Unpacking the Complexities of Community-led Violence Prevention Work

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ABSTRACT

With increased public scrutiny of policing and growing calls for community-based violence prevention, street outreach programs that hire residents to mediate conflicts in their neighborhoods are gaining support. To understand how street outreach workers (SOWs) use information and communication technologies (ICTs) and how they envision future ICTs that better support their work, we interviewed 25 SOWs across three organizations. Results suggest that SOWs leverage ICTs to: 1) identify and mediate conflict; 2) support collaboration and teamwork; and 3) invoke community connections and trust. SOWs posit that new ICTs could provide a seamless infrastructure for communication among SOWs and between community members, assist with training to sharpen conflict negotiation skills, and provide insight on effective conflict mediation strategies.

CCS CONCEPTS

• **Human-centered computing** → *Collaborative and social computing*.

KEYWORDS

community-led violence prevention; public safety; support tools; community justice initiatives; assets-based design

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1 INTRODUCTION

As public awareness and scrutiny of the brutal, racist, and oppressive history of policing in the U.S. grows [71], community-based methods to keep the public safe and to reduce levels of violence are gaining traction. By violence, we refer to any type of behavior that causes physical or bodily injury or harm, including gun violence that results from conflicts between individuals or groups (e.g., cliques or gangs). In the U.S., many Black and Latino/a/x[1] communities that have been targeted by oppressive laws and policies that have led to health and income disparities have also experienced high levels of violence, which can further impede communities' social and economic growth and development [14, 55]. There have been several state-led approaches to addressing violence, including increasing law enforcement, policy changes (e.g., tougher sentencing and stricter gun laws), and creating community-based programs that focus on youth job training and recidivism. The results of such approaches have been mixed, some even detrimental to certain communities. For example, over-policing can increase incidents of police harassment and Black and Latinx communities' distrust of police [46, 59, 92, 97, 100].

Conversely, residents have organized their own initiatives to address violence that involve building relationships, occupying public space, and advocating for more local resources [47, 60]. Similarly, organizations such as the Centers for Disease Control view violence as a public health crisis that requires healing and prevention rather than increased law enforcement and stricter policies and legislation that harm historically oppressed communities [2, 21, 59, 91, 101]. This alternative perspective has led to the creation of *street outreach*, which refers to a neighborhood-level, assets-based [56, 102] model, where residents from the community are trained and paid to be street outreach workers (SOWs) who leverage their skills, relationships, and credibility to identify and disrupt potential violent conflict within their communities [15, 20, 67, 79]. Similar to social workers, some SOWs conduct long-term outreach in an attempt to address the underlying factors that led to the people being involved in violence by connecting them to resources (e.g., trauma-informed

[1]For the remainder of the paper we use "Latinx" to be inclusive of all genders and recognize that this is not a term all Latino/a people identify with. We use the inclusive term "Black" to refer to those of Black African descent whether from Africa, North and South America, Europe, Australia, and/or Asia, because racial discrimination and structural oppression impacts everyone in the African diaspora [18].

mental health services, housing, educational support, work training). Numerous evaluations suggest that this model for violence prevention is highly successful [44, 76, 88, 98, 99].

Recent studies exploring street outreach suggest that information and communication technologies (ICTs) can catalyze violent events [31, 72, 73]. ICTs refer to any digital tools used to support social interactions that are relatively easy to access and join (e.g., social media, web forums, email lists) and/or provide personal one-on-one communication (e.g., mobile messaging services, phone calls). While there is growing evidence that ICTs play a role in instigating violence [31, 73], less research has investigated the potential to design ICTs to reduce violence, especially in communities where historic oppression drives higher rates of crime, over-policing, and police brutality [11, 53, 59, 61, 80]. As such, we turn our attention to how ICTs can be used to support community-led efforts to reduce violence. We pose the following research questions: *(RQ1) What is the role of information and communication technologies in street outreach work? (RQ2) How do street outreach workers envision new ICTs supporting their work?* Within the context of this research, we focus intentionally on community-based violence prevention work rather than punitive and reactionary methods (e.g., harsh sentencing, incarceration) or ad-hoc community policing strategies (e.g., police-led initiatives that engage residents in activities such as in neighborhood clean-ups or to report crimes), both of which have been extensively studied in HCI [33, 37, 58, 89, 96]. Street outreach work, which includes conflict mediation and long-term outreach, not only engages local residents in violence prevention but also offers a more structured, assets-based approach as compared to traditional community-policing. Street outreach takes a non-punitive approach to violence prevention by engaging local residents as agents of care in building safe communities [25].

Situated in seven majority Black communities in Chicago, IL USA, results to our first research question (RQ1) suggest that street outreach workers use technologies to (1) identify and mediate violent conflicts; (2) facilitate collaboration and teamwork amongst SOWs; and (3) build community connections and trust that is essential to community-led violence prevention work. Results to our second research question (RQ2) illustrate that when SOWs imagine technologies that support their work, they prioritize communication, training, and mediation strategy selection while maintaining the privacy and safety of their outreach participants. We cautiously suggest that there is an opportunity for partnerships between designers and those leading community-based initiatives that aim to address issues rooted in structural oppression to collaboratively build tools that support networks of workers aligned with community justice. However, such partnerships need to be carefully developed and the collaborators with lived expertise must drive the design process to mitigate the risk of developing technologies that could inadvertently cause harm.

This paper makes two main contributions to HCI. First, our findings provide insight into the role of technology in community-based violence prevention—providing direct accounts from SOWs about how they use ICTs to mediate conflicts and engage residents in outreach as well as the ways they keep their communication safe, extending prior research that does not include the technological perspective [3, 33, 58, 62, 92, 99, 101]. Furthermore, we situate this paper in prior literature that focuses on collaboratively designing technologies with communities that have faced structural oppression [25, 34, 50, 68]. By focusing on community-based violence prevention approaches, this paper builds on work that takes a social justice approach to design [4, 19, 28]. Second, we seek to grow the body of work in HCI that specifically explores community-led alternatives to policing [25, 37, 58, 70, 82, 104, 105]. Implications from this paper provide insight into how ICTs can be collaboratively designed to support community-led violence prevention efforts, building on prior work about the design of violence prevention support tools [58, 75] and approaches to effective community-research partnerships [35, 50, 77].

2 RELATED WORK

2.1 Examining the Historical Factors that Impact Violence

Recent literature urges HCI scholars to attend to the historical context and structural harms that exist when working with communities that have experienced a history of injustice and oppression [4, 50, 68, 78]. Such studies impress upon the field the importance of not only acknowledging oppressive practices and policies as we conduct research but also charges us to discuss the historical context of these communities in our publications [50]. As designers and researchers, it is important to understand how the history of injustice and oppression in the United States have systemically created communities with disparities—that is, disproportionate amounts of unemployment, criminalization, lack of educational opportunities, and negative health outcomes [59, 61]—prior to examining the impact and design of technology. It is one way to acknowledge and address institutional and societal harms [4]. In this section, we provide a historical lens into the context of violence and the factors that catalyze violence in order to better understand those who engage in violence prevention work.

