

(Sharkey, 2010; Garner & Shonkoff, 2012, Sharkey et al., 2012) (Sharkey, 2010; Garner & Shonkoff, 2012, Sharkey et al., 2012) (Sharkey, 2010; Garner & Shonkoff, 2012, Sharkey et al., 2012).

In New Haven, the location of this study, there are approximately 130,000 residents with most people identifying as Black (33%), White (32%), and Hispanic or Latino (27%) (Abraham & Buchanan, 2016). Forty-nine percent of the population is low-income (i.e., household income is < 2 times the federal poverty level), compared with 24% of the state of Connecticut (Abraham & Buchanan, 2016). As with other urban cities, there are also substantial disparities in the social determinants of health within New Haven. For instance, in the six lowest-income neighborhoods in New Haven—where most residents are people of color—11% are unemployed, compared with 7% citywide (US Census, American Community Survey, 2010-2014; Santilli et al., 2017). As for crime, rates of violent crime in New Haven far exceed the national average and are three times higher than averages in cities with a comparable population (Investigation, 2014). Further, as in other cities, historically redlined districts experience worse health outcomes, including higher rates of gun violence and lower life expectancy (Abraham et al., 2019). Redlining is the term used to describe discriminatory lending practices that originated in the 1930's and was perpetrated by the Home Owner's Loan Corporation. These practices included deeming areas with predominantly Black populations as hazardous on residential security maps, thereby disqualifying them for federal housing loans (Rothstein, 2017).

Emerging literature has shifted from a sole focus on law enforcement derived solutions to those that arise within these communities. For instance, community-led programs that aim to improve the lives of community members through youth-development (Sharkey et al., 2017), career services (Sharkey et al., 2017), and arts-based programming (Sharkey et al., 2017) are associated with improved community health outcomes and also reduce gun violence (Kondo et al., 2018). In a recent cluster randomized control trial in neighborhoods with predominantly Black residents, experiencing low-income, remediation of abandoned housing was directly associated with a significant drop in weapons violations and assaults with a gun, with a trend towards a reduction in shootings (South et al., 2023). Improving housing conditions and vacant land has also been shown to increase community connectedness, perceptions of safety, and reduce stress among community members (Kondo et al., 2018).

One plausible reason behind the success of these interventions is their ability to address the root causes of gun violence, including structural racism, poverty, and inequities in housing, education, and employment (Branas, Reeping, & Rudolph, 2021; Knopov et al., 2019). For instance, a recent paper described how redlining in Boston is associated with higher risk of community gun violence (Knopov et al., 2019). Even after accounting for neighborhood poverty, household income, and the proportion of individuals with public insurance, the redlined areas' incident rate of firearm-related homicides and assaults was 21 times (IRR 21, 95% CI 4.8, 92.4) that of greenlined areas (Poulson et al., 2020). Similarly, increased risks have been found in redlined areas of other cities such as Louisville, KY (Benns et al., 2020). However, there has yet to be an appraisal of the possible community-level solutions that derive from community members themselves, or that attend to the structural determinants of health, namely the social, economic, and political mechanisms that generate inequities in health.

The purpose of this study was to understand one community's perception of the root causes of local gun violence and to identify assets in the community that may mitigate the incidence of gun violence. We aimed to use qualitative data from this study to inform the design of a community-led, assets-based structural intervention to reduce rates of gun violence.

2. Methods

We conducted a series of in-depth qualitative interviews with

community members in New Haven, Connecticut (CT) to identify potential community-based solutions to gun violence. We applied the assets-based community development (ABCD) framework (Kretzmann & McKnight, 1996) embedded within a social-ecological model to guide our work (Dahlberg & Krug, 2002). ABCD is a strategy by which community members identify and mobilize existing but often unrecognized assets. Formal and informal associations, networks, and extended families are treated as assets and the means to mobilize other assets within the community. We chose an ABCD approach for its focus on structural assets and social relationships within a community and applied this to the multi-level social-ecological model to deliberately elicit interpersonal-, neighborhood-, and organization-level assets that may prevent the incidence of gun violence through a series of in-depth interviews with community members.

