VIOLENCE INTERRUPTERS: A REVIEW OF THE LITERATURE

Violence Interrupters: A Review of the Literature

By: Kyle Hucke

Abstract: The street-level violence prevention field includes a range of professionals fulfilling specific roles in various programs. This literature review focuses on violence interrupters as a specific type of outreach worker and the programs that utilize them. Violence interrupters embed themselves within specific areas of communities experiencing elevated levels of violence and mediate emerging conflicts between groups and/or individuals to interrupt the cycle of violence. This review describes the theoretical frameworks guiding the design of these programs, the role of violence interrupters, and program implementations. It also summarizes results from the research literature that evaluates these programs. The literature suggests that violence interrupters are successful at reaching the target population. The research on the effects of these programs on community violence shows that most experience initial success followed by challenges maintaining that success. Program instability from funding and employee turnover likely reduce the effectiveness of VI programs. The dangerous and stressful nature of the work and the relatively poor level of monetary compensation drives the high turnover of VIs. The high social and economic cost of violence suggests that VI programs "pay for themselves" by preventing violence. Overall, evidence suggests violence interrupters are a valuable part of the violence prevention field, but researchers, practitioners, and policy makers need to be aware of violence interrupters' strengths, limitations, and the supports needed for them to work effectively.

Introduction

Violence interrupters (VIs) are a specialized form of outreach worker (OW) who specifically focus on violence reduction. OWs have been a key component of many public health focused violence reduction programs (Bonevski et al., 2014). OWs deliver services and/or information directly to individuals in the community with the goal of addressing a particular problem. Researchers sometimes refer to these types of interventions as street-level interventions because the primary point of contact between an OW and the target of the intervention occurs in public, on the street, rather than in a facility or inside the home (Bonevski et al., 2014). The objective is to remove as many barriers as possible by bringing an intervention to the individuals it is designed to help. This tactic can be particularly important for individuals with the greatest risk for involvement in violence (Bonevski et al., 2014). Many of these individuals are part of hard-to-reach or under-resourced populations who might not otherwise be reached by interventions (Bonevski et al., 2014).

VIs bring conflict mediation and anti-violence messaging directly to the individuals who need it the most (Butts et al., 2015; McManus et al., 2020). Violence is often a culmination of escalating tensions between individuals or groups (Butts et al., 2015; McManus et al., 2020). To prevent or reduce it, VIs use direct and indirect pathways (Butts et al., 2015; McManus et al., 2020). Directly, VIs prevent violence in the community by using conflict mediation skills to resolve disputes (Butts et al., 2015). Indirect pathways, by contrast, relate to violence associated with people's lack of access to adequate resources, such as employment or healthcare (Dahlberg & Mercy, 2009; McManus et al., 2020). In indirect cases, VIs may refer individuals whose conflict they have mediated to another group of OWs (Butts et al., 2015). These OWs, in turn, act as case managers, helping to ensure that the individuals successfully connect to needed resources (Butts

et al., 2015). Many programs call these referred individuals clients because they have a great deal of contact with them and often collect information about them to track their progress (Butts et al., 2015). Some programs require VIs to act as hybrids. In these programs, VIs mediate conflict and connect clients to resources (see Figure 1) (Butts et al., 2015). The second indirect pathway is through anti-violence messaging (Skogan et al., 2008). Some violence reduction programs sponsor community events, such as marches and vigils, and promote anti-violence messaging to change community attitudes about violence (Butts et al., 2015). The goal is to create long-term community-level reductions in violence. VIs, OWs, program partners (e.g., faith leaders), and members of the community all participate in these events and spread anti-violence messaging (Butts et al., 2015). This review focuses on violence reduction programs at the individual and community levels that use VIs as part of their program.

Figure 1
Roles of Violence Interrupters, Outreach Workers, and Hybrid Workers

Violence Interrupter: Conflict Mediation | Hybrid: Both | Outreach Worker: Case Work
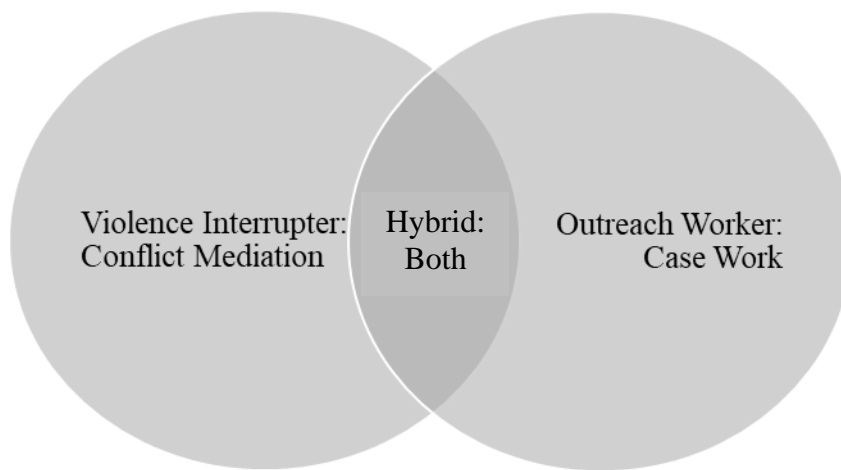
Review Methods
Review Objectives

The goal of this review is to describe the role of violence interrupters in violence prevention programs, implementation challenges facing these programs, challenged conducting research, and the current scientific evidence for the effects of these programs on violence. Readers should gain an understanding of how these programs have functioned in the past, the existing scientific evidence on the effects of these programs, the programs' implementation strengths and weaknesses, and the research's strengths and weaknesses, and what experts in the field suggest could address weaknesses.

Review Structure

This review begins with a description of the history of violence interrupters and the theoretical foundations that influenced the design of programs that use violence interrupters. Then I describe the two most prominent program models that have used violence interrupters; Cure Violence and focused deterrence. Next, I illustrate the daily lives of violence interrupters including work-related challenges. The subsequent section presents findings from implementation evaluations of

violence interrupter programs to highlight the challenges researchers have documented during program implementation "in the field." The goal of these sections together is to provide the reader with a strong contextual understanding of violence interrupter programs prior to examining the outcome evaluations. Consistent with this, I then summarize the findings from outcome evaluations examining violence interrupter programs, describe limitations to the existing research, and suggest some future directions for examination of these programs.

Search Method

I reviewed two review articles as the first step in this review; McManus et al., (2020) and Butts et al., (2015). The McManus et al., (2020) article was a broad review of street level violence prevention programs that included programs outside of the scope of this paper, but also included summaries of relevant programs like Cure Violence and focused deterrence. The Butts et al., (2015) article was a detailed review of the existing Cure Violence literature to that date. The second step in the review was to examine the reference sections from both papers and then screen relevant articles for inclusion as the starting point for a "snowball" approach (Badampudi, Wohlin, & Petersen, 2015). In a snowball search, researchers use the reference section from papers to generate the next list of papers to screen for review and then repeat that process. A total of 102 papers were screened using this snowball method with 55 included for review. The most prominent type of paper I excluded were focused deterrence interventions that did not include violence interrupters, street outreach programs focused on non-violent outcomes, and papers that focused on violence prevention/intervention broadly rather than violence interrupters.

After reviewing the 55 papers, I created search terms to conduct a database search. I then engaged two research assistants to conduct the database search and screening process to identify any papers that were not included in the snowball search. They searched five databases that were relevant to the topic to check for articles that may have been missed by the snowball method. The research assistants erred on the side of inclusion when deciding if a paper should be screened. A total of 131 papers were screened with 20 included in the review (See Appendix A for a complete list of search results).

Researchers utilized the following search terms for the current article:
- Ceasefire
- Cure Violence
- Street level intervention and violence
- Restorative justice and violence
- Violence interrupters
- Gang outreach workers
- Outreach workers and violence
- Pulling levers and outreach workers
- Focused deterrence and outreach workers and violence
- Focused deterrence and youth violence and violence interruption

Inclusion and Exclusion Criteria for Articles

Articles were included in the review if they focused on programs that utilize outreach workers who directly intervene in developing or active conflicts or focus on the outreach workers themselves. I refer to these individuals as violence interrupters throughout for simplicity and consistency, but they have other names in some articles such as gang outreach workers. The articles included in this review also fall into at least one of three categories: outcome evaluations, implementation evaluations, and qualitative studies. Combined, these studies provide a comprehensive view of violence interrupters and the programs that utilize them. They describe how the programs are implemented, what effect they have, and provide insight into potential actions needed to improve them.

Outcome Evaluations. Outcome evaluations are studies that measure the effects of a program. I included articles in this review that focused on outcomes associated with violence interrupter programs. Outcomes examined included violence measures such as homicides or shootings and attitudes of residents in the community such as fear of violence or attitudes about violent conflicts. Most programs measured both community level violence changes and the number of mediations violence interrupters conducted. Articles of this type often focus on quantitative data analysis.

Within this category, I further categorized articles as either major or minor studies. Major studies have strong methods and data quality. Most major studies utilized a quasi-experimental design and had multiple data sources to triangulate results. Quasi-experimental designs are common in the social sciences and in research conducted "in the field" rather than in a laboratory. In a quasi-experimental design, researchers select two or more samples to measure and they are assigned to either the experimental group or the control group. In a "true experiment" design, researchers randomly assign individuals to either the experimental or control group. Ideally, the experimental and control samples are as alike at the start of the research as possible so that the effect under examination can be detected. Researchers often use a quasi-experimental design when random assignment is impractical or unethical. For instance, it would be unethical to randomly assign violence interrupters to mediate some potentially violent conflicts and not others. Studies like these require considerable resources, coordination between multiple stakeholders, and appropriate community conditions (e.g., multiple similar neighborhoods). Most of the major studies in this review compared neighborhoods where violence interrupter programs were operating to similar neighborhoods where the program was not operating. Examples of major studies include the evaluation of Chicago Ceasefire and Baltimore Safe Streets (Skogan et al., 2008; Webster et al., 2013).

I categorized articles as minor outcome studies if they focused on quantitative analysis of outcomes, but the methods were not as strong as that of the major studies. For instance, the study may not have been a quasi-experimental design, or the authors may not have had access to a robust data set to conduct the analysis. For instance, the evaluation of Cure Violence in Honduras did not include a comparison area in their analysis but examined the change in violence within the intervention area (Ransford, Decker, & Slutkin, 2016). These methodological shortcomings were often due to lack of resources available for research or forces outside of the authors' control. However, due to those limitations I review the major studies in greater detail in this paper.

Implementation Evaluations. Implementation evaluations assess the implementation of programs to identify strengths, weaknesses, fidelity to the intervention model, and document unanticipated challenges experienced during the programs' implementation. Such studies provide valuable context to the interpretation of outcome evaluation results. For instance, the implementations of a program (e.g., Cure Violence) at different locations could show different effects on violence. Implementation evaluations allow us to examine if variations in implementation could explain the variations in results. They also allow researchers and practitioners to learn from previous implementations to improve a program/model over time. Implementation evaluations in this review included descriptions of program implementation and primary data collection with staff and clients of the program. Researchers used both qualitative (e.g., focus groups) and quantitative (e.g., surveys) methods to assess program implementation strengths and weaknesses. Examples of implementation evaluations in this review include the evaluation of Chicago Ceasefire and the evaluations of project REASON in Trinidad and Tobago (Maguire, Oakley, & Corsaro, 2018; Skogan et al., 2008).