Street outreach workers (SOWs) often work in our most disadvantaged communities and neighborhoods. Being from those areas, SOWs are prepared to work within the context given their deep understanding of the daily realities that residents in their communities face [59, 79, 99]. Policies that support segregation and discrimination have resulted in a lack of employment and lower paying jobs, thereby resulting in areas with concentrated poverty and high social vulnerability rates for communities that are majority Black and Latinx, as is the case for many communities on the south and west sides of Chicago, IL USA (where this study was conducted) [1, 84, 88]. Black and Latinx communities, negatively impacted by such policies, still face concentrated poverty, inadequate health services, over-policing, underfunded public education, and lack of city services [1]. These factors catalyze cycles of violence and trauma. Furthermore, over policing, police brutality, and mass incarceration are conditions that have been normalized by the association of Blackness with violence and criminality [55]. Black criminality has been encoded in data as early as the 1890 census [65], which manifests today in the form of police gang databases [95]—such as those used in studies such as [6, 87]. As we bring attention to the historic association between Blackness and criminality, it is important to note that this paper intentionally focuses on street outreach work as an alternative to this narrative, where instead of being criminalized based on race, Black people (who have formerly

been involved in gangs and groups as well as those who are many times described as being "at-risk" within such gang databases) share their experiences mediating violence in their communities, facts that are many times overlooked when discussing communities that experience high levels of violence.

It is in this context that community-based violence intervention work lies. Understanding the history and the factors that influence violence helps situate violence prevention work as a small, but important, factor in the complexity of solutions to completely eliminate violence, which would require policies that aim to reverse decades of oppression (e.g., reparations, increased business investments and employment opportunities, improved mental and physical health services, adequate educational opportunities). In this paper, we aim to bring attention to the factors that fuel violence and to the voices and experiences from the communities most impacted by violence into the discourse on violence prevention in HCI.

2.2 Street Outreach as an Approach to Reducing Violence

As violence across the United States reached its height in the early 1990s [45], scholars began considering how public health theories and approaches can inform violence interventions beyond more traditional solutions, such as harsher sentencing [79] and over policing. Despite various perspectives, the growing consensus became that certain conditions (e.g., economic opportunities, resident mobility, local social structures) negatively impact behavior [51, 84] and that to be successful, interventions should address at least one of three variables—attitudes, norms, and self-efficacy [39]. Early public health approaches to violence prevention were based on the notion that violence is contagious, like other communicable diseases; thus, individuals who are traumatized by witnessing violence regularly are more likely to resort to violent behavior to resolve conflict. Some early public health approaches to reducing violence were "preventing injuries from firearms, interrupting the 'cycle of violence,' developing and evaluating community approaches to violence prevention, and changing public attitudes and beliefs toward violence. It is believed that attention to these areas offers the greatest chance of saving lives, preventing injuries, and reducing the overall impact of violence on our society" [63]. Early success of such approaches were foundational to current strategies for violence prevention, such as community-driven street outreach programs.

Street outreach programs stop the spread of violence by first identifying and working with high risk individuals to change their behaviors and attitudes (many times interrupting violent behavior in real-time) and secondly, by working with the individual and others in the community to identify resolutions to conflicts that do not involve violence, thereby changing the norms [15]. Another critical component of street outreach is to address underlying factors that can contribute to a person engaging in violence by connecting them to resources (e.g., trauma-informed mental healthcare, education, employment, housing) on an individual level and at a societal level by transforming social policy [9]. Given the public health perspective, such approaches are typically independent of law enforcement and other efforts to reduce violence [15]. Given that the street outreach approach prevents violence by targeting root causes rather than simply reacting to violence with punitive measures, it requires a long term and consistent engagement with individuals while also building relationships and trust within the community. Funding for these programs has historically been inconsistent, which has caused sites to open and close, resulting in high worker turnover and disrupting their progress [15]. Even with these challenges, evaluations have shown that the street outreach model is effective at lowering rates of violence [44, 76, 88, 98, 99]. Street outreach programs have been implemented across a range of settings—in communities, hospitals, schools, prisons, and local governments across the U.S. as well as globally [12, 15, 20, 42, 67]. Given that SOWs engage in front line violence prevention work, it is important to understand their experiences when designing to support community-based violence prevention methods like street outreach.

2.3 Use of Technology Towards Violence Prevention in HCI

There is much HCI research that explores the role of technology in violence and public safety [3, 33, 37, 58, 83]; however, the two main foci have been examining how law enforcement use technology to improve safety [16, 96] and how residents use technology in community policing, a partnership model where residents work with law enforcement to improve public safety [37, 58, 70, 82, 104, 105]. To understand how police use technology, researchers designed COPLINK to improve internal information sharing [16], while other areas of research seek to understand how surveillance tools are used in policing [96]. Related work has focused on how residents engage in local violence prevention efforts in Bangalore, India [83], Manchester, UK [24], Mexico City, Mexico [3], and Chicago, USA [37, 58] while some have focused specifically on intimate partner violence [29, 41], violence in developing countries [5, 64], violence among homeless populations [57], or do not take a community-based approach [87]. Two studies in HCI have addressed street outreach; one explores the potential for public art and storytelling to garner support for street outreach [85], and another investigates how a mobile app for SOWs impacted their transformative practices [25]. By focusing on ICTs employed by community-based SOWs in a developed urban environment, this paper contributes to the growing body of literature that suggests technologies adopted in violence prevention techniques will vary depending on the type of violence and the setting in which the violence occurs [94].

Prior literature has also focused on understanding the benefits of using social media in pubic safety, including increased partnership between citizens and law enforcement, awareness of local crime and violence, and citizen engagement in decision-making that impacts public safety [3, 24, 33, 52, 58, 83]. Social media has the ability to support stronger relationships between residents and police, enabling two-way discussions around addressing community concerns [52, 83]. Social media also increases community engagement in offline violence prevention activities and helps strengthen the community's voice by establishing more community-led discussions with the police [37]. However, despite how residents use technologies, political power impacts local city response to addressing citizens' concerns around public safety and policing [33]. In a three-year ethnography, Erete and Burrell [33] found that despite

using ICTs in similar ways, lower income communities receive less response to address community concerns from local government officials and law enforcement as compared to more affluent neighborhoods. Because prior HCI literature has predominantly focused on technology use from the perspectives of law enforcement and residents, we focus on understanding a rare but important hybrid—SOWs who are community residents that are paid to mediate violent situations and engage in outreach, but in different ways than law enforcement. Understanding SOWs can further improve our understanding of how to design support tools for community-led safety initiatives.