2.1. Recruitment and participants

Inclusion criteria was broken down into two categories (1) individuals identified in the social network of co-offenders at greatest risk of gunshot victimization but who are not injured and (2) individuals living on streets with high risk of gunshot victimization, but who are not involved in the gun violence network. As described in a prior paper (Wang et al., 2020), we used a social network analysis and block-level spatial analysis constructed from local police administrative data on arrest records and shootings to identify individual, network, and neighborhood factors that increased the likelihood that an individual would be arrested for gun violence or injured by gun violence. Because we were focused on identifying assets-based strategies to deter involvement in gun violence, we applied a positive deviance approach to recruit participants for our in-depth interviews. In this context, positive deviance refers to people who have been able to avoid gun violence despite facing similar challenges and having no extra resources or knowledge than their peers (Bradley et al., 2009). We hypothesized that it may be possible to identify community assets that foster sufficient collective efficacy to break the cycle of community violence by interviewing individuals who, despite living in neighborhoods and existing within social networks with high rates of gun violence, and with access to the same neighborhood resources, have not been involved in gun violence.

Using data from the social network analysis, this meant identifying people with a high probability of having been arrested for gun violence or being injured by a gunshot but were not. Initially, we directly contacted individuals who were central in the social network – but only one person was willing to speak to our study interviewers. We then instead, expanded our recruitment strategies to engage our community partners to refer us to people within the social network who were successful in avoiding gun violence.

We similarly used the block-level spatial analysis to identify blocks with a high likelihood being a site of gunshot victimization, but a shooting had not taken place. We then approached homes and businesses on these blocks in three different “high-risk” neighborhoods and interviewed whomever would provide consent. Among those who consented, we asked for additional referrals using snowball sampling techniques and approached those referred individuals. Our sampling frame was not intended to be generalizable but to maximize number of assets identified.

A member of the research team (G.W.) conducted both the social network and spatial analysis to identify people within the network who had not been directly involved in gun violence as well as to identify neighborhood blocks with lower-than-expected rates of gun violence. Researchers (N.H. and S.A.) went to door-to-door or through community contacts to find and talk to these identified individuals in the social network and to recruit individuals living or working on the pre-specified blocks. Those who they were able to locate and who were willing to participate were interviewed at a later date and time. From these initial interviews, we employed a snowball sampling approach with those interviewees connecting us to other potential interviewees who met our criteria. Interviews were conducted either in a university office or in the

community, depending on the preference of the participant.

Participants were remunerated with \$50 Visa gift cards. Interviewers provided a verbal overview of the study prior to asking for written informed consent was obtained. All interviews were digitally recorded with the consent of the participant. Recordings were transcribed verbatim, and the interviewers reviewed the transcripts for accuracy. The study was approved by the Yale University IRB.

2.2. Interview guide

The interview guide asked about existing assets in the neighborhood that may prevent and mitigate the impacts of gun violence (Supplement). These assets could include people (interpersonal), physical spaces and social connectedness (neighborhood), or businesses, associations, organizations, or institutions (organizational). We adapted questions from the ABCD mapping community assets workbook and the Instruments of Social Capital Assessment Tool (Krishna & Shrader, 1999). Example questions and probes from our interview guide include, “What distinguishes your block from other blocks nearby which have had shootings recently? Do you think there are any specific reasons why there hasn’t been a shooting on your block/street?” “Can you provide specific examples of how you and your neighbors have worked to reduce gun violence on your block/street? Are there specific people on your block/street who you feel are instrumental to keeping this block/street safe? Can you tell me about them?” “Are there specific organizations you think are instrumental to keeping this block/street safe? (School, church, sports, arts/music, clubs, YMCA, health centers) Can you tell me about them?” “Are there specific activities you think are instrumental to keeping this block/street safe? Can you tell me about them?” The interview included both closed and open-ended questions about an individual’s perceived assets and took about 45–60 min to complete.

2.3. Analysis

We conducted thematic content analysis of transcribed qualitative questionnaires. All data were coded independently by three analysts trained in qualitative analysis (N.H., S.A., L.B.R.). Each of these authors read all transcripts line by line and recorded inductively derived codes. Then, two additional authors (E.W. and A.V.P) reviewed the transcripts and codes. Next, all five authors discussed any disagreements and achieved consensus on the codes. This resulted in a codebook that included definitions and examples of broad categories within three major themes: interpersonal, neighborhood, and organizational. Additional inductive coding linked open codes to emergent concepts. In cases of disagreement during the analysis process, analysts referred to the data and codebook for guidance. Emergent themes were discussed with the Community Resilience Steering Committee (CRSC) (Wang et al., 2020), a multi-sector group of community stakeholders overseeing this research. The CRSC is comprised of researchers as well as representatives from local schools and law enforcement, health care, local community organizations, and residents of neighborhoods with high rates of gun violence. This group voluntarily came together in 2011 in response to a marked increase in community gun violence in New Haven, Connecticut.

