 (2.03)	0.07	-	-	1.67 (2.06)	0.06
Northside	-	-	1.84 (1.82)	0.08	-	-	2.41 (1.84)	0.09

*p < 0.05 **p < 0.01.

Table 2
OLS coefficients and standardized coefficients predicting perceptions of neighborhood safety examining gun homicide exposure.

	Exposure to <i>Either</i> Relative or Friend Gun Homicide				Exposure to <i>Both</i> Relative and Friend Gun Homicide			
	Model 1		Model 2		Model 3		Model 4	
	Coefficient (SE)	β	Coefficient (SE)	β	Coefficient (SE)	β	Coefficient (SE)	β
Gun Homicide Exposure	-0.95 (0.68)	-0.09	-0.77 (0.77)	-0.07	-1.16 (0.48)	-0.15*	-1.13 (0.54)	-0.14*
Age	-	-	0.03 (0.02)	0.09	-	-	0.02 (0.02)	0.06
Employment	-	-	-1.00 (0.51)	-0.13 [†]	-	-	-0.66 (0.52)	-0.08
Single	-	-	-0.37 (0.67)	-0.04	-	-	-0.32 (0.69)	-0.03
Prior Arrest	-	-	-1.04 (0.54)	-0.14 [†]	-	-	-0.94 (0.56)	-0.12 [†]
Prior Victimization	-	-	0.53 (0.57)	0.07	-	-	0.45 (0.58)	0.05
Northside	-	-	1.34 (0.52)	0.17*	-	-	1.37 (0.53)	0.17*

*p < 0.05 **p < 0.01 †p < 0.1.

these segments into codes; 2) **Focused Coding**: Further analyzing codes derived from open coding and systematically reducing and merging codes; 3) **Axial Coding**: Constructing linkages between codes to develop conceptual themes; and 4) **Integration**: Merging mixed-method findings by using qualitative data to inform, support or challenge quantitative data (Fetters et al., 2013).

Findings were grounded in participant’s discussions of exposure to community violence, prevalence of gun homicide deaths, and experiences with traumatic loss. I paid specific attention to variations in their relationship to homicide victims and how participants explained how loss shaped their neighborhood perceptions. I integrated participants’ quotes throughout the findings to give voice to their lived experiences of the identified patterns found in the quantitative data. Some of the related interview questions included: 1) Can you talk about times you ever witnessed/observed community violence? 2) Can you talk about any time you attended the funeral of someone who was shot and killed or suffered violence? 3) How do you feel about the Westside/Northside? Do you have a good relationship with your neighborhood? and 4) Where do you feel most safe/most unsafe in your neighborhood and why? Together, these data provided critical insights about the nature and prevalence of gun homicide-related loss and its effect on neighborhood perceptions among street-identified Black women and girls.

3. Results

3.1. Quantitative findings: prevalence and demographic differences

On average, survey participants had moderate perceptions of their neighborhood social environment ($M = 79.60$; range = 39 to 131; Appendix Table 2) and neighborhood safety ($M = 12.97$; range = 7 to 25). Most (87%) participants lost either a friend or relative to gun homicide and over half (57%) lost both a friend and relative to gun homicide. Survey participants who never lost a friend or relative to gun homicide were less likely (33.3%) to agree or strongly agree that their neighborhood was “an ugly place to live,” in comparison to those who lost either a friend or relative (52.7%) or lost both a friend or relative to gun

homicide (54.8%). Participants who never lost a friend or relative to gun homicide were also more likely (44%) to agree or strongly agree that they felt “safe walking in [their] neighborhood, day or night,” in comparison to those who lost either a friend or relative (25.7%) or lost both a friend or relative to gun homicide (24%).

Survey participants were on average 32.54 years old ($SD = 11.46$) and were all street-identified Black American women and girls (Appendix Table 2). Most participants were unemployed (55%), single/unmarried (82%), and lived in the Northside neighborhood (63%). Over half (58%) had been arrested at least once and 65% had been previously victimized (i.e., physically assaulted, seriously injured after violence, attacked or stabbed with knife, shot with gun, and/or sexually assaulted).