3 POSITIONALITY STATEMENT

Following the methodology of *standpoint theory* [48], we include a positionality statement. We represent a collaborative team of academic researchers and community partners who come from diverse socioeconomic backgrounds, including at various points in our lives being low-income, middle-class, or upper middle-class due to educational attainment and employment opportunities. Two of the six authors currently or have formerly lived in the communities involved in this study. Given that the majority of co-authors do not live in these communities, we acknowledge the detachment from these communities as a limitation in our data collection, data analysis, and our interpretation of the findings. As such, we have shared and validated our findings with the study participants to address this limitation and establish fidelity.

Our standpoints within cis-hetero patriarchy and white supremacy are varied and intersectional [17], affording us differing advantages and disadvantages within these systems. The lead collaborator from Street Peace (SP) is a Black man who worked as a SOW for four years before transitioning into the organization's administration, and at the time of the study, was a senior administrator focused on developing street outreach practices and training for both national and international agencies. His interest in innovation led him to invite the lead author, who is a Black woman with a decade of experience in various forms of violence prevention, to collaboratively explore opportunities for technology to support street outreach work. The sixth author, a white Sicilian American woman, was also a SOW for four years before becoming an administrator and played an integral role in the study's data collection. Collectively, this group of authors has over four decades of experience working with community organizations that focus on violence prevention.

Lastly, we acknowledge the harm that has been caused by negative narratives and stereotypes about Black and Latinx communities and violence. We reject these false and dehumanizing narratives that perpetuate Black criminality [65] and do not account for the historical and current policies that have created concentrated poverty and other factors that catalyze violence [8, 69, 90]. We carefully and cautiously engage in this work with a long-term commitment to our community partners that have led community-driven approaches to violence prevention for decades. Thus, the stories SOWs tell in this paper are not intended to sensationalize community violence or define the communities by crime or violence. Rather, we position SOWs' as agents of care and knowledge [17] in street violence prevention work.

4 STUDY DESIGN

To address our two research questions, we interviewed 25 street outreach workers from Street Peace (SP), a pseudonym that collectively refers to three different street outreach non-profit organizations that regularly collaborate in Chicago, IL USA. The street outreach administrator who initiated this study invited the two partnering organizations to participate to maximize the study's potential impact. Street Peace agreed as a collaborative to partner with the academic team for three-years (this paper focuses on the initial work of understanding the role of ICTs in street outreach work while other papers describes the partnership in more detail [25]). In this section, we describe Street Peace and its approach to violence prevention as well as our data collection and analysis methods, including details about our recruitment process, our participants, and interview protocol.

4.1 Street Peace: A Collective of Violence Prevention Non-Profits in Chicago

As a collective of community-based street outreach programs, Street Peace attempts to prevent violence at the individual and community-levels by taking a public health approach. SP operates from an understanding of the cycle of trauma—that people who have experienced violence (e.g., domestic violence, war violence, street violence) have an increased risk of engaging in it or being a victim of violence (however, this does not mean that all people exposed to violence will act violently) [14]. Using an evidence-based approach to interrupt this cycle, SP employs public health strategies associated with disease control to prevent violence [23]: 1. *violence mediation*, where SOWs detect and mediate potentially violent conflicts; 2. *long-term outreach*, where SOWs work with high risk individuals to address underlying factors that increase stress and limit the life choices available to them (e.g., education, employment, mental health, housing [14]); and 3. *community engagement*, where SOWs bring communities together through peace rallies, vigils, and information sessions. Workers and their organizations also advocate for policy changes to alleviate the oppression that fuels violence [14, 25].

In this paper, we primarily interviewed street outreach workers (SOWs) about the role of technology in their work, a component of which is to intervene in conflicts that could escalate to violence. *Violence mediation* is when trained individuals (i.e., SOWs), who live in and have legitimacy with a community, use deescalation strategies to intervene in conflicts. These individuals are selected and hired based on their former backgrounds and relational ties to the community. Many street outreach workers were formerly incarcerated and/or were high ranking gang members, and they talk about street outreach work as an opportunity for them to leverage their skills and relationships to make a positive impact in their community [15]. One of the most important characteristics of a SOW is that they are non-judgmental, because they understand the complexities of violence and its causes and that residents view them as trustworthy (i.e., the SOW will keep information private from other residents and the police and will be available when needed). Given the high rate of recidivism [9, 66], violence prevention programs create an opportunity for SOWs to make a living wage and to reduce the unemployment rate in their neighborhoods

Table 1: Thirteen conflict mediation strategies SP workers use

Strategy Name	Definition
Buy Time	Getting everyone to take a step back while figuring out what is going on; Stall the situation to find out more information and to give parties time to cool down
Change Location	Related to deescalating and constructive shadowing but requires a physical change of location
Constructive Shadowing	Babysitting a situation by keeping an eye on parties involved
Deescalating the Situation	Calming people down to decrease size, scope, or intensity of conflict; Not letting a conflict "blow-up"
Focus on Consequences	Talking the person through the possible outcome of a bad decision to encourage them to change their mind
Gather Information	Collecting facts about the situation from one or both parties.
Save Face	Providing a way out of the conflict that does not cause loss of street credibility
Use Middle Man	Street Peace staff uses outside parties not involved in the conflict to help mediate the conflict
Reach Agreement	Obtaining a resolution that does not involve violence (e.g., the parties agree to stay away or leave each other alone)
Reasoning/Alternate Solution	Reframing the situation to provide a different understanding for one or both parties or to get them to see each other's point of view
Use Street Peace Staff from Other Sites	Involve staff from other Street Peace sites in the mediation
Use Family/Friends	Using family/friends as a means of information gathering, communicating, and leveraging/influencing people involved
Use Other Street Peace Participants	Use other Street Peace participants to help in the mediation process

as these are full-time paid jobs, which are especially hard to access for people who have a criminal record and face other employment challenges (e.g., racial discrimination, underfunded schools that lead to educational disparities).

Prior to becoming a SOW, employees are trained to apply strategies that aim to diffuse very intense situations that could become violent. Table 1 describes the 13 strategies used in mediating violent events [44, 76, 88, 98, 99]. Such strategies include *constructive shadowing*, where SOWs spend time with the individual in hopes of calming them down or *saving face*, where SOWs give individuals a "reason" or "excuse" to not engage in violent behavior (particularly if an associated group or gang requires it). For example, a potential violent offender can *save face* if a SOW asks them not to retaliate due to the respect the SOW has within the community.