Qualitative Studies. Qualitative studies included in this review focused on the experiences of staff and clients of violence interrupter programs. Qualitative research methods are appropriate for the study of a small, understudied, population such as violence interrupters. That is, there are few violence interrupters compared to other professions (e.g., police officers) and the research in this review is the only research focused on this population. Likewise, people who have participated in these programs are a small subset of the community. Qualitative studies are also appropriate as exploratory studies that may have limited or no formal hypothesis. For instance, one of the studies in this review explored the challenges that violence interrupters face without testing a formal hypothesis about those challenges. Such studies can provide valuable insight to programmatic changes or future hypothesis driven research. Examples of qualitative studies in this review include examinations of the experiences of violence interrupters in Chicago and New York (Bocanegra et al., 2021; DeFries Gallagher, 2021).

Excluded Articles. I excluded several types of articles from this review. The first was violence prevention programs that utilized outreach workers, but those workers did not engage in direct violence interruption. Direct violence interruption is when a violence interrupter mediates a conflict as it is developing, which is often in "the streets." Many violence prevention programs use outreach workers to help link individuals who are at risk for violence to services. Some programs even include services that are conflict resolution training or scheduled conflict mediation. However, if the intervention occurred exclusively at a designated place and time, rather than at the street level, then I excluded the article. The second type of article I excluded focused on programs that use outreach workers who intervene at the street level, but the goal was not to address violence (e.g., if the outreach targeted drug users). The third type of article excluded was focused deterrence programs that did not include violence interrupters. The final type of excluded article focused on street-level violence prevention that did not use violence interrupters such as problem oriented policing or stop and frisk programs.

Violence Prevention and Violence Interrupters Programs
History

Historically, many street-level violence prevention programs are law enforcement-based and draw on criminological theory (Dahlberg & Mercy, 2009; McManus et al., 2020). Problem oriented policing, for example, is based on criminological theory and suggests specific policing strategies for countering crimes (Cordner & Biebel, 2005). From this perspective, if a public parking lot is experiencing break ins, police may alter their patrol schedule or install a fence to reduce individuals' abilities to successfully commit that crime without being caught. Following high rates of violence in the 1980's, violence prevention efforts expanded beyond criminology perspectives to include other theoretical frameworks and approaches. Public health is the most prominent of these approaches (Butts et al., 2015; Dahlberg & Mercy, 2009). A public health approach to violence prevention focuses on the well-being of entire populations, emphasizes prevention, and includes multi-disciplinary perspectives and problem-solving techniques (Krug et al., 2002). Compared to approaches that exclusively focus on law enforcement efforts, these multi-disciplinary perspectives inform each step of the process and allow for a greater variety of intervention strategies (Dahlberg & Mercy, 2009; McManus et al., 2020). Under a public health model, economic development and access to mental healthcare are viewed as potential avenues for violence prevention, even though both are outside the purview of law enforcement.

Most programs in this review utilize the public health model, which, by design, treats violence as a communicable disease and aims to target its immediate and root causes to prevent its spread (Butts et al., 2015; Slutkin, Ransford, & Zvetina, 2018). To address the immediate causes of violence, VIs mediate disputes and then, either themselves or someone else from the program, connect individuals to services that can address root causes, such as mental health care. Early examples of these programs include the Little Village Gang Violence Reduction Project in Chicago (1992-1997) and Chicago Ceasefire (later called Cure Violence, 2005-2015) (Skogan et al., 2008; Spergel et al., 2003).

During the early 1990's, law enforcement-based programs developed new strategies to apply a more targeted approach to crime and violence reduction, such as focused deterrence (Braga, Brunson, & Drakulich, 2019). Focused deterrence is a strategy in which law enforcement targets a specific group of high-risk offenders (e.g., a gang) and tells them they will receive increased enforcement pressure unless the group chooses to discontinue specific behaviors (e.g., gun violence). VIs have been part of programs that use focused deterrence for a long time, as in Boston's Operation Ceasefire (1996-2000) (Braga, Hureau, & Papachristos, 2014). Initial evaluations of targeted deterrence programs and Cure Violence, such as Chicago Ceasefire and Boston Ceasefire, have deemed both to be promising. Findings have shown that both demonstrate significant reductions in violence, and other cities have adapted, refined, and implemented the programs (Braga, Hureau, & Papachristos, 2014; Skogan et al., 2008).

Theory
The Public Health Model and Violence Interrupter Programs

Public health researchers have suggested that violence can spread like an infectious disease (Slutkin, Ransford, & Zvetina, 2018). Criminological research has indicated that violence is often geographically concentrated, and it pertains to a small group of individuals relative to the size of the entire community who spread it amongst each other (Braga, Papachristos, & Hureau, 2012; Braga & Weisburd, 2012; Braga, Weisburd, & Turchan, 2018; Butts et al., 2015;

McManus et al., 2020). Combined, these two research findings inform the design of most of the violence prevention programs in this review (Slutkin, Ransford, & Zvetina, 2018).

From a public health perspective, the first step in designing a program is to define and monitor the problem (see Figure 2) (Mercy et al., 1993). This step includes establishing an evidence base rich enough to support rigorous evaluations of the effects of intervention efforts.

Figure 2
Public Health Model Steps

The Public Health Model	
Step 1:	Define and monitor the problem
Step 2:	Identify risk and protective factors
Step 3:	Develop intervention and prevention strategies
Step 4:	Assure widespread adoption of strategies supported by evidence

Center for Disease Control: https://www.cdc.gov/violenceprevention/pdf/PH_App_Violence-a.pdf

The second step is to identify risk and protective factors associated with an outcome of interest (Mercy et al., 1993). Risk factors increase the likelihood of a negative outcome; protective factors reduce it. Risk and protective factors can be directly or indirectly associated with an outcome. For instance, carrying a weapon, being in a gang, or participating in an active dispute are all direct risk factors for engaging in violence (Stayton et al., 2011). Experiencing poverty or having been a victim of violence are indirect risk factors (Dahlberg & Mercy, 2009; Stayton et al., 2011).

The third step in designing a program is to develop and test intervention and prevention strategies (Mercy et al., 1993). Intervention strategies seek to reduce or eliminate harm caused by a problem that is already occurring. Conflict mediation is one such intervention. When it is successful, this intervention can stop the cycle of violence. Prevention strategies seek to circumvent a problem completely. For instance, the anti-violence messaging that VIs spread is a prevention strategy. Its purpose is to create a culture in which interpersonal conflicts do not lead to violence at all. Intervention and prevention strategies often focus on increasing protective factors, reducing risk factors, or both. The programs in this review have employed and are still employing multiple strategies to promote protective factors and reduce risk factors. They, at times, connect individuals to resources that act as protective factors (e.g., employment support), and VIs also reduce risk factors by de-escalating tensions and advocating for non-violent solutions to disputes (Butts et al., 2015).

The fourth step is to adopt widespread strategies that evidence suggests are effective (Mercy et al., 1993). The public health approach acknowledges that local contexts can vary and that problems may change over time (Dahlberg & Mercy, 2009). Therefore, to assure continued efficacy the model includes collecting data repeatedly and monitoring outcomes of interventions regularly (Dahlberg & Mercy, 2009).

There is a strong rationale for combining a public health approach to violence prevention with criminological findings (Dahlberg & Mercy, 2009; McManus et al., 2020). Findings from

criminological research give insight into important contexts that can guide public health approaches. Criminology findings consistently reveal that a majority of murders are committed in connection with personal disputes, and a significant number of murders are retaliations for violent acts that perpetuate the cycle of violence (Braga, Papachristos, & Hureau, 2012; Butts et al., 2015; McManus et al., 2020). This body of research also has indicated that a disproportionate number of violent acts are committed by a very small number of people who are often either active gang members or socially adjacent to gangs (Braga, Hureau, & Papachristos, 2014; Braga & Weisburd, 2012; Braga, Weisburd, & Turchan, 2018). These individuals have a high number of risk factors for both perpetrating and being victims of serious violence. In addition, they can be difficult to reach because they can be distrustful of outsiders out of fear of law enforcement (Bonevski et al., 2014). VIs are often formerly members of this population, which leads to more success working with them than others could achieve (Butts et al., 2015).

Violence as a Disease

While research has suggested that violence often concentrates geographically, violence can "spread" to others in a community like a communicable disease through direct and indirect "transmission" (Braga & Weisburd, 2012; Braga, Weisburd, & Turchan, 2018; Skogan et al., 2008; Slutkin, Ransford, & Zvetina, 2018). In this analogy, a VI's role is to prevent transmission from one "infected" person to another. VIs are the "emergency medical professionals" brought in to stop the spread and save lives (Slutkin, Ransford, & Zvetina, 2018). The most direct pathway of spread is through victimization. Victims are at greater risk of committing violence, either by engaging in retaliation or by otherwise acting on the negative effects of traumas caused by their victimization. Traumatic effects may include mental health problems, risk-taking behaviors, addiction, and hyper-vigilance (Skogan et al., 2008; Slutkin, Ransford, & Zvetina, 2018; Smith & Patton, 2016). Violence can also spread indirectly to individuals who are socially connected to victims of violence. These individuals are more likely to commit acts of violence either as direct retaliation for the violence inflicted on the victim or as an effect of the same negative experiences of trauma that victims suffer (Skogan et al., 2008; Slutkin, Ransford, & Zvetina, 2018; Smith & Patton, 2016). To stop the spread of violence, VIs directly intervene to prevent violent acts from retaliations and trauma-induced disputes (Bocanegra et al., 2021; Butts et al., 2015).

Social Determinants of Violence

Social determinants of health are "the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life" (CDC, 2022). Extending the communicable disease analogy, individuals are infected, but they are not the "source of the disease." Researchers have developed a social determinants of health framework by drawing on data about chronic health conditions that emphasize the sociological nature of common risk factors, such as poverty (Nation et al., 2021). Within this framework, social determinants are not just variables that are associated with outcomes like chronic disease; they are the root causes of them (Nation et al., 2021).

As an analogy, this framework posits an "environmental contagion" that is the "source" of the disease of violence. Specifically, the sources of pervasive community violence are the social and

economic conditions produced by disinvestment policies and practices shaping the community (Sharkey & Marsteller, 2022). Researchers of violence have applied this framework by investigating if relationships exist between a lack of economic stability, quality healthcare, and quality education in a community and its high rates of mortality, morbidity, and violence (Kim, 2019; Nation et al., 2021). Addressing such environmental sources is important in research and practice because, as studies have shown, a common pattern is for violence to return to these communities even after successful violence reduction programs (Sharkey & Marsteller, 2022; Tillyer, Engle, & Lovins, 2012). That is, programs may be treating the symptoms rather than sufficiently addressing the root causes. In evaluations of several programs, researchers have noted that VIs have difficulty balancing their focus on violence mediation with their aim of meeting the basic needs of community members, such as access to food and shelter (Adams & Maguire, 2023; Bocanegra et al., 2021; Maguire, Oakley, & Corsaro, 2018). Many VI programs seek to provide community members with some of the resources they need, but their primary purpose is to prevent the violence that emerges from that need (Butts et al., 2015; McManus et al., 2020).

Models

The two most prominent types of programs that use VIs in this review are programs based on a Cure Violence approach and those that include focused deterrence as a strategy (Braga & Weisburd, 2012; Braga, Weisburd, & Turchan, 2018). Cure Violence draws heavily on public health theory and practices; focused deterrence utilizes law enforcement more extensively (Braga & Weisburd, 2012; Braga, Weisburd, & Turchan, 2018; Butts et al., 2015). Some communities (e.g., New Orleans and Cincinnati) have implemented Cure Violence and focused deterrence at the same time as part of their comprehensive effort to reduce violence (Engel, Tillyer, & Corsaro, 2013; Corso & Engel, 2015).