3.1.1. Effect of Gun Homicide Exposure on Perceptions of Neighborhood Social Environment and Safety

Table 1 presents analyses examining the impact of losing a relative or friend to gun homicide on perceptions of neighborhood social environment. Exposure to either relative or friend gun homicide was not significantly related to perceptions of the neighborhood social environment (Models 1 and 2). Model 3 presents the effects of exposure to both relative and friend gun homicide. Exposure to both relative and friend homicide was negatively related to perceptions of neighborhood social environment ($b = -4.81$; $p < 0.01$). Those who experienced the gun homicide-related loss of both a relative and friend reported worse perceptions about overall neighborhood aesthetic quality, solidarity, safety, walkability, and availability of healthy foods. When controlling for age, neighborhood, and other potential confounding stressors, including employment, marital status, prior arrest, prior victimization, the coefficient for gun homicide exposure increased by about 18% ($b = -5.32$) and remained significant ($p < 0.01$; Model 4).

Table 2 presents analyses examining the impact of losing a relative or friend to gun homicide on perceptions of neighborhood safety. Exposure to either relative or friend gun homicide was not significantly related to perceptions of neighborhood safety (Models 1 and 2). However, neighborhood was significantly related to perception of safety, where those

who lived in the Northside reported more positive perceptions compared to those who lived in Westside. Model 3 presents the effects of exposure to both relative or friend gun homicide. Exposure to both relative and friend homicide was negatively related to perceptions of neighborhood safety ($b = -1.16$; $p < 0.05$). Those who experienced the gun homicide-related loss of both a relative and friend reported worse perceptions about neighborhood safety. Living in the Northside was also associated with more positive perceptions of safety.

I conducted supplementary correlational analyses to further probe how cumulative exposure (both relative and friend gun homicide) impacts the various sub-scales of neighborhood social environment and safety perceptions. I found that exposure to both relative and friend gun homicide was associated with perceptions of neighborhood aesthetic quality ($r = -0.14$, $p = 0.026$), walkability ($r = -0.16$, $p = 0.010$), and safety ($r = -0.14$, $p = 0.022$). Conversely, cumulative exposure to gun homicide was not associated with perceptions of neighborhood availability of healthy foods ($r = -0.06$, $p = 0.292$) or social cohesion ($r = -0.06$, $p = 0.319$). Taken together, these results suggest that exposure to both relative and friend gun homicide is associated with a myriad of perceived neighborhood features.

3.2. Qualitative findings: prevalence and demographic differences

Interview participants were on average 34.3 years old and were all street-identified Black American women and girls (see Appendix Table 1). Most participants were unemployed (52%) and single/unmarried (98%), and lived in the Westside neighborhood (66%). Most (80%) had been arrested at least once and all had been previously victimized (i.e., physically assaulted, seriously injured after violence, attacked or stabbed with a knife, shot with a gun, or sexually assaulted). All interview participants lost at least one friend or relative to gun homicide.

Qualitative data complement quantitative data about the considerable frequency of gun homicide-related loss among this sample of street-identified Black women and girls. But quantitative findings are limited in their ability to explain how this loss shaped the collective worldviews and meaning among this population. Qualitative findings reveal that for street-identified Black women and girls growing up in contexts of concentrated disadvantage, the prevalence of gun homicide-related loss altered social relationships and how they understood the salience of death in their neighborhoods. While each interview participant survived at least one gun homicide of a relative or friend in their lifetime, there were two notable differences in the patterning of their gun homicide-related loss: a) recent clustering of violent deaths within the last year and b) recurrent exposure to violent deaths throughout the life course.