Long-term outreach is when SOWs engage with high-risk individuals to identify resources (e.g., job and educational opportunities) that could address their unmet needs [15, 20, 23]. An individual involved in a conflict mediation or identified as high-risk (due to age, history of violence, gang-affiliation, etc.) can be recruited to join the street outreach program as a *participant*, meaning they work long-term with a SOW who builds a relationship with them and determines what resources and support they need to access alternative, safe avenues to making a living and finding belonging in their community. Similar to social workers, this can include connecting participants to resources for housing, education, job training, trauma-informed mental healthcare, or substance abuse treatment [15, 20, 23, 40].

4.2 Data Collection

We interviewed 25 SOWs across seven SP sites using semi-structured interviews, which lasted, on average, 35 minutes in length. The sites were selected by SP administrators, and SOWs at each site gave permission prior to us visiting their sites to conduct interviews. *Sites* refer to the physical offices that a team of SOWs work out of located in a specific neighborhood. Each of our sites were located in a different Chicago neighborhood (seven in total).

Because the structure of the organization requires full transparency, SP administrators felt it was important that our team introduce ourselves to all those in SP to create and maintain trust. We introduced ourselves at a collaborative, monthly meeting, where all SOWs across the city meet in an auditorium at a local university. Our team introductions lasted approximately 30 minutes. In addition, we introduced ourselves at each of the seven sites. One site asked us to have more formal introductions where we convened in a conference room, and SOWs asked our team questions about our collaboration with SP as well as provided insight into their thoughts about the role of technology in their work. We mention this particular site introduction as the 30 minute conversation was recorded with the permission of the 10 SOWs at that site. Five SOWs from that site agreed to participate in interviews and 3 SOWs from the other 6 sites (18 SOWs) agreed to participate (we had a minimum requirement of 3 per site). In addition, we interviewed two SP administrators who both had nearly a decade of experience working in the field as SOWs and continued to engage in mediations as necessary despite their current role to support SOWs as administrators.

We selected semi-structured interviews over other ethnographic methods (e.g., observations) due to participant preference. Interview participants stated reasons for this preference was due to the unpredictable nature of violence escalation (i.e., ensuring the physical well-being of the researchers) as well as the risk of losing legitimacy and trust if they are seen with us (researchers) by community residents who could identify us as outsiders that are potentially affiliated with law enforcement. Using interviews as our method of data collection also allowed SOWs to have testimonial authority—the ability for a person of color to speak and to be heard as in authority about their lived experiences [17].

Interviews with all 25 SOWs addressed their involvement with SP, their experience mediating violent conflicts, their methods for selecting mediation strategies, and the use of technology in their work. In addition to these topics, our interviews with administrative staff helped our team learn about the background and inner workings of the organization, including training techniques, as well as feedback on our interview protocol.

At the end of each interview, interviewees completed a survey to collect demographic information and information about their personal and professional technology usage.

4.3 Participants

All 25 interviewees (100%) had experiencing working as a SOW, whose primary task was to mediate violent conflict, at some point in their career in violence prevention. Two interviewees (8%) worked as an administrator at the time of the interviews and one (4%) interviewee worked as a supervisor. The median age of the participants was 41-55. Twenty-three interviewees (92%) identified as Black or African-American, one as white (4%), and one (4%) opted not to disclose. Twenty-three interviewees (92%) identified as male and two interviewees (8%) identified as female. Though women are underrepresented within street outreach work (and consequently, in our participant sample), female SOWs have made considerable contributions to their field and communities, as detailed in [9, 10]. One participant (4%) had a master's degree, 11 participants (44%) had completed some college coursework, 11 others (44%) had high school degrees or equivalent, and two participants (8%) had not completed high school. All were native English speakers, and one interviewee was fluent in Spanish.

Twenty participants (80%) owned a smartphone, while five (20%) owned non-smartphone mobile devices. Twenty-one participants (84%) reported that they were either "extremely" or "very comfortable" using mobile technology, while the other four (16%) indicated that they were "somewhat comfortable." Eleven participants (44%) reported that they used the internet for over seven years, four (16%) reported that they used the internet for 4-6 years, five (20%) reported that they used the internet for 1-3 years, and five others (20%) reported that they used the internet for less than one year.

Interviewees primarily focused on interpersonal violence that arose from online and in-person conflicts. While the majority of cases were clique or gang related, participants also dealt with intimate partner conflicts. After each mediation, interview participants inputted unidentifiable information pertaining to each case, such as conflict location (e.g., 500 block of street name) and mediation techniques, into an online database owned by Street Peace. This information is collected for both internal and external purposes of measuring the organization's success but is never used to measure a SOWs' abilities or accomplishments. Instead, this data should be thought of as similar to clock-in/clock-out procedures, where workers report on time spent working. Internally, the anonymous data is used to review mediation strategies while externally, the data is aggregated to measure the organization's success by community, which is then shared in reports back to funding agencies. Therefore, there is some assessment; however, the information recorded is never specific enough to be used by law enforcement or for other punitive outcomes.

4.4 Analysis

To analyze the data, we first transcribed the interviews and the one site group discussion that was recorded. We then used Dedoose, an online collaborative coding tool, to iteratively, inductively code the data [93]. Both the first and second authors coded the dataset independently. Afterwards, the authors met several times to discuss the codes, checking for discrepancies between the two until there was 100% compliance. There was a total of 62 codes across the entire dataset using inductive grounded coding methods [93]. We used inductive coding to identify themes around technology use in street outreach work, conflict mediation strategies, and the future of ICTs in violence prevention work. After all transcriptions were coded, they were then grouped to reveal larger themes such as how ICTs are used to support conflict mediation, enable collaboration and teamwork, and invoke connections and trust within the community while reimagining ways that ICTs can better support street outreach work. In this paper, we describe the themes that emerged from the most heavily reoccurring codes. Though the nuances of how violence prevention work is conducted may not seem directly relevant to technology design, we include it because understanding the context of this type of work and how ICTs are situated in that context is essential to design.

5 FINDINGS

Exploring the ways in which ICTs are used to support street outreach work (RQ1), we found that SOWs (1) use social media to identify and mediate conflicts; (2) leverage ICTs to support collaboration and teamwork; (3) engage in communication with the community using ICTs. Reimagining ICTs that support street outreach work (RQ2), SOWs expressed desire for technologies that inform mediation strategy selection, enhance training for SOWs, and improve communication between SOWs across sites and with community residents. In the following sections, we describe each of these themes using quotes from participants that are edited only for clarity and/or to maintain anonymity. As a trigger warning to readers, some of these quotes describe instances of violence.