Cure Violence

Cure Violence utilizes the public health approach to address some of the immediate and root causes of violence in communities (Butts et al., 2015). For immediate causes, VIs focus on mediating interpersonal conflicts (Butts et al., 2015). VIs work in areas of the community that are experiencing elevated levels of violence and spend the majority of their time talking to individuals, building rapport in the community, and seeking out conflicts to mediate (Skogan et al., 2008). Programs usually employ VIs with specific backgrounds. Many live or have lived in the neighborhood in which they work; they may have returned from incarceration or have formerly been gang members (Butts et al., 2015; Skogan et al., 2008). These lived experiences make the individual more likely to be accepted by the target population as "credible messengers" (Butts et al., 2015; Skogan et al., 2008).

Cure Violence also utilizes OWs who act as case managers and connect clients to services (Butts et al., 2015). As mentioned, VIs often refer individuals to OWs after mediating a conflict so they can connect those individuals to services (Butts et al., 2015). At the end of a mediation, an individual still may have unmet needs and challenges that are root causes/risk factors of violence, such as poverty or untreated trauma (Skogan et al., 2008; Slutkin, Ransford, & Zvetina, 2018; Smith & Patton, 2016). The goal of ameliorating these unmet needs, with the help of OWs,

is to reduce the likelihood that the individual will be in conflicts that could escalate to violence in the future (Butts et al., 2015).

Commonly, across research studies, Cure Violence VIs and OWs are supported by organizational and administrative staff (Butts et al., 2015). Supervisors coordinate the placement of VIs and OWs in the community and hold meetings with their staff to strategize and to solve problems (DeFries Gallagher, 2021). Research interviews with Cure Violence staff have indicated that during these meetings, VIs share information and develop plans to prevent the escalation of challenging conflicts (Skogan et al., 2008). Each individual VI may only have insight into one group involved in the conflict (Butts et al., 2015). Therefore, sharing information can be critical for mediating conflicts that cross neighborhoods or that involve competing groups. In addition, staff members report that these meetings provide time for the VIs to share their feelings, process trauma, and recover from the work, all of which are critical to maintaining their well-being and avoiding burnout (Bocanegra et al., 2021).

To address community violence, Cure Violence administrators coordinate and build coalitions with other programs and institutions within the community (e.g., local government, faith institutions, other community-based services) (Skogan et al., 2008; Stewart, Jessop, & Watson-Thompson, 2021). These partnerships help to ensure that VIs and OWs have a network of additional services for client referrals and that they have support for community events that spread anti-violence messaging (Skogan et al., 2008; Stewart, Jessop, & Watson-Thompson, 2021). Additionally, researchers have found that when a program has law enforcement as a partner, this partner provides Cure Violence with valuable data, such as information about gang activity or recent shootings (Skogan et al., 2008). This information helps supervisors and VIs to plan and be proactive in anticipating new or changing conflicts (Skogan et al., 2008).

Studies have shown that Cure Violence programs typically coordinate community activities that are designed to strengthen communal bonds in a neighborhood and to demonstrate a condemnation of violence, such as vigils and marches (Butts et al., 2015). VIs attend these events to reinforce their reputation in the community as leaders seeking to reduce violence (Skogan et al., 2008). Likewise, the events increase the visibility of Cure Violence in the community, which also increases community buy-in for the program (Delgado et al., 2017).

Focused Deterrence

Evidence that violence is often concentrated geographically and within a small group of gang members or gang-adjacent individuals has led to the creation of the focused deterrence strategy (Braga & Weisburd, 2012; Braga, Weisburd, & Turchan, 2018). In focused deterrence, law enforcement concentrates on a specific group, usually a gang, and tries to deter them from acts of violence (Braga, Hureau, & Papachristos, 2014). For instance, the Boston Ceasefire program focuses on gangs and targeted gun violence (Braga, Hureau, & Papachristos, 2014). The goal of focused deterrence is to reduce violence, not to increase arrests (Braga, Hureau, & Papachristos, 2014). One of the features that differentiates focused deterrence from a standard policing strategy is the use of "call ins" with a target gang (Braga, Hureau, & Papachristos, 2014). These "call ins" are meetings where law enforcement personnel warn the gang that they are being targeted because of violent behaviors (e.g., gun violence) and that they can avoid a "crack-down" if they

discontinue the behavior (Braga, Hureau, & Papachristos, 2014). Gangs that cease the violent acts do not face increased enforcement pressure, but law enforcement "pulls every lever" available to arrest members of the gangs who do not cease the violence (Braga, Hureau, & Papachristos, 2014). These "levers" can include aggressive enforcement of traffic laws, parole violations, and other minor violations as a means of disrupting the gang's ability to function (Braga, Hureau, & Papachristos, 2014).

Successful "call ins" create a clear cause and effect relationship between the actions of the gangs (i.e. gun violence) and law enforcement's actions (i.e. the "crack downs") (Braga, Hureau, & Papachristos, 2014). Establishing that cause and effect gives the gangs some agency to control their relationship with law enforcement and reduces the belief that a "crack down" is arbitrary (Braga, Papachristos, & Hureau, 2012). Providing gang members with clear instructions can lead to the gang choosing not to engage in violence (Braga & Weisburd, 2012; Braga, Weisburd, & Turchan, 2018).

VIs contribute to the success of "call ins" by reinforcing the message that law enforcement delivers to the gang. VIs' role is to increase the likelihood that the gang will believe it (Braga, Hureau, & Papachristos, 2014). This role can be a challenging balancing act for VIs. They must maintain their independence from law enforcement while supporting law enforcement's call to end violence (Bocanegra et al., 2021; Braga, Hureau, & Papachristos, 2014). Appearing to work with law enforcement can damage their credibility, as many in the community they work with are distrustful of law enforcement (Bocanegra et al., 2021; Braga, Hureau, & Papachristos, 2014). VIs' abilities to be credible messengers are critical to their specific role in a program utilizing a focused deterrence strategy (Braga, Hureau, & Papachristos, 2014).

To achieve credibility, studies have shown that in many cases VIs use their skills to advance multiple reasons for avoiding violence instead of speaking on behalf of law enforcement. For example, as one study has shown, they may, point out the negative consequence of engaging in violence and appeal to a gang's self-interests (e.g., avoiding a "crack down") (Braga, Hureau, & Papachristos, 2014). VIs exclusively focus on violence rather than advocating for ceasing drug use or sales (Braga, Hureau, & Papachristos, 2014). Therefore, VIs can credibly present their arguments as anti-violence and being good for the individual(s) they are speaking to rather than coming from a law enforcement partner (Braga, Hureau, & Papachristos, 2014). Research of focused deterrence, including meta-analyses, have suggested that successful "call ins" (where gangs believe the message) can lead to reductions in violence; and VIs are important to those successes (Braga, Hureau, & Papachristos, 2014; Braga & Weisburd, 2012; Braga, Weisburd, & Turchan, 2018).

Violence Interrupters
Daily Activities

Several studies have used methods such as interviews or surveys to investigate the specific daily activities of VIs. In interviews, VIs talk about establishing strong rapport with members of the community as the first goal of their work, a necessity for mediating conflict successfully (Bocanegra et al., 2021; Decker et al., 2008; DeFries Gallagher, 2021). While VIs describe themselves as better suited to integrate with the target population than others from outside the

community, VIs also describe the process of establishing rapport with clients as challenging at times (Bocanegra et al., 2021; Decker et al., 2008; DeFries Gallagher, 2021). VIs state that many of the individuals they have interacted with were part of an insular gang culture or went through life experiences (e.g., trauma from exposure to violence) that made them hesitant to trust others (Bocanegra et al., 2021; Cheng, 2018; Decker et al., 2008; DeFries Gallagher, 2021; Skogan et al., 2008; Smith & Patton, 2016). Researchers also have interviewed Cure Violence supervisors about hiring VIs, and they suggest that a potential VI hire needs to demonstrate such qualities as patience, resilience, passion for the work (DeFries Gallagher, 2021). These qualities are important because, in addition to facing personal danger, VIs are likely to be rebuffed by the people they seek to help and have to respond well to that rejection (DeFries Gallagher, 2021). For instance, one hospital based VI program in New Orleans reported enrolling 76 gunshot victims as clients, but 314 declined to fully enroll in services (though they may have continued informal interactions with the VI) (Bollman et al., 2018). In spite of these challenges, research has suggested that VIs are able to successfully establish rapport with those who are most in need of their services (Adams & Maguire, 2023; DeFries Gallagher, 2021; Gorman-Smith & Cosey-Gay, 2014; Skogan et al., 2008). In interviews, those community members in need of services state that they are more willing to trust VIs because of shared lived experiences, suggesting that people without those shared experiences would have greater difficulty gaining that trust (Adams & Maguire, 2023; Bocanegra et al., 2021; Cheng, 2018; DeFries Gallagher, 2021; Maguire et al., 2017; Maguire, Oakley, & Corsaro, 2018; Gorman-Smith & Cosey-Gay, 2014; Skogan et al., 2008; Webster et al., 2013).

VIs also report in interviews that once they understand the social dynamics of a neighborhood and establish rapport, they are strategic in their activities (DeFries Gallagher, 2021; Skogan et al., 2008). They seek to establish a visible presence at locations, such as storefronts where conflicts may begin, or at intersections, where rival groups are more likely to come into contact (Skogan et al., 2008). The VIs believe that their visible presence probably directly deters conflicts and certainly allows members of the community to easily find them if conflicts occur elsewhere (Butts et al., 2015; Skogan et al., 2008). VIs also attend social gatherings and community events as places where conflicts may occur (Butts et al., 2015). They report that it is important to attend funerals of victims of violence because their family members and friends may be in need of support, and they may be experiencing anger and grief that can lead to retaliation (Bocanegra et al., 2021; DeFries Gallagher, 2021). Similarly, VIs work with victims of violence while they are in the hospital to provide support and prevent retaliation (Bollman et al., 2018; McVey et al., 2014; Nguyen et al., 2020; Thomas et al., 2022; Wical, Richardson, & Bullock, 2020). These proactive strategies demonstrate VIs' personal concern for those affected by violence and show ways in which they provide opportunities to de-escalate tensions. These efforts, in turn, increase the likelihood that future mediations and de-escalation efforts with individual community members will succeed (Butts et al., 2015).

Mediation Strategies

Researchers also have examined the types of conflicts VIs mediate and the mediation strategies they utilize (DeFries Gallagher, 2021; Dymnicki et al., 2013; Skogan et al., 2008; Whitehill, Webster, & Vernick, 2013). In interviews, VIs describe a diversity of conflict situations they encounter and emphasize the importance of collecting detailed information about each conflict

(Skogan et al., 2008). VIs use mediation strategies, which include gathering information, de-escalating, supporting a client, using family or friends as a means of communication, providing alternatives, and building community (Dymnicki et al., 2013). In addition, VIs develop common strategies and practices for specific types of conflicts (Skogan et al., 2008). For example, when a conflict involves the theft of goods or money, VIs negotiate a return of the property to the rightful owners and prevent retaliation (Skogan et al., 2008; Whitehill, Webster, & Vernick, 2013). In disputes between gangs or other groups VIs negotiate truces and boundaries (Skogan et al., 2008; Whitehill, Webster, & Vernick, 2013). In sudden conflicts fueled by anger, VIs encourage individuals to take time to calm down, or they actively move someone out of the neighborhood (Skogan et al., 2008). Some VIs describe a strategy aimed at getting community members to actually blame the VI for preventing retaliation. By blaming a VI, members can preserve their reputations within the community, which is particularly effective if the motivating force for retaliation is a fear of appearing weak (DeFries Gallagher, 2021; Whitehill, Webster, & Vernick, 2013). As additional strategies, VIs rely on stories from their own experiences to illustrate the negative effects of violence, such as incarceration or harming loved ones (Skogan et al., 2008). They also uses the individuals' potential or personal goals as rationales for not engaging in violence, which requires deep knowledge of the individual (Whitehill, Webster, & Vernick, 2013). Finally, VIs describe using strong language to convince someone not to engage in violence but only for the most serious conflicts (e.g., if an individual has a weapon and intends to use it) and only after other strategies have failed (Whitehill, Webster, & Vernick, 2013).