The youngest cohort of women (ages 16 to 24) were more likely to experience a recent clustering of violent deaths. Several of these young women lost multiple loved ones to gun violence within a single year. Piggy (19, Northside) burst into tears as she shared how a rapid succession of loss of three close friends reinforced fears of her own mortality: "I have lost three people [this year]. And this has been the worst year since I've been in Wilmington. And they all happened three months apart. So [death is] very close, and it's getting closer and closer to where I live, and I'm sorry ... I'm getting emotional." Similarly, after losing multiple male friends, Kimesha (22, Westside) echoed: "For me, it was more so like, damn ... it was really a reality check: 'You will die! People die!' There's no coming back from it, that's for real. [...] Even my friends are targets, even I could be a target ..." Numb after attending "ten funerals in the last three months," Alaze (18, Northside) reasoned that "we all are gonna get the phone call one day. I think it's better for them to be [in heaven] than down here." Responses from the young women revealed the deeply cynical views of life in their neighborhoods, and many felt helpless to curb the prevalence of traumatic loss among their social networks. Piggy also reflected on how violent conditions in "Killington" (moniker for Wilmington) stifled the lives of young people because "they done ... either seen someone die, either know someone

[who died], or heard about [someone dying]. [...] their environment is ... not helping them ... Kids shouldn't grow up to see this." Many of the women and girls were visibly, emotionally affected by the frequency of gun homicide-related loss they experienced, and articulated how this loss had rippling effects on themselves and their social "environment" or local community.

Other interview participants experienced recurrent exposure to gun homicide among family and friends over their life course. Natasha M (23, Westside) has experienced frequent gun homicide-related loss, including the murder of her oldest brother after a botched robbery (age 12), as well as the murder of two close male friends and other peers she knew from high school (age 21). She described attending the funeral of one of her male friends as "the most depressing thing [she] ever experienced," and remembered her friend "laying there lifeless, all pale and bloated, and he [didn't] look like him [self]." Then just months prior to the interview, Natasha's nephew was shot 13 times after a neighborhood fight in the Westside, but miraculously survived. She explained how the prevalence of gun shootings fractured neighborhood social cohesion: "... Can't nobody understand what happened, like why did this happen? Kids can't even sit outside they house and play ball, or play with their rope, or play with [their] neighbors anymore—without somebody having to worry about if their kid's going to get shot. And it was crazy. It was quiet for a while. Ain't nobody trust nobody, and nobody kn[e]w who did it."

Although the women knew that young Black men accounted for the majority of gun homicides, several perceived that Black women and girls were also at an increased risk of being harmed by guns in their neighborhood. This perception of risk, whether becoming a victim of an unintentional or intentional shooting, shaped how the interview participants understood their own capacity of loss as women. Kayla (28, Westside) believed that although women were less likely to carry a gun, they could still be injured: "I mean, nowadays, girls is getting killed too." Piggy (19, Northside) lamented on changing community norms after her female significant other was killed: "And to hear that she got shot ten times is like ... Wow ... Y'all don't even care about females, like y'all just shooting anyone now ... Men just don't care nowadays. Everybody wanna be a shooter. It's just crazy." After her daughter's female friend was killed, Lisa (37, Westside) stopped allowing her children to play in public: "I have a 12-year-old who is itching to go outside constantly. And I have to give her some kind of trust and just allow her to go out. But at the same time, I really don't want her to ... It's not safe. She has a friend who got shot in the head. 15 years old ... We hear gunshots more than four or five times a day ... tomorrow's not promised to you."

3.2.1. Effect of Gun Homicide Exposure on Perceptions of Neighborhood Social Environment and Safety

Safety. Qualitative data also expand our understanding about how gun homicide exposure influenced perceptions of neighborhood social environment and safety, particularly for women with children ($n = 39$). Marquita (33, Northside) described how a "normal" day at the park ended abruptly after hearing the sound of bullets nearby: "... they got to shooting, and ... we go 'Oh, that's a gunshot.' We were just sitting there, my 2-year-old nephew, my 8-year-old son, my 11-year-old nephew, and a bunch of other kids ... And all the kids broke out running, and they just messed up our whole day." Overcome with anger, Marquita yelled: "It made me very upset, because I was outside enjoying my day, you know? ... [The kids] had to basically run ... so they can go be safe. [...] I think it impacts them a lot, because they're outside to enjoy their day and they don't want to get shot! [...] Just leave the guns wherever the fuck y'all got them at!" This inability to "enjoy [one's] day" fueled a heightened sense of fear and frustration for the cycle of neighborhood violence.