5.1 RQ1: What is the role of information and communication technologies in street outreach work?

5.1.1 Leveraging Social Media to Identify and Mediate Conflict. Aligned with [73], participants indicated that ICTs, particularly social media, can catalyze violent situations. In addition, participants in our study said ICTs can also help them mediate situations before they become violent. Keith gives an example of how social media can catalyze violence [72, 73]:

> *"Facebook can also, you know because these young guys, they put everything on social media, so you could actually see a lot of stuff that's going on and you could probably stop it before it happens. You know, [..] but we [..] didn't find out until afterwards, but it was this shooting that happened on [intersection] where [..] five people got shot. The young lady got killed. This was about two, three weeks ago. And it was all over Facebook. They was arguing on Facebook and like, 'You know where I'm at. Come'[..] but all the time you're thinking they're not coming. And they just came over there shooting and like I say, five people got shot. The young lady died."*

James describes a situation that escalated on social media that he was able to mediate:

> *"I just had a mediation yesterday. [..] So I'm looking on my Facebook page and I just see the girl, one of the girls, like she's my family, and the other girl is a girl I know from the neighborhood. They arguing back and forth all on Facebook. [..] I'm just seeing a lot of people from my neighborhood come and they're getting down on her. So I'm like, "Man, y'all stop. This is my cousin, it's over with." They're like, "It's your cousin?" "Yeah, it's my cousin." [..] My main thing I wanted to do was buy time and focus on consequences. [..] So I used different strategies for different people. She immediately took [..] that picture down. But the [other] girl screenshot it and posted it back up. But I got her to take it down. I'm talking to her [throughout]. I'm just basically buying time. [..] I resolved the conflict like peacefully. [..] It took me four hours [but] it was sporadic. It was fast. A lot of people, if you don't have a relationship with nobody, you can't do that."*

Both quotes illustrate how quickly conflicts can escalate through social media. Though Keith is unable to intervene, James's quote provides insight into how their work is connected to social media since he was able to quickly begin to implement conflict mediation strategies that align with his training (as highlighted in Table 1).

Chris explains that youth who engage in these conflicts often do not actually want to engage in physical violence, but feel they have to if their reputation is on the line:

> *"A lot of these guys, they'll kill you but a lot of them really don't be wanting to do that. A lot of people really wanna talk, they want somebody to mediate it without them physically having to be there because they don't wanna look as if they weak. [..] It's like [my colleague] was saying exposed, being exposed, people don't like that shit. Anything that can keep them behind closed doors or help them. That's why a lot of them do this Facebook stuff because really they behind this computer."*

This example demonstrates how ICTs can serve as a buffer, creating an opportunity for SOWs to intervene and provide a way for participants to *save face* before physical retaliation occurs, especially for those who do not necessarily wish to engage in physical violence but feel a need to express themselves via social media in the safety of their homes. While this type of social media exchange may escalate into physical violence [11, 31, 72], it also suggests that ICTs such as social media can be used to deescalate heated exchanges.

Although social media can be a way to learn about and intercept conflicts, several SOWs were not on Facebook or other social media sites, which some attributed to a generational divide among SOWs. The digital divide may be especially visible when examining which social media tools are used as new tools become more prominent (e.g., Instagram, TikTok). Will shares a typical conversation with a younger colleague:

> *"We'll be talking about something, and he'll say, 'Oh, you didn't hear about what took place over there?' And he'll say, 'That's why you need Facebook.' I say, 'Man, I watch the news.' He say, 'News, for it'll be over. Everything's gon' be on Facebook."*

Some older SOWs chose more traditional options (e.g., local news channel) for keeping abreast about happenings within their neighborhoods. However, some felt that using more traditional methods for sourcing information on current events could result in having outdated information and missed opportunities to intervene and mediate a conflict in a timely manner. Familiarity and proficiency in using social media for getting information about what is happening within their local communities not only revealed the age differences between some of the younger and older SOWs and their usage of ICTs, but also highlighted the significance of having *just-in-time information*, which enabled some SOWs to mediate or deescalate immediate conflicts accordingly. Future work should explore the various social media platforms that are used in community-led violence prevention work and the factors that may influence the use of those tools (e.g., age, comfort with technology, education, time).

Outside of traditional news sources and social media, only one SOW explicitly stated that they used another app to find local information about current events. Russell says:

> *"What I got is the app that you go to that tells you when shootings occur in the city but it don't pick up all of them [..] [It'll show] a shooting occurred fifteen minutes ago on such and such street"*

In addition to being a source of information, social media were also a way to connect with other residents and SOWs who could provide help with mediations. Todd shares how his communication with someone over social media opened his access to a group involved in conflicts that he did not previously have inroads with:

> *"You know what I've learned is? The world's so big but yet so small. [..] One time it did come about to where I was talking to a person on the social [media] site and find out they helped me get in, like into a crew or clique that nobody really rocked with, people like us [SOWs]."*

Todd's experience signifies the multiple, conflicting roles that social media plays in violence and street outreach work. While it can be a source of violence, social media can also serve as a bridge for SOWs to access crucial information and manage relationships necessary to mediate conflicts.

5.1.2 Supporting Collaboration and Teamwork through ICT Usage. SOWs emphasized the importance of collaboration and teamwork in order to successfully engage in street outreach work. As evidence of its importance, opportunities to communicate are built into the practices and procedures of violence prevention work. Specifically, SOWs have short daily team meetings, where they touch base with their supervisor about things happening in the neighborhood, and longer weekly meetings, where they discuss potential strategies to overcome current conflicts. During the focus group, one SOW states:

> *"Every Thursday, we have strategy meetings for things that are brewing, that don't get solved the first time or the initial time. What that would do? That would give us an opportunity to survey everything as a team and look at different strategies. 'Okay, what if we do try this?' Get input from everybody. I believe it can be very helpful."*

These strategy meetings are particularly vital to resolving ongoing conflicts and rapidly changing situations (e.g., feuds between gangs). In addition to the scheduled meetings, SOWs send text messages and calls to team members as emergency situations unfold and to coordinate their response. Curtis explains how his team communicates in the field during an emergency:

> *"[My supervisor] would text everybody Yeah. Or say if I'm in the field, I heard, you just had a shooting over at such and such [...] she might call. I might text her and say [supervisor] we had a shooter on and she'd get the team, or she'd tell me, the team, and she'd tell me to get over there [...] meanwhile we keeping on texting."*

Based on the interviews, these texts would not contain confidential information about the situation but rather requests for others to meet them at a certain location.