Characteristics of Conflicts

Research examining characteristics of conflict has found that most of the conflicts VIs mediate involve several individuals who already know each other, and the conflicts are either gang-related or direct retaliations from previous conflicts (Braga, Papachristos, & Hureau, 2012; Braga & Weisburd, 2012; Braga, Weisburd, & Turchan, 2018; Dymnicki et al., 2013; Papachristos, Wildeman, & Roberto, 2015). Two studies have compared the mediations of gang related conflicts to non-gang related conflicts to examine if one type of mediation may be more successful than the other. Results between the studies are inconsistent. In the study of a Chicago-based VI program no significant difference occurs in the likelihood of a mediation succeeding in gang-related versus non-gang related conflicts (Dymnicki et al., 2013). In fact, the data show that the more severe the conflict, the lower the probability of a successful mediation, with this effect being most pronounced for deadly conflicts (Dymnicki et al., 2013). By contrast, the second study of a Baltimore-based VI program has shown that VIs are more likely to succeed in their mediations in gang related conflicts than non-gang related conflicts (Whitehill, Webster, & Vernick, 2013). Researchers in this study postulate that such success may be because gangs have competing economic interests or because they treat violent acts as part of a strategic decision. Non-gang related conflicts are likely personal and faster developing (Whitehill, Webster, & Vernick, 2013). While this hypothesis is consistent with the focused deterrence strategy, more research is needed on conflict characteristics and mediation success.

Violence Interrupter Challenges

Personal Danger, Burnout, and Trauma. Researchers have interviewed VIs about the effects of their job on their wellbeing, and results suggest that working as a VI can have a

negative impact on an individual's personal wellbeing (Bocanegra et al., 2021; Free & McDonald, 2022). Researchers have noted that VIs work near violence, and they are at risk for violent victimization; both situations can be traumatic (Bocanegra et al., 2021; Free & McDonald, 2022). In one recent study involving interviews with 35 VIs, 91% report that at least one of their clients was killed within the past year; several of the VIs themselves reportedly have been shot while working as a VI (Bocanegra et al., 2021). In interviews, VIs describe the negative effects of unsuccessful mediations and the violence that has occurred afterward, which includes individuals that the VI has known (Bocanegra et al., 2021; DeFries Gallagher, 2021; Free & McDonald, 2022). Some of those same VIs also feel responsible for unsuccessful mediations that result in violence, which is very emotionally challenging (Bocanegra et al., 2021; DeFries Gallagher, 2021; Free & McDonald, 2022). The negative effects of an unsuccessful mediation can be so severe that VIs choose to leave the profession (Free & McDonald, 2022). Research has suggested that many VIs show symptoms of Post-Traumatic Stress Disorder, which negatively impacts their whole well-being (Bocanegra et al., 2021; DeFries Gallagher, 2021; Free & McDonald, 2022). For instance, in one interview, a Chicago-based VI describes suffering from nightmares and sleep disruption after being shot while working as a VI (Bocanegra et al., 2021). Moreover, though working in one's own neighborhood may aid a VI in establishing credibility and in understanding the social landscape, it can also lead to reliving traumas from their past (Free & McDonald, 2022). In interviews, some VIs describe the negative effects of witnessing violence on the same street on which they had been victimized. Even just seeing similarities between themselves and their clients can trigger trauma responses (Bocanegra et al., 2021; DeFries Gallagher, 2021; Free & McDonald, 2022).

Given the challenges VIs face, they need, but may not always find, reprieves from the difficulties of their work (Bocanegra et al., 2021; DeFries Gallagher, 2021; Free & McDonald, 2022). In research interviews, VIs emphasize that their VI identities exist beyond working hours because community members approach them whenever they are needed (Bocanegra et al., 2021; DeFries Gallagher, 2021; Free & McDonald, 2022). Because violence can happen at any time VIs reportedly feel "always on call" (Bocanegra et al., 2021; DeFries Gallagher, 2021; Free & McDonald, 2022). VIs say they often cannot emotionally distance themselves like other first responders can because they know the victim and/or perpetrator personally (Free & McDonald, 2022). Some research has suggested that VIs' exposures to trauma are similar to first responders', but they do not have access to the same supports as first responders do (Free & McDonald, 2022). There are state and federal programs that provide support for first-responders, such as access to mental health and economic support, but VIs are not classified as first-responders (Homeland Security Digital Library, 2014). Some researchers have argued that the work in which VIs engage has levels of danger, violence, and trauma similar to other first responders, and, as such, VIs could be classified as first responders (Bocanegra et al., 2021). Findings from interviews with VIs suggest they also experience challenges helping others while healing from their own traumas (Harmon-Darrow, 2020). In one study, a VI describes himself as a "wounded healer" (Harmon-Darrow, 2020). Both VIs and their supervisors have stated that the emotional toll of the work contributes to burn-out and high levels of turnover in VI programs (Bocanegra et al., 2021; DeFries Gallagher, 2021; Free & McDonald, 2022). Providing VIs with mental health and financial support, if they are injured, could help alleviate some of the burnout and turnover (Harmon-Darrow, 2020). Currently, it is common for programs to use team meetings as opportunities for VIs to process their emotions and recover from some of the

emotional toll of their work (Bocanegra et al., 2021; DeFries Gallagher, 2021; Free & McDonald, 2022).

Pay and Job Stability. Several studies have noted that many VIs are in precarious financial situations and/or on short-term contracts without benefits (Bocanegra et al., 2021; Skogan et al., 2008). For instance, VIs from the 2008 Chicago Ceasefire evaluation were on 900 hour contracts that had to be renewed, and the VIs often did not know if they would be renewed (Skogan et al., 2008). More recent research (2021) on different, Chicago-based, VI programs has found that low pay and job stability are significant stressors for VIs (Bocanegra et al., 2021). VIs report that financial stress harms their ability to perform the job and can also increase temptations to secure financial stability through illegal revenue (Bocanegra et al., 2021; Johnson & Everon, 2022). In one set of interviews, some VIs emphasize their difficulties affording rent and basic goods (Skogan et al., 2008). In another study, a VI describes a sequence of events during which he was shot while working as a VI, then lost his job due to the program losing funding, and finally resorted to selling drugs to support his family (Bocanegra et al., 2021). Some researchers have suggested eliminating the unstable employment for VIs, but the programs themselves have had unstable funding, as well (Bocanegra et al., 2021; Free & McDonald, 2022; Skogan et al., 2008). In interviews, VIs say that uncertainty about program funding produces fear of future unemployment and economic need, which undermines job performance and satisfaction (Bocanegra et al., 2021). They express frustration that unstable employment forces them to spend time and energy looking for future employment rather than helping their clients (Bocanegra et al., 2021; DeFries Gallagher, 2021; Free & McDonald, 2022). Finally, Bocanegra et al. (2021) have suggested that VIs need greater support to transition out of the field because not many positions exist that utilize or recognize their skills (Bocanegra et al., 2021).

High-risk vs. High-need Clients. As the combined literature has shown, one challenge VIs face is differentiating between high-need and high-risk for violence individuals. In a violence interrupter context, high-risk means that individuals are likely to perpetrate or be the victims of violence; high-need means that individuals lack resources to meet their material needs (e.g. housing or healthcare). It can be difficult for VIs to differentiate between the two because both groups have many common needs, and conditions tied to those common needs can be root causes of violence, like poverty, trauma, and exposure to violence (Dahlberg & Mercy, 2009; Staton et al., 2011). Thus, while not all high-need individuals are high-risk for violence at a given moment, being high-need is a risk factor for becoming high-risk for violence (Farrington, Gaffney, & Ttofi, 2017). Some of the researchers who have evaluated Project REASON, the Cincinnati Initiative to Reduce Violence, and Pittsburgh's One Vision One Life have postulated that these programs may show reduced efficacy in violence reduction because some VIs focus predominantly on high-need rather than high-risk for violence individuals (Engel, Tillyer, & Corsaro, 2013; Maguire et al., 2019). Researchers and practitioners have created screening tools to identify individuals at the highest risk of violence to aid VIs (Adams & Maguire, 2023; Engel, Tillyer, & Corsaro, 2013; Maguire et al., 2019; Maguire, Oakley, & Corsaro, 2018).

In practice, differentiating high-risk from high-need individuals in order to focus exclusively on those at high-risk can have negative effects. Many community members who are not a high-risk for violence make valid requests for help from VIs (Engel, Tillyer, & Corsaro, 2013). The VIs risk breaking trust or reducing their credibility by not assisting community members when they request assistance (Decker et al., 2008). If a VI or an anti-violence organization gains a

reputation for not following through on offers to help, it can be a significant barrier to their efficacy (Gorman-Smith & Cosey-Gay, 2014). Also, researchers have found through interviews that many VIs view their identity and mission more broadly as community service, which includes helping as needed (Bocanegra et al., 2021; Johnson & Everon, 2022). For instance, during the Covid-19 pandemic VIs took on additional duties to help combat the disease even though that was not directly related to violence prevention (Bocanegra et al., 2021; Johnson & Everon, 2022).

Another overlap between community members who are high-need versus high-risk for violence is the need and desire for gainful employment. In the literature, clients in programs in Chicago; Baltimore; Lowell, Massachusetts; and Trinidad and Tobago emphasize that they want support for obtaining employment and that having a job is necessary to avoid violence (Adams & Maguire, 2023; DeFries Gallagher, 2021; Fratoli et al., 2010; Gorman-Smith & Cosey-Gay, 2014; Maguire et al., 2019; Maguire, Oakley, & Corsaro, 2018; Pollack et al., 2011). In a survey of Chicago community members, 76% of respondents report that they need a job; and, in Ceasefire, clients are twice as likely as non-clients to have a job, likely due to the program's support (Skogan et al., 2008). In interviews across many sites, clients and VIs stress that it is important for clients to accept that a violent lifestyle is harmful and to feel that they have a realistic alternative lifestyle to pursue, which can depend on having employment (Adams & Maguire, 2023; DeFries Gallagher, 2021; Fratoli et al., 2010) Gorman-Smith & Cosey-Gay, 2014; Maguire et al., 2019; Maguire, Oakley, & Corsaro, 2018; Pollack et al., 2011).

     Social Media. Researchers have investigated the role of social media in VI work, but the effects of social media are not yet well-integrated into existing outcome evaluations of VI programs. So far, one study has found that VIs working in communities note an increased role for social media in creating conflict (Blandfort et al., 2019). This study has analyzed social media monitoring and content sorting and has examined how these activities could aid VIs in intervening in escalating conflicts (Blandfort et al., 2019). Findings show that the quantity of content created by social media far exceeds the capacity of the VI program to manually process it (Blandfort et al., 2019). For processing, the VI program in this study works with technology experts to develop automated methods of sorting social media posts and highlighting those that may lead to violence (Blandfort et al., 2019). As pre-requisites, however, creating effective sorting criteria requires understanding the specific and constantly changing slang, hand gestures, and taunts people engage in. It requires, as well, knowing the physical locations in a community (Patton et al., 2016). Thus, to create the criteria for sorting, this work requires extensive coordination between community members and technology experts; and those criteria may change rapidly (Blandfort et al., 2019). The pilot program in automated sorting that this study has reviewed demonstrates some success, but more research is needed before these methods can be considered predictive or effective (Blandfort et al., 2019). In addition, ethical issues, including privacy concerns, warrant discussion before these methods are widely utilized (Blandfort et al., 2019).