Walkability and Built Environment. Mirroring quantitative findings on perceptions of neighborhood safety and walkability, several of the women explained how the actual and perceived threat of gun violence shaped how they viewed the built environment. Interview participants discussed how they navigated this built environment by being

“streetwise” or using localized knowledge to mitigate harm (Anderson, 2013). While Netta (30, Westside) felt safe enough to allow her children to walk “either up the street to that park or two blocks to this park,” she understood that “one block could be good, and the next block can be bad,” and she applied this knowledge of the built environment to supervise her children’s whereabouts. Comparably, Jade (35, Westside) not only “watch [ed] [her children] while they’re walking the dog,” but also “watch [ed] from the [front] door like a hawk” when she sent her son to a nearby fast-food restaurant: “... if I am gonna send [my son] to the store, I prepare. Make sure nobody’s in there. [...] Sometimes [residents are] fighting [in that store]. I remember when they shot in [that store] before ... yeah, it’s not safe.” She feared that if she didn’t manage her son’s whereabouts, he would become a case of “mistaken identity” and be killed or harmed. In this way, being “streetwise” became a protective mechanism for the women to survive in a difficult or dangerous social environment.

Aesthetics. Exposure to gun homicide also negatively shaped how the interview sample perceived the aesthetic quality and desirability of their neighborhood. Paralleling quantitative findings on perceptions of neighborhood safety, women who lived on the Westside described more negative perceptions about residing in a noxious environment characterized by crime or danger. This environment shaped the women’s perceptions of social disorder, such as through the presence of litter or trash. Illustrating her neighborhood as both violent and “dirty,” Kia (47, Westside) explained: “A dirty environment makes me feel angry. And if it’s clean, okay—I’m have a more positive day, wake up to a positive day. Oh, it’s just so much trash everywhere. It’s so nasty. [...] And [it makes me feel] depressed. Depression, you know what I mean? [...] Just dirtiness ... dirtiness just makes you angry.” Jasmine (27, Northside) shared a similar perspective about her neighborhood: “It’s a city. [...] I’ve heard gun shots right across the lot from where we are ... we’ve got some of the highest murder rates ... You can just see the desperation ... just in the look of it, it looks sad. [...] Yeah, like nothing’s kept up with. It’s trash everywhere ... just a whole bunch of people standing around looking like they ain’t got nothing to do. People standing on corners, liquor stores everywhere ... it’s too dirty for me. I don’t like it. There’s too much concrete.” Women with increased exposure to violence were more likely to see their neighborhood as undesirable, and understood how various aesthetic features could shape poorer quality of life outcomes.

Finally, women with increased exposure to gun homicide not only held poorer neighborhood perceptions, but many also withdrew from public space to avoid future victimization. Kamren (19, Westside) connected the context of gun homicide-related loss to neighborhood change: “It’s tough. Difficult. It’s just, knowing what I got to walk outside to, every day. Some of my friends have been shot, killed. I don’t get into stuff like that, but just to know it could happen to anybody, at anytime, anywhere. [...] Everything changed from how my neighborhood used to be. It used to be nice around there. The cars drive different now. I’m just thinking about how it is when I sit outside ... The atmosphere is so different now. Even early in the morning, I love my neighborhood early in the morning. The birds are just chirping, the sun’s right there, directly on my house. It just don’t feel the same anymore. I used to have pride in where I live. Now I love my house, but I want to get away.” For some of the women, this social withdrawal compromised their own physical health: “I sit [at] home. I think that’s why I’m getting so big, maybe I need to start walking. I’m scared to go out because it’s too much shooting, it’s too much violence, and listen, I don’t want a bullet to accidentally ... I’m worried about my daughter out there every day. It’s just too much violence. You can’t even go to the park and sit” (Tanya 47, Westside).