In addition, all participants mentioned their reliance on their team members for support, reiterated that teamwork was vital to successfully address conflict, and acknowledged that ICTs played a role in supporting their collaborations. Additionally, SOWs gave advice to other SOWs about how to handle high-stakes situations through conversations about similar experiences using multiple channels of communication. The ability to verbally communicate and talk through ideas and conflicts, especially in real-time dangerous situations, was a key collaboration strategy repeatedly employed by SOWs. Chris, for example, feels that the team dynamic is essential to the success of violence prevention work, stating: *"I think what works best is the teamwork that we got. I think it's a team effort."* A major component of their teamwork was collaboratively basing conflict mediation strategies on who has relationships with the people involved, often in real-time, which is illustrated in the story that Kevin shares about a recent mediation:

> *"the [people involved in the conflict] I didn't know, the [SOWs] that I was with, they knew them. So, that's how we kinda do it. Like okay, you know them, you do the talking then since you know the person. They'll listen to you. So, that's basically how it will go, but I think it was only one where it was a bunch of kids comin from school and this some young teenagers and I only knew one, but one of our co-workers he kinda knew all of them, and I let him do most of the talking so the young guy that I just kinda knew, I knew him through his Uncle or whatever and he kinda remembered me, but like I said, I didn't know him personally but we knew of each other. So, he kinda got the other guys, I kinda calmed him down like, 'Man, be cool, it's alright. It ain't that serious. Y'all gonna be cool again tomorrow and just let it go,' and stuff like that, so.."*

ICTs also enabled teamwork in tense situations where a fast response was crucial for the SOWs' safety, as when Isaac explains how he handled a conflict in another part of the city, outside of his team's range: *"It was going on so fast, and mind racing 'cause I'm like, 'Man, I'm gonna call over here.' I knew a few guys from the [other site's] number. "* It was also important that SOWs be present as soon as possible after a shooting to quell potential retaliation, when the victim's family and friends are experiencing various emotions (e.g., anger, desperation, sadness) that may cause them to feel the need to reciprocate violence. Robert gave an example of the effectiveness of SOWs' teamwork when their team talked a group out of retaliating after an accidental shooting, saying:

> *"[The victim's] brother, who's actually out there, he was for peace because he knew it was a mistake. But his friends around him didn't wanna hear that. So they was trying to go bang on the [shooter] dude's door and drag him out the house, but we was all out there canvassing the neighborhood, and we talked the guys down."*

These cases demonstrate how SOWs use mobile phones as well as in-person interaction to mediate complex conflicts as a team. Although SOWs use phone calls and texting for communication in the field, they are highly conscious of the sensitivity of the information they share through ICTs for their own safety and the safety of their participants.

5.1.3 Invoking Community Connections and Trust Using ICTs. SOWs were transparent about the necessity of in-person and online communication to the kind of work that they do. When asked how he shares and receives information, Daniel replies, *"We got phone communication, text communication. We got social media communication and in person communication."* Daniel's response illustrates how SOWs used a variety of ICTs to communicate and share information across multiple channels.

Our participants also described using ICTs to interact and communicate with community members about potentially violent conflicts. When asked about how he finds out about conflicts, Daniel says, *"Sometimes it's from one of our high risk participants [..], sometimes it can be from a parent, or somebody from the block, a community member."*

Daniel's statement reveals that SOWs receive information from those directly or indirectly engaged in conflict. Robert testifies to receiving information from a family member of someone directly involved in a conflict:

> *"These guys' mothers will call us to come and calm their child down or their son down, like 'He got a gun on me. Can you come and get the gun?' Or, 'Can you talk him down, 'cause he flew out of the house with a gun.' They'll call us first before they call the cops, because our outcome is [discussing] consequences, 'This what's gonna happen if you do this, this what's gonna happen if you do this.' The cops, they're not giving you consequences, you are gonna be the consequence, you're going to jail."*

SOWs describe the importance of their personal networks, particularly when they do not know some or all of the people involved, and social media can sometimes help make visible social connections that can support their work. For example, Anthony shares his approach, *"If I don't know these people, don't have no personal relationship with 'em, I find somebody to get me in. And I use family and friends. That's just family or friend as a middleman."* In this way, he leverages the trust and credibility of others in his network to support mediation work, using ICTs and social media to help make those connections easier to see.

ICTs also play a large role in making sure SOWs are available at all times. When asked if he uses any technologies to share information, Will responds:

> *"Somebody from the streets, they might contact me on my phone, they might contact me in person, or they might contact me on Facebook, like, 'Call me. Like, I need you, bro.' Like, or something. But there's gonna be some way that they could get in contact. [..] There will never be a way they can't get in contact with me."*

ICTs support street outreach workers' requirement to be available at any time. Their constant availability may also contribute to why community members trust them to diffuse difficult situations.

Establishing trust is not a trivial matter as it is essential to how SOWs' effectively work within the communities where they live. Being careful about how they use ICTs to communicate about sensitive topics enables SOWs to continuously build trust while leveraging their social networks as a crucial mechanism for street outreach work. For example, though SOWs use text messaging and social media, they are careful not to document anything that could incriminate the people involved in the conflicts. Daniel says:

> *"Every communication that we do, it has to be non-incriminate. Even if somebody put some incriminat[ing] communication on social media, if we see it, it may not be the best thing for us to respond [online] and we got to make a judgment call. We make [phone] calls, but there's no substitution for in-person communication, because a lot of this stuff is sensitive and its got to be in-person. Even the way that we document our mediations, we got certain words and terminologies that it is part of the training that speaks for certain things. We assign each [person] on a caseload a number. All our [participants] have a number, because it's sensitive. Certain lines can't get cross. [We] still live in the community."*

From an ethical perspective, SOWs do not want to incriminate any of their outreach participants. In addition to protecting participants from the judicial system, Daniel's statement reveals their vulnerability since they are residents in the neighborhoods that they work and any form of informing is a betrayal that could result in dire consequences. Chris agrees, saying, *"We don't ever say names, we say group A, group B."* Similarly, Shana says,

> *"We pretend like every phone is bugged. The whole world is listening in that sense. I would never call, if you were my fellow worker and I needed your help, [..] I'm not going to say, 'Pookey Slim just shot whomever.' We're not going to talk about it. We don't do a lot of talking on the phone. We do it in-person. [..] And then I go there, then, I can talk to him in person, alone, 'Look, this is what I heard, what the hell are you doing? What the hell? What happened? Tell me what happened.' Now we can get to the meat and potatoes of everything. We're able to mediate it peacefully."*

From Shana's point of view, phone communication is best used to set up in-person meetings. Shana continues,

> *"We are a confidential organization and that gives us our credibility, the opportunity, and the privilege to be able to go into these communities with guys who are loading guns, because they trust us. We're trying to make them make a better choice before they cross the line. That way, nobody gets shot and nobody goes to jail. We can work with them and get them to change their behaviors and then they change their life."*

Communication is essential to understanding how ICTs are used in street outreach work, particularly the nuances of how they are used to make SOWs easily accessible, to invoke community connections, and to establish trust with residents.