The study team took two additional steps to refine categories into themes. First, a second round of analysis was conducted by a qualitative researcher independent of the initial analysis team (A.P.) who received the transcripts, codebook, and suggested alternative coding when necessary. The researcher then sorted the coded data into final themes. These final themes were presented to the Community Resilience Steering Committee for confirmation.

3. Results

We performed in-depth interviews with 45 individuals who had not been directly involved in gun violence or who lived on city blocks that had not been sites of a shooting between November 2018 and April 2019.

The mean (SD) age of participants was 43 years (15.31), and the majority of participants were male (73%) and had at least one child (68%) (Table 1). Most participants identified as Black (65%) or Latinx (22%) and more than half indicated their highest level of education was a high school diploma/GED (57%). Participants had lived in New Haven for a mean (SD) of 22 years (18.39).

Using thematic analysis, we identified themes related to structural supports that were helpful in preventing or mitigating exposure to gun violence at multiple levels: role models (interpersonal), social cohesion and home ownership (neighborhood), and community-based organizations (organizational) (Table 1).

3.1. Role models (interpersonal level)

In this theme, participants share their thoughts on how role models in the community can influence the choices that youth make, particularly

Table 1
Overview of main themes and subthemes collected through qualitative interviews (n = 45) identifying assets to preventing gun violence.

Level	Main Theme	Subtheme	Example Quote
Interpersonal	Role Models	–	“... one of them said I was his dad. Two of them asked me to walk them across the stage for senior night...I’m pretty sure I can relate to them; they’re looking at me and they know I...talk the language. I walk the walk... So I think that played a big part of it, instead of being some little, old white guy.”
Neighborhood	Social Cohesion	–	“But we also have somewhat of a neighborhood thing where if we see anything going on, we’ll call the cops anonymously.”
	–	Home Ownership	“I think my block is composed of a lot of um, stable residents. Where they have a mix of homeowners and renters which had been there more than five years. So, the turnaround rate is low.”
	–	Insider Culture	“They know who I am. I know who they are. We know, well I know who belongs and who doesn’t belong in the neighborhood at a certain time”
Organizational	Community-Based Organizations	–	“My father was a gangbanger, I was born into it. I followed it for a minute but then I just knew it wasn’t me, then I had other things to do, I swam a lot. I went to school, I was a paramedic for 15 years. So you gotta have something to do. Yeah, you gotta have something to do”
	–	Mental Health	“I go see a therapist and a psychiatrist and I talk to them-about my problems. And they help me deal with situations like that. Like, you know like if I, I feel like okay, sometimes I just want to go out and I just want to be able to go to a bar and just go crazy. You know? And that’s why they’re there. To help me, you know, stay out of trouble”

when it comes to involvement with guns and disrupting gun violence. Several participants talked about the owners of a local barbershop who played a big role in keeping the kids in the neighborhood from “acting up.” One participant described it this way:

Just last week the kids was out there and they started getting loud and somebody said to them ‘now you know you don’t do that around here now,’ so they respected.

Participants said that kids were more likely to respond to people who they identified with, people from their communities, or those who had similar experiences as them. It was clear to many participants that kids sought role models to “get a better understanding of themselves.” One participant who had served as a role model for several kids in the neighborhood said this:

... one of them said I was his dad. Two of them asked me to walk them across the stage for senior night...I’m pretty sure I can relate to them; they’re looking at me and they know I...talk the language. I walk the walk...So I think that played a big part of it, instead of being some little, old white guy.

Some participants spoke about the specific benefits of having a role model. For instance, one participant said role models “teach you how to, you know, conduct yourself throughout life” while another said role models connect youth to resources, therefore, “giving the youth the help that they need.” Many believed that if adults made a personal investment of time and interest then kids could “turn it around.” As one said:

I’ve watched guys put a gun down and pick the pen up, I’ve watched people turn it around. So as of right now it looks hopeless, it feels hopeless, but it’s gotta be another way to tell these boys there’s a way to get your voice heard.