4. Discussion

The current study used a mixed-methods approach to examine the prevalence and impact of multiple exposure to gun homicide-related loss

among an intergenerational sample of street-identified Black women and girls (ages 16 to 54). It expands prior criminological and public health-related research by considering exposure among a marginalized and hard-to-reach population of women and girls who are often highly-stigmatized, embedded in criminal activity, and/or are most at risk for future offending (Tourangeau et al., 2014; Goode, 2000). Most of the quantitative (58%) and qualitative (n = 40) participants had been previously arrested, and most had also been previously victimized (65% and n = 50, respectively). Homicide survivors are overwhelmingly Black women and girls who are often in close proximity to street life or the criminal justice system (Johnson, 2010; Isom-Scott, 2018; Jenkins, 2002). While they are less likely to experience gunshot victimization than Black men and boys, they are no less likely to experience the collateral consequences of co-victimization as well as other forms of personal victimization (Isom-Scott, 2018). I examined how this context of marginalization heightened their overall exposure to relative and/or friend gun homicide but also shaped how they perceived their local neighborhood. A better understanding of this vulnerable population presents an opportunity for intervention following a gun homicide-related loss.

This study advances our understandings of homicide survivorship among Black women and girls by uncovering the prevalence and significance of cumulative grief and traumatic loss among survivors. Most (87%) quantitative and all (n = 50) of qualitative participants lost either a friend or relative to gun homicide. Several experienced multiple gun homicide-related losses: some lost members of their network in rapid succession (e.g., recent clustering of loss), while others throughout their life course (e.g., recurrent exposure to loss). This revealed a multiplicity and chronicity of loss that is often “masked in the singular status of the homicide survivor” (Smith, 2015: S488). As co-victims, qualitative participants discussed how gun homicide-related loss altered their social relationships, as well as their own salience of death and capacity of loss. Many of the women explained how death appeared closer and more possible given the frequency of homicide in their networks, and left some wondering “who would be next?” (Kamren, paraphrase). These micro-level findings support macro-level findings by Papachristos and Wildeman (2014) who found that degrees of separation are smallest for those involved in violent crime, particularly those embedded in high-risk networks. The women felt at risk to victimization given their close proximity to young Black men in marginalized neighborhoods.

Study findings also crystalized the cumulative effect of gun homicide-related loss on neighborhood perceptions, even while controlling for co-occurring factors. As hypothesized, women and girls who experienced multiple gun homicide-related losses held significantly more negative neighborhood perceptions overall. Further correlational analyses indicated that neighborhood-based features of safety, aesthetic quality, and walkability mattered most in shaping more negative perceptions. Compared to those not exposed, homicide survivors reported more dissatisfaction with many quality-of-life aspects of their neighborhoods, such as its attractiveness and cleanliness, ability to keep them safe from victimization, and opportunity to provide standards of health and comfort. Findings suggested that cumulative co-victimization disrupted one’s sensibilities about the social environment, leaving many of the women deeply cynical and distrustful of their neighborhoods and its residents. Living in a violent or noxious neighborhood characterized by crime or disorder shapes human behavior and attitudes, and street-identified Black women and girls adapted to these conditions using the strategies at their disposal. This was most visible among the mothers in the qualitative sample, as they were tasked with raising children in violent social milieus and often used inventive strategies to protect their families from harm, such as through “racialized mothering” (Hitchens et al., 2022). Many expressed frustrations with navigating childrearing under these precarious conditions, leading some to withdraw from public space and outdoor activities. This has substantive health-related implications, as Black women and girls with greater perceived fear of violence are more likely to experience compromised physical (e.g.,

obesity) and mental health (e.g., depression; [Assari et al., 2016](#)).

Study findings identify the critical need for comprehensive, trauma- and grief-informed intervention efforts to support the healthy processing of gun homicide-related loss among street-identified Black women and girls across the life course ([Hitchens, 2022](#)). Policies focused on urban gun violence reduction should consider the root causes and unintended consequences of the violence. These consequences include the often-overlooked trauma of surviving a violent death in distressed Black communities, most chronically among Black women and girls in close proximity to street life.