5.2 RQ2: How do street outreach workers envision new ICTs supporting their work?

When discussing potentially new technologies in community-led violence prevention work, the majority of SOWs' interviewed thought that there should be better technologies to support their work. They articulated how support tools should be mobile and accessible in the field. David, for example, expresses wanting to keep up with how fast technology is changing and impacting his work:

> *"Times is changing, gang banging is changing, it's not the same MO. They're on social media. They're rapping. And it's different, because stuff can happen so fast, you might not see something on social media, or whatever. So, all I'm saying is, technology is changing. Everything is changing. It might be unbelievable, but you gotta change with it. They the gang, but we're, like, anti-gang. So we're trying to stop it, but we need to be as swift as they are. You understand what I'm saying?"*

Similarly, Will says:

> *"A lot of guys like using this [points to mobile phone]. They like to express their self on this. They like to hear feedback off this. [..] Everybody got these nice phones that can just walk around and do it now. So by [us SOWs] having an app, it's just a quicker way for people to just either ask for help, to see other ways to get through certain things, you know?"*

SOWs described how future ICTs must be integrated into violence prevention practices, specifically to inform mediation strategy selection, enhance training, and improve communication between SOWs across sites and with community residents.

5.2.1 Inform Mediation Strategy Selection. Violence prevention work—particularly mediating conflict—is complex as there are many factors to consider (e.g., what led to the conflict, the backgrounds and histories of the people involved, the relationship between the SOW and the parties involved). Such factors influence the strategies SOWs use in violence mediations. SOWs describe the complexity of these situations and the factors they take into consideration when deciding how to mediate a conflict, saying that they rely on both instincts and data (e.g., input from their team). Daniel describes the complexity of the decisions being made by SOWs, saying *"There's gonna be certain dynamics that play out in this place versus that place, certain shared dynamics, certain things that are only specific to 'this' [situation]."* Daniel continues to state that by leveraging the data from the SP database (as described in Section 4.3) to understand the different factors that impact the effectiveness of the strategies

selected, SOWs could more effectively select strategies depending on the situations in which they face most often:

> *"At the end of the day it is really just about tapping into our data bank and being able to use that [data] to make [conflict mediation] more effective. But without the information, [SOWs] don't have in front of them, 'this is this percentage effective versus that,' they don't have that context so we don't know how to shift things or not. So I think even once we [a]re able to have [a tool that informs us], people are going to get presented with this information here and I think there's gonna be a percentage [of SOWs] that gonna shift what their [mediation] strategy will be. And then there's gonna be some of them that are gonna say 'We're just gonna do this anyway.' I think even that is something that you want to be able to capture. If you pull up the information and it's saying 'this is the most effective but we're still gonna go with this strategy.' This is an opportunity to learn. Maybe 50% or 60% of the time, we're shifting and what does that mean?"*

Daniel provides his vision for the usage of technologies that could be designed to support street outreach work across various communities using data:

> *"But then what we can do is run a report of all the mediations for a particular community and you can see what the commonalities are there or you can just do across the number of sites and see what's the most common strategies are."*

Though SOWs are confident in their approach, Daniel describes how technologies can support SOWs in leveraging their own data to improve conflict meditation outcomes.

One street outreach worker, Charles, was skeptical of using data to inform mediation strategies given how complex and overlapping they are, saying:

> *"Well, that's what I been trying to explain to [SP] a lot, that we already have, mostly, relationships with these people. See, they [reference to SP administration] go off their computer and all that, but it's bigger than that because we was already out here, we done raise them, and I've seen thugs grow up."*

Charles continues to explain that gathering data about mediation strategies is difficult because of how complex the situation is in the moment so a conflict may require several mediation strategies simultaneously:

> *"I can move on like, 'You know what, I talked to the other side, they don't want no problems.' Then I gotta, what you call, change locations is what we use. Which means the main targets or the main people that's armed in group A, I'll probably get them in the car with me. Take them somewhere. [..] Plenty of times I've brought people to the office for mediation or we just take them to the park. Anywhere to get [..] their mind away from [the situation] so they can think straight. So I do that a lot too, try to change locations, buy time."*
> *Interviewer: So you combine methods and stuff?*
> *Charles: "I will say about them both two is combined because me buying, by me changing location, I'm buying time."*

Charles questions whether ICTs could support the conflict mediation process in a meaningful way given that the nature of violence prevention work requires much improvisation based on the situation and evolving conflict status. Thus, the mediation strategies are complex and interwoven together, making one particular strategy difficult to identify as a useful recommendation to SOWs. This view was shared by Keith, who explains that tools should not be designed to be used during in-person conflicts, saying *"A lot of times, in the heat of the moment, I'm just talking, doing what I'm doing, I'm not thinking about pulling out my phone."*

5.2.2 Enhance Training Opportunities. In addition to discussing ways that data and technologies could inform conflict mediation strategies, our participants felt that mobile support tools had the potential to improve their training. SOWs attend extensive deescalation, trauma, psychology, and public health training. Our participants felt that support tools could potentially improve the training experience and keep them current on new training information and materials. Will feels that both novice and experienced street outreach workers could benefit from such tools, saying:

> *"It's not just for the workers, but for the people that are training. It gives you a different context. A different overview of what's going on where, what's effective where, and why, and then you can start asking 'Well, why? Why, why did this same strategy over here have a different result over here.' You know what I mean? With similar dynamics. These are things that informs how we train different sites, how we train different areas. And what are the real considerations, when we're talking about navigating these, you know, potentially lethal environments.*

During the introductions, James shares that data-oriented support tools could be useful to upcoming street outreach sites, because it could inform new SOWs about past conflicts that have been mediated in that area, saying:

> *"It would work well in [neighborhood name] because [this neighborhood's street outreach site] is starting to come back up now [..] With this app, it will show [new SOWs in the neigborhood] if we have mediated conflict over there."*

5.2.3 Support Effective Communication with SOWs and Community Members. There was also consensus that mobile support tools could help them better communicate in emergency situations internally and to request backup from their team when needed. Robert states:

> *"I think an app would be better because it's like if somebody really needs some help [..] Like I said I would being able to just hit that button."*

Communicating with the public is typically done in person and through word-of-mouth, but at least three participants felt that mobile support tools could help them better communicate with their community about current situations in ways that are beneficial to residents. For instance, David says:

> *"What it can also do is [...]these kinds of conflicts are going on with these kinds of probabilities...we can also use this to set up a system where we can alert the community about a current type of situation. For example 'This might not be the best time to have your kids playing out front or on the playground. Certain things are going on.' There's things that we can do to inform our strategy to shift outcomes but there's another layer of things that we can also do to alert community and help them and inform them so they can take certain actions to maximize their own safety."*

Despite some skepticism about the role of technology in street outreach work, they expressed strong feelings about designing support tools to help them with mediation strategy selection, additional training, and communication.