Other research has found that VIs are attempting to monitor social media independently as part of their work (Patton et al., 2016). In interviews, some VIs state that if they do not monitor social media they may act on outdated information or may not be proactive enough to counter conflicts originating from social media (Erete, 2021; Erete et al., 2022). One research project has tested an

app that assists VIs in social media monitoring (Dickinson et al., 2021). VIs in this study rate the app as helpful, noting it addresses some of their concerns, such as data privacy and security (Dickinson et al., 2021). This research is still preliminary, and more studies are needed before examining the effect of using the app on outcome data.

Relationship with Law Enforcement. Researchers have conducted interviews to investigate the challenges of navigating the relationship between law enforcement and VIs (Bocanegra et al., 2021; Braga, Hureau, & Papachristos, 2014). VIs are often members of communities that have strained relationships with law enforcement and may have had negative personal experiences themselves with law enforcement (Bocanegra et al., 2021; Free & McDonald, 2022). In interviews, VIs describe the negative effects of racial discrimination in policing and public policy on their personal experiences as VIs (Braga, Brunson, & Drakulich, 2019; Powell & Porter, 2022). In one 2021 study, one third of VIs in Chicago report experiencing police misconduct while acting as VIs (Bocanegra et al., 2021).

For the police perspective, findings from early versions of VI programs (e.g., The Little Village Gang Violence Reduction Project and Ceasefire Chicago) suggest a distrust by law enforcement of the programs, the VIs, or both, with a possible result of negative interactions (Skogan et al., 2008; Spergel et al., 2003). As studies have shown, when VIs actually cross legal boundaries, it adversely affects VI programs. For example, in a Cincinnati program, some VIs were arrested for misconduct, which led to the discontinuation of the VI portion of that program (Engel, Tillyer, & Corsaro, 2013). Researchers have stressed that a best practice for programs is to have protocols in place to support VIs and prevent misconduct or criminal activity (Bocanegra et al., 2021; DeFries Gallagher, 2021; Skogan et al., 2008). These policies are part of a strong management and support structure, which is necessary for the wellbeing of the VIs and their programs (Bocanegra et al., 2021; DeFries Gallagher, 2021). However, it is also true that undo scrutiny by law enforcement on VIs negatively impacts their ability to work in the field (Bocanegra et al. 2021). More research is needed to determine if the prevalence of VI programs has changed law enforcement personnel's perceptions of the programs.

VIs' positive relations with law enforcement are important because, as a valuable partner in VI programs, law enforcement can provide VIs with information about crimes in the area or about escalating gang activity in other neighborhoods (Bocanegra et al., 2021; DeFries Gallagher, 2021). Additionally, good collaborations with law enforcement, with patrol officers knowing the identities of VIs, can enable patrol officers to act with discretion and understanding in their interactions with VIs (Bocanegra et al., 2021; Spergel et al., 2003). For example, increased coordination with law enforcement can potentially prevent instances in which VIs are arrested on minor parole violations or arrested due to inclusion in a gang database (DeFries Gallagher, 2021; Johnson & Everson, 2022).

Even in these positive relationships, however, VIs must maintain independence from law enforcement to maintain credibility with clients (DeFries Gallagher, 2021). Administrators of both police departments and VI organizations should develop strategies for sharing information while protecting VIs' credibility (Braga et al., 2019; Fox et al., 2015). For instance, one strategy is to ensure that information flows from law enforcement to the supervisors, who have less client contact, and from them to the VIs (Braga et al., 2019; Fox et al., 2015). Some programs that

successfully partner with the police are the Phoenix TRUCE and Oakland Ceasefire programs. Both maintain a strong data sharing relationship with law enforcement without harming VI credibility (Braga et al., 2019; Fox et al., 2015).

Findings from Implementation Evaluations

Implementation evaluations of programs are complementary to outcome evaluations. Implementation evaluations first document challenges and successes in implementation that then become the lessons learned for future implementations. For instance, when researchers and practitioners were developing Chicago Ceasefire, they were guided by lessons from researchers' evaluation of The Little Village Gang Violence Reduction Project. This guidance motivated them to include VIs and outreach workers as separate roles and to narrow the program's focus and activities (Skogan et al., 2008; Spergel et al., 2003). The literature also has shown that as important as it is to maintain elements previously found to be effective in programs, such as properly conducted "call ins" in focused deterrence or regular team meetings between VIs and supervisors, it is also vital to grow programs through adaptations and incremental improvements (Braga, Hureau, & Papachristos, 2014; DeFries Gallagher, 2021).

Many implementation elements of VI programs require more research. For instance, it is not clear from the literature if VIs are more effective when they exclusively conduct mediations or when they act as hybrids by assuming case work duties. In interviews, VIs from both Chicago and New York stress that fulfilling the roles of VI and OW simultaneously is very challenging (DeFries Gallagher, 2021). Likewise, they suggest that clarity of roles and responsibilities may be important for program effectiveness (DeFries Gallagher, 2021). Researchers of both the Pittsburgh One Vision One Life program and the REASON project in Trinidad and Tobago have cited a lack of role clarity as one potential factor reducing the effectiveness of the programs (Adams & Maguire, 2023; Maguire et al., 2017; Wilson & Chermak, 2011). On the other hand, VIs establish trust with individuals in the community and that trust may help ensure clients access the services they are referred to, and VIs may benefit from increased credibility when they are able to make referrals themselves. Based on our knowledge to date, no direct assessment of this topic exists, and more research is needed.

Implementation evaluations provide details about contextual factors or choices stakeholders make while developing or implementing a program. These details have given interpretive insight into subsequent operations of a program and its outcomes. For instance, process evaluations have given insight into the One Vision One Life program that Pittsburgh implemented, showing that the program significantly deviates from both the focused deterrence model and Cure Violence model that were part of the programs' earlier processes of development. These insights help explain outcome findings (Wilson & Chermak, 2011). According to researchers who have evaluated outcomes in One Vision One Life, it is "a locally developed program […] partially inspired by Cure Violence" (Butts et al., 2015). It is one of the least successful programs at violence reduction reviewed here, and it is the least faithful to either of the models reviewed here.

In examining the strengths and weaknesses of some program implementations, researchers have highlighted challenges that arise in implementing programs and in evaluating outcomes of

interventions at a community level. Adaptations are often necessary for contextual reasons (e.g., geography and culture) or for pragmatic reasons (a lack of funding for staff). These changes are important to consider when comparing results between implementations of the same program model. These challenges likely contribute to the frequent pattern of programs demonstrating initial success but failing to sustain it (Buggs, Webster, & Crifasi, 2022; McManus et al., 2020).

Inadequate Resources
Funding and Staffing

Unstable and/or inadequate funding is a challenge that has been cited by researchers and the staff of VI programs (Bocanegra et al., 2021; Free & McDonald, 2022; Skogan et al., 2008). For instance, the Chicago Ceasefire evaluation has noted that some sites experience delays in opening or in hiring staff; others close early or temporarily shut down during the course of the evaluation (Skogan et al., 2008). Evaluations of programs in Baltimore and New York also have noted challenges with site specific closures or temporary work stoppages due to funding difficulties (DeFries Gallagher, 2021; Picard-Fritsche & Cerniglia, 2013). Combined findings from several articles underscore that site closures pose a challenge for programs because they create inconsistency for the staff and the community (Bocanegra et al., 2021; Free & McDonald, 2022; Skogan et al., 2008). Temporary suspension of service or closure of sites undermines community faith in the programs (Bocanegra et al., 2021; Free & McDonald, 2022; Johnson & Everson, 2022). Funding challenges contribute to staff turnover, which also impacts the VIs and a program's relationship with the community (Bocanegra et al., 2021; Free & McDonald, 2022; Johnson & Everson, 2022). Moreover, turnover affects the efficacy of mediations because rapport must be re-established with a new VI, and some knowledge of existing conflicts may be lost when a VI leaves the program (Johnson & Everson, 2022; Whitehill, Webster, & Vernick, 2013).

In addition to turnover, some programs find it necessary to adopt staffing structures during implementation that differ from the planned model. For instance, Baltimore's Safe Streets has one neighborhood that is fully staffed while the other three neighborhoods share support personnel (Webster, Buggs, & Crifasi, 2013; Webster et al., 2013). Researchers of the Baltimore program have noted that staffing shortages can lead to one site supplementing another on a temporary or permanent basis. This choice may adversely affect both sites (DeFries Gallagher, 2021; Webster, Buggs, & Crifasi, 2018; Webster et al., 2013). In the Baltimore study, findings show that the neighborhood that is fully staffed has the strongest results, but there is no systematic analysis comparing outcomes of fully staffed vs understaffed sites (DeFries Gallagher, 2021; Webster, Buggs, & Crifasi, 2018; Webster et al., 2013).

One gap in the research is the optimal ratio of VIs to high-risk community members. Most programs have caseload expectations for OWs but not for VIs (Butts & Delgado, 2017). The Chicago Ceasefire evaluation has focused on areas with a population of approximately 80,000 and with 52 VIs in the field (Skogan et al., 2008). The evaluation of the implementation of Cure Violence in Philadelphia has examined the program set in an area with approximately 72,800 people and two VIs (Roman, Klein, & Wolff, 2018). Findings from this Philadelphia evaluation show that at the community level the dose of VI is too diluted to significantly reduce gun crime, but when just the "hot spots" to which the VIs are assigned are analyzed, the dose is concentrated

enough to detect a significant reduction in gun crime compared to a control "hot spot" (Roman, Klein, & Wolff, 2018). There is no research directly assessing if the number of VIs employed by programs is determined by community need or budgetary restraints. Anecdotally, staff from VI programs stress in interviews that community need exceeds program capacity (Bocanegra et al., 2021; DeFries Gallagher, 2021; Skogan et al., 2008).

Political Support

For initial success and sustainability, implementations of VI programs depend on resources, effective leadership, effective communication, and political support for both. Most large VI projects start with political support and initially show success. These effects, however, are difficult to sustain (Butts et al., 2015; McManus et al., 2020). In evaluating the program in New Orleans, researchers have credited strong initial political support as a significant factor in its initial success, with the caveat that "future potential replicating agencies would be well advised to understand the potential toward deterioration of treatment in strategies that approach their second, third, and fourth years" (Corsaro & Engel, 2015). City, state, or federal funding is often the largest source of funding for VI programs. For support, program models include the formation of partnerships with mayoral offices and law enforcement. Both are integral to large-scale sustained community change (Butts et al., 2015; McManus et al., 2020). Decidedly, large-scale community change is slow and irregular compared to election cycles, and changes in leadership can lead to changes in funding priorities. For example, Boston Ceasefire was largely successful but faced diminished funding when there was a change in leadership in 2000 and political leaders diverted resources to anti-terrorism initiatives in 2001 (Braga, Hureau, & Winship, 2008). Gun violence, specifically the youth gun violence that Ceasefire had targeted, rose in Boston from 2000-2004 coinciding with diminished political support and reduced resources (Braga, Hureau, & Winship, 2008).