3.2. Social cohesion (neighborhood level)

In general, participants wanted their neighborhood to be “a safe place for everybody.” Most said that to achieve that level of safety you had to “look out for each other.” One participant felt that “if you don’t get involved you might be the next person that get hurt or somebody that you are close to.” Acting against gun related activity for this participant was a form of protection for themselves and those they cared about.

Participants living in neighborhoods with lower levels of gun violence often attributed the lesser violence to their being connected with one another. Several participants felt a strong sense of community exhibited by the presence of activities and events that some felt could be protective against gun violence. As one participant said, “[e]verybody on this block pretty much interacts with everybody. We have our cookouts; we have our little block party.” Another participant echoed this saying that “we communicate, we network as a community, we just look out for each other.” At least one participant had an opposing view saying, “... honestly the majority of folks around here just mind they business, ‘That ain’t my business I ain’t involved in it’, that’s really what it is you know when it come down to it.”

Other participants were unsure why they had not experienced gun violence like the neighboring communities. Upon further consideration, one said:

Honestly, I don’t see what’s stopping it around here. But we also have somewhat of a neighborhood thing where if we see anything going on, we’ll call the cops anonymously.

Though this participant mentions engaging the police, this was a divisive topic with some saying things like, “I don’t mind telling you, I will call the police. I still trust my men in blue” and others saying, “You can’t trust the police.”

Generally, participants said that knowing their neighbors and

communicating with one another were important factors in discouraging gun related activity. Some also felt that being proactive if they observed possible gun related activity was important and related that to a sense of community. However, at least one participant recognized that, while these factors were necessary, they were not sufficient.

I feel like we talk to each other all the time, we know what’s going on in our community, but for the people who can bring the change, to help bring change, they don’t know because we don’t talk to *them*. There is a divide, and I feel like that bridge needs to be built between the people in the community and the powers that be or the people that could really make the change.

This participant felt the people in the neighborhood did not have enough power to make change and therefore needed those with more power (e.g., public officials) to listen and support the wants and needs of the community.

3.2.1. Subtheme: home ownership

Participants indicated the housing stability of a neighborhood reduced the incidence of gun violence by creating social cohesion. One respondent stated,

I think there’s a lot of established families on this street. There’s a lot of families with deep roots and they all know each other and they, they talk to each other and there’s a, there’s a community.

When asked about why a block had not had an episode of gun violence, another respondent remarked, “I think my block is composed of a lot of um, stable residents. Where they have a mix of homeowners and renters which had been there more than five years. So, the turnaround rate is low.” Similarly, another resident reported that homeownership was important to avoiding exposure to gun violence: “For the most part the people who live at [neighborhood name] and own their property here are active in a way where they inform each other.”

3.2.2. Subtheme: insider culture

While many felt that getting to know their neighbors and watching out for one another built a strong sense of community, some participants said that there was a sense of protection over the community that created an insider versus outsider mentality. Some participants lived in communities with “a lot of families with deep roots” and that these families know one another and “talk to each other and there’s a sense of community” among those families. This participant, being new to the neighborhood, identified with being an outsider, saying that “it’s been an interesting and eye-opening experience living on this street.” Another participant who identified as an insider described their neighborhood like this:

They know who I am. I know who they are. We know, well I know who belongs and who doesn’t belong in the neighborhood at a certain time. And when there’s something that looks fishy like there was an incident in the summer, a group of kids, one of them particularly didn’t look right to me in terms of he was hanging out with the wrong crowd.

This participant believed that the reason the neighborhood was not subject to as much gun violence is that the neighborhood kept out those who did not “belong.” This participant, and others who agreed, said that by knowing one another and keeping in touch they could maintain their sense of community but only for those who they accepted as insiders.

3.3. Community-based organizations (organizational level)

In this theme, participants talk about community and organizational level factors that they perceived influenced gun violence. Participants said that the decrease in resources, activities, and safe places to go

increased the likelihood that youth would become involved in gun violence. In addition to the personal investment in the youth of the neighborhood, participants also talked about the need for investment in the community at large.