6 DISCUSSION

While prior HCI research has studied how technologies catalyze violence in communities [31, 72, 73], little work has examined ICT usage in the context of violence prevention work [32, 74]. Our focus for this study was to amplify existing community violence prevention practices by understanding how SOWs use technology in their work and how ICTs might be better designed to support their work. We found that SOWs view ICTs such as social media as responsible for catalyzing violence but they also leverage ICTs in their work to prevent violence. Our results suggest that SOWs use ICTs to 1) identify and mediate conflicts on social media that could otherwise become violent; 2) collaborate with other SOWs; and 3) leverage community connections and trust. SOWs described opportunities for technologies to further support their work, while stressing that any such technologies would need to prioritize the safety of SOWs and their participants. In this section, we detail two primary takeaways from this work: 1) implications for co-designing tools that support community safety and justice work; and 2) new questions and considerations for conducting collaborative research in socially complex contexts that respond to issues of justice.

6.1 Supporting Networks of Community-Based Justice Initiatives

Our findings demonstrate that SOWs used technology to support their non-punitive violence reduction practices as a community of care [9] to support (primarily) young people who could become targets and/or perpetrators of violence. The SOWs drew on their deep relationships, credibility, and trust in the community to *prevent* violence and incarceration, rather than responding to actual or suspected violence with violence and punishment, as is the case with law enforcement. SOWs demonstrated care to their participants and community by: 1) being accessible at all times to respond to conflicts and participants' needs; 2) building relationships with participants to understand what types of support they need; 3) personally extending themselves to try to address those needs; and 4) risking their own safety to intervene in dangerous situations. SOWs collaborated with one another to develop communities of care [9] within their sites, using ICTs to collaborate and share information to help one another mediate conflicts.

However, SOWs shared that they did not have an infrastructure through which to connect with SOWs at other sites across the city, which limits their ability to share their mediation resources (e.g., their relationships, credibility, and care) with one another. Designing support tools that allow SOWs to more easily communicate across sites and organizations distributed around the city creates more opportunities for training, peer learning, and relationship-building amongst SOWs, especially those who are novice and/or do not use social media. Given SOWs' current ICT practices, our findings suggest that there is an opportunity to co-design technologies with SOWs to connect their disparate communities of care. Such technologies would integrate SOWs' expertise through a collaborative design process that is attuned to considerations of safety and privacy so that the technologies do not inadvertently expose SOWs or their outreach participants to risks such as retaliation from residents or investigations by law enforcement. SOWs made it clear that any design must preserve the trust and confidentiality that they depend upon to do their work. Furthermore, any co-design collaborations between researchers and street outreach organizations should be driven by SOWs and grounded in long-term relationships and commitments.

Street outreach is not the only context in which communities of care work to address community issues and disparities that result from historic and present structural racism. For instance, other community interventions that eschew the outsider provider model of addressing local disparities (e.g., large nonprofits or government agencies "serving" communities) in favor of a community-driven model include examples in health and education. Local birth workers (e.g., doulas, midwives) are attempting to curb the disproportionate maternal mortality and morbidity in childbirth rates of women of color by providing care in their communities [30]. Restorative justice workers are attempting to curb the disproportionate amount of Black and Brown youth that are incarcerated and serving longer sentences as compared to their white counterparts [22, 86]. Transformative justice groups build mechanisms for care, healing, and accountability for victims of sexual abuse and other violence or harm independent of the criminal legal system [27, 43, 54]. Community-based education partners create a landscape of out-of-school learning opportunities to enrich formal education, perceived as subpar, in their local neighborhoods [7, 36, 38]. All of this work, including street violence prevention, is local, community-powered, and counters injustice.

As calls grow to develop healing alternatives to policing, we must seek ways to support and connect a multitude of community-driven, assets-based justice practices [9, 26, 27, 54, 102]. Community members develop such practices to address the intersectional harms that are inflicted on them by systems of domination (e.g., white supremacy, capitalism, cis-hereopatriarchy, nation) [17] using their lived expertise and local resources (e.g., relationships, credibility, trust). If we expand our findings from street outreach workers to the broader ecosystem of community-driven justice initiatives, we can see potential for co-designing systems that enable cross-collaboration, communication, and resource sharing. Such an ecosystem would not only respond to many of the issues that are currently delegated to traditional policing, but would also serve to repair community infrastructures so that communities can work together to root out systemic issues and build local power.

6.2 Accounting for the Complexities of Research in Safety and Justice Contexts

Reflecting on the lessons the SOWs taught us about their work and our experiences as academic and community-based researchers collaborating in this study surfaces questions and considerations for future collaborative research in the contexts of violence prevention and social justice initiatives. As designers, researchers, and community leaders, it is imperative that we understand how we can design technologies that amplify existing non-punitive approaches to safety such as street outreach. We recognize that there is no simple solution to violence, nor is the goal to replace police with another single system that is entirely responsible for public safety. Instead, these questions point to the need for further collaborative research in this area that unpacks the complexity of multiple perspectives that represent different stakeholders (i.e., community residents, community associations, local government officials, local police, the legal system) with ostensibly similar goals but different approaches to achieving these goals. Such complexity goes beyond access and usage of ICTs for street outreach work. The following questions promote an assets-based approach and position people with lived experience of the given issue as agents of knowledge [17, 102, 103] in the process of co-designing tools with and for community-driven justice and safety initiatives:

(1) What are the historical implications of policing in Black and Latinx communities?
(2) How do these implications impact the way safety and justice leaders work within their communities?
(3) What existing technologies do community-led safety and justice initiatives use in their work?
(4) What other assets (e.g., relationships, trust, credibility) do communities advancing their own safety and justice initiatives possess and leverage?
(5) What assets do outside research partners (e.g., academics) bring to a collaboration with safety and justice initiatives?
(6) What additional resources do community-based organizations or grassroots groups need to successfully achieve their initiatives?
(7) Who will benefit from successful implementation of these initiatives?
(8) From the perspective of community members, how do they define safety and justice and what outcomes do they want to see from community initiatives?

These questions highlight the (largely) non-technological complexities of working with community safety and justice initiatives that are often unaddressed by existing HCI research and design methods. Some researchers are beginning to address this gap by developing methods that are cognisant of communities' histories [13, 49, 50] and embracing Black feminist theories in their analysis in order to specifically draw out complexities and power dynamics that traditional HCI methods do not specifically engage with [35]. We propose that these types of approaches are important to further develop and apply when collaboratively designing tools and systems with community-driven safety and social justice initiatives [19, 28, 81]. However, we must innovate beyond developing technologies and consider how such initiatives can be financially and politically sustained.

7 CONCLUSIONS AND FUTURE WORK

In this paper, we provide insight into the ways in which ICTs are used in street outreach work. Future work has the ability to design technologies that support community-led violence prevention in a way that attends to the historical sociocultural systems of oppression that have supported the spread of violence to certain neighborhoods. By focusing on designing support tools that have the ability to be useful to street outreach workers by improving communication, training, and mediation strategy selection, we have the ability to create a network that centers values such as trust, care, empathy, and sharing. In the broader context, other areas of study such as health, criminal justice, and education can also use this approach to identify and integrate the values of community-based workers in the design of effective support tools.

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