Political challenges have other negative effects, as well. Project Reason in Trinidad and Tobago is the most direct example of a program's efficacy being undermined by a lack of political support. Researchers have conducted a implementation evaluation and have interviewed staff from project Reason, and findings from both studies allude to governmental leadership decisions and interpersonal actions having a direct, negative effect on the wellbeing of the staff and the program overall (Maguire et al., 2019; Maguire, Oakley, & Corsaro, 2018). Likewise, ineffective collaboration by agencies can also affect the functioning of programs that depend on that support (Spergel et al., 2003). For example, the Little Village Gang Violence Reduction project, a currently defunct program, had initial success but faced significant program challenges in its final years (Spergel et al., 2003). Researchers have attributed the challenges to misaligned goals of the partner organizations and ineffective collaboration (Spergel et al., 2003).

Contextual Challenges
Density of Neighborhoods

As researchers have found in their evaluation of Phoenix TRUCE, low density of a neighborhood can be factor in lower rates of conflict mediation (Fox et al., 2015). VIs establish rapport and credibility with individuals at risk for violence through informal interaction in public spaces. Dense neighborhoods with high amounts of foot traffic are much more conducive to these types

of interactions than neighborhoods where cars are the dominant method of transportation. Conflicts are also more likely to escalate when individuals in an active conflict unexpectedly come into contact with each other (Fox et al., 2015; Skogan et al., 2008; Spergel et al 2003). However, the increasing role of social media in the creation of conflicts may change this dynamic and change how VIs identify conflicts (Patton et al., 2016).

Gang Characteristics

To date, no formal analysis assesses the effects that different types of gangs may have on the outcomes of VI programs. Nonetheless, an understanding of gangs in a community is likely important for program implementation. There are many types of gangs. They range from large multi-generational gangs focused on organized crime to small recently formed gangs unlikely to remain after the initial forming group "ages out" (Starbuck, Howell, & Lindquist, 2001). VIs working in a community with multiple small gangs may need different tactics than VIs in a community with one or two large gangs. To better understand this issue more research is needed.

Research findings suggest that for VI programs to be successful in achieving significant reductions in community violence, people working in the program must engage with gangs. The projects that engage gangs, particularly those using focused deterrence, show strong initial successes in areas with and without large, highly structured gangs (e.g., Oakland and New Orleans, respectively). Conversely, in one program that does not focus on gang related activities –Pittsburgh's One Vision One Life- findings show that community violence is not reduced. Researchers have highlighted the absence of this focus as a contributing factor to the lack of reduction in community violence (Wilson & Chermak, 2011). Some researchers have suggested that mediating gang-related disputes may differ from mediating personal disputes, due to the economic incentives of gangs; other researchers, however, have not found significant differences between gang and non-gang mediations (Whitehill, Webster, & Vernick, 2013).

Organizations and Facilities in the Neighborhood

The literature often has referred to VI programs as street-interventions because that is where the majority of VI activity occurs. Even so, programs need a physical location beyond "the street" as a headquarters; as a place to conduct team meetings; and, in some cases, as a safe haven for clients (Skogan et al., 2008; Webster et al., 2013). Researchers in Chicago and Baltimore have attributed some of the differences in outcomes across neighborhoods to the host facility's location and its place in the culture of the community (Skogan et al., 2008; Webster et al., 2013). Likewise, evaluations of the Phoenix TRUCE program have tied some of its success to the program being embedded in a location with existing connections to the community (Fox et al., 2015). Embedding programs within buildings that act as community centers allows for faster implementation and community acceptance (Fox et al., 2015). Research findings also suggest another benefit that can come from integrating VIs into existing community programs. Doing so can provide opportunities for the VIs to transition to positions in those programs if they no longer want to be a VI (Bocanegra et al., 2021). If a community organization is already familiar with a VI, its leaders may be more willing than other employers to offer the VI a position.

Digging deeper into outcomes tied to location, researchers have emphasized that a facility must be in neutral gang territory for client safety, especially if VIs choose to conduct mediations there (Braga, Hureau, & Papachristos, 2014; Spergel et al., 2003). Size also matters. Larger facilities that house multiple organizations increase the potential for competing agendas, mistrust between clients of different programs, mission drift, and even competition for resources (Skogan et al., 2008). However, in a positive sense, a large facility is also more likely to be financially stable and to have existing ties to the community (Skogan et al., 2008). Researchers also have stressed the importance of considering the local political connections and cultural relevance of the facility/organization. These factors can be crucial for maintaining support, acquiring resources, and encouraging utilization (Skogan et al., 2008). Researchers have conceded that some high-need neighborhoods lack suitable sites to meet many of these criteria, but it is still important to consider these location issues when designing or evaluating VI programs (Skogan et al., 2008).

Program Outcomes

Community Violence

Evaluations have provided mixed results on the effects of VI programs on community violence. The largest and most comprehensive programs, most of which have multiple studies examining them, are in Table 1. It is important to consider the methodological complexity and heterogeneous nature of the studies when considering the findings in their entirety. The programs, even those using the same model, have differences, sometimes major differences, due to implementation decisions, available data, and funding availability (e.g., total staff hired). Likewise, the major studies have a similar structure, but also important differences. In general, the studies evaluating the programs in Table 1 are large-scale studies that have longer intervention periods than other studies discussed in this review (2-5 years), access to more pre-intervention data (2-5 years), and/or comparison groups for the analyses. Access to pre-intervention data allows researchers to measure the effects of the program compared to the conditions in the area prior to implementation. Researchers suggest that the variance in some violent outcomes, especially homicide, necessitates several years of data to achieve a reliable baseline, and the same rationale applies to the intervention period (Braga & Weisburd, 2012; Braga, Weisburd, & Turchan, 2018; Webster et al., 2013). Such data varies in quality and availability by location.

In general, researchers sought to match the area where the program occurred with a similar area to act as a comparison group. To accomplish this, researchers examined demographic data, economic data, crime statistics, and other important datapoints if they were available. Some studies, such as Safe Streets in Baltimore compared neighborhoods within Baltimore to each other in a quasi-experimental design (Webster et al., 2013). Researchers in other studies, such as the evaluation of Nola for Life in New Orleans, chose to construct the comparison group using data from other cities to achieve the quasi-experimental design because there was not an appropriate neighborhood in New Orleans to act as the comparison (Engel, Tillyer, & Corsaro, 2013). Researchers for these studies also relied on external partners (e.g. law enforcement) to provide data used for outcomes such as shootings, and the programs themselves for administrative data such as the number of mediations conducted. The specific method (e.g. synthetic control, ordinary least squares, or difference in differences) of analysis varied by study and researchers made those methodological decisions based on the available data and the

individual nuances of program implementation. Ultimately, the researchers reported if the area where the program operated experienced a statistically significant reduction in the violent outcomes, they measured compared to a control group. Most examined these effects primarily at the community level, but some examined the number of individual mediations that occurred or the effects of the program on individuals who became clients. This section of the review provides an overview of the results of these quantitative analyses and details to explain the mixed results.

Table 1 displays the major studies, the primary model used, the primary outcomes measured, and which outcomes achieved statistically significant changes in a positive direction such as reductions in shootings or homicides. Results from researchers' quantitative analyses of violence rates demonstrate statistically significant reductions of violence in some programs; partial effects in others, varying by specific neighborhood or outcome; and no effect in yet other programs (Butts et al., 2015; McManus et al., 2020). Overall, results suggest that projects using the Cure Violence model alone are less consistently successful at reducing violence at the community level than programs that use multiple strategies.

Table 1
Major Quantitative Studies of Community-Level Violence Outcomes

Program Name, Location, Date	Model Used	Outcomes Measured	Violent Outcomes Results
Ceasefire (Chicago, IL) (2008)	Cure Violence	• Shootings • Attempted Shootings	Statistically significant decreases in shootings and attempted shootings in four of seven neighborhoods
Safe Streets (Baltimore, MD) (2013)	Cure Violence	• Homicide • Non-fatal shootings	Mixed results depending on neighborhood
Save Our Streets (New York, NY) (2013)	Cure Violence	• Gun Violence	Statistically non- significant change, but adjacent comparison neighborhoods experienced statistically significant increases during the intervention period suggesting a practical decrease in the intervention neighborhood
Project TRUCE (Phoenix, AZ) (2015)	Cure Violence	• Violent Events • Shootings	Decrease in total violent events, but an increase in shootings
Project REASON	Cure Violence	• Violent crimes	Statistically significant reductions in all three outcomes

(Trinidad and Tobago) (2018)		• Hospitalizations for gunshots • Calls for emergency services	
One Vision One Life (Pittsburgh, PA) (2011)	Cure Violence Focused Deterrence	• Homicide • Aggravated assaults • Gun assaults	No statistically significant change in homicide rate but a statistically significant increase in aggravated assaults and gun assaults.
NOLA for Life (New Orleans, LA) (2015)	Cure Violence Focused Deterrence	• Homicides • Lethal and non-lethal gun violence	Statistically significant reduction in all outcomes, but effects are only attributed to focused deterrence
Cincinnati Initiative to Reduce Violence (Cincinnati, OH) (2013)	Cure Violence Focused Deterrence	• Gang involved homicide • Violent firearm incidents	Statistically significant reduction in both outcomes
Ceasefire Oakland (Oakland, CA) (2019)	Focused Deterrence	• Gun homicide • Shootings	Statistically significant reduction in both outcomes
Boston Ceasefire (Boston, MA) (2001)	Focused Deterrence	• Total shootings	Statistically significant reduction in shootings

Note. The dates correspond to publication of evaluation results

Cure Violence Programs

Most programs show a significant short-term (12-24 months) improvement in at least one important violence outcome (Butts et al., 2015; McManus et al., 2020). For instance, Chicago Ceasefire demonstrates statistically significant reductions in shootings and homicide in four of seven evaluation sites (Skogan et al., 2008). As a percentage compared to control areas, the reductions in shootings range from 16% to 28% while the reductions in homicide range from 15% to 40% (Skogan et al., 2008). Initial evaluations of Baltimore's Safe Streets, a replication of Cure Violence, shows strong effects in the most successful neighborhood demonstrating a 56% reduction in homicide and a 34% reduction in nonfatal shootings (Webster et al., 2013). The

other neighborhoods in that study show mixed results (Webster et al., 2013). One has reduced homicides but increased shootings; another has reduced shootings but no change in homicide; and the last shows a decrease in homicide but no change in shootings (Webster et al., 2013).

Many evaluations have offered underlying details about positive effects or the lack of positive effects. Findings from the initial evaluation of Chicago Ceasefire, for example, describe challenges with funding and their likely effects on the future of the program (Skogan et al., 2008). As actual events show, Chicago Ceasefire, despite an initial success, was unable to sustain itself at the level of intervention and under the original organizational structure present in the initial evaluation (Skogan et al., 2008). The original Chicago Ceasefire closed its last site in 2015, though the program was absorbed by Metropolitan Family Services and violence interrupter programs continued to exist in different forms under different organizational leadership to present day (Bocanegra et al., 2021; Chicago Tribune, 2015). An evaluation of Baltimore's Safe Streets also has shown initial success, but subsequent evaluations show diminished effects concurrent with evaluations of implementation that indicated degraded implementation quality over time (Buggs, Webster, & Crifasi, 2022; Webster, Buggs, & Crifasi, 2018; Webster et al., 2013). These evaluations also illustrate the impact of events outside the intervention. For instance, subsequent evaluations have shown an increase in violence in the Safe Street space following civil unrest in 2015 (Buggs, Webster Crifasi, 2022). The 2015 increase was city-wide, however, and does not connect directly to the program (Buggs, Webster Crifasi, 2022). Evaluations of Project REASON in Trinidad and Tobago, another a replication of Cure Violence, have highlighted statistically significant reductions in violent crime (38%, $p < .009$), hospitalizations from gunshots (39%, $p < .01$), and calls for emergency services related to violence (23%, $p < .03$). Yet findings from these evaluations are tempered by the fact that Project REASON became suspended before the end of the full evaluation period (Adams & Maguire, 2023; Maguire, Oakley, & Corsaro, 2018). Other program evaluations have revealed both positive and negative effects on violence. An evaluation of Phoenix TRUCE, also a replication of Cure Violence, has shown a decrease of 16.1 violence incidents per month but an increase of 3.1 shootings per month (Fox et al., 2015). In this evaluation, researchers have used total incidents of violence as the measure instead of number of homicides because homicide rates in that area are too low to accurately assess change from the intervention (Fox et al., 2015).