Additionally, participants felt that “the community is basically supposed to be a protection for the youths” and that this was achieved through investing in activities and resources. When that investment was neglected, gangs provided these necessities to youth (e.g., social support, shelter, employment). One participant talked about the complicated considerations associated with joining a gang:

I don't really want to be in the gang, but I'm scared, and you know if I don't be in [the gang] they punking me out or I don't have nowhere to go and they helping me, I don't see the out, where's the out?

Another participant lamented the disinvestment in activities for youth, sharing that they were able to get out of a gang because when they were younger other activities were available:

My father was a gangbanger, I was born into it. I followed it for a minute but then I just knew it wasn't me, then I had other things to do, I swam a lot. I went to school, I was a paramedic for 15 years. So you gotta have something to do. Yeah, you gotta have something to do.

Some activities that were mentioned as no longer present in the community included sports and after-school access to school sports fields and gyms, community-based programs like the Boys and Girls Club, and summer jobs. When asked about specific resources that currently existed or existed at one time, participants mentioned social support programs, such as those specifically for single fathers as well as employment and housing programs. Another participant advocated for providing kids with the opportunity to see the world around them saying:

... you gotta be exposed to different things. A lot of people stuck on their block, they don't never leave the block, so they don't know too much about nothing else in the world, let alone the city.

3.3.1. Subtheme: mental health

In the subtheme *mental health*, several participants expressed the perception that not having access to affordable mental health resources in the wake of traumatic events contributes to the community health impacts following gun violence in a variety of ways, including a lack of support network and difficulty knowing how to handle complicated emotions and situations. When participants talked about why they engaged in mental health support systems, several mentioned that they were able to “talk to [mental health professionals] about [their] problems” while others felt that mental health resources helped them “stay out of trouble.” As one participant put it:

I go see a therapist and a psychiatrist and I talk to them about my problems. And they help me deal with situations like that. Like, you know like if I, I feel like okay, sometimes I just want to go out and I just want to be able to go to a bar and just go crazy. You know? And that's why they're there. To help me, you know, stay out of trouble.

Another participant talked about the importance of being able to talk about problems. They said that, in the absence of a “secure situation at home” you have to have “people that care for you so you don't go to that option [of engaging in gun violence]. You have people that talk to you about how to handle situations.” It was common for the participants who spoke about the value of accessing affordable mental health services to mention how it helps to have someone to talk to and get help with life stressors.

Participants also recognized the stigma associated with talking about mental illness, distinct from trauma, in some communities and how that can negatively influence people to seek out the support that they need. As one participant said:

... people go towards gun violence because of mental illness, and not having access to affordable health care, and not being able to talk about it in their community.

Though this participant suggests a connection between mental illness and gun violence, the majority of participants who talked about the relationship between mental health support services and gun violence focused on how these services provided a support network and strategies for managing trauma and stress, and not about addressing a chronic mental illness.

4. Discussion

We used a strengths-based approach to elicit potential interpersonal-, neighborhood-, and organizational-level assets that may lower rates of involvement in gun violence using qualitative interviews among 45 individuals living in high risk areas for gun violence who had not themselves been directly involved in gun violence. Emergent themes from these interviews included role models, social cohesion, and community-based organizations. Of note, participants also remarked on the dissolution of and disinvestment in community-based organizations over time, which has limited activities available to youth currently living in the neighborhood. Participants highlighted community building as a key mechanism to mitigating community gun violence and especially indicated that homeownership and long-term residence was important to building community.

Structural racism has resulted in both community disinvestment and decreased homeownership in Black and Brown, primarily low-income, communities, and previous research has shown it to also drive gun violence (Benns et al., 2020; Houghton et al., 2021). Like others, we found that stable housing may lower rates of gun violence. Previous research reports that housing plays a key role in neighborhood stability (Rohe & Stewart, 1996), and structural practices and policies that constrain housing, including racial segregation, have impacts on crime broadly and on gun violence, particularly within Black communities (Firebaugh & Acciai, 2016; Knopov et al., 2019). A growing body of research has focused on understanding how programs, policies, and practices aimed at improving residential conditions for disadvantaged communities impact gun violence. Two studies show that grants for home repairs and renovations were associated with decreases in overall crime, including gun assaults (Kondo et al., 2015; South et al., 2021). Further, a large-scale demolition program in Detroit found that census blocks that received 5 or more demolitions of vacant buildings experienced an 11% decrease in gun assaults compared with locations not receiving any demolitions of vacant buildings (95% CI: 7–15%) (Jay et al., 2019). Together, the evidence suggests that housing is not only an important structural determinant of gun violence but also a mechanism by which neighborhood gun violence can be prevented. Multi-level interventions targeting structural racism and its effects are warranted to mitigate the impact of gun violence on Black and Brown communities.