Upstream Interventions. Macro-level intervention efforts should address the complex social determinants of health such as concentrated disadvantage, that play a fundamental role in poor quality of life outcomes. Investing in quality economic opportunity in distressed Black communities can potentially support co-victims after surviving a violent death and reduce gun violence more broadly. Poverty not only makes distressed communities worse but also increases crime and street life among disadvantaged men and women. Economic investment necessitates that we address the racial wealth gap in this country, and how health systems should work to directly promote wealth-building among Black Americans ([South et al., 2022](#)).

Downstream Interventions. Micro-level intervention efforts for gun homicide-related loss can exist on state and local levels. Allocating bereavement funds for co-victims can alleviate the strain of traumatic loss, given homicide survivors are disproportionately poor, yet have the burden of quickly raising thousands of dollars when their loved one is unexpectedly killed ([Reckdahl, 2012](#)). Cities or states sometimes offer a “crime victims fund” which can be used to pay for funeral expenses, but these funds are often based on reimbursement ([Cohen et al., 1994](#)), and funds are sometimes exhausted in a given fiscal year. In addition, these funds sometimes exclude felons and those believed to have “contributed” to their death, which excludes victims allegedly involved in drugs, weapons, or other illegal activity ([Reckdahl, 2012](#)). Removing this restriction would reduce barriers to accessing civic funds, particularly for those involved in street life.

On a local level, offering comprehensive, trauma-informed services (e.g., grief support and counseling, therapy, conflict mediation, and hospital-based violence interventions) in targeted communities, could potentially help homicide survivors cope with their loss. These services should include community-outreach or advocacy programs, crisis response, bereavement ministry or counseling training, and restorative justice practices for homicide survivors at various life stages. Homicide survivorship research underscores how loss increases adverse behavioral health risks such as PTSD, prolonged grief, and substance abuse. Yet most Black homicide survivors do not seek therapy following their traumatic loss, sometimes due to barriers in access or availability, and other times due to stigma associated with therapy. Closing the gap in access and stigma of these services, especially in cities with elevated crime rates, can potentially mitigate antisocial behaviors such as retaliatory violence, self-inflicted harm, and aggression.

In addition, as demonstrated through the implementation of Street PAR, researchers should prioritize the critical perspectives, narratives, and voices of those who are most affected by gun violence. Rather than merely relying on law enforcement strategies, researchers should consider how collaborating with local residents and grassroots organizations on violence reduction efforts can affect tangible change in marginalized communities. No one is more concerned about gun violence than those most affected in distressed communities. Utilizing participatory and community-engaged research methods can facilitate the buy-in and rapport needed to access hard-to-reach residents.

5. Limitations

Although this study expanded analysis of homicide survivorship among street-identified Black women and girls, there are some limitations. On one hand, integrating a mixed-methods approach potentially

addressed some of the disadvantages of single-method designs, including the ability to recruit a diverse or stratified population, triangulate data, and expand the breadth of inquiry toward comprehensive findings on the target population ([Creswell et al., 2003](#)). The use of mixed-methods allowed for the examination of the behavior, experiences and perspectives of a hard-to-reach Black American population, one that is otherwise difficult to access or recruit ([Tourangeau et al., 2014](#); [Goode, 2000](#)). That said, these mixed-method findings are only reflective of the experiences of street-identified Black women in girls in two low-income, high-crime neighborhoods in Wilmington, Delaware. Within the sample distribution, the majority of the quantitative sample lived in the Northside (63%), while most of the qualitative participants were recruited from the Westside (66%).

Despite these limitations, the structural conditions that perpetuate violence in Wilmington are reflective of the social determinants of violence in cities throughout the United States. Thus, these present findings may still provide critical insight into the broader experiences of homicide survivorship for Black women in other low-income, urban neighborhoods. Continued research is needed to understand how surviving violent death shapes the identity, developmental trajectories, decision-making, and wellbeing of this population. Future studies should examine the experiences of homicide survivorship among nationally-representative samples.

Author credit statement

B.K. Hitchens: Conceptualization, Methodology; Data Curation, Writing-Original Draft Preparation; Investigation; Formal Analysis; Writing-Reviewing and Editing.

Data availability

The data that has been used is confidential.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.socscimed.2023.115675>.

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