Another factor that researchers must account for is broader trends in violence to accurately assess programmatic effects. For instance, analyses of a replication of Cure Violence in New York's Crown Heights neighborhood, called Save Our Streets, show a non-significant reduction in violence over the intervention period; comparison neighborhoods, however, show statistically significant increases in violence during that same intervention period where the default assumption in research is no change to the comparison group (Picard-Fritsche & Cerniglia, 2013). Authors have suggested that in the context of rising violence in the city, a statistically non-significant decrease is evidence of program success (Picard-Fritsche & Cerniglia, 2013). Similarly, for Ceasefire Boston, researchers have been able to isolate the specific effects of this intervention to show its particular effect in reducing shootings during a time when violence rates were decreasing nationally (Braga, Hureau, & Papachristos, 2014).

There have also been smaller scale evaluations of other implementations of Cure Violence that either have examined shorter-range outcomes or have lacked a comparison group. For instance,

for Advance Peace in Sacramento, a modified version of Cure Violence, evaluations have focused on trauma treatment for clients (Corburn et al., 2021; Corburn, Nidam, & Fukutome-Lopez, 2022). When this program's interventions were evaluated, gun assaults and homicides had fallen by 21% compared to the previous 18 months (Corburn et al., 2021; Corburn, Nidam, & Fukutome-Lopez, 2022). Data from an implementation of Cure Violence in Honduras show that, compared to the previous nine months, shootings and killings had fallen 73% in three intervention areas (Ransford, Decker, & Slutkin, 2016). However, neither evaluation has included a comparison group so full attribution of the effects to the intervention is not possible. An additional analysis of Ceasefire Chicago finds similar results to the original evaluation of statistically significant reductions in violence with differences between neighborhoods but examined a smaller number of areas and over a shorter timespan (Henry, Knoblauch, & Sigurvinsdottir, 2014).

Researchers have evaluated a pilot version of Cure Violence in Philadelphia to test the level of sensitivity needed for an evaluation (Roman, Klein, & Wolff, 2018). That is, they have inquired into how large an area is appropriate for measuring an "intervention area" and how to determine and construct an appropriate comparison group. Conventionally, Cure Violence evaluations have utilized census tract, zip code, or other pre-existing boundaries to build their intervention and comparison groups (Roman, Klein, & Wolff, 2018). For the Philadelphia study, when the researchers have used larger, pre-existing boundaries, results do not show significant effects of the intervention (Roman, Klein, & Wolff, 2018). However, when comparing the specific "hot spots" where VIs are placed and "hot spots" with equivalent rates of violence, the Philadelphia researchers have found significant reductions in gun crime in the intervention area (Roman, Klein, & Wolff, 2018). As positive as this finding is, it depends on access to data at this level of sensitivity, which is not always possible.

Focused Deterrence and Cure Violence

Programs that use focused deterrence in conjunction with VIs more consistently show community-wide reductions in violence but also struggle to sustain these effects long-term (Braga, Hureau, & Papachristos, 2014; Braga, Hureau, & Winship, 2008; McManus et al., 2020; Tillyer, Engel, & Lovins, 2012). One example is Operation Ceasefire in Boston. Findings from its evaluations show reduced shootings (31%), yet the program was not sustained when city leadership shifted priorities to funding anti-terrorism efforts (Braga, Hureau, & Winship, 2008; Tillyer, Engle, & Lovins, 2012). As other examples, both New Orleans' NOLA for Life project (with a 17% total homicide reduction) and the Cincinnati Initiative to Reduce Violence (a 41% gang related homicide reduction) demonstrate initial success in reducing violence yet find sustainability to be a challenge (Corsaro & Engel, 2015; Engel, Tillyer, & Corsaro, 2013). The NOLA for Life evaluation has suggested that the focused deterrence portion of the program accounts for the positive effect on reduced violence, but the analysis did not demonstrate a separate effect of the replication of Cure Violence (Corsaro & Engel, 2015). The Cincinnati project has initial success but has another set of challenges as well. The VI portion of the Cincinnati project was discontinued in response to the misconduct of several VIs, and, despite the positive effects of the overall initiative, funding was drastically cut in 2010. Subsequently, significant programmatic changes have been made, and positive effects on violence have diminished over time. In another program, Ceasefire Oakland, evaluation findings highlight a 31.5% reduction in gun homicides and a 20% reduction in shootings compared to control areas,

but implementation is too recent to assess long-term impacts (Braga et al., 2019). For one program, Pittsburgh One Vision One Life, even initial successes are lacking (Wilson & Chermak, 2011). Its evaluations have shown null results for the murder rate (it is unchanged) and have uncovered negative results for assaults (an increase in the intervention area) (Wilson & Chermak, 2011). Evaluators have noted that, in its actual implementation, this program deviates substantially from both the Cure Violence model and the focused deterrence model (Wilson & Chermak, 2011). These deviations may explain the diminished impact of the program on violence outcomes.

Attitudes and Norms Concerning Violence

Researchers' findings on the attitudes of clients with respect to violence suggest that the VIs have a positive effect on the individuals targeted by these programs (DeFries Gallagher, 2021; Gorman-Smith & Cosey-Gay, 2014; Pollack et al., 2011; Skogan et al., 2008). For instance, clients from Chicago report reduced engagement in crime and violence and attribute this reduction to the influence of the VIs (Skogan et al., 2008). Cure Violence also tries to change community-level norms concerning violence by changing the attitudes of non-clients. The VIs and OWs advocate for and model non-violence, and they participate in formal activities, such as marches and vigils, to demonstrate against violence (Butts et al., 2015). They also interact informally with non-client members of the community and promote the program and its mission of violence reduction in those interactions (Butts et al., 2015). Researchers have conducted surveys and interviews with community members to assess the name recognition of programs and attitudes related to violence (Adams & Maguire, 2023; Butts et al., 2015; Gorman-Smith & Cosey-Gay, 2014; Maguire et al., 2019; Maguire, Oakley, & Corsaro, 2018; Milam et al., 2016). Name recognition and support for these programs' missions are high in most communities and show strong support for anti-violence messaging (Adams & Maguire, 2023; Butts et al., 2015; Gorman-Smith & Cosey-Gay, 2014; Maguire et al., 2019; Maguire, Oakley, & Corsaro, 2018; Milam et al., 2016).

Two sets of researchers have used surveys in Baltimore and New York City, respectively, to compare young men's attitudes towards violence. In both sites, the researchers have compared communities where Cure Violence has and has not been implemented (Delgado et al., 2015; Milam et al., 2016). Both studies have found that young men in neighborhoods with VI programs report significant reductions in a willingness to use violence over the course of the intervention period compared to young men in neighborhoods without VIs (Delgado et al., 2015; Milam et al., 2016). The New York City survey also has found a rise in respondents' confidence in police where Cure Violence is implemented, though authors could not identify specifics causing this change, suggesting the need for more research (Butts & Delgado, 2015). These surveys are cross-sectional and administered in multiple waves rather than longitudinally examining the same individuals over time. Nevertheless, the results support the hypothesis that these programs affect neighborhood level changes in attitudes about violence.

Perception and Fear of Violence

Findings from surveys and interviews with clients and community members suggest that respondents' perceptions of the programs that use VIs are positive, but fear of violence remains high (Gorman-Smith & Cosey-Gay, 2014). One survey of community members has found that

members' ratings of peers' likelihood of engaging in violence is much higher than they rate their own likelihood (Delgado et al., 2015; Delgado et al., 2017). One interpretation is that this discrepancy in ratings may be due to social desirability, but it could also be due to fear of violence (Delgado et al., 2015; Delgado et al., 2017). That is, an individual who is afraid of violence in the community likely believes that others in the community are willing to engage in violence even if they, themselves, do not endorse violence. The same survey also has found a significant association between being a victim of violence and endorsing a willingness to engage in violence and/or carry a weapon, though the causal direction is not possible to interpret (Delgado et al., 2015; Delgado et al., 2017). In interviews, community members in Chicago Ceasefire neighborhoods report fear, symptoms of depression, isolation, hyper-vigilance, and fatalistic thoughts in response to exposure to violence (Gorman-Smith & Cosey-Gay, 2014). These are symptoms of trauma, but they are also risk factors for engaging in violence (Stayton et al., 2011).

In interviews with staff of Cure Violence on their perceptions about the implementation of this model, interviewees stress the importance of anti-violence community events (DeFries Gallagher, 2021). These events provide opportunities to show shifts in a community's acceptance of violence, affirm the commitment to reducing it, and show the community's actions on that commitment (Groff, 2015; Rabinowitz et al., 2020). However, the link between changing individuals' attitudes about violence and reduced rates of community violence is less clear. It is also not clear if these events significantly impact individuals' fears of violence, which may be a significant factor in their behaviors.

Economic Analysis

While a community-wide reduction in violence is an important outcome to pursue, it is not the only metric for evaluating these programs. An additional metric is to consider the economic and social cost of violence compared to the cost of program implementation. Violence incurs a variety of costs that society must bear, such as medical expenses, resources expended by law enforcement, court time, incarceration costs, and loss of economic activity (Waters et al., 2005). Research has suggested that direct effects of violence have indirect economic effects. For example, in a direct response to violence, others in the community may behave in ways that avoid violence (e.g., by staying inside the home), leading to the indirect monetary effect of reduced economic activity (Waters et al., 2005). Economic analyses of programs in Baltimore, Chicago, and Trinidad and Tobago suggest that these programs save money by preventing violence (Adams & Maguire, 2023; Maguire et al., 2017; Maguire, Oakley, & Corsaro, 2018; READI Chicago, 2020; Webster, Tilchin, & Doucette, 2023). That is, the total cost of incidents of violence prevented is greater than the cost to implement the program that prevented them. Due to the concentrated nature of violence and its high cost, VI programs can have an outsized impact on violence relative to the amount of resources allocated to them (Adams & Maguire, 2023; Maguire et al., 2017; Maguire, Oakley, & Corsaro, 2018; READI Chicago, 2020; Webster, Tilchin, & Doucette, 2023). Thus, even if programs do not demonstrate statistically significant reductions in violence at the community level they are worth the investment of resources.
Limitations to Outcome Evaluations

Identifying Appropriate Controls

For evaluations, the strongest experimental design is a randomized control trial, but that design is very challenging for neighborhood-level programs like VI programs and may raise ethical issues. Even quasi-experimental designs, where neighborhoods are not randomly assigned but selected by researchers for the intervention or as controls, are very difficult to implement for VI programs. VIs work in the most violent neighborhoods, which makes it challenging to identify as a control another neighborhood similar in size, demographics, and violence levels (Roman, Klein, & Wolff, 2018). In fact, the initial evaluation of Operation Ceasefire in Boston does not include a comparison neighborhood because researchers could find no appropriate neighborhood in Boston (Braga, Hureau, & Papachristos, 2014). Researchers in Baltimore have found statistically significant differences in violence between intervention neighborhoods and potential control neighborhoods, despite these potential controls still being in the top 20% of violence rates (Webster et al., 2013). Even the largest cities only have a small number of very violent communities with similar characteristics, too small a number for a robust evaluation design. Researchers suggest that an ideal design for testing Cure Violence needs to include at least 15-20 neighborhoods in the experimental group and an equal number in the control group (Butts et al., 2015).