Communities that experience a high prevalence of gun related violence often do not have access to mental health resources to help with addressing trauma inflicted by experiencing gun violence (Choi et al., 2020; Goldstein et al., 2019). A vicious cycle ensues, with high rates of gun violence inflicting individual and collective trauma on neighborhoods, with trauma being one potential cause of gun violence. Of note, a recent analysis found state mental health agency expenditures to be inversely associated with violent crime rates, such that a 10% increase in state mental health agency funding was associated with an approximate 4% reduction in firearm-related violent crime (Palatucci & Monheit, 2022). In addition to the need for mental health services to address trauma that can lead to further gun violence, our findings lend support to the importance of increasing community-based mental health resources as a form of social support. Beyond funding to increase access, programs aimed at educating to reduce stigma related to accessing mental health

services are needed so that community members will take advantage of increased access to these services. Empowering community members to act as resources for those needing mental health services, especially among Black and Brown communities, could be an additional avenue for violence prevention. Previous research has documented promise of these types of interventions but the feasibility and efficacy of such programs in the context of promoting mental well-being have yet to be studied (Alvidrez et al., 2008; Mantovani et al., 2017).

Lastly, participants recognized the need for social connection both at the interpersonal level and at the neighborhood level. Some spoke about the critical interpersonal support that a community can provide in the form of role models and others spoke about youth programs and neighborhood activities that can build social cohesion, likening community support to protection. One program that has been successful, particularly for Black men, are barbershop-based interventions targeting various physical health outcomes, including blood pressure reduction and risk reduction for sexually transmitted infections (Bryant et al., 2020; Jemmott et al., 2017; Victor et al., 2018). Such a model could be extended to gun violence prevention where barbers, acting as trusted community sources, are educated on facilitating conversations with clients around addressing mental illness and alternatives to engaging in gun violence. The rigorous implementation and evaluation of such interventions is warranted given its great potential based on the existing literature (Bryant et al., 2020; Jemmott et al., 2017; Victor et al., 2018).

Older participants recognized that positive, engaging activities that they had growing up were no longer present in the neighborhood and stated community disinvestment was a driver of gun violence. Some examples mentioned included neighborhood sports teams and mentorship programs like the Boys and Girls club. Others mentioned community cookouts and getting to know their neighbors to build a sense of community and safety in the neighborhood. Social cohesion is widely accepted as a positive aspect of a community though, in recent years, it has been on the decline (Putnam, 2015). Interventions that promote increased social cohesion and their subsequent evaluation are needed. Particularly, interventions that are community-initiated and -driven could be useful in terms of sustainability and effectiveness in mitigating gun violence by promoting social cohesion. The success of such interventions has been shown to be related to their ability to adapt to a community's unique needs and integrate accountability into their foundations (Byrdson et al., 2016).

4.1. Limitations

The following limitations should be considered to contextualize our findings. Participants in our study were purposively sampled based on inclusion and exclusion criteria and therefore the findings cannot be generalized to the larger population. Specifically, though our sampling approach harnesses positive deviance as a way to identify participants who may have unique insight into assets that deter involvement in gun violence, we did not speak with those who had direct experience with gun violence and including this population may yield complementary findings. Being a qualitative study, we did not aim to recruit a representative sample. Further, all participants were from New Haven, CT, and their experiences may not be applicable in other places across the United States. Though research assistants who conducted data collection worked to develop rapport with the participant and create an environment of trust, it is possible that participants censored their responses given social desirability bias. Last, given that participants were asked to recall past experiences, it is also possible that they misremembered certain details or that the passage of time has changed their memory of certain experiences due to recall bias.

5. Conclusion

In conclusion, using an assets-based community development framework, we identified perceived drivers and deterrents of

neighborhood-level gun violence. These included the influence of community role models on youth, stable housing and social cohesion, and access to community-based mental health services and engaging activities for youth. Prospectively evaluating whether investments in these factors results in lower rates of gun violence among communities with high rates of gun violence is needed as a critical next step.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

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