Statistical and methodological techniques can mitigate some of the shortcomings implicit in design limitations, and researchers continue to develop and refine these techniques. For instance, in the NOLA for Life evaluation, neighborhoods from other cities are the comparison neighborhoods (Corsaro & Engel, 2015). This evaluation has used as many relevant data points as available to create comparisons, but potentially important contextual variables may not have corresponding data in comparison sites. Researchers have evaluated Baltimore Safe Streets several times (2013, 2018, 2021), utilizing improved methodologies over time. One improvement is the use of synthetic controls, which is more robust and reduces the likelihood of unaccounted for, contextual variables (Buggs, Webster, & Crifasi, 2022; Webster, Buggs, & Crifasi, 2018; Webster et al., 2013). Results of these analyses show diminished program effects compared to earlier methods, but researchers have noted a decline in the quality of implementation, as well (Buggs, Webster, & Crifasi, 2022; Webster, Buggs, & Crifasi, 2018; Webster et al., 2013). Synthetic controls are part of researchers' methodology in evaluating Project REASON in Trinidad and Tobago, as well. This evaluation has shown significant improvements in all three violence related outcomes (Maguire, Oakley, & Corsaro, 2018). Making an overarching comment about methodology, researchers examining the Philadelphia implementation of Cure Violence have suggested that, for the purpose of replicating research, the field could benefit from greater transparency in the methods used to construct comparison groups (Roman, Klein, & Wolff, 2018).

Data Quality and Mediation Operationalization

Limitations on data quality also affect the evaluations discussed in this review. First, records may not be as complete or detailed as is ideal for several reasons. Potential clients may have legitimate reasons to be reticent to provide identifying information, and VIs must use discretion and avoid breaking trust with individuals (Butts et al., 2015). VIs also express concern about the effects of paperwork on their ability to perform in the field; they may prefer to complete paperwork separately, and this limitation may negatively impact accuracy (DeFries Gallagher,

2021). Researchers have noted that the internal record keeping of some programs is very inconsistent, and some programs lack resources to fund staff dedicated to building and managing a database of their internal records (DeFries Gallagher, 2021; Skogan et al., 2008; Webster et al., 2013; Wilson & Chermak, 2011).

Another limitation is that the field has not clearly defined, operationalized, or set clear expectations about mediations. One result is that it can become difficult for programs to determine what interactions should be recorded or not. On the one hand, a strict definition of a mediation may lead to excluding interactions that may prevent escalating tensions because they do not meet that strict definition of a mediation. On the other hand, a definition that is too broad can lead to a burdensome amount of record keeping. VIs' interview responses also show that they feel guidance is unclear concerning how many mediations they should engage in and, at times, feel that expectations are not based on their experiences in the field (Bocanegra et al., 2021). Without a clearer understanding of the level of mediations that are expected, it is difficult for the program to assess if an individual VI or the program overall is performing well. Researchers have suggested this presents an opportunity to incorporate community-based research practices that better define mediations, to build data systems, and to set expectations for how many mediations are appropriate for an individual VI (Bocanegra et al., 2021).

Future Directions

Longitudinal Research

Existing research on VI programs has focused on community-level outcomes, cross-sectional community surveys, and interviews/focus groups with VI staff and clients (Butts et al., 2015; McManus et al., 2020). Longitudinal research at the individual level could provide new information about VI programs. For instance, does mediation success increase as VIs gain experience in the field? Qualitative research describes many challenges that VIs face that lead to burnout or leaving the field (Bocanegra et al., 2021). Addressing these challenges first would provide more long-term viability to the position and make longitudinal research more likely to succeed.

To our knowledge, there has not been a large-scale longitudinal study of outcomes for individual clients of VI programs beyond violence perpetration and victimization. Survey data suggest some other positive outcomes, like increased employment for clients of VI programs (Skogan et al., 2008). Examining such outcomes as incarceration rates of clients, educational attainment, or other indicators of wellbeing could reveal additional positive outcomes of VI programs at the individual level.

Domestic Violence

Domestic Violence (DV) is a serious form of violence that has not been a focus of VI programs. In the evaluation of Ceasefire Chicago, VIs report a reluctance to engage with DV conflicts, citing heightened resistance from individuals involved in domestic disputes to their mediation efforts (Skogan et al., 2008). Along with many other competencies identified by both VIs and others in the field as valuable (e.g., trauma informed care), some implementations of VI programs have included trainings for VIs to improve their competencies in addressing DV (Bocanegra et al., 2021). Thus far, no analysis has examined DV separately from outcomes like

shootings. It is not clear if expanding VIs responsibilities to include intervening in DV is the correct course. It may be that separate individuals or organizations would be more effective, but VIs have demonstrated success in achieving trust with community members, which is likely a valuable asset for such work (Bocanegra et al., 2021; Skogan et al., 2008). Given DV's interconnectedness to trauma and other forms of violence, including street violence, it is important that DV is included in any city's comprehensive violence prevention efforts. Likewise, VI programs should have procedures for and seek partnerships to address DV (Travers et al., 2021). Future research should assess the efficacy of such efforts and explore different models for addressing DV as part of a comprehensive approach to community violence reduction.

Conclusion

This review summarizes and synthesizes the literature examining violence interrupters and the programs that utilized them ranging from programs that were developed in the early 1990's to the experiences of current VIs. The evidence suggests that violence interrupters are a valuable part of the violence prevention field, but improvements in both programming and evaluation are possible.

- VIs are successful at reaching the target population
- Most VI programs initially reduce violence at the community level, but struggle to maintain that success
- Program instability from funding and employee turnover likely reduce the effectiveness of VI programs
- The dangerous and stressful nature of the work and the relatively poor level of monetary compensation drives the high turnover of VIs
- The high social and economic cost of violence suggests that VI programs "pay for themselves" by preventing violence

VI programs are designed to identify and target individuals at high-risk for violence, to have VIs mediate escalating conflicts, and to have them connect individuals to services that decrease their likelihood of engaging in violence in the future (Butts et al., 2015). The evidence suggests that VIs are capable of achieving all three of those goals with a population that is difficult to reach and responsible for a disproportionate amount of violence (Bocanegra et al., 2014; Bonevski et al., 2014; Braga et al., 2019; Skogan et al., 2008). Community surveys and interviews with clients show that these individuals view VIs as credible and acting in their best interests, which makes mediation of conflicts possible (Delgado et al., 2017; Gorman-Smith & Cosey-Gay, 2014; Maguire et al., 2019).

Results for community-level reductions in violence are mixed. Most programs demonstrate at least partial success in the short-term but struggle to sustain results. Researchers have suggested that implementation and funding inconsistencies undermine efficacy with funding shortfalls often being the cause of poor implementation (e.g., sub-optimal staffing levels) (DeFries Gallagher, 2021; Maguire & Adams, 2019; Skogan et al., 2008). Results may improve with more stable and sufficient resource allocations. For instance, programs with multiple strategies, especially focused deterrence, have tended to yield stronger results, but those multiple strategies also represent increased resource allocation. Likewise, results may improve if more resources are devoted to the wellbeing of the VIs themselves. The literature demonstrates that VI work is dangerous, very challenging emotionally, and poorly compensated (Bocanegra et al., 2021;

DeFries Gallagher, 2021). Consequently, there is a high degree of burn-out and turnover for VIs which is both a strain on the programs and likely undermines the effectiveness of the program (Bocanegra et al., 2021; DeFries Gallagher, 2021). It is also possible that community-level evaluations are not sensitive enough to measure such VI programs as Cure Violence (Roman, Klein, & Wolff, 2018). Currently, the appropriate number of VIs needed for a community of a given size is unknown as is a strong methodology for estimating the number of "high risk for violence" individuals in a community. Researchers often use violence data at the neighborhood or census tract level because that is what is available, and this size area may be larger than is appropriate for measuring a VI program, but more research is needed (Roman, Klein, & Wolf, 2018). Finally, research suggests that VI programs show success at the individual client level, and economic analyses suggest that the programs are cost effective and save money compared to the cost of violence (Adams & Maguire, 2023; Maguire et al., 2017; Maguire, Oakley, & Corsaro, 2018; READI Chicago, 2020; Webster, Tilchin, & Doucette, 2023).

VI programs are one part of the violence reduction ecosystem (Braga, Weisburd, & Turchan, 2018; Branas et al., 2020; Butts et al., 2015; Riemann, 2019). Ideally, they prevent the first incident of violence, but the research suggests that many mediations are to prevent a retaliation, which means at least one violent incident has already occurred (Braga, Weisburd, & Turchan, 2018; Branas et al., 2020; Butts et al., 2015; Riemann, 2019; Whitehill, Webster, & Vernick, 2013). Full prevention of the cycle of violence means addressing the root causes that lead the first individual to feel the need to use violence (Braga, Weisburd, & Turchan, 2018; Branas et al., 2020; Butts et al., 2015; Riemann, 2019; Whitehill, Webster, & Vernick, 2013). VI programs provide support to individuals to access services that address needs on an individual level, but they do not directly address the underlying community conditions in which those individuals live (Branas et al., 2020; Powell & Porter, 2022). The challenge VIs face distinguishing "high-need" from "high-risk for violence" individuals highlights the interconnection between those neighborhood conditions and violence (Adams & Maguire, 2023; Wilson & Chermak, 2011). Likewise, the clients of VI programs consistently cite gainful employment as critical to their wellbeing and avoiding future violence (Gorman-Smith & Cosey- Gay, 2014; Maguire et al., 2019; Pollack et al., 2011).

Returning to the social-determinants of violence and the disease analogy, VIs treat those who have already been infected and prevent the spread of the violence, but they do not significantly address the social determinants of violence to prevent new outbreaks. Investment and revitalization efforts in the communities in which VIs work may reduce the need for mediations while improving the lives of those living in the communities (Branas et al., 2020; Dahlberg & Mercy, 2009; Powell & Porter, 2022; Reimann, 2019).

Appendix A: Summary of Search Results

Database	Search Term	Results	Included for Screening	Screened Eligible
Google Scholar	Snowball Search	*	102	55
Scopus	Ceasefire	823	10	3
Scopus	Cure Violence	14	8	2
Scopus	Street [AND] Intervention [AND] Violence	111	3	1
Scopus	Restorative Justice [AND] Violence	429	22	1
Scopus	Violence Interrupters	6	4	1
Scopus	Gang [And] outreach [AND] Workers	16	7	2
Web of Science	Ceasefire	522	3	2
Web of Science	Gang [AND] Outreach [AND] Workers	17	1	1
DOAJ	Violence Interrupters	3	1	1
Criminal Justice Abstracts	Ceasefire	127	11	3
Criminal Justice Abstracts	Restorative Justice [AND] Violence	321	9	2
SocINDEX	Ceasefire	496	9	2
SocINDEX	Gang [AND] Outreach [AND] workers	20	3	2

Note. Searches that did not yield an included paper were excluded from the table

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